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Exploration of Post-Secondary Preparation in Urban, Suburban, and Rural High Schools in the State of Missouri

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by

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A Dissertation submitted to the Education Faculty of Lindenwood University

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Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

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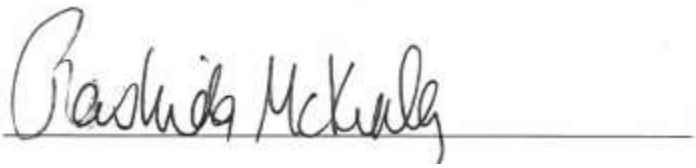
Signature:  Date: 12/15/18

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Abstract

The purpose of this study was to analyze how high schools in the state of Missouri's rural, suburban, and urban areas were preparing students for post-secondary education and career readiness. The researcher analyzed the state of Missouri secondary data gathered from the 2013 through 2017 school years, in urban, suburban, and rural high schools. The researcher also surveyed school guidance counselors and administrators. The data represented consisted of ACT Composite Scores, Annual Performance Reports, Post-Secondary Placements, Career and Technical Education Placements, Dropout Rates, and Graduation Rates. This examination utilized a mixed method study to gain an understanding of each school's delivery method, as well as factual data. Such an investigation was undertaken to understand how each targeted school was performing and what areas needed improvements.

The results of the study indicated that there were multiple elements that may be causing urban school students to perform less than their counterparts, and suburban schools to outperform rural and urban schools. Suburban students had the highest score for meeting or exceeding the minimum ACT score, rural schools came second, and urban schools had the lowest scores. Rural schools had the highest number of students attending Technical Schools after graduation. Data also indicated that counselors from rural schools felt that an unsuccessful strategy was verbally telling students to apply to college, and that universal programs did not work well with their students. Suburban school counselors felt their caseloads were too large, which limited the 1-1 interaction that students needed. Urban school counselors felt that getting parents involved was a

challenge and students had high levels of trauma, which led to difficulty in focusing on college or career options.

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Chapter One: Introduction

Imagine a nation in which every student, from Boston to Houston, from Cleveland to Miami, from Chicago's South side to Compton, from a New Mexico Indian reservation to the Appalachian Mountains, characteristically graduates from high school prepared for post-secondary training (i.e., college, university, trade school, or workforce training). Further, imagine being able to say to every child "you will be provided with a high school that will educate you, challenge you, care for you, support you, and graduate you ready to compete and succeed in this world" (Balfanz & Legters, 2004, p. 2). Research showed that those with more education earned a significantly greater amount of income over a lifetime than those who had less education (Carnevale, Rose, & Cheah, 2011). According to a report produced by Georgetown University's Center on Education and the Workforce, "obtaining a high school diploma adds 33% more to lifetime earnings" (Carnevale et al., 2011, p. 3). However, in the United States there were disparities in the educational system that led to inequities based on a variety of social identities. Among these, the most prevalent were class and race. According to the MetLife (2010) study, one of the highest priorities expressed by Americans revolved around the education of all the students of this nation. The terms 'college-and career-ready' appeared frequently in analyses about the nation's future, the global economy, teaching, and student achievement. Educators, employers, government leaders at all levels, parents, and students were advocating for the values of meeting universal standards of college and career readiness, while debating what this meant, who needed to be ready, and how it would be accomplished. Furthermore, the concept of college and career readiness spanned a continuum of ideas: immediate enrollment in college courses for credit without

need for remediation, the capacity to achieve a C or higher in core college courses, persistence through the first year of college study to enroll in a third semester with sufficient credits, and continuation to completion of a degree or certificate. Increasingly, the standard for success was defined as what students actually learned and how effectively they could employ this knowledge, as well as demonstrating higher-order thinking skills, in their further studies, in life, and in work (MetLife, 2010). Researchers also suggested that the majority of high school graduates in the 21st century in the United States were not academically prepared for the rigor of post-secondary education or to enter the workforce (American College Test [ACT], 2009; Conley, 2007;). In a national survey, the Educational Testing Service (ETS) reported that large numbers of the adult population over 15 years-of-age did not demonstrate the literacy and numeracy skills to be successful in post-secondary education or have the understanding of how to assimilate themselves into the complex, bureaucratic global society (as cited in Kirsch, Braun, Yamamoto, & Sum, 2007). Additionally, in measuring college and career readiness: 1,924,436 students in the 2015 graduating class took the American College Test (ACT). This represented an estimated 59% of the 2015 national graduating class being tested with the ACT. In the State of Missouri, 77% of high school graduates took the ACT test, and the average composite score was 21.7 (American College Test, Inc. [ACT, Inc.], 2015).

The Missouri Department of Elementary and Secondary Education (MODESE, 2014b) launched *Top 10 by 20,* a major improvement effort that aimed for student achievement in Missouri to rank among the top 10 performing states by 2020. The state developed four goals:

1) All Missouri students will graduate college and career ready.
2) All Missouri children will enter kindergarten prepared to be successful in school.
3) Missouri will prepare, develop and support effective educators.
4) The Missouri Department of Elementary and Secondary Education will improve departmental efficiency and operational effectiveness (Missouri Department of Elementary and Secondary Education [MODESE], 2014b).

This chapter will discuss then-current research and material concerning college and career readiness. The theoretical framework, which acted as a guide for the study, is introduced and explained. A description of the problem and the purpose of the study are also given. The purpose of this study was to analyze how high schools in the state of Missouri in rural, suburban, and urban areas were preparing students for post-secondary education and career readiness. The researcher analyzed the state of Missouri secondary data gathered from the 2013 through2017 school years, in urban, suburban, and rural high schools. The researcher also surveyed school guidance counselors and administrators. The data represented ACT Composite Scores, Annual Performance Reports (APRs), Post-Secondary Placements, Career and Technical Education Placements, Dropout Rates, and Graduation Rates. The research questions are outlined, and definitions for key terms used in the study are specified. Finally, the limitations and assumptions for this research study are addressed.

Background of the Study

The research questions, which served to organize the content of this study, focused on how practices were used in high schools to prepare students for post-secondary education or career. In the global, knowledge-based economy, at the time of

this writing, a college education was the gateway to social mobility and better lifelong opportunities. The vast majority of America's high school students (86%) expected to attend college, but many lacked the support and guidance they needed to prepare for enrollment and success in college (U.S. Department of Education [USDOE], 2010b). Furthermore, parents sent their children to school starting in Kindergarten, with the ultimate intent of their child graduating from 12th grade with a high school diploma. Throughout their transitional educational process, students were expected to acquire knowledge by receiving instruction at each grade level (Report Card on American Education, 2015). Each year, students were expected to graduate with skills or knowledge to pursue their post-secondary education or trade.

President George Bush established the national reform agenda for the 1990s, with the announcement of *America 2000: An Education Strategy* (as cited in Orlich, 2000). To bring American education into the 21st century, six major national goals were endorsed in 1991. These goals were to be achieved by the year 2000 and included the following:

> (a) all students would begin school ready to learn, which included disadvantaged and disabled individuals, preschool students, and students suffering from malnutrition; (b) the high school graduate rate would increase to a minimum of 90%; (c) students in grades 4,8, and 12 would demonstrate proficiency in all subjects on a competency-based assessment; (d) American students would become dominant in science and mathematics as compared to other nations; every adult would be literate and possess the necessary knowledge and skills to contend in a globalized society; and (f) all schools would be safe and drug-free. (Orlich, 2000, pp.469-471)

In other efforts to continue educational accountability, in 2001, President George Bush replaced the Goals 2000 Act with the enactment of No Child Left Behind (NCLB) in efforts to reduce two types of achievement gaps (Zhoa, 2009). NCLB mandated evidence of comprehensive, unilateral proficiency for all students in the subjects of reading and mathematics. Participation was mandatory, and both teachers and students were accountable for meeting high standards evidenced by Adequate Yearly Progress (AYP) (Burke, 2012). Penalties for non-compliance ranged from restructuring district personnel, fiscal disbursement, and state sanctioned authority (Burke, 2012). With teachers and schools having to meet the terms of the federal government regulations, state standards, and district polices, meeting the expected challenges seemed impossible (Sugai & Horner, 2008). Furthermore, some researchers proposed that the lack of academic preparation from high school led students to face academic difficulty entering college. Several studies (Byrd & MacDonald, 2005; Handel & Williams, 2011) reported 20% to 40% of students took at least one remedial course in college, depending on the selectivity of the institution, with courses in math, reading, and writing taken most often.

Statement of Problem

In order for the United States economy to remain viable in the global marketplace, it was imperative to increase the number of students who earned post-secondary degrees (Engle & Tinto, 2008). All students should "have the opportunity to receive a high-quality education" and "graduate from high school prepared to succeed in college" (Gates & Gates, n.d., p. 1). Researchers suggested that college and career readiness meant that a high school graduate had the necessary English and mathematics knowledge and skills — including, but not limited to, reading, writing, communications, teamwork, critical

thinking, and problem solving — either to qualify for and succeed in entry-level, credit-bearing two- or four-year college courses without the need for remedial coursework or in workforce training programs for his/her chosen career that offered competitive, livable salaries above the poverty line, offered opportunities for career advancement, and were in a growing or sustainable industry (MODESE, 2015b). Carnevale, Strohl & Smith (2009) suggested that the 20th century, high school was enough for a shot at middle-class status and wages. According to more recent data from the U.S. Department of Education (USDOE, 2015,), only 59% of students who entered four-year colleges completed their degrees within five years (p.1). According to more recent data from the U.S. Bureau of Labor Statistics, the nation's youth employment rates plummeted over the 15 years previous to this writing, declining to their lowest levels since the 1930s. Among 2012 high school graduates who did not enroll in college the following year, only 45% were able to find work of any kind, and only half of those jobs were full time. Among high school dropouts aged 16 to 19, only about 30% were employed (Sum, Khatiwada, & McHugh, 2013). Each year students were expected to graduate with skills or knowledge to pursue their post-secondary education or trade. "Every student should graduate from high school ready for college and a career, regardless of their income, race, ethnic or language background, or disability status" (Castro, 2013). Additionally, states set standards and grade level expectations for K-12 learning, as well as assessments to measure progress and knowledge in core areas, such as math, reading, writing, and science, along with problem-solving and critical-thinking skills. However, "The current Elementary and Secondary Education Act (ESEA) does not ask states to consider whether those standards are based on evidence of what students need to be successful in college

and the workplace" (as cited in USDOE, 2010a, p. 1). More researchers specified that tech prep and dual credit were both intended to assist students with transition between high schools and colleges. The prominence of tech prep was on building connections and partnership between secondary and post-secondary institutions, whose idea equals the primary goal of dual credit to improve students' success transition into college (Kim, 2014). Researchers found that the ACT was the leading United States college admissions test, measuring what students learned in high school to determine their academic readiness for college. According to ACT, Inc. (2011), statewide administration of the ACT allowed states to experience improvements in student achievement and college preparation. Exposing more students to a college entrance exam gave them a sense of how they stood in terms of admission requirements (Herbert, 2010).

Purpose of Study

The primary purpose of this mixed method study was to explore if high schools were preparing students for post-secondary education and career readiness. The researcher analyzed the state of Missouri secondary data gathered from four years **(**2013-2016) for the APR data, and five school years (2013-2017) in Midwest rural, suburban, and urban high schools. Data will represent ACT scores, APRs, Post-Secondary Placement, Career Technical and Education Placement Rates, Dropout Rates, and Graduation Rates.

This study examined data collected from five school years, a total of 42 high schools (all 14 of the urban, 14 suburban, and 14 rural school buildings) in the state of Missouri. The study reviewed the following publicly available data: ACT scores, APRs, Post-Secondary Placement, Career Technical and Education Placement Rates, Dropout

Rates, and Graduation Rates. Additionally, research was conducted to explore successful and non-successful strategies by interviewing school administrators and school counselors.

Rationale

The goal for completing this study was to help educators and guidance counselors realize the importance of early planning and preparation for students and to display yearly data and observe methods that were helpful for students to be successful. This undertaking required collaboration from the MODESE (2014b), school administrators, and guidance counselors. Research indicated that academic and college/career planning provided all students with the opportunity to identify strengths, areas in need of improvement, and areas of interest early in their education; so, students and their families could set post-secondary goals and make informed choices to support students in achieving their desired goals (Conley, 2013; Darling-Hammond, Wilhoit, & Pittenger, 2014). The American School Counselor Association (2017) stated, “The focus of academic and career planning is threefold: to help students acquire the skills to achieve academic success, to make connections between school and life experiences, and to acquire knowledge and skills to be college- and/or career-ready upon high school graduation” (p. 1). According to Savitz-Romer and Bouffard (2013), academic and career planning included supporting a variety of developmental processes (e.g., self-concept, motivation, goal setting, self-regulation, identity development and relationship development).

Definition of Terms

Adequate Yearly Progress. A standard defined to measure a school district's success in achievement (MODESE, 2010).

Advanced Placement courses. Advanced Placement was a program run by the College Board (the makers of the SAT) that allowed a student to take courses at the high school, which could earn college credit and/or qualify the student for more advanced classes when her or she began college (Edwards, 2018).

American College Test: Was a national college admissions examination that consisted of subject area tests in English, mathematics, reading, and science. ACT results were accepted by all four-year colleges and universities in the United States (ACT, Inc., 2015).

Annual Performance Report. The APR supported the MSIP policy goals of articulating the state's expectations, distinguishing the performance of schools and districts, empowering stakeholders, and promoting continuous improvement (MODESE, 2018).

Career and Technical Education. CTE programs combine academics and occupational skills training, allowing students to learn more about possible career paths in agriculture, business, health sciences, family consumer sciences, skilled technical sciences, and marketing and cooperative education (MODESE, 2015a).

Cumulative Grade Point Average. An achievement scale used to indicate the average of high school grades over the span of four or more years (MODESE, 2010).

Dropout rate. As required by law (167.275 RSMo), all public and nonpublic secondary schools are to report secondary students who drop out of school for any reason

other than to attend another school, college or university, or enlist in the armed services, to the MODESE (2009).

Dual credit. Dual credit was defined as a course or program where high school students could earn both high school and post-secondary credits for the same courses (USDOE, 2013).

Dual enrollment. Dual enrollment programs allow high school students to take courses at a local institution of higher education, such as a community college (College Express, 2014).

Graduation rate. The number of students who graduated in four years with a regular high school diploma (MODESE, 2013).

Low income schools. *S*chools where more than 30% of the student population came from low-income families, and the school was in a school district that was eligible to receive federal funding (USDOE, 2010).

Low performing schools. Schools identified by school districts that were "persistently in the lowest achieving 5% of all public schools in the past three years based on state reading and math assessments or graduation rates" (MODESE, 2012, p. 10).

Missouri School Improvement Plan 5. The state's school accountability system for reviewing and accrediting public school districts in Missouri. MSIP began in 1990 and entered its fifth version in 2013 (MODESE, 2013).

Post-secondary education. The provision of a formal instructional program whose curriculum was designed primarily for students who were beyond the compulsory age for high school. This included programs whose purpose was academic, vocational,

and continuing professional education, and excluded avocational and adult basic education programs (National Center for Education Statistics [NCES], 2013).

Standards. Statements of what students should know and be able to demonstrate; the expected learning to be accomplished (Chappuis, Stiggins, Chappuis, & Arter, 2012).

Technical Skill Attainment Assessment. Technical Skill Attainment (TSA) was an initiative adopted by the system, which originated in the Carl Perkins IV legislation. The System Office's role was to manage this initiative and support the implementation of assessments for over 349 programs (as cited in Wisconsin Technical College System, 2016).

Hypotheses

In order to test the hypotheses, *t*-tests for difference in mean were conducted on each of the areas that were measured. This study tested the following hypotheses:

Hypothesis 1. There is a relationship between college entrance rates of urban, suburban, and rural high schools and the percentage of students who score at or above the qualifying score on the ACT test.

***Sub Hypothesis 1a*.** There is a relationship between the type of high school, urban, suburban, or rural, and the percentage of students who score at or above the qualifying score on the ACT test.

Sub Hypothesis 1b. There is a difference between the percentage of students who score at or above the qualifying score on the ACT test, with regard to the type of high school, urban, suburban, or rural.

Hypothesis 2. There is a difference in the number of Annual Performance Report points between urban, suburban, and rural High Schools.

Hypothesis 3. There is a difference in the number of students in urban, suburban, and rural high schools enrolled in Career and Technical Education programs.

Hypothesis 4. There is a relationship between college entrance rates of urban, suburban, and rural high schools and high school dropout rates.

Hypothesis 5. There is a relationship between college entrance rates of urban, suburban, and rural high schools and high school graduation rates.

Research Questions

Research Question 1. What are the successful and non-successful strategies according to administrators and school counselors in urban, suburban, and rural school buildings in the state of Missouri with regard to preparation for post-secondary education and career workforce preparation?

Limitations

Although the research aided its initiative, there were several limitations. These included: (a) The use of interviewing as a data collection tool was a limitation and could be taxing, due to the amount of time and labor it took to meet with each individual, as well as transcribing and coding the data for further analysis (Creswell, 2013); (b) The study reviewed 14 rural, 14 suburban, and 14 urban high schools in the State of Missouri; (c) Due to the total number of schools researched, the researcher did not visit each school. The interview questions were considered a limitation as they written by the researcher; and (d) the response rate from the administrators and counselors was reduced.

Summary

Chapter One outlined the various components of the background of the problem, the statement of the problem, and the purpose of the study. The information shared

indicated that the federal government and states had policies and procedures in place for students to graduate prepared for success; however, the number of students graduating from high school unprepared for college and employment continued to grow. Schools must establish and implement best practices to ensure that all students are well equipped for their future. “The idea that we should do a better job of education[ing] all students is a fine one. But what matters more than the aspiration is the execution” (Hess, 2016, p. 4).

