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The Impact of a Four-Day and Five-Day School Week on Student Achievement in Reading and Math

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THE IMPACT OF A FOUR-DAY AND FIVE-DAY SCHOOL WEEK ON STUDENT ACHIEVEMENT IN READING AND MATH

by

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The four-day school week is a growing trend in the state of Missouri. As of 2023, 144 public schools are utilizing a four-day school week. Studies have shown a multitude of reasons school districts are making the change, such as financial savings, teacher recruitment, and teacher retention. Studies have also found mixed results regarding the impact of a four-day school week on student performance. Initially, student scores do not appear to be impacted. However, studies have shown districts implementing a four-day school week greater than five years begin to see a decline in student performance on state assessments. The research on student achievement in Missouri is limited, and it is unclear how the transition to a four-day school week impacts student achievement in the Missouri Assessment Program (MAP).

ACKNOWLEDGMENTS

The journey to complete the coursework and capstone for this degree has not been easy. Through the process, I have found mentors and friends while growing as an educator and leader. Since beginning classes with SIU in 2021, I have been guided by Dr. Colwell and Dr. Kelly. Both of these gentlemen have given me the skills to lead, but also taught the importance of showing myself grace. This process would not have been possible without their support, motivation, and guidance. I am forever grateful.

Lastly, thank you to Dr. Webb and Dr. Parr as well as Dr. Colwell and Dr. Kelly for serving on my committee. Your time and guidance are greatly appreciated.

DEDICATION

My SIU journey began in 2021 with the support of my husband and family. It required many years of late-night travels and weekends of assignments. While my husband cannot see the completion of my journey, I know he is proud. My children have shown understanding and patience through the process, but are looking forward to more time together.

PREFACE

This study explored the impact of the four-day school week on student achievement in the state of Missouri as compared to students attending five-day school weeks. Student achievement was assessed by analyzing school districts' scores on the Missouri Assessment Program (MAP) from 2018 through 2023.

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CHAPTER I

INTRODUCTION

"The time is now. This is our moment. It's up to all of us to raise the bar in education" (U.S. Department of Education, 2022a, para. 8). These are the words of Miguel Cardona, U.S. Secretary of Education, after reviewing the 2022 results of the National Assessment of Educational Progress. Nationwide student assessment scores have shown an overall downward trend since 2019. Specifically, the 2022 report showed student achievement in math and reading has "moderately" declined (U.S. Department of Education, n.d.). In my home state of Missouri, districts' NAEP scores did not show statistically significant differences in data from other states. In sum, this downward trend in reported scores is representative of a significant issue: decreasing academic success.

Missouri, like many other states, has taken this decrease in NAEP scores very seriously and has implemented numerous remedial and proactive steps to reverse the downward trend. As outlined in Missouri's Consolidated State Plan (MoDESE, 2019), the academic standards for core content areas were revised in 2014, with new assessments aligned to those standards in 2017. Missouri's Educator Equity Plan in 2015 outlined strategies to hire, train, and retain effective teachers, but has not shown statistically significant improvement (MoDESE, 2019). However, since its implementation in 2010, one of the increasingly popular strategies to increase student achievement has included looking at the length of the traditional school week. In other words, does the number of school days per week impact student learning?

Missouri: How did it Fare?

The four-day school week has been increasing in popularity since 2010, while student achievement, as assessed by the NAEP, has declined. Students in Missouri had been achieving

scores above the national average until 2009, with the exception of 2005. Then, in 2011, the scores of Missouri districts began declining (U.S. Department of Education, n.d.). Between 2011 and 2022, Missouri school districts averaged the same or 1 point lower than the national average.

Based on the NAEP assessment, Missouri students appear to be keeping in line with the national averages; however, as a state, the average scores have been trending downward since 2009. Between 2019 and 2022, fourth-grade students fell six points in math and five points in reading. Eighth-grade students had similar results as they fell nine points in math and five points in reading (U.S. Department of Education, n.d.). While Missouri scores are not significantly different from the national average, the downward trend in reported scores represents a more significant issue: decreasing academic success.

