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The Sustainability of Funding for Dual Credit Programs an Analysis of the State Governance Structure and Funding Models' Impact on Tuition Revenue from 2013-2016

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The sustainability of funding for dual credit programs: An analysis of the state governance structure and funding models' impact on tuition revenue from 2013-2016

By

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The sustainability of funding for dual credit programs: An analysis of the state governance structure and funding models' impact on tuition revenue from 2013-2016

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The purpose of the study was to assess the sustainability of dual credit programs from 2013-2016 across U.S. public community and junior colleges and the effect of 2 funding variables associated with these course offerings. The literature postulated that dual credit programs have continued to grow in demand since their origin with no indication of decreasing in the near future. The researcher chose 2 funding mechanisms to associate with dual credit enrollment: governance structure of the state and the state funding model as it pertains to dual credit enrollment. Tuition revenue totals were extracted from the Integrated Postsecondary Education Data System for each fall semester from 2013-2016. This data set included 48 states in the U.S. The only non-reporting states were Alaska, Delaware, and The District of Columbia.

This study uses a quantitative approach to determine if state governance structure and state funding model had an impact on tuition revenue. The statistics computed included an Independent Samples T-test. In summary, the analysis did support the research hypothesis in that there was statistically significant differences based on the governance structure of the state for the years of 2013 and 2014, but not years 2015 and 2016. The analysis did not support the research hypothesis in that there were no statistically significant differences based on the state

funding model in tuition revenue derived from enrollment. Limitations in the current study that may have influenced the outcome of the analysis and recommendations for further studies are discussed.

DEDICATION

This dissertation is dedicated to my grandparents, Lonnie and Betty West, my nephew, Michael McCraw, and the rest of my family and extended family. Thank you for your unconditional love and support as I pursued this degree.

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CHAPTER I

INTRODUCTION

The Minnesota State Legislature created the Postsecondary Enrollment Options (PEO) program to promote rigorous course taking and improve student transitions to postsecondary education in 1985 (Blumfield, Grew, Jackson-Beeck, & Vos, 1996). This allowed Minnesota to become the first state to pay for high school juniors and seniors to earn college credit that also counted toward their high school diplomas. As of 2010, more than 110,000 Minnesotans have earned as many as two years of college credits without paying a dime toward the tuition. Subsequently, Magan (2016) explained newly proposed changes to the partnerships between the state colleges, universities and public schools that would limit students' ability to earn college credit and discussed a nearly 23% increase in demand of these classes over a 5-year span. Initiatives such as the PEO in Minnesota were designed with the intent to help more young people prepare for some form of higher education, so it is important that education leaders understand how these initiatives have evolved over the past 30 years in order to effectively project and plan for the future.

Dual credit became a dominant force in Mississippi in the late 2000's. An example given by Rilla K. Jones (personal communication, April 18, 2018) "during the 2009-2010 school year, dual credit enrollment expanded so rapidly the Mississippi Academic Officers Association (MAOA) was forced to pass state laws and policy for eligibility. Moreover, new standards had to be established by the Mississippi Community College Board (MCCB) and the accrediting agency

Southern Association of Colleges and Schools (SACSCOC) dictating that if an institution offered more than 49% of a program by dual credit, it is a substantive change. According to SACSCOC (2019), the definition for substantive change is a significant modification or expansion in the nature and scope of an accredited institution. An increasing number of dual credit enrollment has caused more U.S. public community and junior colleges to report dual credit programs as a substantive change in order to remain within their accreditation requirements.

Colleges and universities have long endeavored to create opportunities for high school students to transition into higher education. Advanced Placement (AP) has previously been utilized as the way for high school seniors to develop advanced college readiness. AP allows for high-achieving students to enroll in standardized, academically challenging courses and take an exam for credit upon completion of the course (Cassidy, Keating, Young, n.d.). If credit is awarded for the course, these AP students are allowed to bypass a college course rather than the course be transcripted at that college. There are costs associated with AP exams, and this offering is restricted to a list of courses. Unlike AP courses, dual credit courses are likely to be transcripted as high school and college credit without a standardized exam. Successful completion of a dual credit course is completing the dual credit course with a grade of "C" or better; subsequently, dual credit options have grown in popularity across the United States.

Previous research on the proliferation of dual credit programs and their potential impact suggests that the programs can positively affect stakeholders involved. With approximately 1,277,100 high school students taking advantage of dual credit in the 2010-2011 school year (Marken, Gray, Lewis, 2013), the impact of dual credit is an important phenomenon to consider. Karp & Hughes (2008) suggests that dual enrollment can positively impact academic outcomes, particularly within low-income and first-generation student populations.

Research also confirms the potential impact dual enrollment could have on college completion. Adelman, Bosetti, Cassidy, Keating, and Young (2008) found that students participating in a single dual credit or dual enrollment course had a better chance of completing an associate degree than students who do not participate in the programs. With student loan debt in America being at a record high, students are in pursuit of degrees the most economical way possible, and dual credit courses are offered to them at a discounted rate.

Dual credit enrollment can also be understood via the lens of anticipatory socialization. Merton first defined the concept of anticipatory socialization in 1949 during a study of United States military, which found that privates who modelled their attitudes and behaviors on those of officers were more likely to be promoted than those who did not (Merton, 1948). Anticipatory socialization is the process, facilitated by social interactions, in which non-group members learn to take on the values and standards of groups they aspire to join, so as to ease their entry into the group and help them interact competently once they have been accepted by it. Another definition of anticipatory socialization is the process of changing one's attitude and behaviors in preparation for a shift in one's role. Words commonly associated with anticipatory socialization include grooming, play-acting, training and rehearsing (Merton, 1948).

When connecting anticipatory socialization and the allure of dual credit enrollment for high school students, students are compelled to enroll in dual credit courses while still in high school because they pre-expose themselves to college courses while still living in the comfort of home. Because these students have never been subjected to collegiate level courses, this enrollment allows them to adapt to the college curricula one or two courses at a time before enrolling full-time, and possibly decreases the amount of time it takes to complete the degree.

Because dual credit programs evolved so rapidly, it is unclear how this type of enrollment impacts the “traditional” community college offerings and their finance structure. This study was conducted to expand the development of research on dual credit enrollment trends and how these programs have impacted U.S. public community and junior colleges. The research project may contribute to a more refined understanding of the necessity of standardized models that result in consistent revenue gains for postsecondary institutions. When examining each state that offers dual credit programs, differences in the governance structure of the college systems and in the return on investment when it comes to this type of enrollment might be exposed. Thus, one must look at tuition revenue as one factor to determine if dual credit program offerings are sustainable or if America’s community colleges might be discounting tuition in exchange for enrollment numbers.

Statement of the Problem

Dual credit enrollment continues to be on the rise without a plateau in sight. In fact, dual enrollment accounts for 30% of community college students (Ashford & Dembicki, 2018). Dual enrollment is promoted by the leaders of secondary institutions as an opportunity to experience college, explore career options, and earn college credit before enrolling in college. Also incentivized from the perspective of secondary institutions is the exposure to the lower costs community college education can provide and how community colleges can aid in preventing debt brought on from student loans. Moreover, dual enrollment affords students who live in high-poverty areas the opportunity to explore pathways to college that they may not have had otherwise. With these admirable and great opportunities comes strife when considering the costs and sustainability of dual credit enrollment to the postsecondary schools offering these type of courses. The problem leading to the need for this study is the decrease of tuition revenue at postsecondary schools and the necessity to understand if the state governance structure and state funding model contribute to the decrease in tuition revenue with regards to dual credit enrollment.

Purpose of the Study

The purpose of this study is to assess the sustainability of dual credit programs from 2013-2016 across U.S. public community and junior colleges and the effect of governance structure and state funding models associated with these institutions.

Research Questions

The following research questions will be answered in order to meet the purpose of the study:

1. Is there a difference in tuition revenue based on a state's governance structure?
2. Is there a difference in tuition revenue based on a state's funding model?

These questions will be answered by examining tuition revenue reported from 2013-2016 and the state governance structure and state funding model as it influences tuition revenue.