Chapter Two: The Literature Review

Introduction

Chapter Two reviews the preparation of college and career readiness and explores how schools could make systemic enhancements to increase the number of students who are college and career ready as they graduate from high school. The chapter will look at interventions for college and career readiness from a variety of perspectives. An overview is offered, then sections on Federal & State, rural, suburban, and urban schools, college readiness, career readiness, disadvantaged students, and school counselor roles are discussed.

Overview

In the literature review, various researchers reported that the U.S. education system was not preparing students for post-secondary education or careers. Nationally, too few high school students were graduating prepared for college. Only 28% of the class of 2015 who took an ACT exam demonstrated college readiness in all four subjects (ACT, Inc., 2015b).

Researchers also stated that by 2018, 62% of the jobs in the United States would require a college education, and over half of those jobs would require a four-year degree (Dyce, Albold, & Long, 2013). More researchers specified that unfortunately, the United States was unprepared to meet this demand — facing a shortage of 16 to 23 million college-educated adults in the workforce by 2025 (Lumina Foundation for Education, 2009). Adding to this, recent data showed that most high school graduates in the United States were not sufficiently prepared to meet the rigor of college education or workplace requirements (Barnes & Slate, 2013).

The term college readiness continued to be defined primarily in terms of high school courses taken and grades received, combined with scores on national tests (Conley, 2007).

In the school year 2013–2014, the adjusted cohort graduation rate (ACGR) for public high schools rose to an all-time high of 82%. This indicated that approximately 4 out of 5 students graduated with a regular high school diploma within 4 years of the first time they started 9th grade. Asian/Pacific Islander students had the highest ACGR (89%), followed by White (87%), Hispanic (76%), Black (73%), and American Indian/Alaska Native (70%) students (NCES, 2015). In the decade preceding this writing, educational leaders and policymakers placed the improvement of academic and post-secondary outcomes of urban learners at the heart of the reform agenda for public schools in the United States (Lieber, 2009).

As the 21st century opened, said Balfanz and Legters (2004), the United States was developing a deep social consensus that American high schools should ensure that all adolescents graduated from high school prepared for post-secondary schooling and training. Lieber (2009) stated:

> An achievement gap (as viewed through graduation rates, exit test scores, Advanced Placement (AP) test scores, and college admission tests scores) persists between inner-city, low-income, and mostly minority students and their suburban, middle-to-high-income, and mostly white peers. Moreover, comparisons of college-going and college completion rates between these two groups indicate that the outcome gap actually widens after students leave high school. (p. 2)

Researchers suggested that between 2008 and 2018, 63% of job openings would require some post-secondary education. But, only 42% of Americans then-currently earned an associate degree or higher by the age of 25 (Carnevale, Smith & Strohl, 2010). Roderick (2006) also presented the idea that it was essential to link what students were doing in the present with their future plans and aspirations; so, they could understand the importance of their high school academic achievement.

Moreover, the failure of youth to complete high school was a problem both for them and for the greater society as high school dropouts had lower earning power, higher rates of incarceration, and poorer health, with all the attendant consequences for themselves, their families, and society (Hauser & Koenig, 2011).

Federal & State

The role of the federal government in public education evolved and intensified over the past century. In the early part of the 20th century, education policy in the United States generally followed the provisions of the 10th Amendment of the Constitution, which stated that all powers not assigned to the federal government be reserved for the states. The states developed their own systems for educating children, complete with unique and individual measures of accountability. The value of local control extended to school districts allowing boards of education the autonomy and authority to develop policy and practice. The commitment to local control in public education spanned the first 150 years of public education in our nation.

The USDOE was the agency of the federal government that established policy for, administered, and coordinated most federal assistance to education. It assisted the president in executing his education policies for the nation and in implementing laws

enacted by Congress (USDOE, 2010a). The Department's mission was to serve America's students - to promote student achievement and preparation for global competitiveness by fostering educational excellence and ensuring equal access (USDOE, 2015b). When Congress created the Department in 1979, it declared these purposes:

1) to strengthen the Federal commitment to ensuring access to equal educational opportunity for every individual;
2) to supplement and complement the efforts of States, the local school systems and other instrumentalities of the States, the private sector, public and private educational institutions, public and private nonprofit educational research institutions, community-based organizations, parents, and students to improve the quality of education;
3) to encourage the increased involvement of the public, parents, and students in Federal education programs;
4) to promote improvements in the quality and usefulness of education through federally supported research, evaluation, and sharing of information;
5) to improve the coordination of Federal education programs;
6) to improve the management and efficiency of Federal education activities, especially with respect to the process, procedures, and administrative structures for the dispersal of Federal funds, as well as the reduction of unnecessary and duplicative burdens and constraints, including unnecessary paperwork, on the recipients of Federal funds; and

7) to increase the accountability of Federal education programs to the President, the Congress and the public. (as cited in USDOE, 2015b, Section 102, Public Law 96-88)

Castellano, Richardson, Sundell, and Stone (2016) found that in the United States, education policy called for every student to graduate from high school prepared for college and a career. National legislation mandated programs of study (POS), which offered aligned course sequences spanning secondary and post-secondary education, blending standards-based academic and career and technical education (CTE) content and often including work-based learning opportunities. This research also indicated that state and federal governments launched an ambitious, unprecedented attempt to specify and measure student learning in the public schools. Every state developed content standards that specified what students should know and be able to do in a broad range of subject areas (Conley, 2013).

To ensure that all students were college and career ready, the federal role in education through the reauthorization of the Elementary and Secondary Education Act (ESEA) would call for

- Raising standards for all students in English language arts and mathematics;
- Developing better assessments aligned with college and career-ready standards;
- Implement a complete education through improved professional development and evidence-based instructional model and supports. (Elementary and Secondary Education Act [ESEA], 2010, p. 1)

In 2009, President Barack Obama, with funding provided through the American Recovery and Reinvestment Act, brought forth the Race to the Top (RTTT) initiative as a way to spur innovation in state and local school districts (USDOE, 2010c). States competed through grant submission centering on a variety of criteria, including the focus on teacher and principal effectiveness, efforts to raise achievement and close gaps, adopting Common Core State Standards, adopting high quality state assessments, encouraging the development and monitoring of charter schools, developing plans to turn around the lowest performing schools, and developing longitudinal, statewide data systems (USDOE, 2010c, p. 1).

State of Missouri

As of 2017, there were 1,020 high schools in Missouri, made up of 832 public schools and 188 private schools. Missouri ranked as the 20th state in terms of student enrollment and 15th in terms of total number of schools. It ranked 18th for the student/teacher ratio and sat 22nd for the percentage of students on free or reduced lunches (Missouri High Schools, 2017).

The state of Missouri implemented the following four areas of college and career readiness that districts were to adhere to. The first area was assessment.

Assessment - Included the management of test development, on-going test maintenance, and oversees the test administration for statewide, large-scale assessments.

The second area was Curriculum Services - The curriculum services section provided professional services related to the development and implementation of improved curricula in the schools of the state.

The third area was Career Education - Missouri Career Education combined academics and occupational skill training to prepare students of all ages. Training programs were offered in Agriculture, Business, Health Sciences, Family and Consumer Sciences, Skilled Technical Sciences, Technology and Engineering, and Marketing and Cooperative Education.

Lastly, the fourth area was School Counseling – Counseling focused on resources and technical help for school counselors as they provided the resources and technical assistance to help school counselors fully implement comprehensive school counseling programs in their schools (MODESE, 2014).

According to MODESE, by 2018, approximately 60% of all jobs in Missouri would require some form of post-secondary education, a professional certificate, or a two-year, four-year, or advanced degree. The state of Missouri set a goal – Missouri's Big Goal – for 60% of adults to have a certificate or degree by 2025 (MODESE, 2014).

Rural schools. Missouri had 517 districts that enrolled 885,148 students. About 70% of those districts were rural. The then-current research exploring this topic suggested that rural students had economic and educational barriers that were different from their non-rural peers (Adelman, 2002; Byun, Meece, & Irvin, 2012). Additionally, Rumberger (2011) stated that the U.S. national average for high school graduation fell far below that of many other industrialized countries and was marked by significant graduation rate gaps between students of higher and lower-socioeconomic status and students attending suburban vs. rural, or urban schools.

Furthermore, the USDOE (2014) found that almost half of all school districts and one-third of all public schools were located in rural areas. These schools served almost

20% of the nation's students. Rural schools had unique needs and faced unique challenges. Many struggled to recruit and retain effective teachers, provided access to a well-rounded education, and offered a diverse array of courses.

Research also indicated that rural schools nationally shared sets of descriptive characteristics that signaled risk of low achievement, low motivation, and lack of school success (D'Amico, Matthes, Sankar, Merchant, & Zurita, 1996; Lichter, Roscigno, & Condron, 2003; National Research Council, 1993). Furthermore, rural schools tended to serve large minority populations and be located in areas of high poverty and low parental education (Flora, Flora, & Fey, 2003; Khattri, Riley, & Kane, 1997; NCES, 2009b; Stern, 1994).

Many rural schools were also faced with financial constraints; so, they could not offer the same support, resources, and extracurricular programs as non-rural schools, even in the same states (Ballou & Podgursky, 1995; NCES, 2009a). Additionally, rural teachers may be required to teach multiple subject areas, grades, and ability levels, often at lower compensation than in nearby non-rural schools (Colangelo, Assouline, & New, 1999; Fowler & Walberg, 1991; Lemke, 1994). Kao and Tienda (1998) observed that rural students were more likely to drop out or discontinue their educations prematurely than similar non-rural peers.

According to Adelman (2002), in comparison to other students, "high school graduates from rural areas/ small towns – and poor students from those areas, in particular – are at the greatest disadvantage in terms of opportunity-to-learn, and consistently evidence the lowest rates of college going" (p. 57). Petrin, Schafft, & Meece (2014) also identified the tension rural students experienced when facing the option to

leave or stay in their rural communities for post-secondary and career opportunities. This tension to stay or leave could be a barrier to college access for rural students.

Another issue for rural students was the need for educators, policy makers, and researchers to agree that the United States needed to send more students to college and find the necessary means to help rural students graduate. Despite this agreement among leaders, getting young people in rural communities to enroll in college and graduate was a difficult challenge (Sherwin, 2012). Furthermore, some researchers proposed that rural schools were at a particular disadvantage in promoting Advanced Placement success due to a lack of sufficiently prepared students, teaching constraints, and other logistical challenges (Gagnon & Mattingly, 2016).

During the 2010–2011 academic year, over half of school districts were rural and approximately "one-quarter of all public school students were enrolled in rural schools" (NCES, 2013, p. 1). While few studies explored rural student college choice, the limited research suggested rural students were less likely than their counterparts to attend college and earn a college degree (Adelman, 2002; Byun et al., 2012).

Research suggested the percentage of rural households headed by single females increased; more mothers were working outside the home; and some rural communities had been plagued by methamphetamine facilities (Carr & Kefalas, 2009), and more recently, by an influx of heroin (Seelye, 2014). These changes presented additional challenges for rural educators, who may not have the knowledge, experience, or access to provide adequate services to meet students' social and emotional needs (Wilcox, Angelis, Baker, & Lawson, 2014).

While scholars acknowledged rural disadvantages, some found that rural communities offered a more supportive environment compared to non-rural environments (Byun et al., 2012; Petrin, Schafft, & Meece 2014). For example, rural students often found that their community fostered a sense of belonging (Petrin et al., 2014). Adding to that, Hardré, Sullivan, & Crowson (2009) noted that compared to urban and suburban youth, the majority of rural teens lived in communities and attended schools, which offered a narrower range of organized activities. Although access to organized activities may be more limited in rural communities, the experience within specific activities may be differentially meaningful for rural adolescents compared to involvement in the same activity for urban and suburban youth (Ludden, 2011).

Some researchers examined practices related to connecting students to their communities as a way not only to help them engage with and stay in school, but also to acquire knowledge and skills relevant to building their own futures (Bartsch, 2008; Tompkins, 2008). Palardy (2013) stated that the related literature suggested a strong influence of school climate on rural students' decisions to attend, engage with, and stay in school until graduation, and whether to pursue post-secondary studies.

Suburban schools. People living in suburbs tended to be much wealthier than people living in cities. With the beginning of the suburban movement in the late 1940s and early 1950s, Americans moved out of the city in droves, mainly because they had the money to do so. They therefore created neighborhoods and communities of wealth. Suburban living was of a higher quality and social class than city living, and the expenses mirrored this. The cost of living in suburbs was much higher than the cost of city living, which included taxes. Because of higher property values and income levels, suburban

taxes were higher than city taxes (Act for Libraries, 2017).This research showed that students from more privileged high school sectors were able to maximize attendance at better academically matched colleges and that the structural type and location of high school both were hierarchically ranked, and providing varied opportunities and norms were key factors in college matching (Lee, Weis, Liu, & Kang, 2017).

Furthermore, some researchers proposed that over the few years previous to this writing, many suburban school districts had seen higher class sizes, teacher and administrative cuts, increase in poverty and homelessness, and a cut in school supplies (Tavernise, 2011). Researchers had long had an interest in the relationship between academic performance and demographic and socioeconomic class-based characteristics. Research suggested that a neighborhood's socioeconomic status was positively associated with educational expectations (Hope 1995; Ceballo, McLoyd, & Toyokawa, 2004; Quane & Rankin 1998). Out of the 10 highest-ranked public high schools in Missouri, nine were in the St. Louis area. Most of them were in the suburbs. Meanwhile, populations living below the federal poverty line grew twice as fast between 1970 and 2010 in suburbs as compared to cities, and almost three times as fast between 2000 and 2012. Public school populations were rapidly becoming more impoverished, especially in suburbs. Starting in 2013, students eligible for free and reduced-price lunch (FRL) constituted a majority of all public school students in the United States. City school populations remained the poorest on average (60% FRL compared to 40% in suburbs and 25% in rural areas), but suburban poverty was rising faster (Turque, 2014). More people with low incomes now lived outside of cities, and some areas were ill-equipped to deal with the influx of the poor (Semuels, 2015).

Much of the prior research around school structure and environment in affluent majority White suburban schools indicated these schools worked well for middle and upper class White populations; however, not for Black students. Many Black students were not succeeding at the same level as their White peers in high-performing schools (Ogbu, 2003). Noguera and Wing (2006) stated, "In many affluent White suburban school districts where varying degrees of diversity have been embraced and where there is no lack of resources, all of these districts have struggled to elevate the academic achievement level of students of color" (p. 8). Banchero and Little's (2002) research findings revealed a wide disparity between White and Black students at some of the most affluent high-achieving suburban schools. DeWitt (2012) wrote,

> Regardless of the type of school it is usually a microcosm of their whole community. Students walk in shaped by their parents' ideas and school is a place where those ideas converge. Given the right circumstances, schools can be a great experience for students. Everything, even the present conditions is a teachable moment. (p. 1)

Suburban schools have had problems with parents using addresses where they did not live (parents, grandparents, etc.), so that their child did not get kicked out of the school and sent to the one in the community where they really lived. That sort of dishonesty would not be happening if all schools were created equally (DeWitt, 2012).

Another issue facing suburban schools that occurred recent to this writing was the shift in attitudes toward combating the suburban heroin epidemic that had taken hold, and nowhere was that more evident than in high schools, where parents and students were getting educated regularly as to the dangers and the prevalence of heroin (Daily Herald,

2015). Furthermore, suburban teenagers around the United States were battling opioid addiction. CNN's Feyerick visited St. Louis County where heroin deaths were nearly four times the national average (Millitzer, 2016). Weissman (2016), of the National Council on Alcoholism and Drug Abuse, said schools struggled to find the time and resources to create addiction awareness programs. "They are fighting for accreditation, or have to concern themselves with test scores, so they are sometimes reluctant to give away part of the day to something they might see as nonessential," Weissman (2016, p. 2) said. "I would argue these are essential skills as much as any other subject" (p. 2).

Urban schools. Socio-economic status was an important factor for predicting student achievement. It influenced a child's life inside and outside of the classroom. Individuals with the highest median income levels viewed life differently. These adults also had a different set of values; for example, the desire for perfection and privacy, which crossed over into children (Levine, 2007; Payne, 1996). Students in urban school districts were stricken with poverty and inadequate material compared to their affluent suburban counterpoints (Wright, 2012).

The majority of American people believed that urban schools could not provide a high level of education to their students, mostly because they lacked the funds to provide an enriching educational experience. As a result, students in urban schools were underachievers, attained less education and encountered fewer career opportunities in the job market than their suburban peers (Act for Libraries, 2017). Furthermore, some research proposed that just over one-half of students (53%) in the principle school systems of the country's 50 largest cities completed high school with a diploma. That rate remained well below the national graduation rate of about 71%, and even fell short of the

average for all urban districts across the country (61%). Further analysis illustrated that the extremely low graduation rates for these large urban school systems contributed disproportionately to the nation's graduation crisis (Swanson, 2009, p. 13).

Researchers suggested the focus of much education reform and research concerned low performing, low Socioeconomic Status Schools (SES). This was because year-after-year some of these schools were not meeting annual growth targets set forth by the federal government. Under NCLB, the goal of the federal government was for all students to be proficient in the core subject matter areas by 2014. Often schools not meeting their growth targets intended to model those schools with the highest APR, those in the top 10%. Students in the high performing schools and high SES schools often had access to a greater number of resources and enhanced resources, such as tutors and educational outings. There was little research concerning the students in these schools who performed below average. The existing research surrounding students from high socio-economic backgrounds tended to focus on substance use, stress levels, and mental health of the highest achieving students (Ablard & Parker, 1997; Flacks & Thomas, 1998; Luthar, 2003; Luthar & Becker, 2002).