Four-Day Week: An Overview

Missouri was not the first state to adopt a varying number of student attendance days. Starting with South Dakota, Montana, and Texas, the four-day school week may have begun as early as the 1970s and has been rising in popularity among school districts across the nation (Stemmock, 1975). In 2019, 662 school districts were utilizing the four-day model across 24 states, an increase of over 600% since 1999 (Thompson & Morton, 2021). As of 2021, 1,600 schools nationwide have adopted the model (Thompson et al., 2021).

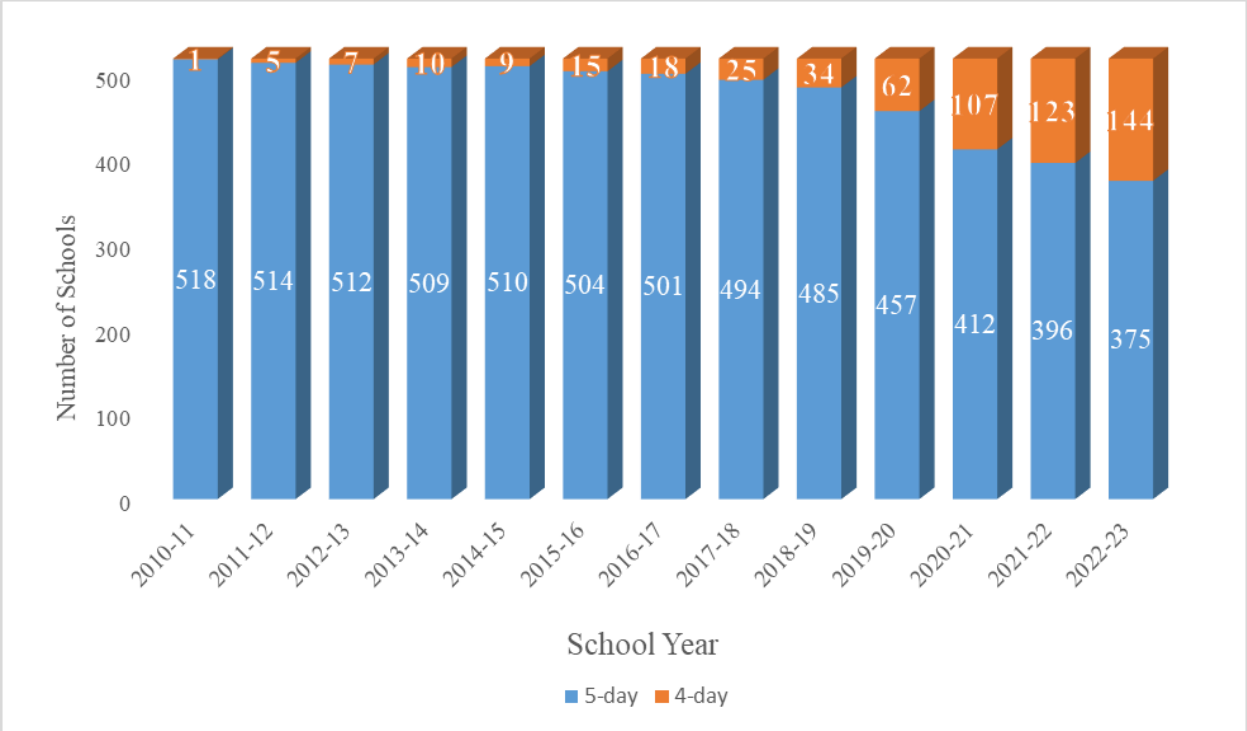
School districts utilizing a four-day school week typically reduce the number of school days to four, with students attending Monday through Thursday or Tuesday through Friday. Specifically, the four-day schools' national average is 148 school days per year versus the traditional five-day school week which averages 180 days per year. This reduction in days is made possible because school days are lengthened for four-day school weeks by an average of approximately one extra hour per day (Thompson et al., 2021). While this is the national

average, each state has its own regulations to follow when adopting and implementing a four-day model.