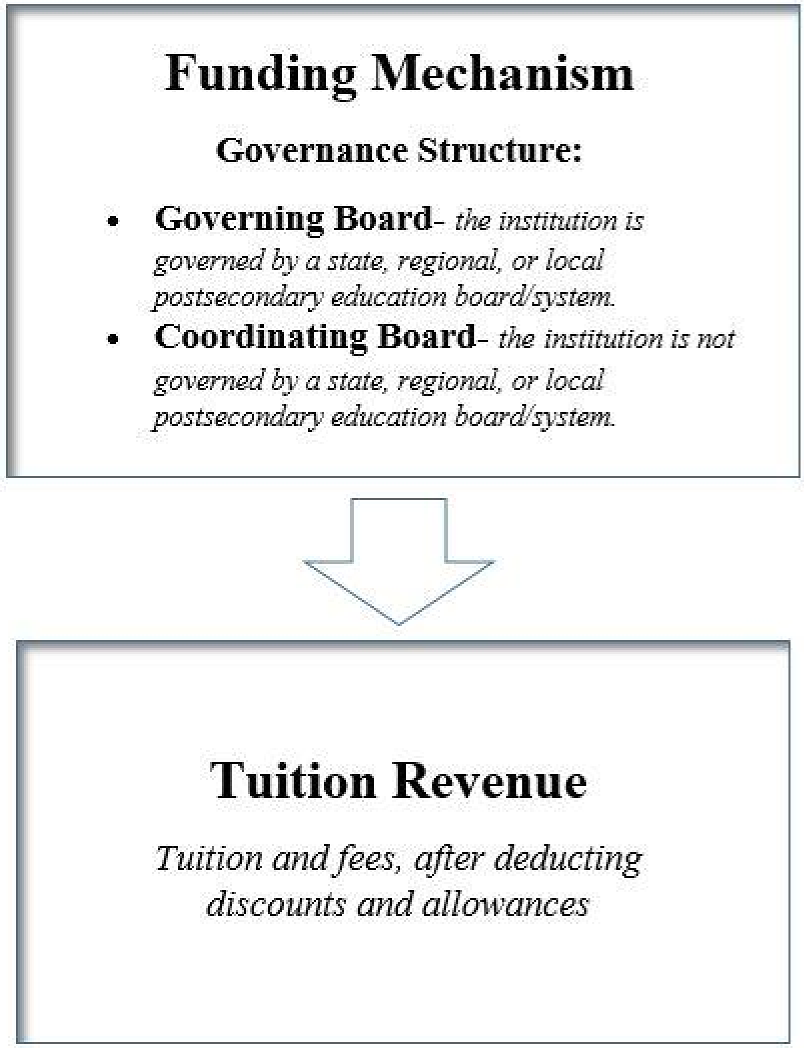

Figure 1. Governance structure on tuition revenue.

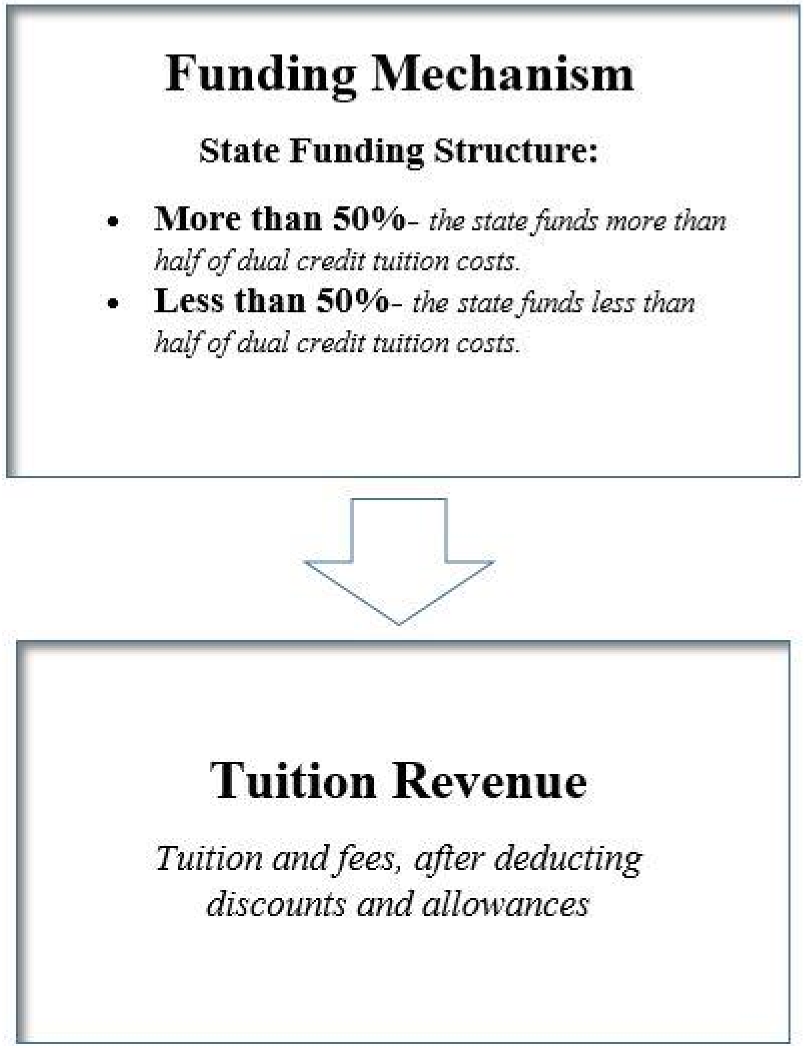

Figure 2. State funding structure on tuition revenue.

Significance of the Study

According to the United States Department of Education (USDE), funding models differ. This is true by state and in some cases by college and school district. In addition to various funding models, state-incentivizing merits of dual credit policy may differ, too. The forethought of offering these type of courses appeared originally to capture the interest of students to enroll in 2-year colleges after high school. In one way, it appears that postsecondary institutions are discounting tuition for the enrollment numbers and federal reimbursement dollars, but in another way community and junior colleges might potentially be performing services without a guarantee of a return on investment. This is true of many states, for "policy makers are in favor of dual enrollment because of the cost savings for families, but colleges don't get full tuition revenue from them and in addition state funding cuts have forced many community colleges to rely on tuition" (Smith, 2017, para. 3).

Although dual credit enrollment has been around for several years, thorough research on funding dual credit enrollment is insufficient. This study will begin a conversation and serve as a foundation upon which further research can be conducted to aid in the annual and long range planning efforts for all postsecondary institutions. This study can serve as a guide for postsecondary institutions by providing a review of the state of dual credit enrollment programs and the impact on their overall college enrollment.

Delimitations

The researcher acknowledged the following delimitations of this study:

1. The study only included data for four semesters: fall 2013, fall 2014, fall 2015, and fall 2016.
2. Tuition revenue was reported on all U.S., 2-year, public institution enrollment and not just dual credit enrollment.

This study was an attempt to compare the influence that state governance structure and state funding model has on tuition revenue. While this study may be representative of exact, publicly available data reported to the National Center for Education Statistics (NCES), it also presents limitations. The state funding models presented were subjective of the researcher's decision.

Definition of Terms

The following terms are defined for the purpose of this study:

1. Community college is defined as a regionally accredited institution of higher education that is committed to serving the needs of the community within which it exists. A community college offers the Associate degree as it highest degree (Vaughn, 2000).
2. Dual credit enrollment refers to an arrangement whereby a high school student is enrolled in postsecondary coursework with a postsecondary institution and earning postsecondary credit hours while continuing to pursue a high school diploma and the student's high school has agreed to accept the postsecondary coursework toward the student's high school graduation requirements (Law Insider, 2018).

3. Funding models refer to direct funding support provided by government to generally supplement construction and/or operational costs of a project and assist the financial viability of a private sector investment (Global Institute, 2019).
4. Governance refers to legal authority and responsibility for an institution or a set of institutions (NCES, 2018).
5. A multi-institutional state system is governed by a state, regional, or local postsecondary education board/system (NCES, 2018).
6. Postsecondary institution is defined as any educational institution that provides classes to students who have already completed high school (reference.com, 2018).
7. Secondary schools refers to a school intermediate between elementary and college and usually offering general, technical, vocational, or college-preparatory courses (Merriam Webster, 2018).
8. State Funding refers to a combination of total funds to be allocated (pre-appropriation) and funds allocated to individual institutions (post-appropriation) determined by the individual state (Education Commission of the States [ECS], 2018).
9. Tuition revenue is defined as tuition and fees, after deducting discounts and allowances (NCES, 2018).

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

Currently, 2-year, public, community and junior colleges are fervently fighting for student enrollment all over the United States. Not only do these institutions compete with universities of higher learning, training schools, and private sector online schools, recently they have engaged in competition for enrollment from students at secondary schools as early as their sophomore year. Secondary and postsecondary enrollment demographics differ greatly when comparing these same demographics from 15 years ago. In the ever-evolving society that we live in, immediacy and/or expediency is expected to be an option in most everything we do. The world of academia is no different. Students are choosing to enroll in these programs as soon as possible for reasons such as occupational advancement, access to better job opportunities, and personal enrichment. Mitchell (as cited in USDE, 2016) stated, “Innovation is an important underpinning in our efforts to expand college access and increase college completion for our nation’s students” (para. 5).

Educational policy makers are being forced to adopt dual credit, dual enrollment, early college programs, etc. to keep up with the demands of the field. Additionally, more students are seeking higher education as a necessary obstacle to join the workforce as opposed to expanding the mind with traditional modes, timelines, and prior pathways. Expediency is key for some students who lack the resources or the support outside of their secondary schools to pursue a degree in the way it was originally designed. “Many high school students- especially those from low-income backgrounds- lack access to the rigorous coursework and support services that help prepare them for success in college” (USDE, 2016, para. 1).

This chapter is a review of the literature related to dual credit enrollment in America’s 2-year, public institutions. The review begins with a look into the mission of community colleges in the United States. This is followed by a brief description of community college governance and state structure. Next, a condensed timeline of how federal legislation, from a presidential level, has funded education throughout the years through President Obama’s College Promise program. Then, an explanation of community and junior college enrollment trends, coupled with specific information about dual credit enrollment, is provided. Lastly, the researcher unpacked previous literature relating to funding. This included community college funding, state funding and tuition revenue.