According to Shamsuddin (2016), information and guidance about college was critical for students to pursue post-secondary education. However, students attending urban schools often had less information and less access to information about college pathways than their peers at wealthy suburban schools (Shamsuddin, 2016, p. 1). Also, more researchers specified that urban schools tended to serve a racially and culturally diverse student body that differed from most of their teachers, who often came from White, middle-class backgrounds (Talbert-Johnson, 2004). Low teacher expectations and

perceptions that student differences were deficits to be corrected could lead students to feel alienated from school (Noguera, 2002). Researchers also found that urban high school counselors focused on delivering facts about college types and procedures for completing college applications. However, students were not given the academic context to make effective use of this information. Mixed signals about academic standards, missing information about grade point averages, and communication barriers around college admissions data hindered students in making sense of this information. To develop this context, college admissions information should be integrated into course curricula, counselors should be engaged interpreters of information, and teachers and counselors should coordinate on developing academic standards (Shamsuddin, 2016, p. 120).

Newton and Sandoval (2015) found that students needed social, cultural, and human capital resources within the school and within the community that would be used to aggressively promote school connectedness, which was fundamental in urban locations. Second, they stated that schools and neighborhoods must continue to provide these extra-curricular activities for youths. Extra-curricular activities were important factors for African American males and females, which augmented social and cultural processes that were conducive to long-term educational planning and aspirations of human capital attainment beyond high school. Also, the authors suggested that school districts should require teachers to participate in cultural sensitivity training to understand the obstacles and challenges that many African American students faced as they navigated the educational system. Culturally responsive teaching could also assist in school connectedness, which was important for students' educational expectations.

Finally, Newton and Sandoval (2015) believed that parents and teachers should continue to work together to develop a partnership to ensure that they were both holding high educational expectations for students.

College Readiness

In the global, knowledge-based economy, at the time of this writing, a college education was the gateway to social mobility and better lifelong opportunities. The vast majority of America's high school students (86%) expected to attend college, but many lacked the support and guidance they needed to prepare for enrollment and success in college (USDOE, 2010b).

Researchers, policymakers, and other stakeholders made numerous attempts to define what it meant to be college and career ready, and recently a consensus emerged (Conforti, 2013). Researchers stated that college readiness could be defined operationally as the level of preparation a student needed in order to enroll and succeed — without remediation — in a credit-bearing general education course at a post-secondary institution that offered a baccalaureate degree or transfer to a baccalaureate program (Conley, 2007). Furthermore, Nagle, Newman, Shaver, and Marschark (2016) proposed that students should have access in high school to a range of academic courses with the appropriate level of challenge and complexity (especially in literacy and numeracy) and the learning skills (e.g., high-order critical thinking, ability to write clearly and analytically, and problem-solving skills) and nonacademic skills (e.g., motivation, tenacity, knowledge of how to apply to college and obtain financial support) necessary for post-secondary success.

A strong college-going culture was a school environment saturated with information, resources, and provided ongoing formal and informal conversations that prepared students for college (Holland & Farmer-Hinton, 2009). Additionally, school personnel needed to focus on eliminating school-authorized barriers to promoting high expectations and academic rigor (Oakes, 2003). When taking all college-going factors into consideration, the College Board (2013) suggested students should walk away with an "appreciation of academics, desire to succeed and drive to attend college, and become a lifelong learner" (para. 1). More importantly, in a college-going culture the school communicated to students that college readiness was a standard, and "students believe that college is for them and is not reserved for the exceptional few who triumph over adversity to rise above all others" (Welton, & Williams, 2015, p. 2). A student's high school plays a significant role in determining college enrollment by preparing students for college. In fact, studies revealed that high school achievement was the single most important factor in deciding college enrollment, even more important than tuition and financial aid availability (Cameron & Heckman, 2001; Ellwood & Kane, 2000). Conley (2007) argued that during the past 20 years, few systematic attempts had been made to integrate the various aspects or components of college readiness that had been investigated in some depth during this period of time. As a result, college readiness continued to be defined primarily in terms of high school courses taken and grades received, along with scores on national tests as its primary metrics (Conley, 2007, p. 5). The idea of college readiness became more important as society changed in the importance of having a college degree.

President Obama (2010) discussed the need for every child to have a world class education. He stated,

> Every child in America deserves a world-class education. Today, more than ever, a world-class education is a prerequisite for success. America was once the best educated nation in the world. A generation ago, we led all nations in college completion, but today, 10 countries have passed us. (p. 10)

In an attempt to increase the selection process accuracy, college readiness included factors that helped high school graduates to manage the various demands of college, work, and life. Identified either as 'non-cognitive' or 'soft' skills, they focused on the complementary to the academic side of schooling of personal independence and responsibility, time and goal/task management, self-awareness and advocacy, community service, and leadership initiatives developed in a variety of non-academic aspects of the educational enterprise (Adebayo, 2008; Adams, 2012; Byrd & MacDonald, 2005; Skelly & Laurence, 2011).

The National Office for School Counselor Advocacy **(**College Board, 2010) campaign focused on galvanizing on mobilizing school counselors to provide every student with the inspiration, planning, academic preparation, and social capital to graduate from high school ready for college and careers. NOSCA's eight components of college and career readiness counseling provided the road map for this work**.**

1) College Aspirations.
    a) Goal: Build a college-going culture based on early college awareness by nurturing in students the confidence to aspire to college and the resilience to overcome challenges along the way. Maintain high expectations by

providing adequate supports, building social capital and conveying the conviction that all students can succeed in college.

2) Academic Planning for College and Career Readiness
    a) Goal: Advance students' planning, preparation, participation and performance in a rigorous academic program that connects to their college and career aspirations and goals.
3) Enrichment and Extracurricular Engagement.
    a) Goal: Ensure equitable exposure to a wide range of extracurricular and enrichment opportunities that build leadership, nurture talents and interests, and increase engagement with school.
4) College and Career Exploration.
    a) Goal: Provide early and ongoing exposure to experiences and information necessary to make informed decisions when selecting a college or career that connects to academic preparation and future aspirations.
5) College and Career Assessments
    a) Goal: Promote preparation, participation and performance in college and career assessments by all students.
6) College Affordability Planning
    a) Goal: Provide students and families with comprehensive information about college costs, options for paying for college, and the financial aid and scholarship processes and eligibility requirements, so they are able to plan for and afford a college education.
7) College & Career Admissions Process

a) Goal: Ensure that students and families have an early and ongoing understanding of the college and career application and admission processes so they can find the post-secondary options that are the best fit with their aspirations and interests.

8) Transition From High School Graduation to College Entrance
    a) Goal: Connect students to school and community resources to help the students overcome barriers and ensure the successful transition from high school to college (as cited in College Board, 2010, p. 3).

Means to Determine College Readiness

Conley (2010) argued that college readiness was a multifaceted concept comprising numerous variables that included factors both internal and external to the school environment. Conley's model suggested that students must master the following.

1) Key Cognitive Strategies-are patterns of intellectual behavior that lead to the development of mental processes and capabilities necessary for college-level work.
2) Key Content- understanding and mastering key content knowledge is achieved through the exercise of broader cognitive skills embodied within the key cognitive strategies.
3) Academic Behaviors- this facet of college readiness encompasses a range of behaviors that reflect greater self-awareness, self-monitoring, and self-control on the part of students in relation to a series of processes and behaviors necessary for academic success.

4) Contextual Skills and Awareness- a systemic understanding of the post-secondary educational system combined with specific knowledge of the norms, values, and conventions of interactions in the college context, and the human relations skills necessary to cope with and adapt to this system (Conley, 2010, p. 34).

Rigorous Courses

Students who took more rigorous courses in high school were more likely to perform well on achievement tests (Adams, 2011). Furthermore, Bangser, 2008, proposed that special attention should be paid to increasing the rigor, relevance, and engagement of the high school curriculum. The lack of academic rigor in high school closed the doors to good jobs, success in college, and, all too often, access to middle class. A College Board survey of graduates from the class of 2010, conducted one year after commencement, found 40% wished they had taken more rigorous courses in high school (Hines, Lemons & Crews, 2011).

AP courses. Advanced Placement (AP) offered a series of college-level courses and assessments for which students may receive college credit while still in high school. The AP program was established by the College Board, and this entity was responsible for certifying AP courses throughout the nation (Gagnon & Mattingly, 2016). Participation in AP was increasing in U.S. high schools in response to calls for more advanced curricular offerings (Iatarola, Conger, & Long, 2011), greater college readiness, greater performance on measures affecting high school rankings, and reduced undergraduate degree completion time (Adelman, 2006). Furthermore, AP courses were two options afforded to advanced students and gifted learners as accelerated learning

alternatives to general education courses. AP curricula embedded challenging concepts and content standards that were above typical grade-level expectations (Colangelo, Assouline, & Gross, 2004).

In the 10 years leading up to 2012, the number of students taking an AP course more than doubled to over 2 million; the number of schools offering an AP course increased by nearly a third to include roughly half of all U.S. public and private secondary schools, and the number of colleges that accepted AP scores increased by nearly a fifth (College Board, 2012). Even with this overall growth, research indicated that well-documented disparities still existed in AP enrollment and success between poor and minority students and their more affluent, non-minority peers. Low-income students represented only a quarter of AP test takers in 2013, despite making up roughly half of the public high school population (College Board, 2014). Similarly, Black and American Indian students participated at roughly half the average rate, although Hispanic students had only somewhat lower AP enrollment and success rates (College Board, 2014).

Dual credit. Dual credit curricula originally initiated sometime in the early 1970s to present secondary school learners the option to receive both secondary and post-secondary course credit concurrently and to make the high school-to-college conversion more stream-lined for learners (Alfeld & Bhattacharya, 2012). Districts and colleges affiliated to present the program to secondary school participants (Barnett & Kim, 2014). As dual credit courses become more prevalent in the secondary school setting, it was probable more high school students would utilize dual enrollment programs, not only to expand their education, but to more adequately prepare for the college experience after high school (Giani, 2014).

Dual enrollment. In order to better prepare students for college, schools needed to prepare more rigor. Another indicator of high school academic preparation was the overall difficulty of students' coursework (Adelman, 1999). Dual enrollment numbers continued to increase in public school districts, which was a tool for students, and adequately challenged them academically and prepared them for the college environment (Flores, 2014). According to McCabe (2000), in a national study of community college education, 41% of entering community college students and 29% of all entering college students were underprepared in at least one of the basic skills of reading, writing, and math. Furthermore, researchers found that assuming no school-level restrictions to accessing college-preparatory work existed, students must have the desire to enroll in college in order to take rigorous coursework. Without a career goal requiring post-secondary education, little hope existed for students taking classes that required extra work and removed them from their circle of friends (Bonous-Hammarth & Allen, 2005). Sawyer (2008) demonstrated that taking advanced core courses improved ACT scores, with the greatest impact found in students who met or exceeded the college readiness benchmark on ACT's assessment.

Students needed to pass core ninth-grade courses in English, math, science, and social studies if they were to remain on track for high school graduation (Allensworth & Easton, 2005; Schneider, 2006). More research specified that if students did not pass key 'gatekeeper courses' such as Algebra I on time, it could be difficult to complete the full sequence of coursework needed for post-secondary education, particularly in four-year colleges (Schneider, 2006).

***Math*.** The level of mathematics courses taken in high school was a significant predictor of students' post-secondary enrollment and of attaining a college degree (Adelman 1999; Khattri et al. 1997).

Students who did not take and pass a rigorous math sequence in high school — generally, Algebra I, Geometry, and Algebra II — are ineligible for admission to many four-year colleges and universities. With almost two-thirds of future jobs expected to require college-level math skills, these students were not just missing out on important academic opportunities, but they may also be closed out of significant economic opportunities (Huebner & Calisi, 2008).

In a review of literature, Chambers, Walpole, and Outlaw (2016) concluded that units and rigor in mathematics coursework were the strongest predictors of college enrollment. There were wide opportunity differences between schools, which impinged upon student access to high rigor coursework and that secondary schools with high concentrations of low-income students tended to have fewer mathematics courses.

ACT Testing

The American College Test (ACT), a curriculum-based education and career planning tool, was the leading college readiness assessment in the United States. As the capstone of college and career readiness solutions, the ACT was based on what students learned in high school (ACT, Inc., 2014). Additionally, in the Missouri graduating class of 2017, 68,480 graduates took the ACT test, compared to 49,217 in 2013. Missouri graduates of 2017 had an average composite score of 20.4, compared to the national average of 21.0 (ACT, Inc., 2017).The College Readiness Benchmarks (Table 1), rooted in research with college and universities from across the United States, were scores on

the ACT that represented the level of achievement required for a student to have a 50% chance of obtaining a B or higher, or about a 75% chance of obtaining a C or higher in corresponding credit-bearing first-year college courses (The Condition of College and Career Readiness, 2017).

Table 1

The ACT College Readiness Benchmarks

College Course	ACT Subject-Area Test Readiness Benchmark	ACT College
English Composition	English	18
College Algebra	Math	22
Social Sciences	Reading	22
Biology	Science	23

The ACT College and Career Readiness Standards had two research-based components: (1) The standards describing what students should know and be able to do at various ACT score ranges were based on an analysis of thousands of actual student responses across multiple test forms developed from the test blueprints, and (2) the progression across ACT score ranges provided an empirical indicator of whether students were performing well enough in relation to those standards to be considered ready for post-secondary opportunities.

Students who met a benchmark on the ACT had approximately a 50% likelihood of earning a B or better, and approximately a 75% likelihood of earning a C or better, in the corresponding college course or course area, without remediation. The benchmarks gave students, families, and educators useful information for assessing whether a student

mastered the skills they needed to succeed in post-secondary education (The Condition of College & Career Readiness, 2016).

ACT Career Readiness. In 2016, ACT first provided an indicator of career readiness, based on ACT composite scores. Progress toward career readiness was based on research linking ACT composite scores to ACT National Career Readiness Certificate (NCRC) levels. The ACT composite cut score for each ACT NCRC level corresponded to a 50% chance of obtaining that level. If a student's ACT score surpassed the cut score for an ACT NCRC level, they were categorized as making progress towards the next higher ACT NCRC level. Attainment of ACT NCRC levels indicated workplace employability skills that were critical to job success (ACT, Inc., 2017).

Course taking patterns and benchmark performance. Within subjects, ACT consistently found that students who took the recommended core curriculum were more likely to be ready for college or career than those who did not. A core curriculum was defined as four years of English and three years each of mathematics, social studies, and science (The Condition of College & Career Readiness, 2016). Also, ACT research showed that younger students who took rigorous curricula were more prepared to graduate from high school ready for college or career (The Condition of College & Career Readiness 2016).

Early college high schools. Castellano, Richardson, Sundell, and Stone (2017), indicated that early college high schools transformed the high school experience by blending academic and career focused studies and creating seamless transitions between secondary and post-secondary education. Designed to help increase college readiness and access for first-time college goers, low-income students, and minority students, early

college high schools offered college-level classes taught by college faculty or certified high school teachers. When located on college and university campuses, they also allowed students to experience campus life. Starting in ninth grade, early college students took increasing numbers of college courses and graduated with both a high school diploma and an associate's degree or a significant number of tuition-free credits applicable toward a degree.

Career Readiness

While some students in the United States attended a two- or four-year college, a number of other students left high school and attempted to enter the workforce immediately (Radcliffe & Bos, 2013). Research suggested that post-secondary education was becoming increasingly imperative for financial and career success. Consequently, jobs must be filled by individuals who had the requisite knowledge and skills. These realities were the foundation of the drive for career and college readiness (Martinez, Baker, and Young, 2017).

The American School Counselor Association (ASCA, 2012) school counselor competencies, which highlighted the critical areas of knowledge and skills that all school counselors should possess, described career planning and development with K-12th grade students as a major component of comprehensive school counseling programs. Within the competencies, school counselors should provide equitable access to career development and support for all students. This involved having knowledge of "career planning and college admissions, including financial aid" (Standard IV-A-6). Additionally, school counselors must understand the intricacies of career outcomes including "career opportunities, labor market trends and global economies" (Standard IV-B-2d).

Furthermore, in 2017, 15,187 Missouri graduates (22%) were likely to attain the Gold ACT WorkKeys® National Career Readiness Certificate®, or higher, based upon ACT Composite scores, compared to 538,392 (27%) nationally (ACT, Inc., 2017).

Nationally, almost 30% of students did not graduate from high school with a regular diploma (Swanson, 2004). Many of the students who did graduate decided to combine work with various forms of post-secondary education during a period when their career plans were still evolving (Haimson & Deke, 2003; McDonough, 2004). Whatever specific paths young people pursued, it was increasingly clear that the skills needed for work often mirrored those required for admission to and success in post-secondary education (ACT, Inc., 2006; Carnevale & Desrochers, 2003).

In the then-current information-and technology-based economy, a high school diploma was no longer sufficient as a terminal degree. Most of the fastest growing jobs that paid reasonably well required at least some post-secondary education (Carnevale & Desrochers, 2003). Researchers stated that the lack of college readiness among high school graduates was troubling in light of changing workforce needs: more and more jobs in the U.S. economy required education beyond high school. In 1973, 72% of jobs nationally required a high school diploma or less compared to a projected 38% by 2018 (Carnevale et al., 2010). According to McCabe (2000), in a national study of community college education, 41% of entering community college students and 29% of all entering college students were underprepared in at least one of the basic skills of reading, writing, and math. Also, connecting 21st century skills to a set of expectations expressed by employers surveyed by Hart Research Associates, on behalf of the Association of American Colleges and Universities in Fall 2009, individuals graduating from high

school and then college should demonstrate the necessary skills and “higher levels of learning and knowledge” (2010, p. 1).