In the 2010-2011 school year, one Missouri school district adopted the four-day model, with five additional schools the following year. Each year the number grew, with the exception of the 2014-2015 school year, so that by the 2018-2019 school year, 34 districts were utilizing the four-day model (see Figure 1). This number nearly doubled at the start of the 2019-2020 school year to 62 districts (MoDESE, 2023).

Figure 1

4-Day vs. 5-Day School Districts in Missouri



Note. The chart represents the growing number of 4-day school districts.

The trend for four-day school weeks has been steadily growing each year. Currently, 144 school districts in Missouri have adopted the shortened school week model. This is equivalent to

27% of all schools in Missouri and a 136% increase since the 2019-2020 school year (Gorton, 2023).

The Origins of Missouri's 4-Day School Year: Senate Bill 291

In 2009, the State of Missouri enacted Senate Bill 291 to allow Pk-12 school districts within the state the option of a four-day school week. The law and accompanying administrative rules provided clear guidelines for Missouri districts seeking to utilize this new model. Amendments to Senate Bill 291 occurred in 2007, 2009, and 2018.

- August 2007: Traditional School Day.
    - RSMo 160.041- Minimum school day, school month, school year, defined:
        - Minimum School Day: 3 hours.
        - School Month: 4 weeks of 5 days each.
        - School Year: July 1- June 13.
    - RSMo 171.031- Calendar, minimum term, opening dates:
        - Calendar prepared with a minimum term of at least 174 days and 1,044 hours of student attendance.
        - No school day shall be longer than 7 hours.
- August 2009: The New Law:
    - RSMo 160.041:
        - Minimum School Day: 3 hours for five-day school week and 4 hours for four-day school week.
    - RSMo 171.031:
        - Minimum term of at least 174 days for schools with a five-day school week or 142 for schools with a 4-day school week and 1,044 hours.

        - No schools with five-day school weeks shall be longer than 7 hours, except for schools that adopt a four-day school week.
    - RSMo 171.029:
        - Four-Day School Week Authorized: The school board, with a majority vote, may establish a four-day school week or other calendar with less than 174 days. A four-day school week requires a minimum of 142 days and 1,044 hours.
        - If a school district attending less than 174 days meets at least two fewer performance standards on two successive annual performance reports (APR) than the last annual APR, the school district will be required to revert to a 174-day school year.
- August 2018: From School Days to Clock Hours!
    - RSM0 160.041:
        1. School Day: Beginning in the 2019-2020 school year and subsequent years, no minimum number of days.
    - RSMo 171.031:
        - Beginning in the 2019-2020 school year and subsequent years, 1,044 student attendance hours shall be required for the school term with no minimum number of school days.

Furthermore, the law is not without provisions to take action should student performance lag while using the four-day model. As stated in RSMo 171.029, Missouri districts utilizing a four-day school week must continue to meet the performance standards on their annual performance reports (APR). If a district meets at least two fewer performance standards on two

consecutive APRs than it met on its last APR, the school district will be required to revert to a 174-day school year. The APRs are used to demonstrate the progress school districts are making toward meeting Missouri School Improvement Program (MSIP) standards and indicators.

Since the legislature enacted Senate Bill 291 in 2009, the MSIP has evolved and is now in its 6th edition. MSIP-6 is a new system with different scoring than MSIP-5 and, therefore, not comparable (MoDESE, 2022). According to Section 161.855.4, RSMo, the APR data from 2022 using the new MSIP-6 model cannot be used to lower district classification/accreditation until the 2023-24 school year data are available. Consequently, the 2023-24 school year will be the third year data were collected under MSIP-6, and classification recommendations will be included in the APR data.

Outcomes of a Four-Day Week

Missouri's transition to a four-day school week has been guided by many factors, which include financial, stakeholder perspectives, attendance, student behavior, teacher recruitment, and teacher retention. Further, surveys and academic studies have established findings on the positive impacts four-day school weeks were having on student attendance and behavior.

Financial

Initially, school districts nationwide were motivated to adopt a four-day week in order to save money—through transportation, utilities, and other operating costs. Thompson (2021) found total expenditures for support services, including transportation and hourly wages, were 3.6% lower than when a district was operating on a five-day school week.