Mission of America’s Community Colleges

Since their origins in the early 1920’s, community and junior colleges across the U.S. have strived to provide the communities they serve opportunities for lifelong learning. “The term *junior college* was applied more often to the lower-division branches of private universities and to 2-year colleges supported by churches or organized independently, while *community college* came gradually to be used for the comprehensive, publicly supported institutions” (Cohen, Brawer, & Kisker, 2014, p. 4). Cohen, et al. indicated that community colleges have five overall missions: academic transfer preparation, vocational-technical education, continuing education, remedial education and community service. In Vaughan’s (2000) text, *The Community College Story*, he defines the community college as “a regionally accredited institution of higher education that offers the associate degree as its highest degree and its mission is to provide access to postsecondary education programs and services that lead to stronger, more vital communities" (Vaughn, 2000, p.1).

A *Time* magazine article summarizes community colleges best, claiming, "The role of problem-solver is one that community colleges are well-equipped to play. Just over a century old, community colleges have been at the forefront of nearly every major development in higher education since their inception" (Trainor, 2015, para. 2). Simply put, the community college origin began with one of comprehensive responsibility and has appeared to have developed to include a variety of missions and an enormous amount of functions.

While the community college mission is commonly understood as an outlet for upward socioeconomic mobility for America's students, "there is a huge scope for improving mobility outcomes through the development of the community college system, especially by boosting Associate degree attainment rates and helping students transfer to 4-year institutions" (Karpilow and Reeves, 2013, para. 8). Due to the nature of these dual enrollment programs progressing, community colleges have had to adapt in order to maintain efficacy. Some of the adaptations include a shift in curricula offerings, an increase in remedial education, and the introduction of online course offerings. History has shown that early community and junior college enrollment was composed of students whose main focus was the academic curriculum that enabled them to transfer to 4-year institutions and attain a bachelor's degree. Moreover, these public, 2-year institution's demographics were made up of students who were "college prepared." It goes without saying that today's postsecondary institutions are enrolling students who come from the secondary school level requiring remedial courses and additional support and resources to fully engaged in college-level work. Jimenez, Sargrad, Morales, & Thompson (2016) discusses, “Across the country, millions of students enroll in college every year to learn that they need to take courses that will not count towards their degrees because they cover material they should have learned in high school” (para. 1). The open door policy within community colleges suggests that remedial or developmental education students are not to be denied admission. “Community colleges have succeeded in opening access to all; if that access is limited to developmental courses that offer primarily the same type of basic education that failed the students in the lower schools, then students have been cruelly denied access to higher learning” (Cohen, Brawer, & Kiskner, 2014, p. 261).

“The mission of America’s community colleges is focused on three areas of commitment: access, responsiveness to community need, and equity” (Troyer, 2015, para. 1). In some portions of the U.S., community colleges serve primarily as an institution that serves mostly transferring students and their preparatory needs to enroll in the 4-year institutions. Other community colleges across the nation are seen as comprehensive institutions that enable students to attain degrees or certificates and/or non-credit workforce training. In 2012, 17 states across the nation were listed as having the ability to permit community colleges to offer baccalaureate degrees (NCES, 2018). Shared needs amongst secondary schools and postsecondary institutions have allowed for a detour from the original mission of America’s community and junior colleges. When examining programs, such as dual credit enrollment programs, it is important to understand how the state governance structure impacts community and junior college policy that is representative of shared needs between secondary schools and postsecondary institutions,

Governance Structure of Community Colleges

The NCES website (2018) defines the term governance as legal authority and responsibility for an institution or a set of institutions. The governance structure of community colleges can change the way a public institution makes decisions regarding policy, admission requirements, financial buying power, and many other everyday factors. Typically, a state community college system functions as an institution that is part of a multi-institutional or multi-campus organization that owns, governs, or controls the institution, or the institution is not part of a multi-institutional state system. For purposes of this study, the institutions that are part of a multi-institutional organization are referenced as working under a governing board, and the institutions that are not a part of a multi-institutional state system are referenced as working under a coordinating board. According to the NCES website (2018), the boards of governing systems have certain responsibilities that coordinating systems do not. These responsibilities may include:

- appointing, setting compensation for, and evaluating chief executive of the institutions in the system
- establishing and implanting personnel policies
- strategic planning, budgeting and allocation of resources
- maintaining the institutions' assets
- awarding academic degrees.

The complexities of governance structures and the differentiation amongst the states create a challenge when establishing comprehensive policy. "To understand the typology of state community college governance structures, it must first be recognized that community college governance is characterized as a complex web of relationships and arrangements that have evolved over time" (Fletcher & Friedel, 2017, para. 1). The NCES (2018) definition that is essential in describing statewide governance reads as "the decision-making authority for an organization, typically controlled by boards". With the understanding of governance and coordinating systems, educational leaders and policy makers are more apt to anticipate challenges of each of the systems with regard to meeting educational needs. Specifically, there are factors that influence statewide governance. The three important factors that influence statewide governance include board composition, articulation issues, and collective bargaining agreement. According to Fletcher and Friedel (2017), "As a union of 50 states, there is no common type of state-level community college governance structure" (para. 1), but each state identifies as a governing or coordinating board state. This is a choice of each state. Because both state and federal policies affect community colleges, it is important the governing or coordinating board is aware of the effect of said policies and the necessity to include state and federal governments in the stabling of policy. When considering state governance structure and the impact it has on an institution's dual credit program, it is inevitable how it can mandate specific policies in how these programs are offered. An example of state governance structure and the impact it can have on a dual credit program can be found in comparing the state of Mississippi to the state of Alabama. Both states have similar demographics when it comes to education; however, they differ in state governance structure. Found on the USDE website (2016), the state of Alabama operates under the structure of a governing board and the state of Mississippi operates under the structure of a coordinating board. In Alabama, there are certain dual credit policies mandated across the state; whereas, Mississippi has a suggested dual credit manual to promote consistency, but each individual institution has the authority to modify requirements. Also different between these two states is the means by which dual credit tuition is funded by the state (ECS, 2018).

Evolution of Funding Education

According to Hight (2011), past presidential platforms dating back to the late 1960's have involved initiatives that were directly related to making college affordable and accessible for as many Americans as possible. Designed as a part of President Lyndon B. Johnson's *Great Society*, the Higher Education Act of 1965 established "help for lower education college students by offering low interest loans, work-study programs, and a scholarship program" (Hight, p. 16), and had a clear goal to give the poor an equal shot at college. Following President Johnson's initiative, President Carter kept the momentum of improving education by establishing the Department of Education Organization Act. This Act essentially "established the Department of Education as the 13th cabinet-level agency of the federal government" (Hight, p. 35), and allowed educational issues to be the top-level priority. The 40th President of the United States, Ronald Reagan, proposed four major educational goals as part of his National Commission in Excellence in Education. Included in these were 1) upgrading requirements for math and science, 2) education savings account for average Americans, 3) vouchers to permit children to attend private or religiously affiliated schools, and 4) a constitutional amendment to permit school prayer (Hight, p. 44). George H.W. Bush proposed the education summit of 1989 with a clear purpose of establishing national performance goals. Hight's (2011) study discussed the following about the national performance goals:

> These goals related to the readiness of children to start school; the performance of students on international achievement tests, especially in math and science; the reduction of the dropout rate and improvement of academic performance, especially among at risk

> students; the functional literacy of adult Americans; the level of training necessary to guarantee a competitive work force; the supply of qualified teachers and up to date technology; and the establishment of safe, disciplined, and drug free schools. (p. 52)

Within the next elected term, President "Bill Clinton's administration invested heavily in college preparation and created a multibillion-dollar program of college tax credits", but it was President Barak Obama that will likely be remembered as the "higher education president" (Lederman and Fain, 2017, para. 2). In reviewing these past presidential initiatives, educational policy makers may better understand how secondary and postsecondary schools have evolved into the institutions they are today.

Lederman and Fain argue, President Barack Obama "trumpeted importance of college-going and invested in students and institutions like no leader before him—while demanding much in return and, sometimes, failing big, too." (Lederman & Fain, 2017, para. 1). President Obama challenged every American to at least one year of higher education or postsecondary training and set a goal that by 2020 America would have the highest portion of college graduates in the world. "We will provide the support necessary for you to complete college and meet a new goal: by 2020, America will once again have the highest proportion of college graduates in the world" (Lederman & Fain, 2017, para. 3). These comments were spear-headed from an independent coalition known as the College Promise Advisory Board. This board was composed of several community college leaders, educators, politicians, foundations and businesses that were interested in workplace skills that could be beneficial to students as well as their organizations. The basis behind this initiative was that members wanted two years of community college free for all Americans. This nationwide promise came shortly after the state of Tennessee originated their very own Tennessee Promise, Last Dollar program that provided students in the state two years of free college by covering the gap between college tuition and the students awarded financial aid.

> America's community colleges came about because local communities believed in the promise that the opportunity to achieve a degree or technical training would benefit both their youth and their communities. College Promise rekindles that same community spirit and affirms the ideal that education beyond high school matters. College Promise will be built upon local initiatives and local support enabled through a natural aspiration. (Smith, 2015, para. 7).

President Obama stated that he and his administration are committed to making college more accessible, affordable, and attainable for all American families. In efforts to help reach the President's colleges attainment goals, he called for state partnerships to ensure that the first two years of community colleges are free for responsible students whether they are completing the first half of a bachelors degree or earning skills to go directly to the workforce. Buzzwords such as free college, discounted tuition initiatives, and other tuition waivers found their way to secondary schools as well as the postsecondary institutions.