Missouri's Career Education delivery system consisted of 516 local education agencies. These local education agencies included 437 comprehensive high school districts (57 with area career centers), one state technical college, 12 community college districts (four with area career centers), seven four-year institutions, and two state agencies. The network of area career centers provided an economical source of occupational-specific skill training, which was available to residents within each school's service delivery area (MODESE, 2015).

Researchers suggested that the job market for high school dropouts was shrinking and the wages were insufficient to support a family, whereas for high school graduates without post-secondary education, the job market witnessed a decline in wages and the necessity of passing minimal competency tests as a condition for being hired (Haycock & Huang, 2001).

The Department of Higher Education was focusing its efforts in several areas to assist the state in meeting its education and workforce goals.

- Attainment – improve college readiness and making higher education opportunities available to all students across the state.
- Affordability – keep the cost of college within reach for Missouri families.
- Quality – ensure students acquire the knowledge and skills they need for a rapidly changing world and workplace.
- Completion – help students stay the course to finish a certificate or degree program (MODESE, 2014a, p. 1).

Three main components played key roles in the foundation of SCCT: self-efficacy beliefs, outcome expectations, and personal goals. Completing a career/education plan in high school required students to address each of these components.

Challenges

More than 1.2 million students dropped out of America's high schools each year, and at least 15 million children overall were at risk of not reaching productive adulthood. This was more than a problem; it was a catastrophe. America's failure to educate tomorrow's leaders and workforce put our entire economic and national security at risk (Balfanz, Fox, Bridgeland, & McNaught, 2009).

The USDOE, Office of Vocational and Adult Education (2012) reported that America's competitive edge in the global economy depended on a skilled and qualified workforce. However, a gap existed between the skill of the United States workforce and employer demands (as cited in Abraham, Slate, Saxon, & Barnes, 2014).

Perna and Finney, 2014 stated that first-generation students, low-income students, and students of color were particularly at risk of not having access to post-secondary education. According to a national profile of college readiness, only 25% of high school graduates in 2011 were prepared for the rigors of post-secondary education (Barnes & Slate, 2013).

Disadvantaged students. According to Bragg et al., (2006) although most Americans dream of attending college, access to a college education was limited for various reasons. Those reasons might include college costs, discrimination, and precollege academic preparation (Bragg et al., 2006). Heller (2001) divided access into

five categories: financial accessibility, geographic accessibility, programmatic accessibility, academic accessibility, and cultural/social/physical accessibility.

Financial accessibility. Relates to the availability of financial resources needed for an individual to attend college (Heller, 2001). The majority of first-generation students were low-income (Tucker, 2014). Bradley (2011) noted, "While tuition at four-year colleges is increasing at a dizzying pace, community colleges offer an affordable alternative for millions of students" (p. 6). According to the Everett (2015), the average annual tuition at a public, in-district community college was $3,260, yet the average annual tuition at a four-year public, in-state college was $8,890. In addition, 58% of students attending community colleges received aid, with 38% receiving federal grants, 19% receiving federal loans, 12% receiving state aid, and 13% receiving institutional aid.

***Geographic accessibility*.** Refers to the distance a student travels to attend college (Heller, 2001). According to Cohen, Brawer, and Kisker (2014), proximity was the most influential aspect of access. Because 90% of the population lived within 25 miles of a community college, community colleges were a convenient choice (Boggs, 2011). Ninety-six percent of two-year college students were in-state residents and traveled a median of 10 miles from their home to the campus to attend college (Cohen, Brawer, & Kisker 2014). For students for whom distance was an issue, distance education helped eliminate some barriers. At public two-year institutions, almost 10% of students were enrolled exclusively in distance education courses, and more than 17% of students were enrolled in at least one distance education course (NCES, 2014).

***Programmatic accessibility*.** Refers to whether a program of the student's choice was available at the college (Heller, 2001). Community colleges were excellent choices

for first-generation students, because community colleges offered both academic and occupational or vocational programs. Cowen and Rossen (2014) noted that almost all community colleges offered basic, introductory classes; however, larger community colleges often offered specialized courses in vocational and technical areas. Boggs (2011) noted that community colleges were excellent choices for first-generation students, because leaders of these institutions worked with local business and industry to develop programs that ensured graduates met the needs of these industries, including programs to retrain displaced workers.

***Academic accessibility*.** Refers to the pre-collegiate academic preparation of a student (Heller, 2001). In 1996, a study conducted by Terenzini and associates revealed that first-generation students arrived to college less academically prepared than their non-first-generation counterparts (as cited in Paulsen & Griswold, 2009). As high school students, first-generation students were less likely to have access to demanding courses or advanced placement courses; they may thus have lower SAT scores (Saenz et al., 2007). When surveyed in Terenzini and associates' study (1996), only 33% of self-identified lower-income students, who were often first-generation students, believed they were prepared for college academic requirements, as compared to 80% of their upper income counterparts (as cited in Paulsen & Griswold, 2009).

***Cultural, social, and physical accessibility*.** Involves support that students might receive from family, friends, or instructors, such as verbal encouragement or the reevaluation of policies for discrimination (Heller, 2001). Community college students often struggled to balance the responsibilities of college with their full- or part-time jobs, their family or parental responsibilities, or other obligations (Cohen et al., 2014).

First generation students. One study concluded that first-generation students were challenged with "straddling two cultures and must come to grips with the fact that they are breaking rather than continuing family traditions by being the first in their family to attend college," (Tate, 2013, p. 83). Moreover, many of first generation students were influenced by a family member to pursue or not pursue their education. First generation students dealt with their family's opinions on whether or not to go to college, as well as if they should work to support the family. Many participants follow their family's advice; others challenged it (Gibbons & Woodside, 2014).

A qualitative study of 79 first-generation college students found that some first-generation college students were supported by their families and communities through gestures, such as monetary gifts, shopping trips, or special meals, yet other first-generation college students believed that the topic of college was taboo and that family members were intimidated or jealous (Orbe, 2004). Even when first-generation college students got emotional support or encouragement from their families, they often did not have family members who could provide them with advice and mentoring concerning how college works (Tucker, 2014).

Homeless students. Research suggested under the McKinney-Vento Act, that State Educational Agencies (SEAs) and local educational agencies (LEAs) were required to ensure that barriers faced by students experiencing homelessness related to their attendance, enrollment, and achievement were removed. Under McKinney-Vento, SEAs must appoint a State Coordinator for Homeless Education and LEAs must appoint a local homeless education liaison to ensure the effective implementation of the Act in schools

throughout the State. Under the McKinney-Vento Act, homeless children and youth had the right to:

- Receive a free, appropriate public education;
- Enroll in school immediately, even if lacking documents normally required for enrollment, or having missed application or enrollment deadlines during any period of homelessness;
- Enroll in school and attend classes while the school gathers needed documents.
- Enroll in the local school; or continue attending the school of origin (the school they attended when permanently housed or the school in which they were last enrolled), according to each student's best interest. *(If the school district believes that the school selected is not in the student's best interest, the district must provide the parent, guardian, or unaccompanied youth with a written explanation of its position and inform the parent, guardian, or youth of the right to appeal its decision;
- Receive transportation to and from the school of origin, if requested);
- Receive educational services comparable to those provided to other students, according to each student's needs. LEAs may also be eligible for competitive sub grants under McKinney-Vento to support the "enrollment, attendance, and success" of students experiencing homelessness (as cited in USDOE, 2016, p. 1).

The literature review suggested that the number of students identified as homeless and enrolled in schools increased by 3.5% over a three-year span during the 2012-2013 to

2014-2015 school years (Havlik, 2017). That was approximately 2.5 million, or one in every 30 children, identified as homeless in the United States (NCHE, 2014). According to National Center for Homeless Education (NCHE, 2016), in the 2014-2015 school year nearly 1.3 million students experiencing homelessness were enrolled in public school districts across the country. Further, although the data was limited on the numbers of students experiencing homelessness transitioning to college after high school, Free Application for Federal Student Aid (FAFSA) data indicated that in the 2015-2016 school year, 31,948 unaccompanied homeless youth applied for financial aid (NCHE, n.d.). Moreover, homelessness may continue into college, with 13% to 14% of a national sample of community college students identifying as homeless (Goldrick-Rab, Richardson, & Hernandez, 2017).

The McKinney-Vento Homeless Assistance Act, as amended in December 2015 by the Every Student Succeeds Act (ESSA), included a new requirement for school counselors to support students experiencing homelessness in their college and career readiness (USDOE, 2014).

With the 2015 reauthorization of the law, school counselors were required to provide college and career support for students experiencing homelessness.

The USDOE Non-Regulatory Guidance explicitly stated, “The local liaison, along with guidance counselors and other LEA staff tasked with college preparation, should ensure that all homeless high school students receive information and individualized counseling regarding their situation” (USDOE, 2016, p. 48).

Furthermore, research on homeless students indicated statutory amendments also required local liaisons to inform unaccompanied homeless students of their independent

status for purposes of applying for federal student aid under the FAFSA, and assisted these students in obtaining documentation of this status. Independent students, including unaccompanied homeless youth, did not include parent information on their FAFSA; as a result, independent students' federal aid packages were calculated based solely on the student's own income and assets (Havlik, 2017).

Duffield, Heybach, and Julianelle (2009) suggested that in order to support students experiencing homelessness in transitioning to college, school counselors should also identify universities that have strong Upward Bound, Talent Search, and Student Support Service (TRiO programs), which supported the transition to college for middle and high school students. Programs, such as Upward Bound or Talent Search, provided a number of services, including tutoring, counseling, and mentoring, for low-income and disadvantaged students, and could ease the transition to college for these students (USDOE, 2016).

School counselors were required to identify and facilitate services and coordinate programs and interventions to support the college and career preparation and transition for students experiencing homelessness. More research specified that helping students experiencing homelessness to set realistic short- and long-term goals towards graduation, would also help them work towards a desirable career pathway. Through teaching students experiencing homelessness to set goals and continually revisit them, it educated them on what was needed to achieve their long-term plans. Furthermore, Nilsen, Huyder, V., McAuley, T., & Lieberman (2017) proposed that teaching them the skills necessary to be successful in college beginning freshman year of high school would build the foundation of seeing college as an obtainable goal. This may include teaching executive

functioning skills, such as impulse control, working memory, and planning, if equal opportunities were to exist for all Americans, minority populations must be better prepared for success in higher education. For this to happen, stakeholders in education should realize the wide range of obstacles that prevented underserved populations from accessing post-secondary education opportunities, followed by appropriate corrective measures (Martinez, 2006; Reid & Moore, 2008). The post-secondary educational process for first-generation, urban college students started long before their first day in college. For first-generation urban college students, there must be an ongoing process of information dissemination about college throughout their education for both the students and their families (Wimberly & Noeth, 2004).

Poverty. Students who receive free and reduced-price meals, by definition, come from families with low income. Specifically, these students were from families with incomes at or below 130% of the poverty level. Students who receive reduced priced meals were from families with incomes between 130% and 185% of the poverty level. From July 2013 through June 2014, 130% of the poverty level was $30,615 for a family of four; 185% was $43,568 (Ryan, Wilson, &Dunham, 2016). Researchers stated that students of color who also lived in poverty were overrepresented in the lowest performing schools and as a result, endured the burden of school reform policies and sanctions affiliated with NCLB and state-level accountability systems (Welton & Williams 2015).

When compared to their counterparts at predominately White and affluent schools, students attending high ‘minority,’ high poverty schools were less likely to matriculate to any form of post-secondary education, particularly four-year universities.

Likewise, students from high 'minority,' high poverty high schools were admitted and enrolled in prestigious state flagship institutions at lower rates, and there were higher proportions of students academically ineligible for these institutions when compared to students from predominately White and affluent high schools. Rowan et al. (2004) suggested that in the United States, the gaps in achievement among poor and advantaged students were substantial. There was a strong, linear correlation between achievement on the ACT and a student's family income. According to Orlich and Gifford (2006), the higher a student's family income, the higher the student's ACT score. Furthermore, Maslow's hierarchy provided one potential explanation why students from low SES families struggled in school. Researchers and educational professionals found that students from low SES families were often not provided with family motivation to succeed at school (Usher & Kober, 2012). Some parents expected their children to simply do as well as they did in school. Often, low income earners did not do well in school. Consequently, some low-income earners do not expect their children to do well in school (Hart, 2014). Students in high poverty schools had less access to their counselors, typically due to higher caseloads among school counselors, and were less likely to get college preparatory counseling (Chambers, Walpole, & Outlaw, 2016).

School Counselor's Role

The literature review indicated that the school counselor had an important connection in providing students with information about colleges, the college application process, scholarship information, and financial aid information. It was important for the school counselor to be knowledgeable in the process and have a system in place to

disseminate the information to interested parties, including students, parents, and faculty members (Reid & Moore, 2008).

According to the ASCA (2012) national model, school counseling programs should meet the needs of all students, regardless of their backgrounds, across three domains: (a) social/emotional (i.e. managing emotions and applying interpersonal skills), (b) academic (i.e. maximizing students' ability to learn), and (c) career (i.e. supporting students' college and career planning and development). School counselors deliver services and programs to students through large group, classroom, small group, and/or individual methods, such as short-term counseling (ASCA, 2012). Hines, Lemons and Crews (2011) also suggested that school counselors were responsible for each and every student in the building, and unlike others on campus, they were in a position to focus on the educational journey of each student.

The authors also concluded that the caliber of course selection strongly shaped the choices students had after they leave high school. Yet, few students were equipped to determine which combination of courses would best prepare them for success after graduation. School counselors could help. These educators knew how to create course schedules that would prepare students for the twin options of college and career (Hines et al., 2011). Additionally, Sciarra and Ambrosino (2011) indicated that the more knowledge school counselors had about the role of expectations in relation to post-secondary educational attainment, the more able they would be to help students achieve commensurate with their ability. As school counselors do an excellent job of helping more and more students continue their education beyond high school, more research is needed into college persistence.

Martinez, Baker, and Young, 2017, suggested that school counselors were well positioned as the school professionals best able to guide all students toward college and career readiness. To be effective leaders in establishing a college-going culture, counselors must be strong advocates for their students and their profession and possess the skills to drive positive change in the school.

Step 1: Collect, analyze and interpret data to identify gaps in student outcomes. Examine data elements that describe student outcomes, disaggregated by race/ ethnicity, gender, family income and other relevant measures, in order to identify student, school and community needs. Analyze data to identify inequities.

Step 2: Develop and prioritize measurable, data-driven goals aligned with school, district, state and national goals. Goals should be specific, quantifiable, time-sensitive statements of what is going to be achieved and when it will be achieved.

Step 3: Develop strategies and interventions to meet goals. Develop solutions and interventions that can be successfully implemented within the context of the school and community and will gain support from stakeholders.

Step 4: Develop and implement the plans for each goal, including benchmarks to monitor progress. Develop multilevel action plans for each goal. Identify action items, the specific individuals responsible for implementation and key milestones, and timelines that correspond to each goal.

Step 5: Collect and report outcome data to all stakeholders, and adjust strategies and interventions as needed based on results. Collect results data to determine whether the goals were reached and if strategies or implementations need to be adjusted. Present results to administrators and other stakeholders.

> **Step 6**: Institutionalize policies, practices and procedures to sustain gains in equity. Identify the strategies and interventions that result in positive student outcomes and equity gains to make them standard operating procedure within the context of the school (NOSCA, as cited in College Board, 2010, p. 2).

Furthermore, just as counselors learn about a variety of general counseling and human development theories early in their graduate programs to help them conceptualize the issues their clients bring to them, they also should learn career counseling theories. Council for Accreditation of Counseling and Related Educational Programs Standards (CACREP, 2009) specified that career counseling theories help to explain career-related thoughts and behaviors and provide a framework for understanding students and developing interventions (Council for Accreditation of Counseling and Related Educational Programs Standards [CACREP], 2009; NCDA, 2009). According to Curry and Milson (2014) in any profession, basic knowledge and skills were requisite for an individual to competently engage in the tasks and responsibilities of that profession. Fortunately, for those individuals who wished to engage in career development counseling in schools, a number of documents were available to provide guidance on the development of training and professional development programs.

Other research suggested three additional areas counselors should have knowledge and training in.

First. The National Career Development Association Minimum Competencies for Multicultural Career Counseling and Development (NCDA, 2009). This document provided an overview of nine general competency areas for career counseling. It also emphasized that career counseling must be provided to all individuals, regardless of their

background, and that services should take into consideration the unique needs of individual clients.

Second. Career Counselor Assessment and Evaluation Competencies (2010). This document was developed because of the importance of assessment and evaluation in effective career counseling. Competencies in eight areas were reviewed.

Third. CACREP (2009). CACREP provided guidance for content to be covered in counselor education programs. Seven core content standards for career development were outlined. Also outlined were standards in areas that have relevance to career counseling (e.g., assessment, diversity).

Summary

In order for students to graduate from high school and college, and be career ready, students must be fully equipped with awareness and skills. Studies highlighted the definition of preparation needed for post-secondary planning in rural, suburban, and urban high schools. Studies also reviewed the factors that contributed to success and risk factors that led students to be unsuccessful and unequipped for post-secondary education or career. This review touched on how rigorous courses and the ACT test were necessary for students to be successful in college, and how career education was vital for students entering into the workforce. This literature highlighted information about the benefits of school counselors assisting all students, in particular homeless students, students of color, students living in poverty, and first-generation students. Every state developed content standards that specified what students should know and be able to do in a broad range of subject areas (Conley, 2013).

The state of Missouri implemented the following four areas of College and Career Readiness that districts were to adhere to: assessment, curriculum, career education, and school counseling. This study aimed to investigate college and career readiness in rural, suburban, and urban schools in the state of Missouri. Chapter Three outlines the methodology used for this study.