In addition, Missouri districts could not increase starting salaries to be competitive with the leading states. This left Missouri schools trying to find other ways to recruit and retain teachers, and recent studies showed the four-day school week had increased teacher morale, and

91% of teachers would prefer working in schools with four-day work weeks (Turner et al., 2019).

Perspectives

Studies have found mixed perspectives from stakeholders. A study from 2003 discovered a split in the perspective of community/business leaders: 44% preferred a return to five-day school weeks, and 43% preferred the four-day school week (Cooper et al., 2003). Over the course of time, the perspectives of stakeholders began to evolve and supported a shortened school week. Turner et al. (2019b) found parents strongly supported the transition to a four-day school week and communicated a positive impact on their family, their child, and the public perception of their school district.

Attendance and Student Behavior

Hewitt and Denny (2011) stated some school districts experienced improved staff and student attendance and reduced discipline problems. Even 11 years later, Morton (2022) found similar results when incidents related to bullying and fighting substantially decreased among high school students between 31% and 39%. However, Morton did not find attendance rates were positively impacted, which aligned with the findings of Thompson and Ward (2022) and Kilburn et al. (2021).

Teacher Recruitment and Retention

Over time, schools' initial motivation to utilize four-day school weeks evolved from addressing financial restraints to a mechanism to combat the struggle in hiring and retaining high-quality teachers. A 2014 survey concluded teachers were leaving the profession due to dissatisfaction with teacher accountability, administration, working conditions, and low pay (Goldring et al., 2014). Missouri is ranked last out of 50 states on National Education

Association reports for starting educator salaries (Missouri NEA, 2023). In the last six years, studies have confirmed teacher recruitment and retention drove the four-day school week (Marion, 2018; Turner et al., 2019a).

Background of Problem

At the start of the 2022-23 school year, almost one-fourth of all school districts in Missouri attended school four days per week (MoDESE, 2023). Missouri's public schools serve over 879,000 pre-kindergarten through 12th-grade students across 518 districts (MoDESE, n.d.). Today, the tradition of Missouri's five-day school week is being challenged as more schools adopt a four-day school week. Traditionally, a school week has been five days, with the school year starting in August and running through May. However, since the passing of Senate Bill 291, the traditional school day has evolved due to unmet financial and staffing needs for school districts.

However, only some are pleased with the movement toward a four-day week since student achievement scores have not appreciably increased. Specifically, earlier this year, State Senator Doug Beck introduced new provisions for the four-day school week in Senate Bill 411. According to Senator Beck's bill, school districts with more than 30,000 residents can only implement a four-day school week for a 10-year period if local voters approve it, which takes the decision-making authority away from the school board. This bill would also decrease the school days for five-day school weeks from 174 to 168 and decrease the four-day school week to 142 days. The opponents of Senate Bill 411 argue that these provisions could harm teacher recruitment and retention.

Problem Statement

Four-day school weeks have been increasing in Missouri since 2010. As of 2023,

Missouri has 144 school districts out of 518 utilizing a four-day school week (MoDESE, 2023). Current research has primarily focused on the fiscal and personnel aspects of the shift from the traditional school week; however, scant scholarly research has explored the academic impact on students between these two delivery configurations.

Purpose of the Study

The purpose of this study was to explore student achievement in relation to four-day school weeks as measured by the Missouri Assessment Program (MAP). The researcher wanted to know if a significant statistical difference exists in academic achievement between districts that have adopted a four-day school week or continued with a five-day school week as measured by the MAP assessment. This study provides information for LEAs and district administrators considering a four-day school week.

Research Questions

The following research questions guided the study:

Research Questions (RQ1): How does using a four-day versus five-day school week impact the overall academic performance of students in Missouri public schools?

Research Questions (RQ2): How are schools that implement a four-day school week utilizing the fifth day?