Friedman (2018) claims, "The latest student loan debt statistics for 2018 show how serious the student loan debt has become- for borrowers across all demographics and age groups" (para. 3). Due to student loan debt being rated as the second highest consumer debt category in America, combatting a negative connotation with reasons to invest in a college education can sometimes be challenging. In the past, there has been a notion that college-educated youth are still living at home, working entry-level service jobs and barely chiseling away at their monstrous student loan debt. The student loan debt crisis is indeed a serious problem across all demographics and age groups; however, predisposed assumptions of how these borrowers are insignificantly contributing to society has finally become somewhat archaic. Although there are many recent college graduates who hold employment in areas that did not require them to go to college, the trend is slowly improving from previous years. This was confirmed in a February 2017 article in the *Chicago Tribune*, which claimed "a highly cited report several years ago found 53.6% of recent college graduates were out of work or underemployed in 2011. But recently released data from a separate source shows that in 2014 only about 33% of people fresh out of college didn't have jobs that required a college education" (Marksjarvis, 2017, para. 2)

Because college funding and policy decisions are relative to enrollment trends, it is important that educational policy leaders stay abreast of the demographics of enrollment. It is beneficial to know in which specific areas the public community and junior colleges are experiencing gains and losses. According to NCES (2019), U.S. College enrollment rates show some unique trends that fell over the 15-year course span between 2000 and 2015. The immediate college enrollment rate is determined as the annual percentage of high school completers who enroll in 2- or 4-year colleges in the fall immediately following high school. They are categorized within the ages of 16 to 24 and who have graduated from high school or completed a GED prior to October of the calendar year. The immediate enrollment rate at 2-year colleges increased from 21% in 2000 to 25 % in 2015. In 2015, about 44% of high school completers enrolled in a 4-year college and 25% enrolled in a 2-year college.

Community College Enrollment Trends

Community colleges may be referred to as thirteenth grade due to reducing duplicity across curriculums and maximizing accessibility for all students. Through partnerships with colleges and universities, eligible students are being afforded the opportunity to enroll in college courses and apply college credit to both their high school diploma and postsecondary degree. This recently developed enrollment trend is referred to as dual credit enrollment (Marken, Gray, & Lewis, 2003). In addition to earning the dual credits, students are gaining an exposure to community college courses and potentially reducing the long-term cost of attaining a postsecondary degree. The students who participate in these dual credit programs get a first glimpse of collegiate academia whilst still enjoying the financial and nurturing support of living at home. In addition to a stable environment that resonates with these youth, the early exposure to the college atmosphere can help with students establishing their major and area of interest and better align their career goals. As cited in Kilgore and Wagner (2017),

> …Dual enrollment has been found by many to provide students with a wide range of potential benefits, (Bailey & Karp 2003; Barnett & Kim 2014; Cassidy, Keating, & Young 2011; Karp 2012; Webb & Mayka 2011), including:
>
> - Helping prepare the student for academic rigors of college;
> - Providing information to students about the skills they will need to succeed in college;
> - Improving students' motivation by offering interesting courses and high expectations;
> - Promoting relationships between colleges and high schools;
> - Providing a college course experience to populations traditionally underserved by high education;
> - Contributing to a college-going culture in the school district;

- Providing an accelerated pathway to a college degree;
- Enabling students to become accustomed to the college environment (when the dual enrollment course is offered on the college campus);
- Increasing the likelihood that high school students will graduate from high school and enroll in college;
- Increasing the rigor of career and technical programs and thereby better preparing students for the workforce; and
- Building college awareness among students who typically would not consider enrolling in college. (para. 3)

The convenience, ease of access, and affordable cost of these dual credit courses are very beneficial to a student who holds interest in accumulating college credits and/or graduating on time or even early.

Community colleges continue to see a steady decline in adult students enrolling in their campuses. History has shown that as the national economy is “healthy,” 2-year institutions experience dips of enrollment from adults working and returning student populations. Because so much of community college funding is enrollment/headcount based, community colleges are often challenged to chase enrollments at every means available. Most recently this chase has been geared towards high school students. While dual credit has allowed institutions an additional source of students, this source has not always provided an increase in tuition dollars (Karp, Calcagno, Hughes, Jeong, & Bailey, 2007, p.1). Overall, dual credit enrollment is as much of a concern within postsecondary institutions as it is an opportunity. From the viewpoint of the community college, some of the most common concerns of dual credit enrollment are the quality of the dual credit programs and whether or not they can adequately prepare and educate students at the same level as comparable college courses and whether or not the dual credit programs are financially sustainable for their institutions. Policies differ from state to state with regards to dual credit enrollment and tuition, but overall most states have seen a significant increase in dual credit enrollment numbers at a discounting tuition rate, and those part-time, discounted tuition students are contributing to a significant population of youth who are filling community college campuses.

Community College Funding

Federal education funding is distributed to states and school districts through a variety of formula and competitive grant programs. Spellings (2005) claims, “While the federal government contributes about 13 percent of direct funding for elementary and secondary schools nationally, the amount varies considerably from state to state” (para. 1). Federal and state monies fund community colleges; however, federal spending has surpassed state spending as the main source of public funding in higher education, and the primary reason is a surge in Pell Grants in the last decade (Pew Charitable Trusts, 2015). To use the state of Mississippi as an example, the Mississippi Department of Education (MDE) introduced new accountability measures that included performance standards based solely on dual credit/enrollment participation. According to MDE (2018), the old model emphasized proficiency and rewarded schools and districts for the number of students who scored in the proficient or advanced categories on state tests; whereas, the new model emphasizes academic growth and rewards schools that move students forward in achievement, even when they have not yet met the "proficient" benchmark. Dual credit enrollment falls into the category of moving forward in achievement. This shift in emphasis moved some schools with relatively low proficiency rates into the A and B categories due to impressive academic improvement. Accountability ratings are important to Mississippi public schools as they are indicative of a vigorous school district, and the community associates these ratings as a level of stature when choosing which schools they want their children to attend. Financial incentives may be designated to the schools meeting the highest level of performance to be used for specific needs such as sabbaticals for teachers or administrators, or both, to pursue additional professional development for educational enrichment and paid professional leave (MDE, 2018). While there is not a specific incentive for dual credit enrollments in regards to waivers, dual credit enrollment and completion often offset non-completers and other negative connotations associated with school exemptions. Dual credit enrollment, even though it might not impact MDE schools financially, gives these schools more prestige/credibility within the educational marketplace.

Subsequently, 2-year public community and junior colleges with increasing dual credit enrolment numbers have had to make drastic adjustments to their financial model design due to lack of enrollment from recently-graduated, incoming freshmen. Gilbert (2016) explained, some of the reasons why tuition revenue is declining is due to 1) fewer students = tuition revenue and 2) increasing tuition rates = higher rate of discounting = higher student aid expenses, and 3) higher prices = lower enrollment" (pp. 6-7). A study by An (2012) supports that "more rapid program completion likewise reduces debt levels" (para. 2). In addition, parental support at half of the cost of attendance reduces debt more than a full Federal Pell Grant. These results lead to recommendations from policymakers at the federal, state, and institutional level to focus on providing for efficient transfer between schools, encouraging timely program completion, limiting developmental education requirements, and targeting sufficient funding to public institutions to produce optimal college prices (Fincher, 2017). However, a fourth reason for a decline in tuition revenue is dual credit enrollment.

Financial pressure in respect to dual credit enrollment is appearing to present itself as a concern and an opportunity nationwide, but the characteristics are varying by state. In efforts to potentially make up for the declines in non-traditional enrollment, colleges are seemingly enrolling more secondary school students. The quality of the programs and whether they prepare and educate students on the same level as college courses are likely a concern. Another possible concern is whether or not the programs are economically justifiable for their institutions. On the state level, policies differ on whether colleges are getting tuition for dually enrolled students, and the amount of state funding varies also.

State Funding

State revenues are on the decline and, as a result, state support to community colleges has been reduced significantly across the nation. Additionally, increasing tuition rates have caused a higher rate of discounting and caused student aid expenses to increase. Moreover, declining revenues have caused some colleges to dip into fund balances which have ultimately caused financial red flags to arise with their regional accrediting agencies. Although, Tollefson, Garrett, and Ingram (1999) state, “Year-to-year variations in state funding for community colleges should not be over-emphasized, because idiosyncrasies in state economic cycles, as well as personal views of governors and key legislators, can obscure long-term trends” (p. 27). This leaves community colleges responsible for the absorption of the costs of dual credit enrollment in anticipation of a change to the funding. Mississippi community and junior colleges are absorbing the costs associated with a tuition gap caused by dual credit enrollment. If both secondary and postsecondary schools' funding mechanisms stay current, dual credit enrollment offerings from the Mississippi community colleges will most likely not be sustainable.