Chapter Three: Methodology

Purpose

The purpose of this study was to analyze and examine how high schools in the state of Missouri's rural, suburban, and urban areas, were preparing students for post-secondary education and career readiness. The researcher analyzed the state of Missouri secondary data gathered from the 2013 through 2017 school years, in urban, suburban, and rural high schools. The researcher also surveyed school guidance counselors and administrators. The data represented consisted of ACT Composite Scores, APRs, Post-Secondary Placements, Career and Technical Education Placements, Dropout Rates, and Graduation Rates, all of which were publicly available information. A mixed-methods study enabled the researcher to use both quantitative and qualitative data in one study in order to produce various types of results; so, analysis could provide further understanding.

The quantitative aspect of this study enabled the researcher to examine overall school districts' student ACT Composite Scores, APRs, Post-Secondary Placements, Career and Technical Education Placements, Dropout Rates, and Graduation Rates, to see which schools were meeting the state-approved targets. Academic achievement targets were based on the goal of improving total student proficiency levels on state assessments by 25% by 2020 (MODESE, 2012).

Student Gap Group targets were based on the goal of cutting the achievement gap in half for students in historically under-performing subgroups (Black, Hispanic, FRL, students with disabilities, and English Language Learners). School and district

accountability determinations were made for the ‘all students’ group and for the ‘super subgroup’ (MODESE, 2012).

Determinations were made for Local Education Agencies (LEAs) and schools that served 30 or more students and for super subgroups of 30 or more students in a single accountability year. Multiple years of data were used for buildings, or LEAs, with fewer than 30 students. School and LEA reports were produced for the ‘all students’ group and for up to nine additional subgroups: Asian/Pacific Islander, Black, Hispanic, American Indian, White, multi-racial, students with disabilities, English Language Learners, and low income students (MODESE, 2012).

This type of study allowed the researcher to compare the scores of rural, suburban, and urban scores. Furthermore, the quantitative portion of the study led to the examination of the similarity, or lack thereof, between rural, suburban, and urban schools. The data collected could lead to possible changes in the methods used to prepare students, teachers, administrators and school guidance counselors for college and career readiness.

The qualitative aspect of this study produced feedback from the administrators and guidance counselors in rural, suburban, and urban schools. The researcher emailed administrators and school counselors of rural, suburban, and urban schools a survey. Participants were asked to answer the survey and reply their responses through google forms.

College and career readiness meant that a high school graduate had the necessary English and mathematics knowledge and skills — including, but not limited to, reading, writing, communications, teamwork, critical thinking, and problem solving — either to

qualify for and succeed in entry-level, credit-bearing two- or four-year college courses, without the need for remedial coursework, or in workforce training programs for his/her chosen career that offered competitive, livable salaries above the poverty line, offered opportunities for career advancement, and were in a growing or sustainable industry (MODESE, 2015a).

Data Collection

The data were collected from five school years (2013-2017), from a total 45 high schools (14 of urban, suburban, and rural high school buildings) in the state of Missouri. All schools were randomly selected, with the exception of the urban schools, due to only 14 schools in the urban areas of the state.

According to Reeves (2003), "Characteristics unique to rural areas include geographic isolation, small populations, and declining enrollments. Rural schools and districts tend to be smaller than their urban and suburban counterparts" (p. 2).

> Suburban schools are schools that exists in the outer suburbs of a city. A suburban school is still administered by the school district it is in but because of the middle-class suburb that surrounds the school, it will generally reflect the affluence of its community. (Silvestri, 2018)

Urban schools were schools located in the metropolitan communities that typically were diverse, characterized by large enrollments and complexity, and many struggling with growth (Dwyer, 2016).

The data for this study were obtained from MODESE. MODESE provided a report card for each school in the state of Missouri, which included ACT Composite Scores, APRs, Post-Secondary Placements, Career and Technical Education Placements,

Dropout Rates, and Graduation Rates, and information pertaining to the standing of each school and district. Additionally, MODESE provided information regarding schools receiving federal funding under various programs. This information was routinely made available on the website for MODESE.

Once the researcher received approval from the Institutional Review Board of the sponsoring institution, counselors and administrators were asked to answer a voluntary question survey (see Appendix C). The research questions were developed by the researcher. A total of four questions were emailed to school counselors and administrators. The following questions were asked:

Question 1. Regarding post-secondary planning, what strategies have proven to be successful in your setting?

Question 2. Regarding post-secondary planning, what strategies have proven to be unsuccessful in your setting?

Question 3. Regarding career workforce preparation, what strategies have proven to be successful in your setting?

Question 4. Regarding career workforce preparation, what strategies have proven to be unsuccessful in your setting?

If the participants did complete the survey, an informed consent (see Appendix A) to use the content of the survey was completed and returned to the researcher. The researcher expected a minimum of 44 completed surveys; however, only nine were received.

Methodology

The researcher analyzed five school years (2013-2017) of secondary data from MODESE of 14 urban, 14 suburban, and 14 rural high schools in the state of Missouri. A Pearson Product Moment Correlation Coefficient (PPMCC) analysis was applied for Hypotheses 1, 4, 5, and 6. The researcher used *t*-test for Hypotheses 2 and 3. The researcher analyzed data gathered from the following: ACT Composite Scores, APRs, Post-Secondary Placements, Career and Technical Education Placements, Dropout Rates, and Graduation Rates.

The researcher also emailed administrators and school guidance counselors of the randomly selected schools a questionnaire. Participants were asked to answer the questionnaire and reply their responses through google forms.

Null Hypotheses

In order to test the null hypotheses, a *t*-test for difference in means was conducted on each of the areas measured. This study tested the following null hypotheses:

Null Hypothesis 1. There is a relationship between college entrance rates of urban, suburban, and rural high schools and the percentage of students who score at or above the qualifying score on the ACT test.

***Sub Null Hypothesis 1a*.** There is a relationship between type of high school, urban, suburban, or rural, and the percentage of students who score at or above the qualifying score on the ACT test and subtests.

Sub Null Hypothesis 1b. There is a difference between the percentage of students who score at or above the qualifying score on the ACT test and subtests, with regard to the type of high school, urban, suburban, or rural.

Null Hypothesis 2. There is a difference in the number of Annual Performance Report points between urban, suburban, and rural High Schools.

Null Hypothesis 3. There is a difference in the number of students in urban, suburban, and rural high schools enrolled in Career and Technical Education programs.

Null Hypothesis 4. There is a relationship between college entrance rates of urban, suburban, and rural high schools and high school dropout rates.

Null Hypothesis 5. There is a relationship between college entrance rates of urban, suburban, and rural high schools and high school graduation rates.

Research Questions

Research Question 1. What are the successful and non-successful strategies according to administrators and school counselors in urban, suburban, and rural school buildings in the state of Missouri with regard to preparation for post-secondary education and career workforce preparation?

Data Analysis

Fraenkel and Wallen (2009) stated that mixed-methods research involved the use of both quantitative and qualitative methods in a single study. Mixed-methods research could help to clarify and explain relationships found to exist between variables. Mertler and Vannatta (2005) stated that the first step in most data analysis circumstances was to "describe or summarize the data collected on a set of subjects that constitute the sample size" (Mertler & Vannatta, 2005, p. 7). Descriptive statistics involved determining measures of central tendency, variability, relative position, and relationship. The mode, median, and mean were all components of measures of central tendency (Mertler & Vannatta, 2005). Descriptive statistics were used in the present study to provide a

description of the major variables and compare overall scores and scores for each rural, suburban, and urban school district. Fraenkel and Wallen (2009) stated that the PPMCC (Pearson r) was an index of correlation appropriate when the data represented either interval or ratio scales; it took into account each pair of scores and produced a coefficient between 0.00 and either $\pm$1.00.

The researcher emailed administrators and school counselors of rural, suburban, and urban schools a survey. Researcher asked the following questions.

1) Describe your school and school setting?
2) Regarding post-secondary planning, what strategies have proven to be successful in your school setting?
3) Regarding post-secondary planning, what strategies have proven to be unsuccessful in your school setting?
4) If you could change anything about your schools program, what might that they be?

Participants were asked to answer the survey and reply their responses through google forms. A total of 90 surveys were emailed; out of the 90 surveys, only nine responded. Of the nine returned, three were from rural schools, three were from suburban schools, and three were from urban schools. The data were sorted to identify trends and patterns. This information was used to determine the effectiveness of the plan put in place by the researcher. Chapter Four provide a detailed overview of the results of the data as they relate to the null hypotheses.

Establishing Processes

The researcher was interested in examining how rural, suburban, and urban schools were preparing their students for college and career readiness. This research used the regression analysis model for Null Sub Hypotheses 1a and 1b. Before checking for a potential relationship between college entrance rates and percentages of qualifying students, measured by ACT score, the researcher checked the consistency of the measure of ACT scores from year to year, among the research sites. This was accomplished with Null Sub Hypotheses 1a and 1b, which called for a check for relationships and differences. Table 2 summarizes the percent of students scoring at or above the minimum required ACT score.

Table 2

Data: Percentage of Students at or Above Minimum ACT Score

Type	2013	2014	2015	2016	2017	AVE
1	32	44.7	31.3	35.1	33.7	35.36
1	33.3	33.3	30.2	48.6	37.4	36.56
1	34.2	33.8	33.3	49.8	36.5	37.52
1	18.5	21.9	16.3	17.9	20.8	19.08
1	26.9	23.4	18.9	35.2	21.8	25.24
1	33.6	22.4	20.7	34.7	23	26.88
1	28.1	25.3	22.8	34.5	24.4	27.02
1	24.3	21.6	21.7	31.5	28.4	25.5
1	45.5	20	20.8	17.6	13	23.38
1	35.1	34.1	22.4	37.7	32.3	32.32
1	31.5	24.6	26.6	36	26.3	29
1	31.9	26.1	29.9	39	32.9	31.96
1	41.5	41.3	39.7	53.4	45.9	44.36
1	42.1	16.7	26.1	12.5	27	24.88
2	36.7	33	34.4	43.3	45.5	38.58
2	75	73	67.3	79.8	71.7	73.36
2	8.4	12	4.6	8.4	6.5	7.98
2	21.4	22.3	17.5	28.1	21.4	22.14
2	61.4	57.4	55.8	64.2	64.4	60.64
2	68.8	67.4	64.1	75.9	72.3	69.7

Continued

Table 2. Continued

2	59.8	56.3	50.3	63.3	60.6	58.06
2	11.2	9.8	11	11.3	7.6	10.18
2	37.4	32.1	36.8	41.2	34.5	36.4
2	65.9	64.2	57.4	67.1	61.2	63.16
2	64.3	58.3	54	60.2	66.3	60.62
2	16.7	12.3	13.4	17.9	15	15.06
2	4	3.2	0.5	4.3	2.1	2.82
2	18.6	15.9	14.4	18.3	9.2	15.28
3	6.1	9.5	9	15.7	2.3	8.52
3	12.7	9.3	14.5	6.7	8.2	10.28
3	63.6	61.1	68.6	61.7	46.8	60.36
3	85.1	78.3	84.1	80.3	82.1	81.98
3	2.8	1.1	1.5	0	1.2	1.32
3	2.6	0	1.9	1.8	0	1.26
3	11.5	4.9	5.7	7.2	3.7	6.6
3	0	1.4	0	2.4	0	0.76
3	0	0.5	0	0	0	0.1
3	10.4	9.5	8.4	15.7	5.3	9.86
3	5	3.5	8.6	6.4	5.6	5.82
3	14	7.5	9	10.4	15.6	11.3
3	1.6	2.9	1.3	3.4	2.9	2.42

Annual Performance Report

The APR "supports the MSIP policy goals of articulating the state's expectations, distinguishing the performance of schools and districts, empowering stakeholders, and promoting continuous improvement" (as cited in MODESE, 2018, p. 1). To determine a valid assessment of how rural, suburban, and urban schools performed, an Analysis of Variance (ANOVA) was applied to APR data averages for the years 2013, 2014, 2015, and 2016, to check for potential differences in the number of APR points present between rural, suburban, and urban high schools.

Career and Technical Education Programs (CTE)

The Career and Technical Education Programs combined academics and occupational skills training, allowing students to learn more about possible career paths in agriculture, business, health sciences, family consumer sciences, skilled technical

sciences, and marketing and cooperative education (MODESE, 2015). The researcher was interested in how many students utilized the career and technical education programs in rural, suburban, and urban schools. Null Hypothesis 3 allowed a check for potential differences in the number of students who attended each type of post-secondary institution.

Dropout Rates

This study examined the number of students who dropped out of school in the rural, suburban and urbans schools. Much of the data that pertained to dropout rates were the result of the Missouri Revised Statute §167.275, which required secondary schools to consistently document and report dropout rates for youth 16-years-of-age or older (Missouri Revised Statute, 2015). Only those who left school to attend another school, joined the armed forces, or attended a college or university were not included in the report (Missouri Revised Statute, 2015, Chapter 167.275.1). Thus, MODESE used annual dropout rate reports to determine retention rates. Dropout rates in the state of Missouri were calculated for grades 9 through 12. The rate was the number of dropouts divided by the total of September enrollments, plus transfers, minus transfers out, minus dropouts, combined with the September enrollment. This number was then divided by two (MODESE, 2010).

Graduation Rates

MODESE looked at a four-year and five-year graduation rate. This study used the four-year rate, which was the number of students who graduated in four years divided by the number of students who formed the cohort for the graduating class, rounded to the nearest tenth. The cohort was made up of students who started the 9th grade, adjusted by

adding any students who transferred into the cohort during the 9th grade and the next three years, and then subtracting all students who left for the following reasons: transferred out, immigrated to another country, or died during the same period. A mean graduation rate was also used for this dissertation to analyze the number of students who graduated with their cohort within four years. Additionally, this study also looked at the college entrance rates into two-year and four-year technical colleges.

Survey

Researcher emailed administrators and school guidance counselors of rural, suburban, and urban schools a survey. Participants were asked to answer the survey and reply their responses through google forms. A total of 90 surveys were emailed, 45 to principals and 45 to school guidance counselors; out of the 90 surveys only nine responded to the survey. Of the nine returned, three were from rural school's guidance counselors, three returned surveys were from suburban schools, two guidance counselors and one from the principal, and finally, three returned surveys were from the urban schools' guidance counselors.

Limitations

In conducting the study, a number of limitations were observed. These included: The study reviewed 14 rural, 14 suburban, and 14 urban high schools in the State of Missouri. Nine surveys were completed and returned. Due to the total amount of schools researched, the researcher did not visit each school, and relied only on the MODESE website data.

The interview questions were considered a limitation, as they were written by the researcher, with help from the chair and committee. Due to the number of responses

received from the administrators and counselors of rural, suburban, and urban schools, the results were condensed.

The data for the 42 schools were limited to the student population identified by MODESE, the percentage for each school created a loss of some documentation on students who started in a particular school building, but did not finish in that school building.

Summary

The purpose of this study was to analyze how high schools in the state of Missouri's rural, suburban, and urban areas prepared students for post-secondary education and career readiness. The researcher analyzed the state of Missouri secondary data gathered from the 2013 through 2017 school years, in urban, suburban, and rural high schools. The researcher also surveyed school guidance counselors and administrators. The quantitative data represented consisted of ACT Composite Scores, APRs, Post-Secondary Placements, Career and Technical Education Placements, Dropout Rates, and Graduation Rates. Additionally, quantitative data were gathered from MODESE yearly report cards.

The descriptive analysis showed substantial differences existed in the percentage of students meeting the minimum ACT cut off score between rural, suburban, and urban school districts in Missouri, for the years 2013, 2014, 2016, and 2017.

Chapter Four: Findings

The purpose of this study was to analyze how high schools in the state of Missouri's rural, suburban, and urban areas were preparing students for post-secondary education and career readiness. The researcher analyzed the state of Missouri secondary data gathered from the 2013 through 2017 school years, in urban, suburban, and rural high schools. The researcher also surveyed school guidance counselors and administrators. The data represented consisted of ACT Composite Scores, APRs, Post-Secondary Placements, Career and Technical Education Placements, Dropout Rates, and Graduation Rates, all of which were publicly available.

Null Hypotheses

Null Hypothesis 1. There is a relationship between college entrance rates of urban, suburban, and rural high schools and the percentage of students who score at or above the qualifying score on the ACT test. Only suburban schools showed a steady relationship between these variables for the years examined in this study.

Before checking for a potential relationship between college entrance rate and percentages of qualifying students, measured by ACT scores, the researcher checked the consistency of the measure of ACT scores from year to year among the research sites. This was accomplished with Null Hypotheses 1a and 1b, which called for a check for relationships and differences.

***Sub Null Hypothesis 1a*.** There is a relationship between type of high school, urban, suburban, or rural, and the percentage of students who score at or above the qualifying score on the ACT test.

A Pearson Product Moment Correlation Coefficient (PPMCC) was applied to the percentage of students scoring at or above the ACT cut-off mark for the years 2013 through 2017.

A PPMCC was applied to the percentage of students scoring at or above the ACT cut-off mark for the years 2013 through 2017. Results, shown on Table 3, indicate a year-to-year relationship between percentages of successful scoring on the ACT (*r* = ranging between .9360 and .9910; *r*-critical = .304). The relationships between the year-to-year percentages indicated consistent scoring by students on the ACT throughout the study timeline.

Table 3

PPMCC*: Type of School vs. ACT Percentage*

	Type	2013	2014	2015	2016	2017	AVE
Type	1						
2013	-0.2809	1					
2014	-0.2367	0.9607	1				
2015	-0.1713	0.9715	0.9777	1			
2016	-0.3032	0.9360	0.9718	0.9561	1		
2017	-0.2630	0.9554	0.9726	0.9653	0.9679	1	
AVE	-0.2564	0.9789	0.9910	0.9882	0.9813	0.9870	1

Note: The table entries are PPMCC values. A negative value indicates an inverse relationship between the two variables. For example, a negative *r* value could indicate that enrollment in college went up when the percent of students who met the minimum ACT score to quality went down.