Significance of Study

The four-day school week continues to gain popularity across the United States and, specifically, the state of Missouri. This modified school calendar has emerged as a possible solution for school districts struggling with financial constraints and the challenge of recruiting and retaining teachers. However, while the four-day school week offers a potential solution, it is still necessary to focus on its impact on student achievement. As school districts consider the

advantages and disadvantages of transitioning from a traditional five-day school week to a four-day model, it is imperative to prioritize students in the decision-making process. Student achievement plays a pivotal role in the APR scores, and the MSIP-6 sets standards for student performance and the demonstration of growth over time. Therefore, it is important to assess whether the four-day school week supports or hinders student academic growth, as measured by the state-required end-of-year assessment, MAP. It also needs to be determined what is occurring on the fifth day within the four-day model, the reason for transitioning to the four-day model, and the current perception of building leaders of schools utilizing a four-day week. This information provides additional data for districts considering transitioning to a four-day model or transitioning back to a five-day school week.

Limitations

Limitations are the "systematic bias that the researcher did not or could not control and which could inappropriately affect the results" (Price & Murnan, 2004, p. 1). Missouri uses one standardized test, the MAP, to determine if students meet the Missouri Learning Standards each year. This assessment is also employed as a comparison tool between districts and student demographics. It is essential to note the assessment is a singular measure and only measures a single point in time.

Another limitation resulted from the impact of the COVID-19 pandemic. The MAP assessment was not given during the 2019-2020 school year due to many schools being closed. This results in a gap in data when looking at MAP results from 2018 and 2023. Furthering the COVID-19 test gap, data could not be pulled prior to the 2018 MAP assessment. At the end of the 2016 school year, the test format and grading scale were changed, causing 2016 and 2017 data to be incomparable to data collected starting in 2018. In addition, the extent of the impact of

COVID-19 on academic achievement and learning loss is still unknown.

The results of the survey were constrained by the singular perspective gathered from district superintendents. Superintendents may be detached from the daily operations of the school buildings under their jurisdiction, as their primary focus revolves around the broader aspects of budget and staffing. Their perspective may differ from building level administration, teachers, and staff. Regardless, the gathered responses revealed key findings that illuminated the workings of four-day districts.

Lastly, another limitation is the discrepancy between four-day and five-day school districts being analyzed. Only 26 schools utilizing the four-day school week model were analyzed, while 359 school districts using the five-day model were assessed. This size discrepancy was unavoidable after establishing the criteria for eligible schools.

Delimitations

Delimitations are the opposite of limitations, as these are "systematic bias intentionally introduced in the study design by the researcher" (Price, 2004, p. 1). The schools selected for this study were only within Missouri boundaries. The researcher selected districts utilizing a four-day schedule and districts using a five-day schedule consistently from school years 2017-2018 to 2022-2023. The population was limited to grades third to twelfth, with the academic subject areas assessed as math and ELA.

Positionality

Having worked in education since 2010, I am currently serving as an Assistant Principal at a public middle school in Missouri. Before this role, I worked directly with students as a special education teacher, catering to students from Pre-K through fifth-grade. Additionally, I took on the responsibility of a process coordinator to ensure students received the necessary

services to meet their developmental needs. All students deserve the opportunity to a quality education, which equips them with the necessary skills to be successful. My passion for student success is what drives my desire to explore the impacts of four-day school weeks on students' academic achievement.

Definitions of Terms

For this study, the following terms are defined:

- **School Term/Period:** 1,044 hours of actual student attendance, requiring no minimum number of school days. The first school day cannot be more than 14 days before Labor Day. The school term must include a minimum of 36 weather make-up hours for possible loss of attendance due to inclement weather.
- **School Day/Attendance Hours:** The public school minimum school day consists of three hours for a five-day school week and four hours for four-day school weeks in which the students are under the guidance and direction of teachers.
- **Four-Day School Week:** A four-day week is typically Monday through Thursday or Tuesday through Friday while increasing the length of the school day to meet the 1,044 hours.
- **Five-Day School Week:** A five-day school week occurring Monday-Friday with at least 1,044 hours.
- **LEA:** Local education agency or a public board of education or other public authority.
- **MSIP-5:** The fifth version of the Missouri School Improvement Program (MSIP 5), the state's accountability system for reviewing and accrediting public school districts, outlines the expectations for student achievement with the ultimate goal of each

student graduating ready for success in college, careers, and life.