According to Kres and Santos (2014), community colleges have been vital to America's social and economic development and prosperity. Since their beginning, community colleges have sought to address a variety of needs and demands through innovation, flexibility, and community responsiveness. One thing that is as true today as the day of the first established community college is that the underlying foundation of community colleges is their unprecedented mission to serve. Community colleges are and have always been many things to many people. The programs and services they provide fuel our nation's national, state, and local economies, contribute to enhancing postsecondary educational attainment of the population, and serve to support the workforce needs of businesses both large and small. It is uncertain how long dual credit enrollment will be popular or how the next trend will evolve. When considering the progression over the past 10 years, education policy leaders are finding that there is a new sense of urgency among high school seniors wanting to complete their high school degree as well as obtaining college credits at the same time. This behavior has recently been consistent in college enrollment.

Tuition Revenue

Community and junior colleges have three major sources of funding. This includes state funds, federal funds, and local funds. The majority of local funds are comprised of student tuition and fees and district taxes. Over the years, community and junior colleges have experienced shifting trends and have become more dependent on tuition as a source of revenue. According to Cohen, et al. (2014), the trend of states picking up a larger share than local districts was "accentuated in the late 1970s when California's Proposition 13 limited property tax to 1 percent of 1975-76 assessed valuation, with a maximum of a 2 percent annual increase. Local community college districts found their major source of funds eventually capped and were forced to look to the state for their funds (p. 154). To give an example from the state of Mississippi for Fiscal Year 2000, student tuition and fees accounted for approximately 17.8% of total revenue; however, in Fiscal Year 2018, it is estimated that student tuition and fees will account for 36.1% of total revenues. To further this example, the state funds from Mississippi were 55.7% in 2000 and are estimated to decrease to 37.3% in 2018.

In recent times, tuition revenue appears to be highly relied on to finance public education. NCES states that tuition revenue is calculated as tuition discounting by which the institution offsets its published tuition price with the institutional grant aid for enrolling students. The result is the discount rate, the ratio of total institutional grant aid relative to gross tuition revenues at an institution. When using this in the context of most dual credit programs, the question proposed remains is the institution is discounting dual credit tuition for the sake of enrollment numbers.

In most states, 2-year public institutions rely on tuition revenue to finance their institutions. As enrollment numbers decline at 2-year, public institutions, tuition revenue also declines and as a result adds more budget constraints to these colleges. Due to this very important financing mechanism for postsecondary institutions, it is essential that educational policy makers look at contributing factors that impact tuition revenue in fear that this source of revenue may not be maintainable. Smith (2017) argued, "The growth of dual-enrollment programs at community colleges across the country has given institutions an additional source of students- and sometimes tuition dollars" (para. 3). Additionally, Jenkins stated (as cited in Smith, 2017), “Dual credit enrollment is both a concern and an opportunity, but the concern varies by state” (para. 4).

Summary

This chapter was a review of the literature related to dual credit enrollment in America’s 2-year, public institutions. The review began with a consideration of the mission of community and junior colleges in the United States. State governance structure of community college systems was introduced. Next, a brief history of Presidential agendas related to education funding was presented. Then, a review of community and junior college enrollment trends, coupled with specifics about dual credit enrollment was presented. Lastly, the researcher focused on funding. This included community and junior college funding, state funding, and tuition revenue.

The relationship between types of community and junior college enrollments and funding is an area that is important and expansion in this area of research could be beneficial to those in higher education. There seems to be suggestions that dual credit enrollment is causing postsecondary institutions financial strife. It was thought by the researcher that the state governance structure and the state funding model would lend itself to trends or consistency in tuition revenue reporting, thus allowing educational leaders and state policy makers to better design dual credit program offerings to be profitable for postsecondary institutions. Unfortunately, this research project did not reveal this truth. What is thought to be missing from the literature is why dual credit students are choosing this enrollment and where they are enrolling upon completion at the secondary school level. Are postsecondary institutions in fact discounting tuition for the sake of enrollment numbers? While these questions are important to address in future research, this study's scope only seeks to investigate the influence of governance structure and state funding models on tuition revenue.

CHAPTER III

METHODOLOGY

Introduction

This chapter summarizes the research methods used to facilitate this study. The purpose of this study was to assess the sustainability of dual credit programs from 2013-2016 across U.S. public community and junior colleges and the effect of two funding variables associated with these institutions. The literature indicated that dual credit programs have continued to grow in demand since their origin without notion of decreasing in the near future, thus causing financial burdens on public, 2-year, community and junior colleges in the United States. This type of study permitted the researcher to examine dual enrollment data and the relationship of state governance structure and state funding models. This allowed for the analysis of profitability of dual credit enrollment for America's community colleges. This chapter includes a description of the research design, source of data used in the study, data collection, and the statistical technique used.

Research Design

This study employed a quantitative approach that allowed for a comparative test design. Available data lent itself to this research design and method of comparative statistical analysis. Using independent-samples *t*-Test allows for a robust comparison of two groups. The statistics calculated include an independent samples *t*-Test. This study design included four independent-samples *t*-Tests with the variables of dual credit funding mechanism: state governance structure and state funding model and with the dependent variable of tuition revenue. The following research questions were proposed in order to meet the purpose of the study:

1. Is there a difference in the tuition revenue based upon a state's governance structure?
2. Is there a difference in the tuition revenue based upon a state's funding model?

Data Source

NCES is a publicly-accessible system of interrelated surveys conducted annually by the USDE. NCES gathers information from every college, university, and technical and vocational institution that participates in the federal student financial aid programs. NCES provides basic data needed to describe and analyze trends in postsecondary education in the United States in terms of the numbers of students enrolled, staff employed, dollars expended, and degrees earned. Major entities such as Congress, federal agencies, state governments, education providers, professional associations, private businesses, media, students and parents, and others rely on NCES data for this basic information on postsecondary institutions.

Research Data

Independent Variable-Governance Structure

For research question two, the researcher studied the pattern of dual credit enrollment trends and tuition revenue as states identified themselves as a part of a multi-institutional state system (governing board) or independent of multi-institutional state system (coordinating board). This information was extracted from the NCES system and is available for public use. Moreover, the researcher more closely examined those states with increasing numbers of dual credit enrollment percentages where the state contributed more than 50% towards the cost of tuition to see if there were any other contributing factors and/or outliers that would allow for a more sustainable dual credit program.

Independent Variable-State Funding Model

For research question one, the researcher studied how each state reports dual credit funding with regards to college tuition. This data were extracted from the U.S. Department of Education website where individual state profiles report if their state contribute less than 50% towards the tuition costs of dual credit enrollment or more than 50% towards the tuition costs of dual credit enrollment. It was determined by the researcher that half support of tuition is significant enough to encourage or dissuade a student's participation in dual credit enrollment; therefore, the researcher chose 50% as the benchmark.

Dependent Variable-Tuition Revenue

The researcher used tuition revenue as the dependent variable for the research study. This information was extracted from the NCES system and is available for public use. NCES defines tuition revenue as the revenue amount from tuition and fees after deducing discounts and allowances.

Data Collection

Data were selected from NCES to get a percentage of dual credit enrollment with regards to total enrollment. By extracting the dual credit enrollment percentage, a better understanding of what percentage of postsecondary enrollment is dual credit and thus how governance structure and state funding impacts overall tuition revenue is likely to be found. In order to get this calculation, the researcher used specific variables to extract only the data needed. The data that were extracted were final release data. According to the NCES website (2018), final release data are the third category in the stages of NCES data. The first category is preliminary data, the second category is provisional data, and the third category is known as final (revised) data. This final revised data is released approximately nine months after institutions have revised their data the following year, if revision was necessary. In addition to the data collected being final release data, the data collected were data specifically reported for the fall semesters only. Data are collected for the entire 12-month academic year, while enrollment data collected in the fall enrollment component are fall data.

The level of student variable chosen for extracting this data were undergraduate and non-degree/certificate seeking. In NCES, an undergraduate student is defined as a student enrolled in a 4- or 5-year bachelor's degree program, an associate's degree program, or a vocational or technical program below the baccalaureate. Additionally, NCES purports that high school students also enrolled in postsecondary courses for credit are not considered degree/certificate seeking. More variables of these data included part-time enrollment and U.S. only. For NCES, a part-time student is an undergraduate student enrolled for either less than 12 semester or quarter credits, or less than 24 contact hours a week each term. The U.S.-only variable applies to institutions that are located within the United States of America.

Another variable of these data is public, 2- year sector. A public institution is an educational institution whose programs and activities are operated by publicly-elected or appointed officials who are supported by public funds. Programs of less than two years are programs requiring less than two years of full-time equivalent college level work (4 semesters or 6 quarters) or less than 1,800 contact hours to obtain a degree, diploma, certificate, or other formal award. For the purpose of this study, each state was divided as primarily participating as a part of a multi-institutional or multi-campus organization that owns, governs, or controls the institution or not primarily participating as a part of a multi-institutional or multi-campus organization that owns, governs, or controls the institution. Additionally, each state was categorized by either contributing less than 50% towards the tuition costs of dual credit enrollment or contributing more than 50% towards the tuition costs of dual credit enrollment.

Data Analysis

Data analysis for this study included four independent *t*-Tests. The independent-samples *t*-Tests compared the grouping variables to the dependent variable to determine if there were significant differences. The grouping variable or independent variables used in this study were state governance structure and state funding model for dual credit tuition. The dependent variable was tuition revenue.