As indicated by regression statistics on Table 4, there was a moderate relationship between the type of school and the percentage of students meeting or exceeding the minimum ACT score (*r* = .679; *r*-critical = .304).

Table 4

Summary Output: Regression Analysis	
Regression Statistics	
Multiple R	0.679412
R Square	0.4616
Adjusted R Square	0.359044
Standard Error	0.647113
Observations	42

There was a relationship between type of high school, urban, suburban, or rural, and the percentage of students who scored at or above the qualifying score on the ACT test.

Sub Null Hypothesis 1b. There is a difference between the percentage of students who score at or above the qualifying score on the ACT test with regard to the type of high school, urban, suburban, or rural.

Significant differences existed in the percentage of students meeting the minimum cut off score between rural, suburban, and urban school districts in Missouri, for the years 2013, 2014, 2016, and 2017. An Analysis of Variance (ANOVA) was applied to the data. The test statistic, *F*, compared to *F*-critical indicated rejection of the null sub-hypothesis for these years (*F* = 3.715; 3.978; 2.523; 4.836; 5.091; *F*-critical = 3.259). In every year, the suburban percentage was significantly higher than both rural and urban; the urban percentage was lowest.

In 2013, the average percentages for rural, suburban, and urban schools in the state of Missouri, were 32.030, 40.846, and 17.876, respectively, as indicated on Table 5. There were significant differences (*F*=3.715; *F*-critical = 3.259).

Table 5

2013: ANOVA Single Factor Results

Groups	*Count*	*Sum*	*Average*	*Variance*
Rural	13	416.4	32.030	47.850
Suburban	13	531.0	40.846	682.244
Urban	13	232.4	17.876	679.403

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3491.05	2	1745.527	3.715	0.0341	3.259
Within Groups	16913.98	36	469.832			
Total	20405.04	38				

In 2014, the average percentages for Rural, Suburban, and Urban schools in the state of Missouri, were 28.653, 38.561, and 15.576, respectively, as shown on Table 6. There were significant differences (F=3.978; F-critical = 3.259).

Table 6

2014: ANOVA Single Factor Results

Groups	*Count*	*Sum*	*Average*	*Variance*
Rural	13	372.5	28.653	63.859
Suburban	13	501.3	38.561	628.675
Urban	13	202.5	15.576	610.458

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3455.66	2	1727.83	3.978	0.0274	3.259
Within Groups	15635.93	36	434.33			
Total	19091.59	38				

Only the year 2015 did not yield significant differences between rural, suburban, and urban academic performance on the ACT. In 2015, though the suburban percentage was higher than the rural percentage, the difference was not significant (F = 2.523; F-critical = 3.259). The average percentages for rural, suburban, and urban schools in the state of Missouri were 25.738, 35.930, and 17.361, respectively (Table 7)

Table 7

2015: ANOVA Single Factor Results

Groups	*Count*	*Sum*	*Average*	*Variance*
Rural	13	334.6	25.73846	45.2259
Suburban	13	467.1	35.93077	572.929
Urban	13	225.7	17.36154	718.5626

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2248.447	2	1124.223	2.523099	0.094304	3.259446
Within Groups	16040.61	36	445.5725			
Total	18289.06	38				

In 2016, the average percentages for rural, suburban, and urban schools in the state of Missouri were 36.230, 43.461, and 17.430, respectively. As indicated on Table 8, there were significant differences (F=4.836; F-critical = 3.259).

Table 8

2016: ANOVA Single Factor Results

Groups	*Count*	*Sum*	*Average*	*Variance*
Rural	13	471	36.23077	112.914
Suburban	13	565	43.46154	727.2626
Urban	13	226.6	17.43077	615.6573

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	4694.408	2	2347.204	4.836824	0.013787	3.259446
Within Groups	17470.01	36	485.2779			
Total	22164.41	38				

In 2017, the average percentages for rural, suburban, and urban schools in the state of Missouri, were 28.953, 40.700, and 13.846, respectively. As indicated on Table 8, there were significant differences (F=5.091; F-critical = 3.259).

Table 9

2017: ANOVA Single Factor Results

Groups	*Count*	*Sum*	*Average*	*Variance*
Rural	13	376.4	28.95385	75.03936
Suburban	13	529.1	40.7	736.8783
Urban	13	180	13.84615	576.121

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	4711.822	2	2355.911	5.091885	0.011289	3.259446
Within Groups	16656.46	36	462.6796			
Total	21368.29	38				

Null Hypothesis 1. There is no relationship between college entrance rates of urban, suburban, and rural high schools and the percentage of students who score at or above the qualifying score on the ACT test. For the years of the study, 2013, 2014, 2015, 2016, and 2017, the researcher applied a PPMCC analysis to check for a potential relationship between four-year-college entrance rates and percentages of students with a qualifying ACT score, for the type of school, urban, suburban, and rural.

Four-year enrollments

Urban. In the urban districts analyzed in this study, there was no relationship between the percent of students who enrolled in a four-year college and the percent of students who scored at or above the qualifying ACT mark (r = .0779; .0622; .0829; .1479; .0662). Correlation coefficients showing a year-to-year comparison among the urban schools are included in Table 10 (r-critical = .302).

Table 10

PPMCC Comparison of Four-Year College Enrollment and ACT Scores - Urban

	2013-ACT	2014-ACT	2015-ACT	2016-ACT	2017-ACT
2013-%	0.0779	0.0647	0.0696	0.0545	0.0795
2014-%	-0.0690	-0.0622	-0.0575	-0.0664	-0.0770
2015-%	0.0726	0.0718	0.0829	0.0537	0.0471
2016-%	-0.1698	-0.1422	-0.1633	-0.1479	-0.1506
2017-%	0.0945	0.0804	0.0815	0.0619	0.0662

Note: The table entries are PPMCC values. A negative value indicates an inverse relationship between the two variables. For example, a negative *r* value could indicate that enrollment in college went up when the percent of students who met the minimum ACT score to quality went down.

Suburban. In the suburban districts analyzed in this study, there was a strong relationship between the percent of students who enrolled in a four-year college and the percent of students who scored at or above the qualifying ACT mark (*r* = .8819; .9386; .9147; .9440; .9365). Correlation coefficients showing a strong year-to-year relationship for every year included in this study among the Suburban schools are included in Table 11 (*r*-critical = .302).

Table 11

PPMCC Comparison of Four-Year College Enrollment and ACT Scores - Suburban

	2013-ACT	2014-ACT	2015-ACT	2016-ACT	2017-ACT
2013-%	0.8819	0.8990	0.8730	0.8721	0.8331
2014-%	0.9276	0.9386	0.9245	0.9202	0.8812
2015-%	0.9108	0.9280	0.9147	0.9036	0.8728
2016-%	0.9517	0.9561	0.9529	0.9440	0.9173
2017-%	0.9623	0.9733	0.9659	0.9601	0.9365

Note: The table entries are PPMCC values. A negative value indicates an inverse relationship between the two variables. For example, a negative *r* value could indicate that enrollment in college went up when the percent of students who met the minimum ACT score to quality went down.

Rural. In the rural districts analyzed in this study, there was no relationship between the percent of students who enrolled in a four-year college and the percent of students who scored at or above the qualifying ACT mark (*r* = .2799; .0004; .0486; .2696; .0754). Only two coefficients indicated a significant relationship; the 2013 ACT

percentage indicated a moderate relationship to the 2015 and 2017 four-year college enrollment percentage (r = .4084; .3218). However, these relationships were not meaningful in supporting Hypothesis 1. Correlation coefficients showing a year-to-year comparison among the rural schools are included in Table 12 (r-critical = .302).

Table 12

PPMCC Comparison of Four-Year College Enrollment and ACT Scores - Rural

	2013-ACT	2014-ACT	2015-ACT	2016-ACT	2017-ACT
2013-%	0.2799	-0.1531	-0.0208	-0.0721	-0.2485
2014-%	0.1638	0.0004	-0.0305	-0.0666	-0.1516
2015-%	0.4084	0.0797	0.0486	-0.1231	-0.1030
2016-%	0.2651	0.2240	0.1906	0.2696	0.0165
2017-%	0.3218	0.1737	0.1198	0.0161	-0.0754

Note: The table entries are PPMCC values. A negative value indicates an inverse relationship between the two variables. For example, a negative *r* value could indicate that enrollment in college went up when the percent of students who met the minimum ACT score to quality went down.

Two-year enrollments. For the years of the study, 2013, 2014, 2015, 2016, and 2017, the researcher applied a PPMCC analysis to check for a potential relationship between two-year-college entrance rates and percentages of students with a qualifying ACT score for the type of school, urban, suburban, and rural.

Urban. Comparison of two-year college enrollment rates to the percent of students who scored at or above the qualifying ACT mark for urban schools indicated a significant, moderate relationship for two years of the study, 2014 and 2015 (r = .5422; .3701; r-critical = .302). No relationship was found for the other years of the study, 2013, 2016, and 2017 (r = .0970; .0753; .0437; r-critical = .302). PPMCC values are shown in Table 13.

Table 13

PPMCC Comparison of Two-Year College Enrollment and ACT Scores - Urban

	2013-ACT	2014-ACT	2015-ACT	2016-ACT	2017-ACT
2013-%	0.0970	0.1222	0.1258	0.1493	0.1021
2014-%	0.5403	0.5422	0.5544	0.5452	0.4771
2015-%	0.3386	0.3583	0.3701	0.3785	0.3073
2016-%	0.1034	0.0770	0.1360	0.0753	0.0524
2017-%	-0.0105	-0.0028	0.0388	-0.0093	-0.0437

Note: The table entries are PPMCC values. A negative value indicates an inverse relationship between the two variables. For example, a negative r value could indicate that enrollment in college went up when the percent of students who met the minimum ACT score to quality went down.

Suburban. In comparison of two-year college enrollment rates to the percent of students who scored at or above the qualifying ACT mark, for Suburban schools, a significant, moderate relationship was found for all years of the study, 2013, 2014, 2015, 2016, and 2017 (r = .6420; .7045; .4657; .4440; .6509; r-critical = .302). PPMCC values are shown in Table 14.

Table 14

PPMCC Comparison of Two-Year College Enrollment and ACT Scores - Suburban

	2013-ACT	2014-ACT	2015-ACT	2016-ACT	2017-ACT
2013-%	-0.6420	-0.6537	-0.6362	-0.6238	-0.6037
2014-%	-0.6648	-0.7045	-0.6586	-0.6700	-0.6440
2015-%	-0.4760	-0.5173	-0.4657	-0.4583	-0.4149
2016-%	-0.4699	-0.4633	-0.4720	-0.4440	-0.4351
2017-%	-0.6669	-0.6782	-0.6438	-0.6514	-0.6509

Note: The table entries are PPMCC values. A negative value indicates an inverse relationship between the two variables. For example, a negative r value could indicate that enrollment in college went up when the percent of students who met the minimum ACT score to quality went down.

Rural. In the rural districts analyzed in this study, there was no relationship between the percent of students who enrolled in a two-year college and the percent of students who scored at or above the qualifying ACT mark (r = .1381; .0671; .0449; .2738; .0494; r-critical = .302). PPMCC values are shown in Table 15.

Table 15

PPMCC Comparison of Two-Year College Enrollment and ACT Scores - Rural

	2013-ACT	2014-ACT	2015-ACT	2016-ACT	2017-ACT
2013-%	0.1381	0.1964	0.1418	0.1125	0.2618
2014-%	0.3887	-0.0671	0.0297	-0.2633	-0.0079
2015-%	0.0659	-0.0620	-0.0449	0.0499	-0.0660
2016-%	0.5248	-0.1208	-0.1300	-0.2738	-0.1728
2017-%	0.3046	0.0437	-0.0428	0.0006	-0.0494

Note: The table entries are PPMCC values. A negative value indicates an inverse relationship between the two variables. For example, a negative r value could indicate that enrollment in college went up when the percent of students who met the minimum ACT score to quality went down.

Technical school enrollments. For the years of the study, 2013, 2014, 2015, 2016, and 2017, the researcher applied a PPMCC analysis to check for a potential relationship between technical school post-secondary entrance rates and percentages of students with a qualifying ACT score for the type of school, urban, suburban, and rural.

Urban. A check for relationships between the percent of students who scored at or above the qualifying ACT score for enrollment and the percent of students who enrolled in a technical education program following high school graduation indicated no relationships found for the study years, 2013, 2014, 2015, 2016, and 2017 (r = .1520; .1913; .2050; .0608; .1816; r-critical = .302).

Table 16

PPMCC Comparison of Technical College Enrollment and ACT Scores - Urban

	2013-ACT	2014-ACT	2015-ACT	2016-ACT	2017-ACT
2013-%	0.1520	0.2046	0.1783	0.2549	0.1816
2014-%	0.1725	0.1913	0.1647	0.1842	0.2117
2015-%	-0.2021	-0.2005	-0.2050	-0.2316	-0.1861
2016-%	-0.0392	-0.0246	-0.0558	0.0608	-0.0901
2017-%	0.1520	0.2046	0.1783	0.2549	0.1816

Note: The table entries are PPMCC values. A negative value indicates an inverse relationship between the two variables. For example, a negative r value could indicate that enrollment in college went up when the percent of students who met the minimum ACT score to quality went down.

PPMC values for comparison among urban schools are displayed in Table 16.

Suburban. A check for relationships between the percent of students who scored at or above the qualifying ACT score for enrollment and the percent of students who enrolled in a technical education program following high school graduation indicated moderate relationships found for each of the study years, 2013, 2014, 2015, 2016, and 2017 (r = .3216; .4949; .5364; .3104; .6445; r-critical = .302). PPMC values for comparison among suburban schools are displayed in Table 17.

Table 17

PPMCC Comparison of Technical College Enrollment and ACT Scores - Suburban

	2013-ACT	2014-ACT	2015-ACT	2016-ACT	2017-ACT
2013-%	-0.3216	-0.3394	-0.3391	-0.3465	-0.2833
2014-%	-0.4896	-0.4949	-0.5023	-0.4958	-0.4744
2015-%	-0.5140	-0.5439	-0.5364	-0.5342	-0.4901
2016-%	-0.3416	-0.3903	-0.3117	-0.3104	-0.3231
2017-%	-0.6436	-0.6681	-0.6486	-0.6545	-0.6445

Note: The table entries are PPMCC values. A negative value indicates an inverse relationship between the two variables. For example, a negative r value could indicate that enrollment in college went up when the percent of students who met the minimum ACT score to quality went down.

Rural. A check for relationships between the percent of students who scored at or above the qualifying ACT score for enrollment and the percent of students who enrolled in a technical education program following high school graduation indicated no relationships found for the study years, 2013, 2014, 2015, 2016, and 2017 (r = .2995; .2959; .0362; .2719; .1787; r-critical = .302). PPMC values for comparison among rural schools are displayed in Table 18.

Table 18

PPMCC Comparison of Technical College Enrollment and ACT Scores - Rural

	2013-ACT	2014-ACT	2015-ACT	2016-ACT	2017-ACT
2013-%	0.2995	-0.6083	-0.2146	-0.6265	-0.3972
2014-%	0.3736	-0.2959	-0.2744	-0.7691	-0.5251
2015-%	0.4819	0.0657	0.0362	-0.4567	-0.2319
2016-%	0.6915	-0.0733	-0.0136	-0.2719	-0.3139
2017-%	0.6609	-0.0913	0.0868	-0.3704	-0.1787

Note: The table entries are PPMCC values. A negative value indicates an inverse relationship between the two variables. For example, a negative r value could indicate that enrollment in college went up when the percent of students who met the minimum ACT score to quality went down

Four-year enrollments. For the years of the study, 2013, 2014, 2015, 2016, and 2017, the researcher applied a PPMCC analysis to check for a potential relationship between four-year-college entrance rates and percentages of students with a qualifying ACT score for the type of school, urban, suburban, and rural. Significant relationships for comparison among four-year enrollment, two-year enrollment, and technical school enrollment for urban, suburban, and rural schools are displayed in Table 19.

Table 19

Urban vs Suburban vs Rural; Relationships between Enrollment % and ACT %

	2013	2014	2015	2016	2017
4-year Enrollment					
Urban					
Suburban	x	x	x	x	x
Rural					
2-year Enrollment					
Urban		x	x		
Suburban	x	x	x	x	x
Rural					
Technical School Enrollment					
Urban					
Suburban	x	x	x	x	x
Rural					

Note: X indicates a relationship between post-secondary enrollment and % of students meeting the minimum ACT score, for the year indicated at the top of the column.

Null Hypothesis 2. There is no difference in the number of Annual Performance Report points between urban, suburban, and rural high schools. For Suburban schools, Null Hypothesis 2 was rejected for year-to-year differences, when comparing suburban school results to urban school results. The Null Hypothesis 2 was also rejected for year-to-year differences when comparing rural school results to urban school results. However, Null Hypothesis 2 was not rejected when comparing year-to-year differences for rural school results to urban school results.

Analysis of Variance (ANOVA) was applied to APR data averages for the years 2013, 2014, 2015, and 2016 to check for differences in the number of APR points present between rural, suburban, and urban high schools. Overall, results indicated a significant difference between rural, suburban, and urban schools (F = 6.252; F-critical = 3.238). To isolate where the significant differences occurred, pairings between rural and suburban, suburban and urban, and rural and urban settings were analyzed

Through use of ANOVA, differences between APR points for rural, suburban, and urban school settings were examined for each of the years 2013, 2014, 2015, and 2016, individually. For the year 2013, results indicated a significant difference between rural, suburban, and urban schools (F = 5.180; F-critical = 3.238). To isolate where the significant differences occurred, pairings between rural and suburban, suburban and urban, and rural and urban settings were analyzed. A significant difference was identified between suburban and urban (F = 4.848; F-critical = 4.225), and rural and urban (F = 8.612; F-critical = 4.225). There was no significant difference in the average APR point scores between rural and suburban (F = 0.115; F-critical = 4.225).