- **MSIP-6:** The sixth and most current version of the Missouri School Improvement Program (MSIP 6). It focuses on continuous improvement for all schools, preparing each student for life beyond high school and promoting practices that lead to healthy school systems.
- **NAEP:** National Assessment of Educational Progress. All 50 states receive an individual NAEP score every three years. NAEP is administered in a sample of schools whose students reflect varying demographics. The students in each sample group are randomly chosen from grades 4, 8, and 12.
- **Academic Performance Levels:** The state of Missouri utilizes four performance levels to score students on the end-of-the-year MAP assessment.
- **Proficient:** Students demonstrate an adept command of the skills and processes identified in the Missouri Learning Standards. They demonstrate these skills consistently and skillfully.
- **Advanced:** Students demonstrate a thorough command of the skills and processes identified in the Missouri Learning Standards. They demonstrate these skills consistently, precisely, and expertly.
- **Basic:** Students demonstrate a partial or uneven command of the skills and processes identified in the Missouri Learning Standards. They demonstrate these skills inconsistently, partially, or with below-grade-level text.
- **Below Basic:** Students demonstrate a minimal command of the skills and processes identified in the Missouri Learning Standards. They demonstrate these skills inconsistently and/or incorrectly.

- **APR:** The Annual Performance Report measures the performance of educator preparation programs (EPPs) in valid, accurate, and meaningful ways. It is based on the Missouri standards and provides a mechanism to review and approve EPPs at the certification area level. These reports will assist in recognizing high-performing programs as models of excellence based on standards and indicators. The reports will also facilitate identifying programs needing improvement so they can receive appropriate support. These standards will guide Missouri's continuous improvement efforts. APRs demonstrate the progress that local education agencies (LEAs) and individual schools are making toward meeting the MSIP 6 Standards and Indicators.
- **LEA:** Local Education Agency is a public board of education legally constituted within a State that maintains administration of public elementary or secondary schools.
- **DESE:** The Department of Elementary and Secondary Education (DESE) is the administrative arm of the State Board of Education. It is primarily a service agency that works with educators, legislators, government agencies, and citizens to maintain a strong public education system that strives to ensure all citizens have access to high-quality public education.
- **MAP:** The Missouri Assessment Program is a computerized adaptive assessment that measures your child's knowledge of reading, math, science, and social studies. Students are given an academic performance level based on their overall score.
- **Student Achievement:** The extent to which learners have attained their short or long-term educational goals.
- **Math:** Part of the annual MAP assessment for grades three through twelve.

- **ELA:** English Language Arts. Part of the MAP assessment for grades three through twelve.

Summary

The rise of the four-day school week, which started in the 1970s, has gained popularity nationwide. The four-day school week involves reducing the number of school days to four, typically with longer hours each day. Missouri's adoption of this model began in 2010 and has been steadily growing, with 144 school districts in 2023. Almost one-fourth of Missouri's school districts have transitioned to a four-day school week. Various factors, including financial constraints and teacher recruitment and retention issues, have driven this shift.

As the four-day school week continues to gain popularity, the academic achievement of students is declining in the United States, as revealed in the 2022 NAEP reports. The assessment data showed a moderate decline in math and reading scores since 2019, with both fourth and eighth graders experiencing decreases. Missouri has been on a similar downward trend, though its score is not significantly different from the national average.

The research determines if student achievement is affected when schools transition to a modified school calendar of attending school four days a week. It needs to be determined if the four-day school week supports or hinders student growth, considering the importance of student achievement with MSIP-6. It also explores how school districts utilizing a four-day school week utilize the fifth day.