The independent variable data were disaggregated into groups based on frequency. The disaggregation was guided by the most common reporting elements from each state. Each reporting state has some type of policy or standards regarding dual credit funding. For the purpose of reporting state governance structure, the states were recorded as functioning as a part of a multi-institutional state system (governing board) or not a part of a multi-institutional state system (coordinating board) classified as majority reported. For the reporting purpose of the state funding model, the states were divided as those who fund more than 50% of dual credit tuition and those who fund less than 50% of dual credit tuition. This revealed that states who contributed more than half of tuition funding towards dual credit enrollment and those who contribute less than half tuition funding towards dual credit enrollment. Research hypotheses for this study were as follows:

1. There would be a significant difference between states that function as a part of a multi-institutional state system (governing board) and tuition revenue over a 4-year

period of dual credit enrollment, 2013-2016. The researcher expected when a state functions under a governing board's policies and regulations, there would be an increase in tuition revenue due to the level of control the state community college board system has on dual credit policy.

2. There would be a significant difference between the states that fund more than 50% of dual credit tuition and tuition revenue over a 4-year period of dual credit enrollment, 2013-2016. The researcher expected when a state funds more than 50% of dual credit tuition, there would be a corresponding increase in total tuition revenue for 2-year, public institutions due to the fact the postsecondary institutions are not having to make the deductions to tuition cost.

Summary

Chapter three provided an overview of the research methods and data analysis for this study. This chapter included a description of the research design, population, description of instrument, data collection and statistical techniques. The purpose of this study was to examine the relationship between state governance structure and state funding model for dual credit enrollment on tuition revenue at 2-year, public institutions.

CHAPTER IV

RESULTS

Introduction

The purpose of this study was to examine the relationship between two funding mechanisms of dual credit enrollment and tuition revenue at 2-year, public institutions across the U.S. The following research questions were answered in order to meet the purpose of the study:

1. Is there a difference in the tuition revenue based upon a state's governance structure?
2. Is there a difference in the tuition revenue based upon a state's funding model?

Descriptive Analysis

Dual Credit and Tuition Revenue

Table 1

State Funding Percentage, State Governance Structure, and Dual Credit Percentages

State Funds >50%	State Board System	DC%-Fall 2013	DC%-Fall 2014	DC%-Fall 2015	DC%-Fall 2016
Arizona	Governing	20%	21%	24%	24%
Colorado	Governing	19%	20%	23%	26%
Florida	Governing	9%	11%	14%	14%
Georgia	Governing	7%	9%	13%	14%
Idaho	Coordinating	21%	30%	25%	30%

Table 1 (continued)

Illinois	Coordinating	24%	24%	26%	26%
Iowa	Coordinating	29%	35%	38%	39%
Kentucky	Governing	23%	22%	25%	27%
Louisiana	Governing	17%	16%	18%	18%
Maine	Governing	19%	19%	22%	24%
Maryland	Coordinating	11%	11%	12%	12%
Massachusetts	Governing	10%	10%	10%	10%
Michigan	Coordinating	19%	19%	17%	20%
Minnesota	Governing	15%	16%	20%	22%
Mississippi	Coordinating	4%	7%	9%	10%
Missouri	Coordinating	12%	13%	14%	13%
Montana	Coordinating	18%	24%	26%	28%
Nebraska	Coordinating	32%	32%	35%	36%
New Mexico	Governing	25%	26%	26%	26%
North Carolina	Governing	11%	12%	15%	17%
Ohio	Coordinating	20%	22%	27%	27%
Oregon	Coordinating	8%	9%	11%	10%
Pennsylvania	Coordinating	10%	8%	9%	10%
South Dakota	Governing	3%	5%	8%	12%
Tennessee	Governing	17%	18%	18%	19%
Texas	Coordinating	12%	12%	13%	15%
Utah	Governing	25%	24%	24%	28%
Vermont	Governing	28%	32%	36%	38%

Table 1 (continued)

Virginia	Governing	21%	21%	23%	25%
Washington	Governing	24%	24%	23%	22%
Wisconsin	Governing	21%	22%	25%	25%
Wyoming	Coordinating	33%	34%	36%	34%

In the states that fund more than 50% of dual credit tuition, almost all of these states increased in dual credit enrollment percentages during the period of 2013-2016. The total average of percentage of increase in dual credit enrollment ranges from 1% to as high as 10%. Massachusetts and Pennsylvania fund more than 50% of dual credit tuition, but these states did not increase in dual credit enrollment percentage from 2013 to 2016. Massachusetts and Pennsylvania's state funding structure was reported as alike; however, these states differ in state governance structure.

Table 2

State Funding Percentage, State Governance Structure, and Tuition Revenue

State Funds >50%	State Board System	Tuition Revenue, 2013	Tuition Revenue, 2014	Tuition Revenue, 2015	Tuition Revenue, 2016
Arizona	Governing	$217,590,272	$221,414,626	$222,167,527	$222,772,563
Colorado	Governing	$179,819,500	$182,412,225	$192,449,823	$191,519,417
Florida	Governing	$25,538,153	$26,180,767	$23,455,169	$26,656,507
Georgia	Governing	$162,388,875	$177,829,946	$197,772,237	$197,871,403
Idaho	Coordinating	$36,232,062	$36,507,949	$34,838,637	$38,209,839
Illinois	Coordinating	$525,534,782	$525,209,256	$533,637,057	$544,534,763
Iowa	Coordinating	$172,351,583	$170,838,780	$171,883,368	$187,284,258
Kentucky	Governing	$83,343,907	$82,960,300	$98,415,689	$82,881,726
Louisiana	Governing	$108,537,805	$118,697,864	$117,644,989	$131,292,788
Maine	Governing	$14,610,381	$16,782,716	$17,668,013	$16,967,483
Maryland	Coordinating	$326,264,70	$320,730,981	$319,205,824	$319,702,711
Massachusetts	Governing	$241,781,961	$231,061,759	$230,800,554	$243,378,671

Table 2 (continued)

Michigan	Coordinating	$331,974,01	$334,277,505	$335,689,505	$336,898,671
Minnesota	Governing	$285,098,001	$265,381,416	$257,622,565	$264,742,996
Mississippi	Coordinating	$84,431,493	$84,547,813	$88,309,773	$92,424,029
Missouri	Coordinating	$107,197,087	$111,977,423	$135,019,689	$139,519,336
Montana	Coordinating	$18,918,125	$18,758,783	$16,296,516	$16,494,475
Nebraska	Coordinating	$60,869,847	$59,578,253	$60,094,103	$58,872,165
New Mexico	Governing	$54,613,031	$52,017,195	$52,348,520	$54,990,302

Table 2 (continued)

North Carolina	Governing	$219,398,273	$213,480,440	$213,960,889	$226,695,951
Ohio	Coordinating	$372,931,971	$364,553,912	$343,553,906	$332,775,065
Oregon	Coordinating	$268,946,698	$265,914,430	$252,236,406	$238,410,295
Pennsylvania	Coordinating	$364,901,080	$373,131,372	$361,826,936	$362,611,205
South Dakota	Governing	$247,263,525	$250,141,648	$249,272,023	$246,937,796
Tennessee	Governing	$185,466,402	$179,194,535	$179,913,448	$165,139,034
Texas	Coordinating	$840,805,532	$820,221,329	$896,517,672	$909,184,849
Utah	Governing	$71,038,686	$72,777,870	$68,866,616	$68,213,727
Vermont	Governing	$18,366,022	$17,715,054	$17,860,445	$17,873,755
Virginia	Governing	$362,990,013	$367,527,500	$359,245,524	$363,818,541
Washington	Governing	$84,316,397	$82,630,848	$84,852,609	$83,026,161
Wisconsin	Governing	$148,415,839	$147,836,532	$143,677,173	$143,534,937
Wyoming	Coordinating	$31,005,532	$33,225,694	$32,227,157	$31,976,51

Tuition revenue appears to have declined in sum in 15 out of the 32 states reported as funding more than 50% of dual credit tuition. These states are Florida, Kentucky, Maryland, Minnesota, Montana, Nebraska, Ohio, Oregon, Pennsylvania, South Dakota, Tennessee, Utah, Vermont, Washington, and Wisconsin.

Table 3

State Funding Percentages, State Governance Structure, and Dual Credit Percentages

State Funds <50%	State Board System	DC%-Fall 2013	DC%-Fall 2014	DC%-Fall 2015	DC%-Fall 2016
Alabama	Governing	9%	9%	12%	13%
Arkansas	Coordinating	20%	23%	25%	24%
California	Governing	9%	10%	10%	11%
Connecticut	Governing	12%	12%	12%	12%
Hawaii	Governing	23%	23%	25%	27%
Indiana	Coordinating	11%	14%	14%	17%
Kansas	Coordinating	29%	29%	31%	31%
Nevada	Governing	18%	20%	20%	22%
New Hampshire	Governing	12%	12%	15%	13%
New Jersey	Coordinating	8%	9%	9%	10%
New York	Governing	18%	19%	19%	20%
North Dakota	Governing	42%	42%	41%	40%
Oklahoma	Governing	15%	16%	17%	22%
Rhode Island	Governing	4%	5%	5%	4%
South Carolina	Governing	9%	11%	11%	13%

Table 3 (continued)

West Virginia	Governing	26%	29%	33%	33%

Like in states that fund more than 50% of dual credit, almost all of these states increased in dual credit enrollment percentages during the period of 2013-2016. The total average of percentage of increase in dual credit enrollment ranges from 1% to as high as 10%. Connecticut and Rhode Island fund less than 50% dual credit tuition, but did not increase in dual credit enrollment percentage from 2013 to 2016. Consequently, these states both function under the operation of a governing board. Additionally, when comparing dual credit enrollment percentages with other states that fund less than 50% of dual credit enrollment percentages North Dakota’s reporting’s were usually high in number.