For the year 2014, results indicated a significant difference between rural, suburban, and urban schools (F = 5.470; F-critical = 3.238). To isolate where the significant differences occurred, pairings between rural and suburban, suburban and urban, and rural and urban settings were analyzed. A significant difference was identified between suburban and urban (F = 4.362; F-critical = 4.225). Suburban scores were significantly higher, while urban scores were lower. Comparison of rural and urban schools yielded a significant difference (F = 9.076; F-critical = 4.225). There was no significant difference in the average APR point scores between rural and suburban (F = 0.789; F-critical = 4.225).

For the year 2015, results indicated a significant difference between rural, suburban, and urban schools (F = 6.371; F-critical = 3.238). To isolate where the significant differences occurred, pairings between rural and suburban, suburban and urban, and rural and urban settings were analyzed. A significant difference was identified between suburban and urban (F = 6.076; F-critical = 4.225), and rural and urban (F = 7.829; F-critical = 4.225). There was no significant difference in the average APR point scores between rural and suburban (F = 0.289; F-critical = 4.225).

For the year 2016, results indicated a significant difference between rural, suburban, and urban schools (F = 5.283; F-critical = 3.238). To isolate where the significant differences occurred, pairings between rural and suburban, suburban and urban, and rural and urban settings were analyzed. A significant difference was identified between suburban and urban (F = 4.988; F-critical = 4.225), and rural and urban (F = 6.281; F-critical = 4.225). There was no significant difference in the average APR point scores between rural and suburban (F = 0.580; F-critical = 4.225).

Null Hypothesis 3. There is no difference in the number of students in urban, suburban, and rural high schools enrolled in Career and Technical Education programs.

Overall, Null Hypothesis 3 was not rejected. Differences in comparing rural, suburban, and urban schools were not significant. When looking at individual years, for the year 2013 the Null Hypothesis 3 was rejected when comparing rural schools to urban schools and was also rejected when comparing suburban schools to urban schools. The rural enrollment in Career and Technical Education programs was significantly higher than the urban enrollment (F = 5.378; F-critical = 3.283; ave. = 31.3; 0.0). The suburban enrollment in Career and Technical Education programs was significantly higher than the urban enrollment (F = 5.378; F-critical = 3.283; ave. = 23.9; 0.0). However, there was no significant difference between the rural and suburban enrollments. (F = 0.366; F-critical = 4.225). Averages are reported on Table 20.

Table 20

2013 Career and Technical Education Programs

Groups	*Count*	*Sum*	*Average*	*Variance*
Rural	14	31.3	2.235714	6.2393956
Suburban	14	23.9	1.707143	4.4237912
Urban	14	0	0	0

For the year 2014, the Null Hypothesis 3 was not rejected. The rural enrollment in Career and Technical Education programs was not significantly different than the urban enrollment. The suburban enrollment in Career and Technical Education programs was not significantly different than the urban enrollment (F = 0.726; F-critical = 3.283). Averages are reported on Table 21.

Table 21

2014 Career and Technical Education Programs

Groups	*Count*	*Sum*	*Average*	*Variance*
Rural	14	44.6	3.185714	8.744396
Suburban	14	34.1	2.435714	23.1394
Urban	14	22.8	1.628571	3.186813

For the year 2015, the Null Hypothesis 3 was not rejected. The rural enrollment in Career and Technical Education programs was not significantly different than the urban enrollment. The suburban enrollment in Career and Technical Education programs was not significantly different than the urban enrollment (F = 1.490; F-critical = 3.283). Averages are reported on Table 22.

Table 22

2015 Career and Technical Education Programs

Groups	*Count*	*Sum*	*Average*	*Variance*
Rural	14	37.3	2.664286	6.311703
Suburban	14	32.8	2.342857	7.125714
Urban	14	68.2	4.871429	39.95143

For the year 2016, the Null Hypothesis 3 was not rejected. The rural enrollment in Career and Technical Education programs was not significantly different than the urban enrollment. The suburban enrollment in Career and Technical Education programs was not significantly different than the urban enrollment (F = 1.703; F-critical = 3.283). Averages are reported on Table 23.

Table 23

2016 Career and Technical Education Programs

Groups	*Count*	*Sum*	*Average*	*Variance*
Rural	14	39.5	2.821429	6.137198
Suburban	14	20.6	1.471429	2.225275
Urban	14	85.7	6.121429	132.7187

For the year 2017, the Null Hypothesis 3 was not rejected. The rural enrollment in Career and Technical Education programs was not significantly different than the urban enrollment. The suburban enrollment in Career and Technical Education programs was not significantly different than the urban enrollment (F = 3.11; F-critical = 3.283). For 2017, the averages were further apart among the three groups; however, there were no significant differences. Averages are reported on Table 24.

Table 24

2017 Career and Technical Education Programs

Groups	*Count*	*Sum*	*Average*	*Variance*
Rural	14	29.3	2.092857	5.736099
Suburban	14	29.9	2.135714	4.516319
Urban	14	71.8	5.128571	30.64374

Null Hypothesis 4. There is no relationship between college entrance rates of urban, suburban, and rural high schools and high school dropout rates.

Null Hypothesis 4 was rejected for relationships between college entrance rates of urban, suburban, and rural data with regard to high school dropout rates and entrance into two-year and four-year colleges. No significant relationships were found among the data.

Analysis of PPMCCs applied to randomly selected data for dropout rates and college entrance rates in two-year, four-year, and technical colleges indicated significant findings for the years 2013 through 2017 (r-critical = 0.497). The entrance rate into technical colleges for the year 2017 was significantly related to the dropout rate for the years 2013 (r = 0.589), 2014 (r = 0.596), 2015 (r = 0.685), 2016 (r = 0.808), and 2017 (r = 0.773). The entrance rate into technical colleges for the year 2015 was significantly related to the dropout rate for the year 2016 (r = 0.522). All other potential relationships were found to be not significant.

Table 25

College Entrance Rates and High School Dropout Rates

	Type	2013	2014	2015	2016	2017
2013(4)	0.003	-0.478	-0.457	-0.427	-0.399	-0.415
2014(4)	0.013	-0.456	-0.441	-0.392	-0.243	-0.274
2015(4)	0.011	-0.512	-0.498	-0.464	-0.401	-0.412
2016(4)	0.156	-0.342	-0.321	-0.291	-0.377	-0.365
2017(4)	0.071	-0.335	-0.291	-0.271	-0.4	-0.376
2013(2)	-0.114	0.187	0.142	0.128	0.132	0.143
2014(2)	-0.174	-0.175	-0.203	-0.207	-0.183	-0.182
2015(2)	-0.377	-0.285	-0.326	-0.309	-0.137	-0.17
2016(2)	-0.619	-0.458	-0.455	-0.429	-0.382	-0.425
2017(2)	-0.321	-0.366	-0.406	-0.432	-0.184	-0.197
2013T	-0.377	-0.249	-0.231	-0.285	-0.27	-0.3
2014T	-0.068	0.024	0.034	-0.043	0.113	0.062
2015T	0.213	0.212	0.198	0.197	0.522	0.449
2016T	0.209	0.383	0.325	0.357	0.408	0.43
2017T	0.509	0.589	0.596	0.685	0.809	0.771

Note: *r*-critical = .497; 4 - 4-year college; 2- 2-year college; T - technical college; Type - 1 - Rural; 2 = Suburban; 3 = Urban.

A summary of PPMCC values representing the relationships between college entrance rates and high school dropout rates for rural, suburban, and urban schools are noted on Table 25.

Null Hypothesis 5. There is no relationship between college entrance rates of urban, suburban, and rural high schools and high school graduation rates.

Null Hypothesis 5 was rejected for relationships between college entrance rates of urban, suburban, and rural data with regard to high school graduation rates and entrance into two-year, four-year, and technical colleges. Significant relationships were established between suburban school college entrance rates and high school graduation rates.

Analysis of PPMCCs applied to randomly selected data for graduation rates and college entrance rates in two-year, four-year, and technical colleges indicated significant findings between the type of institution and graduation rates for four-year institutions for the years 2013 (r = 0.733), 2014 (r = 0.768), 2015 (r = 0.758), 2016 (r = 0.744), and 2017 (r = 0.757). Significant relationships were also established between graduation rates and entrance into four-year colleges for the years 2013 (r = 0.594), 2014 (r = 0.553), 2015 (r = 0.576), and 2017 (r = 0.506). No significant relationships were established for two-year and technical colleges.

A summary of PPMCC values representing the relationships between college entrance rates and high school graduation rates for rural, suburban, and urban schools are noted on Table 26.

Table 26

College Entrance Rates and High School Graduation Rates

	Type	2013	2014	2015	2016	2017
2013(4)	0.151	0.595	0.532	0.561	0.568	0.558
2014(4)	0.186	0.603	0.553	0.564	0.561	0.555
2015(4)	0.204	0.61	0.555	0.576	0.584	0.567
2016(4)	0.194	0.157	0.154	0.161	0.157	0.165
2017(4)	0.142	0.527	0.475	0.508	0.527	0.506
2013(2)	-0.25	-0.33	-0.316	-0.329	-0.316	-0.38
2014(2)	-0.263	-0.322	-0.335	-0.319	-0.307	-0.369
2015(2)	-0.437	-0.345	-0.362	-0.369	-0.375	-0.411
2016(2)	-0.511	-0.396	-0.433	-0.427	-0.403	-0.441
2017(2)	-0.328	-0.221	-0.244	-0.257	-0.255	-0.283
2013(T)	-0.445	-0.289	-0.282	-0.277	-0.266	-0.28
2014(T)	-0.189	-0.223	-0.188	-0.197	-0.2	-0.221
2015(T)	0.214	-0.082	-0.015	-0.057	-0.118	-0.032
2016(T)	0.196	-0.119	-0.069	-0.097	-0.136	-0.027
2017(T)	0.323	0.005	0.034	0.025	0.012	-0.004

Note: r-critical = .497; 4 - 4-year college; 2- 2-year college; T - technical college.

Survey

The researcher emailed a survey to administrators and school counselors of rural, suburban, and urban schools. Participants were asked to answer the survey and reply their responses through google forms. A total of 90 surveys were emailed; out of the 90 surveys, nine responded to the survey. Of the nine returned, three were from rural schools, three were from suburban schools, and three were from urban schools.

Question 1. Regarding post-secondary planning and career workforce preparation, what strategies have proven to be successful in your setting?

The results of this question indicated that counselors felt that:

Rural school counselors felt that some of their methods were beneficial to their students. They believed that one-on-one counseling, parent nights, financial aid night, college curriculum, internships, college specialist on staff, and individual senior meetings were helpful.

Suburban school counselors felt that career fairs, college exploration activities, personal plans of study, students having a Teacher Advisory period which helped with post-secondary planning, the use Missouri Connections and SCOIR, working closely with South County Technical School for the career certificates for the students half day at South County Technical School, and students taking dual enrollment classes at the Community College were helpful.

Urban school counselors felt that partnering with St. Louis Community College, Ranken Tech, Job Corp, having post-secondary meetings that met bi-weekly to ensure that no students fell through the cracks, and coordination with outside community partners were helpful.

Question 2. Regarding post-secondary planning and career workforce preparation, what strategies have proven to be unsuccessful in your setting?

The results of this question indicated that counselors from:

Rural schools felt that an unsuccessful strategy was verbally telling students to apply to college, and that Universal programs did not work well with their students. Their students needed personalized strategies.

Suburban school counselors felt that their caseloads were too large, which limited the 1-1 interaction that students needed. Many schools had too many programs where the students were out of the building during their senior year, in addition to a class of 470 seniors, almost 170 others transferred out to different schools consuming counselors with a great deal of work and time to deal with the related paperwork. Also, the counselors felt that they were constantly exploring ways to get additional parents involved with the completion of Free Application for Student Aid (FAFSA).

Urban school counselors felt that getting parents involved was a challenge, because students had high levels of trauma, which led to it being difficult to focus on college or career options. Additionally, when hosting informational meetings for college, career, dual credit, advanced placement courses, and informational grade-level meetings, there was very little turn out from parents and students.

Summary

The purpose of this study was to analyze how high schools in the state of Missouri's rural, suburban, and urban areas were preparing students for post-secondary education and career readiness. The researcher analyzed the state of Missouri secondary

data gathered from 2013 to 2017 school years in urban, suburban, and rural high schools. The researcher also surveyed school guidance counselors and administrators.

There was a moderate relationship between the type of school and the percentage of students meeting or exceeding the minimum ACT score. Significant differences existed in the percentage of students meeting the minimum cut off score between rural, suburban, and urban school districts in Missouri for the years 2013, 2014, 2016, and 2017. In every year, the suburban percentage was significantly higher, and the urban percentage was lowest.

The results for APR indicated that in every year, the suburban percentage was significantly higher, and the urban percentage was lowest. The results for Career and Technical Education Programs indicated that rural enrollment in Career and Technical Education programs was significantly higher than the urban enrollment. The suburban enrollment in Career and Technical Education programs was also significantly higher than the urban enrollment.

Additionally, findings for the entrance rate into technical colleges for the year 2017 were significantly related to the dropout rate for the years 2013 through 2017. The entrance rates into technical colleges for the year 2015 were significantly related to the dropout rate for the year 2016. All other potential relationships were found to be not significant. Significant relationships were also established between graduation rates and entrance into four-year colleges for the years 2013 through 2017; however, no significant relationships were established for two-year and technical colleges.

For the years of the study, 2013, 2014, 2015, 2016, and 2017, the researcher applied a PPMCC analysis to check for a potential relationship between four-year-college

entrance rates and percentages of students with a qualifying ACT score for the type of school, urban, suburban, and rural.

In the urban districts analyzed in this study, there was no relationship between the percent of students who enrolled in a four-year college and the percent of students who scored at or above the qualifying ACT mark. In the suburban districts analyzed in this study, there was a strong relationship between the percent of students who enrolled in a four-year college and the percent of students who scored at or above the qualifying ACT mark. In the rural districts analyzed in this study, there was no relationship between the percent of students who enrolled in a four-year college and the percent of students who scored at or above the qualifying ACT mark.

Only two coefficients indicated a significant relationship: 2013 ACT percentage indicated a moderate relationship to the 2015 and 2017 four-year college enrollment percentage. However, these relationships were not meaningful in supporting Hypothesis 1.

There was no difference in the number of students in urban, suburban, and rural high schools enrolled in Career and Technical Education programs. For the year 2013, the Null Hypothesis 3 was rejected. The rural enrollment in Career and Technical Education programs was significantly higher than the urban enrollment. The suburban enrollment in Career and Technical Education programs was significantly higher than the urban enrollment; however, there was no significant difference between the rural and suburban enrollments.

For the years 2013 through 2017, application of the PPMCC analysis yielded no significant relationships between the entrance rates into Career Technical Education and high school dropout rates with regard to rural, suburban, and urban schools.

Null Hypothesis 5 was rejected for relationships between college entrance rates of urban, suburban, and rural data with regard to high school graduation rates and entrance into two-year, four-year, and technical colleges.

Analysis of PPMCC s applied to randomly selected data for graduation rates and college entrance rates into two-year, four-year, and technical colleges indicated significant findings between the type of institution and graduation rates for four-year institutions for the years 2013 through 2017. Significant relationships were also established between graduation rates and entrance into four-year colleges for the years 2013 through 2017. No significant relationships were established for two-year and technical colleges.

Chapter Five: Discussion

Findings and Implications

The purpose of this mixed-methods research was to analyze how high schools in the state of Missouri's rural, suburban, and urban areas were preparing students for post-secondary education and career readiness. The researcher analyzed the state of Missouri secondary data gathered from the 2013 through 2017 school years in urban, suburban, and rural high schools. The researcher also surveyed school guidance counselors and administrators. The data represented consisted of ACT Composite Scores, APRs, Post-Secondary Placements, Career and Technical Education Placements, Dropout Rates, and Graduation Rates, all publicly available information. A mixed-methods study enabled the researcher to use both quantitative and qualitative data in one study in order to produce various types of results, so analysis could further the understanding of the preparation of students for post-secondary education and career readiness. The quantitative aspect of this study enabled the researcher to examine overall school districts' student ACT Composite Scores, APRs, Post-Secondary Placements, Career and Technical Education Placements, Dropout Rates, and Graduation Rates, to see which schools were meeting the state approved target. This type of study allowed the researcher to compare the scores of rural, suburban, and urban scores. Furthermore, the quantitative portion of the study led to inter-rater results in order to examine the similarity, or lack thereof, between rural, suburban, and urban schools.

Hypotheses

In order to test the hypotheses, a *t*-test was conducted on each of the areas measured. This study tested the following hypotheses:

Hypothesis 1. There is a relationship between college entrance rates of urban, suburban, and rural high schools and the percentage of students who score at or above the qualifying score on the ACT test.

Before testing for a potential relationship between college entrance rates and percentages of qualifying students, measured by ACT score, the researcher checked the consistency of the measure of ACT scores from year-to-year among the research sites. This was accomplished with Hypotheses 1a and 1b, which called for a check for relationships and differences.

Sub Hypothesis 1a. There is a relationship between type of high school, urban, suburban, or rural, and the percentage of students who score at or above the qualifying score on the ACT test.

A PPMCC was applied to the percentage of students scoring at or above the ACT cut-off mark for the years 2013 through 2017. Results, shown on Table 3, indicate a year-to-year relationship between percentages of successful scoring on the ACT. As indicated by regression statistics on Table 4, there was a moderate relationship between the type of school and the percentage of students meeting or exceeding the minimum ACT score. Through examining the results, it was clear that suburban students had the highest score for meeting or exceeding the minimum ACT score, rural schools came second, and urban schools had the lowest score. Noting the results, possible improvements could be made to the rural and urban schools to increase their students' ACT scores.