Table 4

State Funding Percentages, State Governance Structure, and Tuition Revenue

State Funds <50%	State Board System	Tuition Revenue, 2013	Tuition Revenue, 2014	Tuition Revenue, 2015	Tuition Revenue, 2016
Alabama	Governing	$145,816,587	$141,604,593	$139,794,883	$146,573,860
Arkansas	Coordinating	$62,557,893	$72,006,196	$63,954,214	$67,630,313
California	Governing	$620,949,020	$640,930,857	$665,237,375	$673,442,480
Connecticut	Governing	$96,846,712	$99,605,836	$96,146,606	$98,043,242
Hawaii	Governing	$44,930,259	$46,039,101	$47,430,152	$48,367,233
Indiana	Coordinating	$146,425,861	$137,417,388	$129,865,547	$132,748,891
Kansas	Coordinating	$133,347.226	$135,979,468	$142,179,370	$140,144,909
Nevada	Governing	$14,385,000	$14,770,000	$15,543,000	$16,345,000
New Hampshire	Governing	$70,216,311	$67,912,075.	$66,524,929	$64,524,759
New Jersey	Coordinating	$427,047,723	$422,960,352	$418,573,368	$420,571,808
New York	Governing	$623,693,972	$613,088,363	$596,183,627	$627,517,682

Table 4 (continued)

North Dakota	Governing	$14,846,005	$14,655,648	$14,152,989	$13,508,612
Oklahoma	Governing	$71,779,596	$64,150,576	$66,599,813	$79,139,044
Rhode Island	Governing	$32,197,846	$30,154,501	$29,417,315	$28,060,677
South Carolina	Governing	$219,348,510	$220,030,876	$218,429,176	$214,443,329
West Virginia	Governing	$22,246,318	$27,259,248	$23,682,284	$24,389,660

Unlike in states that fund more than 50% of dual credit in which approximately half had a decline in tuition revenue, tuition revenue appears to have declined in sum in only 6 out of the 16 states reported as funding less than 50% of dual credit tuition. These states are Indiana, New Hampshire, New Jersey, North Dakota, Rhode Island, and South Carolina. South Dakota, Tennessee, Utah, Vermont, Washington, and Wisconsin. North Dakota reported significantly lower tuition revenue numbers in comparison to the other 15 states that fund less than half of dual credit tuition.

State Governance Structure

The first primary independent variable presented in Tables 1-4, the state governance structure, purports that over half of the reporting states (30 out of 48 reporting) function under the direction of a governing board and are a part of a multi-institutional state system. The remaining 18 states reported they do not function as a part of a multi-institutional state system; therefore, they are considered operating under a coordinating board. The dual credit enrollment percentage totals reported in these tables are the changes in enrollment percentages each term fall 2013, 2014, 2015, and 2016.

State Funding Model

The second primary independent variable presented in Tables 1-4, the state funding model on dual credit enrollment, suggests that well over half (32 out of 48 reporting) of states have some form of state funding program specifically for dual credit enrolled students. This may reveal that these states have recognized dual credit programs are sizeable enough to mandate state policy in regards to how this type of student is charged with still enrolled in high school.

However, each state varies on the amount and type of funding assistance associated with dual credit enrollment. The tuition revenue numbers reported in these tables are specific to the fall enrollment for 2013, 2014, 2015, and 2016.

Summary

Almost half of the states in this study have experienced declines in tuition revenue during the 4-year span of 2013 to 2016, while dual credit enrollment has increased in percentages. Moreover, the states that fund more than half of dual credit tuition revenue, in essence, have been impacted twice as hard. Postsecondary schools operate and are dependent heavily on tuition revenue. Funding generated from tuition revenue has recently surpassed state funding and is now the greatest contributor of funding for postsecondary institutions. The decreasing trend of tuition revenue monies across these states is very problematic when considering how important this source of funding is to postsecondary institutions.

Research Question One- Governance

Research question one: Is there a difference in tuition revenue based on a state's governance structure? Data for question one were extracted from NCES. For this research question the independent variable was the state governance structure and the dependent variable was tuition revenue. An independent samples *t*-Test was calculated comparing the mean score of tuition revenue from states that function under the operation of a governing board to states that operate under the function of a coordinating board for each individual year 2013, 2014, 2015, and 2016. According to the output generated from the independent samples *t*-Test, there was a significant difference among the tuition revenue based on governance structure between these two groups at the .10 level of significance for year 2013 and year 2014. The statistics were

[$t(46) = -1.658$, $p < .096$] for 2013, [$t(46) = -1.534$, $p = .100$] for 2014, [$t(46) = -1.523$, $p > .118$] for 2015, and [$t(46) = -1.489$, $p > .149$] for 2016.

Because North Dakota appeared to be a possible outlier in the reported data, a second independent samples *t*-Test was conducted without the data reported by North Dakota. According to the output generated from the independent samples *t*-Test without North Dakota, there was a significant difference among the tuition revenue based on governance structure between these two groups at the .10 level of significance for the year 2013. The statistics were [$t(45) = -1.439$, $p > .094$] for 2013, [$t(45) = -1.428$, $p < .103$] for 2014, [$t(45) = -1.419$, $p < .121$] for 2015, and [$t(45) = -1.381$, $p < .152$] for 2016.

The research hypothesis for this question was that there would be a significant difference between states that function as a part of a multi-institutional state system (governing board) and tuition revenue over a 4-year period of dual credit enrollment, 2013-2016. The researcher expected when a state functions under a governing board's policies and regulations, there would be an increase in tuition revenue due to the level of control the state community college board system has on dual credit policy. Based on the findings, the researcher fails to reject the null hypothesis that there are not significant statistical differences in the means between these groups at the .10 level of significance for the years 2015 and 2016 with or without the data reported by North Dakota. A statistical significance was found at the .10 level of significance among the means of governance structure between these two groups for the years 2013 and 2014 with North Dakota and 2013 without North Dakota. Thus, the research cannot fail to reject the null hypothesis that there are not statistical differences in the means between these two groups for 2013 and 2014.

Research Question Two- Funding Model

Research question two: Is there a difference in tuition revenue based on a state's funding model? Data for question two were extracted from both individual state statues, state rules and regulations, state education agencies and NCES. For this research question the independent variable was the state funding model of dual credit tuition and the dependent variable was tuition revenue. An independent samples *t*-Test was calculated comparing the tuition revenue of states that fund more than 50% dual credit tuition to states that fund less than 50% dual credit tuition for each individual year 2013, 2014, 2015, and 2016. According to the output generated from the independent samples *t*-Tests, there was not a statistically significant difference in tuition revenue based on state funding between these two groups at the .10 level of significance. The statistics were [$t(46)= -.308, p>.627$] for 2013, [$t(46)= -.405, p> .507$] for 2014, [$t(46)= -.454, p> .514$] for 2015, and [$t(46)= -.403, p> .498$] for 2016.

Because North Dakota appeared to be a possible outlier in the reported data, a second independent samples *t*-Test was conducted without the data reported by North Dakota. According to the output generated from the independent samples *t*-Test without North Dakota, there was not a significant difference in tuition revenue based on state funding between these two groups at the .10 level of significance. The statistics were [$t(45)= .229, p< .496$] for 2013, [$t(45)= .213, p< .440$] for 2014, [$t(45)= .267, p<.451$] for 2015, and [$t(45)= .219, p< .436$] for 2016.

The research hypothesis for this question was there would be a significant difference between the states that fund more than 50% of dual credit tuition and tuition revenue over a 4-year period of dual credit enrollment from 2013-2016. The researcher expected that when a state funds more than 50% of dual credit tuition, there would be a corresponding increase in total tuition revenue for 2-year, public institutions due to the fact the postsecondary institutions are not having to make the deductions to tuition cost. Based on the findings, the researcher fails to reject the null hypothesis that there are not significant statistical differences in the means between these groups.

Summary

Chapter four presented the results of the analysis of the data. The independent variables state governance structure and state funding structure, and the dependent variable tuition revenue were included in the analysis. Multiple independent-samples t Tests were run and the results reported for each individual year 2013, 2014, 2015 and 2016 to determine if there were differences in tuition revenue based upon the state governance structure or funding model.

Overall, there was a significance difference for tuition revenue based on governance structure found at the level of .10 for 2013 and 2014 among the means of these groups when including North Dakota. Additionally, a significance was found at the level of .10 for 2013 without including the data from North Dakota. For the years of 2015 and 2016 including North Dakota and 2014, 2015, and 2016 not including North Dakota, there was not a significant difference at the .10 level. There was no significant difference for tuition revenue based on the state funding model. The findings of this data analysis did not support the research hypothese. Chapter five will present a summary of the study, conclusions, and recommendations for further study.

CHAPTER V

RESULTS

Introduction

This chapter presents a summary of the research, discussion, and recommendations for further study. The purpose of this study was to assess the sustainability of dual credit programs from 2013-2016 across U.S. public community and junior colleges and the effect of two funding variables associated with these institutions. The sustainability of dual credit programs was measured by tuition revenue reported for 2013, 2014, 2015, and 2016. The funding mechanisms the researcher studied were represented by two independent variables: state governance structure and state funding model. Tuition revenue was extracted from NCES. The following research questions were proposed in order to meet the purpose of the study: Is there a difference in tuition revenue based on the state governance structure or the state funding model?

Discussion

The researchers expectations based on Smith (2017), "the growth of dual enrollment programs at community colleges across the country has given institutions an additional source of students and sometimes tuition dollars" (para. 3) was that dual credit will influence tuition revenue which lead to research question one that concentrated on the effects of the governance structure on tuition revenue. The output of the independent-samples *t*-Test purported that there was significance at the .10 level found in two (2013 & 2014) of the four years that were reviewed. Because North Dakota was a seeming outlier in the data used, a second set of independent sample *t*-Tests were run without the data reported by North Dakota. This output revealed a significance in one of the four years at the .10 level of significance, 2013. Research question two focused on the effects of a state funding model on tuition revenue. An independent samples *t*-Test was conducted to compare the mean differences in tuition revenue based on state funding model. Overall, the findings revealed no statistically significant difference between means for state funding on tuition revenue. Again, because North Dakota was an outlier in the represented data, a second independent samples *t*-Test was run and reviewed without the reporting from North Dakota. Independent sample *t*-Tests failed to validate this prediction of the research. It was noted by the researcher that any significance between these two groups was found only in 2013 and 2014 and then disappeared. The desertion of significance in years 2015 and 2016 does not coincide with the corresponding tuition revenue amounts reported.

These results may be explained with the fact that governing board policy and procedures allow for a more controlled environment of dual credit enrollment. It is thought by the researcher when governing board policy and procedures are set and remain consistent, tuition revenue will lend itself to a more consistent stream of revenue. Consequently, it was thought that as long as tuition revenue stream is increasing in number, policy would remain stagnant. Because a portion of calculating tuition revenue includes deduction of discounts, it was thought that when a state funds over half of dual credit tuition, postsecondary institutions would increase in tuition revenue because they are not deducing tuition institutionally. The researcher originally thought that the state governance structure and/or the state funding model would lend itself to patterns in tuition revenue.

As introduced in Chapter two, when better understanding governance and coordinating system trends, educational leaders and policy makers are likely to anticipate challenges of each of the systems with regard to meeting educational needs. It was assumed that policies mandated by governing boards and states that fund more than 50% towards dual credit tuition would lend a net profit and consistent tuition revenue.

The guiding theory model for this research was Merton's Theory of Anticipatory Socialization (Merton, 1948). Anticipatory socialization suggests that students who participate in dual credit enrollment are pre-exposing themselves to college curriculum while still in high school in preparation for future full-time enrollment. When applying this theory to the increasing dual credit enrollment numbers, the researcher operationalized state governance structure and state funding model as variables that would lend themselves to more structured course offerings, state policies, and more consistency in tuition revenue and funding from individual states. Because anticipatory socialization is likely to explain why an increasing amount of students are continuing to enroll in dual credit programs across the U.S., individual states might be able to find consistency in tuition revenue through the lens of governance structure and state funding models (Merton, 1948).

Despite the findings, the literature showed that policies and funding models are likely becoming a necessity to control tuition revenues and to allow for profitability of dual credit programs for America's 2-year, public institutions. Smith (2017) argues "in one way, dual-credit students could be viewed as a sustainable population, but the larger question is whether or not it can be sustained with reduced tuition" (para. 3). The researcher thought patterns would evolve in this study of 48 states, but unfortunately no patterns were evident. Additionally, if the states that are offering dual credit programs are continuing to see a reduction in tuition revenue, they are more likely immediately adjusting how aggressively they offer dual credit courses. Because most postsecondary institutions have the ability to adjust on a semester basis and in the same academic calendar year, it is more likely to skew the type of data generated for study such as the research presented in this project. When studying trends reported on a state/national level, some postsecondary institutions may have identified early the problems in offering an abundance of dual credit courses and have implemented local policy that differs from their state policy. Implementing such policy might have allowed institutions to prevent additional financial strive when offering dual credit programs.

Previous research on community college funding negate dual credit course offerings at public, 2-year colleges. Gilbert (2016) explains, some of the reasons why tuition revenue is declining is due to 1) fewer students= less revenue, 2) increasing tuition rates= higher rates of discounting= higher student aid expenses and 3) higher prices= lower enrollment (pp. 6-7). While dual credit enrollment continues to increase, these two specific funding mechanisms of state governance structure and state funding model do not appear to contribute a significant difference to tuition revenue of 2-year public institutions the U.S at this time. However, the decreasing tuition revenue that was revealed in this study is a pressing issue. If this trend continues, the decrease in tuition revenue will be detrimental to the already challenged funding of postsecondary institutions. This study begins to shed some light on how dual credit enrollment may have an impact on 2-year institutions.

There is available information about dual credit programs across the U.S. regarding curriculum alignment and articulation, accreditation standards for instruction and admission requirements commonly mandatory from institutions, but not as much information seems to be available about the financial side of dual credit enrollment programs. This study looked at tuition revenue on state governance and state funding, and because of the continued increasing of dual credit enrollment numbers, how public 2-year institutions will profit from the offering of dual credit programs.

Limitations

Although this research included publicly used data, it has limitations. The data extracted from NCES included data reported by individual institutions, which could pose a threat to the validity of the study. Additionally, data collected from state statutes, state rules and regulations, and state education agencies and was evaluated by the researcher to determine the state funding model on dual credit. The sole decision of the researcher could pose a threat to the validity of the study. Additionally, the tuition revenue reported was overall tuition revenue, and not just tuition revenue generated from dual credit enrollment.

Perhaps this research was limited and inevitably skewed due to looking at a broad view of state governance and state funding within the 48 states reporting. For future research, one might chose to look at individual states with high and low tuition revenue reporting and break down dual credit enrollments across the state and their individual school district for governance and funding characteristics.

Recommendations for Practitioners and Policymakers

When funding mechanisms are reviewed for secondary and postsecondary institutions, it would be beneficial for practitioners and policymakers to take in consideration what services are provided to the student at each level. There are several factors that comprise the costs of each dual credit student and each factor falls within one of the 5 categories of Instruction and Accreditation, Facility, Academics, and Student Support. The costs associated with dual credit students at both entities that practitioners and policymakers should be exposed to when considering funding a student and what entity is responsible for the funding can be found in the chart below.

Table 5

Considerations for Funding

Institution Level	Secondary	Postsecondary
Costs in credentialing and training college level instructors		Yes
Facility costs	Yes	Yes
Resources to support the student academically at the college level		Yes
Material and textbook cost for instruction	Yes	
Administrative costs for transportation	Yes	
Student support in advising, registration, and curriculum alignment		Yes

When one looks at the costs associated with dual credit students and the shared responsibilities between each entity the question that arises is how are practitioners and policymakers deciding who gets the funding and how is it decided who carries the majority of the cost for these students and how can a model be created to appropriately share the costs of dual credit students?

Recommendations for Future Research

This study was limited to 2-year postsecondary institutions only and for a better comprehensive study it could be expanded to compare 2-year institutions and 4-year institutions as well as the differences of dual credit enrollment for profit and non-profit institutions. Funding sources are the same at postsecondary institutions, but this is not true with regards to secondary institutions.

Another research expansion for dual credit would be to look at the impact of dual credit course offerings in rural areas verses metropolitan areas and the difference in the outcomes of these students from these two areas. An assumption can be made that rural area schools would not have the funding that metropolitan area schools would have access to and in return would limit the availability of dual credit course offerings and even instructors that are able to be credentialed for teaching dual credit courses.

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APPENDIX A

IRB APPROVAL

McCraw, Brandi L.

From: prm199@msstate.edu
Sent: Monday, October 22, 2018 3:22 PM
To: mef348@msstate.edu; blm438@msstate.edu; ltc1@msstate.edu; sbk2@msstate.edu
Subject: Protocol Inactivated: IRB-18-429, Sustainability of dual credit programs across the United States: A look into the increasing numbers of dual credit enrollment over a four-year period and the state funding method associated with the enrollment

Protocol ID: IRB-18-429
Review Type: EXEMPT
Principal Investigator: Mark Fincher

You are receiving this inactivation notification for one of the two following reasons:

Exempt Determinations:

This protocol is has been granted an exemption determination. Based on this exemption, and in accordance with Federal Regulations which can also be found in the MSU HRPP Operations Manual, your research does not require futher oversight by the HRPP.

Therefore, this study has been inactivated in our system. This means that recruitment, enrollment, data collection, and/or data analysis can continue, yet amendments to this study are no longer required. If at any point, however, the risk to participants increases, you must contact the HRPP immediately.

Non-Exempt Approvals (Expedited or Full Board):

A request to inactivate (with the submission of a final report) your non-Exempt protocol was submitted and approved. If this is the case, there should be no further data collection or data analysis conducted under this protocol.

For additional questions pertaining to this study, please contact the HRPP at irb@research.msstate.edu.