Sub Hypothesis 1b. There is a difference between the percentage of students who score at or above the qualifying score on the ACT test with regard to the type of high school, urban, suburban, or rural.

Significant differences existed in the percentage of students meeting the minimum cut off score between rural, suburban, and urban school districts in Missouri for the years 2013, 2014, 2016, and 2017. An ANOVA was applied to the data. The test statistic, *F*, compared to *F*-critical indicated support for Sub-Hypothesis 1b for these years. In every year, the suburban percentage was significantly higher, and the urban percentage was lowest.

As previously noted, Sub-Hypothesis 1b examined a potential difference between the percentage of students who scored at or above the qualifying score on the ACT test. After screening the data as before, Tables 5 through 10 from the years of 2013-2017 demonstrate that suburban schools' ACT test scores were the highest, rural schools were second, and urban schools were last. Since the urban schools had the lowest scores for this research, the researcher concluded that more training and assistance was needed to help students attending the urban schools in the state of Missouri**.**

As the research demonstrated, students in urban schools had the lowest scores alongside their counterparts. The literature review revealed some dynamics concerning urban schools students and many reasons why they struggled academically. Many students in the urban setting were often at-risk students, dealing with trauma, homelessness, being first-generation students, poverty, and residing in low-income families that may be dealing with situations that hindered the students from an environment to succeed and excel academically. To better assist these students and their concerns, administrators should attempt to focus on providing supports for students who are in need such as ACT prep, counseling, tutoring, community partnerships, and

mentoring programs that at-risk students could take advantage of when they are dealing with issues or traumatic events that are out of their control.

Hypothesis 2. There is a difference in the number of Annual Performance Report points between urban, suburban, and rural high schools.

Hypothesis 2 was supported for differences between rural and suburban data. The Hypothesis 2 was not supported for differences between suburban and urban data and between rural and urban data.

Analysis of Variance (ANOVA) was applied to APR data averages for the years 2013, 2014, 2015, and 2016 to check for differences in the number of APR points present between rural, suburban, and urban high schools. Results indicated a significant difference between rural, suburban, and urban schools. To isolate where the significant differences occurred, pairings between rural and suburban, suburban and urban, and rural and urban settings were analyzed. A significant difference was identified between suburban and urban. There was no significant difference in the average APR point scores between rural and suburban.

The research revealed that there were multiple elements that may be causing urban school students to perform below their counterparts and urban schools to outperform rural and urban schools. The research also showed there may be outside forces causing students to perform below the state standards. In certain instances, the outside world of a student's life style could have a major impact on his or her academic performance.

As previously noted in the literature review section of this research, researchers suggested that students need social, cultural, and human capital resources within the

school and within the community that were used to aggressively promote school connectedness, which was fundamental in urban locations. Since the research results have been outlined, the domains should be revisited.

Hypothesis 3. There is a difference in the number of students in urban, suburban, and rural high schools enrolled in Career and Technical Education programs.

For the year 2013, the Hypothesis 3 was supported. The rural enrollment in Career and Technical Education programs was significantly higher than the urban enrollment. The suburban enrollment in Career and Technical Education programs was significantly higher than the urban enrollment. However, there was no significant difference between the rural and suburban enrollments. Averages are reported on Table 19.

For the year 2014, the Hypothesis 3 was not supported. The rural enrollment in Career and Technical Education programs was not significantly different than the urban enrollment. The suburban enrollment in Career and Technical Education programs was not significantly different than the urban enrollment. Averages are reported on Table 20.

For the year 2015, the Hypothesis 3 was not supported. The rural enrollment in Career and Technical Education programs was not significantly different than the urban enrollment. The suburban enrollment in Career and Technical Education programs was not significantly different than the urban enrollment. Averages are reported on Table 21.

For the year 2016, the Hypothesis 3 was not supported. The rural enrollment in Career and Technical Education programs was not significantly different than the urban

enrollment. The suburban enrollment in Career and Technical Education programs was not significantly different than the urban enrollment. Averages are reported on Table 22.

For the year 2017, the Hypothesis 3 was not supported. The rural enrollment in Career and Technical Education programs was not significantly different than the urban enrollment. The suburban enrollment in Career and Technical Education programs was not significantly different than the urban enrollment. For 2017, the averages were further apart among the three groups; however, there were no significant differences. Averages are reported on Table 23. The Career and Technical Education Programs combined academics and occupational skills training, allowing students to learn more about possible career paths in agriculture, business, health sciences, family consumer sciences, skilled technical sciences, and marketing and cooperative education (MODESE, 2015). The results indicated rural schools had the highest enrollment and suburban and urban scores had the lowest scores. The results clearly indicated that suburban and urban school students could benefit from assistance with preparing students in the

Hypothesis 4. There is a relationship between college entrance rates of urban, suburban, and rural high schools and high school dropout rates.

Hypothesis 4 was supported for relationships between college entrance rates of urban, suburban, and rural data with, regard to high school dropout rates and entrance into two-year and four-year colleges.

Analysis of PPMCC s applied to randomly selected data for dropout rates and college entrance rates into two -year, four-year, and technical colleges indicated significant findings for the years 2013 through 2017. The entrance rate into technical colleges for the year 2017 was significantly related to the dropout rate for the years 2013,

2014, 2015, 2016, and 2017. The entrance rate into technical colleges for the year 2015 was significantly related to the dropout rate for the year 2016. All other potential relationships were found to be not significant.

A summary of PPMCC values representing the relationships between college entrance rates and high school dropout rates for rural, suburban, and urban schools are noted on Table 24. The results indicated that urban schools had the highest dropout rates, while suburban came second, and rural was last. Students attending urban schools often had less information and less access to information about college pathways than their peers at wealthier suburban schools (Shamsuddin, 2016, p.1). Also, more researchers specified that urban schools tended to serve a racially and culturally diverse student body that differed from most of their teachers, who often came from White, middle-class backgrounds (Talbert-Johnson, 2004).

Hypothesis 5. There is a relationship between college entrance rates of urban, suburban, and rural high schools and high school graduation rates.

Hypothesis 5 was supported for relationships between college entrance rates of urban, suburban, and rural data with regard to high school graduation rates and entrance into two -year, four-year, and technical colleges.

Analysis of PPMCC s applied to randomly selected data for graduation rates and college entrance rates into two -year, four-year, and technical colleges indicated significant findings between the type of institution and graduation rates for 4-year institutions for the years 2013, 2014, 2015, 2016, and 2017. Significant relationships were also established between graduation rates and entrance into 4-year colleges for the

years 2013, 2014, 2015, and 2017. No significant relationships were established for two - year and technical colleges.

A summary of PPMCC values representing the relationships between college entrance rates and high school graduation rates for rural, suburban, and urban schools are noted on Table 25. Results indicated that rural schools had the highest graduation rates, suburban was second, and urban was last.

Research Questions

The researcher sought to answer the following questions:

Research Question 1. What are the successful and non-successful strategies according to administrators and school counselors in urban, suburban, and rural school buildings in the state of Missouri with regard to preparation for post-secondary education and career workforce preparation?

The results of this question indicated that counselors from rural schools felt that an unsuccessful strategy was verbally telling students to apply to college, and that universal programs did not work well with their students. Their students needed more personalized strategies. Rural schools had the highest number of students attending technical schools after graduation.

Suburban school counselors felt that their caseloads were too large, which limited the 1-1 interaction that students needed. Many schools had too many programs where the students were out of the building during their senior year, in addition to a class of 470 seniors, almost 170 others transferred out to different schools consuming counselors with a great deal of work and time to deal with the related paperwork. Also, the counselors felt

they were constantly exploring ways to get additional parents involved with the completion of FAFSA.

Urban school counselors felt that getting parents involved was a challenge because students had high levels of trauma, which led to difficulty in focusing on college or career options. Additionally, when hosting informational meetings for college, career, dual credit, advanced placement courses, and informational grade-level meetings, there was very little turn out from parents and students.

Recommendations for Future Research

For future research, the researcher would recommend that all high schools align curriculum with the expectations of post-secondary educational institutions and the needs of the workforce. Future research should explore the career readiness, workforce, and post-secondary institution standards to see how this information can be implemented into curriculum to support students who are entering the workforce immediately after graduation, as well as those who are going to two or four-year institutions. School administrators and counselors should collaborate with post-secondary institutions, economic development agencies, and employers to help create a smoother transition to college and the workforce.

After gaining information from the job markets and universities, feedback should be provided to high schools so that they can create a system for tracking students across the K–12 and post-secondary education systems and into the workplace.

As previously mentioned, urban schools lacked resources in many areas, such as meeting the states' ACT composite scores, APRs, poverty, advanced placement, dual credit, dual enrollment courses offered, first generation students, lack of funding in

schools, lack of parental involvement, and resources. It is recommended that future research be conducted to explore support for students who are struggling academically and personally, also emphasizing rigor and high expectations for all students, along with appropriate counseling and other supports.

Future research should focus on exploring the dynamics of the whole student and analyzing the needs and skills needed to assist the student in being successful. It can be explored if the administrative staff, counselors, teachers, and parents are contributing factors to the academic outcomes, as failures or successes.

Additional research should explore the professional development needed for school counselors to be effective in assisting students with appropriate course selection, students who are homeless, living in poverty, first generation students, and providing early interventions when students are developing their college and career goals. Counselors play a very important role in schools and are an excellent resource for at-risk students. Counselors are trained to recognize signs of abnormal behavior and to develop and implement care plans for students before their behavior spirals out of control (Carlile, 2009). Because of this, it is imperative that school counselors understand the different social structures, social pressures, household dynamics, and mental challenges students face (Bridgeland, Diulio, & Balfanz, 2009).

The researcher would recommend that any future studies be conducted as a qualitative research project. A different research design could focus more on including interviews and surveys. The data could include explicit details concerning the dynamics of post-secondary planning and career planning.

Summary

Many of the findings supported information shared in the literature review in Chapter Two. It was determined that significant differences existed in the percentage of students meeting the minimum ACT test cut off score among rural, suburban, and urban school districts in Missouri. Regarding the APRs, a significant difference was identified between suburban and urban, and rural and urban. There was no significant difference in the average APR point scores between rural and suburban. The rural enrollment in Career and Technical Education programs was significantly higher than the urban enrollment. The suburban enrollment in Career and Technical Education programs was significantly higher than the urban enrollment. In the entrance rate into technical colleges, relationships were found to be not significant. Significant relationships were established between graduation rates and entrance into four-year colleges; however, no significant relationships were established for two-year and technical colleges.

It is vital that school administrators and counselors become aware of the needs of all students and develop a strategic plan to assist each in every area of his or her educational process. This researcher believes that all students deserve the right to learn and the right to be afforded the appropriate tools needed to become successful after high school. Administrators, counselors, and teachers should provide all students with the finest opportunities; so, in turn, all students will be equipped and ready for post-secondary education and the workforce.

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Appendices

Appendix A

LINDENWOOD

Research Study Consent Form

Exploration of Post-Secondary Preparation of Urban, Suburban, and Rural High Schools in The State of Missouri.

Before reading this consent form, please know:

- Your decision to participate is your choice
- You will have time to think about the study
- You will be able to withdraw from this study at any time
- You are free to ask questions about the study at any time

After reading this consent form, we hope that you will know:

- Why we are conducting this study
- What you will be required to do
- What are the possible risks and benefits of the study
- What alternatives are available, if the study involves treatment or therapy
- What to do if you have questions or concerns during the study

Basic information about this study:

We are interested in learning about:
The purpose of this study is to explore if high schools are preparing students for post-secondary education and career readiness. The researcher will analyze the state of Missouri secondary data gathered from 2013 to 2017, in Urban, Suburban, and Rural high schools. Data will represent: ACT Composite Scores, Annual Performance Report, Post-Secondary Placements, Career and Technical and Education Placements, Drop-Out Rates, and Graduation Rates. All information is publicly available on the Missouri Department of Education website.

Researcher will interview and provide survey questions to high school administrators and high school guidance counselors. Researcher will also analyze data from the Missouri Department of Elementary and Secondary Education.

Risks of participation include no more than minimal risk; Participants will all be treated fairly, based on the interview; I will use their answers to assist with my research. All information will be confidential, and after research is over, all information will be shredded.

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LINDENWOOD

Research Study Consent Form

Exploration of Post-Secondary Preparation of Urban, Suburban, and Rural High Schools in The State of Missouri.

You are asked to participate in a research study being conducted by Rashida McKinley under the guidance of Dr. Graham Weir at Lindenwood University. Being in a research study is voluntary, and you are free to stop at any time. Before you choose to participate, you are free to discuss this research study with family, friends, or a physician. Do not feel like you must join this study until all of your questions or concerns are answered. If you decide to participate, you will be asked to sign this form.

Why is this research being conducted?

We are doing this study to explore if high schools are preparing students for post-secondary education and career readiness. The researcher will analyze the state of Missouri secondary data gathered from 2013 to 2017, in Urban, Suburban, and Rural high schools. Data will represent: ACT Composite Scores, Annual Performance Report, Post-Secondary Placements, Career and Technical and Education Placements, Drop-Out Rates, and Graduation Rates.

We will be asking about 44-54 other people to answer these questions.

What am I being asked to do?

Participants will be asked to answer four questions by email with an attached link to a survey, regarding college and career readiness procedures provided for their students in their building.

How long will I be in this study?

The amount of time involved in your participation will be approximately 30-45 minutes.

What are the risks of this study?

- Privacy and Confidentiality:
  There are no anticipated risks associated with this research. The researcher will maintain anonymity and confidentiality of interview responses. However, there is some risk of identification of participants when small sample sizes are used.

We will be collecting data that could identify you, but each survey response will receive a code so that we will not know who answered each survey. The code connecting you and your data will be destroyed as soon as possible.

We are collecting data that could identify you, such as survey. Every effort will be made to keep your information secure. Only members of the research team will be able to see any data that may identify you.

We will be collecting data from you using the internet. We take every reasonable effort to maintain security. It is always possible that information during this research study may be captured and used by others not associated with this study.

What are the benefits of this study?

You will receive no direct benefits for completing this survey. We hope what we learn may benefit other people in the future.

What if I do not choose to participate in this research?

It is always your choice to participate in this study. You may withdraw at any time. You may choose not to answer any questions or perform tasks that make you uncomfortable. If you decide to withdraw, you will not receive any penalty or loss of benefits. If you would like to withdraw from a study, please use the contact information found at the end of this form.

If you think you have been injured as a result of taking part in this research study, tell the person in charge of the research study as soon as possible. Please use the contact information at the end of this form.

Decisions to pay you or give you other compensation for the injury will be made by Lindenwood University. You do not give up your legal rights by signing this form.

What if new information becomes available about the study?

During the course of this study, we may find information that could be important to you and your decision to participate in this research. We will notify you as soon as possible if such information becomes available.

How will you keep my information private?

We will do everything we can to protect your privacy. We do not intend to include information that could identify you in any publication or presentation. Any information we collect will be stored by the researcher in a secure location. The only people who will be able to see your data are: members of the research team, qualified staff of Lindenwood University, and representatives of state or federal agencies.

Your study participation in this study may be observed by a student enrolled in a course taught by the faculty supervisor, Dr. Graham Weir. Please let us know if you are willing to be observed by checking one of the boxes below:

How can I withdraw from this study?

Notify the research team immediately if you would like to withdraw from this research study.

Who can I contact with questions or concerns?

If you have any questions about your rights as a participant in this research or concerns about the study, or if you feel under any pressure to enroll or to continue to participate in this study, you may contact the Lindenwood University Institutional Review Board Director, Michael Leary, at (636) 949-4730 or mleary@lindenwood.edu. You can contact the researcher, Rashida McKinley directly at 314-685-5677 or rmckinley@lindenwood.edu. You may also contact Dr. Graham Weir gweir@lindenwood.edu.

I have read this consent form and have been given the opportunity to ask questions. I will also be given a copy of this consent form for my records. I consent to my participation in the research described above.

_____ **Participant's Signature**	_____ **Date**
_____ **Participant's Printed Name**	

_____ **Signature of Principal Investigator or Designee**	_____ **Date**
_____ **Investigator or Designee Printed Name**	

Appendix B

Letter of Participation / Recruitment Materials
Educator Questionnaire

Dear Educator,

I am writing this letter as a doctoral student at Lindenwood University to ask for your participation in my dissertation research. My dissertation focuses on exploration of post-secondary preparation of Midwest, Urban, Suburban, and Rural High Schools in the state of Missouri. As an educator, I wholeheartedly understand the demands on your time and I appreciate your assistance in advance.

Attached is the Informed Consent Form for your review and signature. If you agree to participate in the study, please sign the consent form and indicate acceptance by return email. Then complete the questionnaire through the link provided. The questionnaire consists of four questions and will take approximately 30-45 minutes to complete. Upon completion of the questionnaire, please email me your response to rmckinley@lindenwood.edu. Your participation in this research study is voluntary and you may withdraw at any time. Confidentiality is assured. If you have questions, please call me (314) 685-5677 or email

rmckinley@lindenwood.edu. Once this study has been completed, the results will be available to you by request.

Sincerely,

Rashida McKinley

Rashida McKinley
Doctoral Candidate
Lindenwood University

Appendix C

ADMINISTRATOR/COUNSELOR INTERVIEW QUESTIONS

1. Describe your school and school setting?
2. Regarding post-secondary planning, what strategies have proven to be successful in your school setting?
3. Regarding post-secondary planning, what strategies have proven to be unsuccessful in your school setting?
4. If you could change anything about your schools program, what might that they be?