CHAPTER II

LITERATURE REVIEW

The focus on school performance and accountability has been a central aspect of education policy and reform in the United States. This is evident in the various mandates established by educational laws. For instance, in 2002, the No Child Left Behind (NCLB) Act played a pivotal role in education by requiring annual standardized testing in reading and math (U.S. Department of Education, 2002; ESSA, 2015), with schools held accountable through their Adequate Yearly Progress (AYP) scores. The NCLB Act was later replaced by the Every Student Succeeds Act (ESSA) in 2015, which transferred more authority over education policy to the states while still maintaining annual testing requirements (U.S. Department of Education, 2002; ESSA, 2015).

In addition to these legislative acts, there have been other grants, initiatives, and reforms such as the adoption of common core standards, the promotion of school choice, "Race to the Top" programs, and efforts to tie teacher performance to student outcomes, all aimed at elevating student achievement. However, it is worth noting that while lawmakers emphasize school accountability, they are also cutting state and federal education budgets (USAFacts, 2023). This situation has led school districts to seek ways to reduce costs and maintain a high standard of education, with one such approach being the adjustment of the length of the school week.

The idea of modifying the school week has been a recurring topic in the field of education. Traditionally, a school week consisted of five days, but a four-day model is gaining popularity across the United States. In 2019, 662 school districts in 24 states were using the four-day model, marking a substantial increase of over 600% since 1999 (Morton, 2022; Thompson & Morton, 2021). By 2021, approximately 1,600 schools across the nation had adopted this model

(Thompson et al., 2021). School districts struggle to find the right balance between meeting state and federal requirements, enhancing academic achievement, ensuring student well-being, retaining teachers, and achieving better financial outcomes (Dixon, 2011).

Research by Thompson and Morton (2021) indicated nearly two-thirds of school districts that transition to a four-day school week do so primarily for financial reasons, followed by considerations related to teacher retention, student attendance, and specific rural-related challenges, such as farming and commuting (Dixon, 2011; Thompson et al., 2020). The implementation of the four-day school week is a reflection of school districts' efforts to adapt to changing circumstances and maintain educational quality in a period of increased accountability and financial constraints.

In the following sections of the literature review, the history of the four-day school week are examined to understand the factors that have influenced schools to transition to an alternative model of four-day school weeks. The sections review the history of the four-day school week, examine the advantages and disadvantages of the four-day week, examine Missouri's adoption of four-day school weeks, and investigate the impact on student achievement.

History of the Four-Day School Week

Historically, school districts have often adopted a four-day school week to respond to financial challenges. Notable transitions occurred during the 1930s, the late 1970s, and more recently, in the late 2000s (Heyward, 2018). The first recorded instance of a four-day school week was in 1931 when a school district in Madison, South Dakota, switched due to the economic hardship of the Great Depression (Donis-Keller & Silvernail, 2009; Hunt, 1936). Other states, such as Colorado, Oregon, and Wyoming, followed suit in the 1970s as the United States faced energy shortages and increased petroleum prices (Heyward, 2018). Rural school districts,

particularly, were looking for ways to conserve energy and reduce operating costs (Grau & Shaughnessy, 1987; Hewitt & Denny 2011), given their challenges of serving students across large geographic areas (Griffith, 2011). Subsequently, more states joined the trend of adopting a four-day school week following the economic downturn of the Great Recession in the early 2000s.

In 1999, 108 school districts in the United States used a four-day school week, surging to 586 in 2017 (Thompson, 2021). Currently, 24 states and 662 school districts have at least one school district operating on a four-day school week schedule (National Conference of State Legislation, n.d.). By 2019, there was a remarkable increase of 600 percent in districts using the four-day school week model (Morton, 2022). At this time, Colorado, Montana, Oklahoma, and Oregon are the leading states for the number of school districts utilizing a four-day school week (Morton, 2022). This transition continues to be a response to the financial and operational challenges faced by school districts across the United States.

Financial Savings

As financial challenges affect school districts across the United States, they encountered the need to decrease operational costs. The Great Recession and the energy crisis brought about falling property values, which made it unfeasible to increase property taxes, significantly impacting the budgets of school districts (Leachman et al., 2017). At the same time, the costs of state-funded services rose due to factors like inflation, demographic shifts, and increasing needs (Leachman et al., 2017).

In recent years, schools have also been challenged with declining aid, which added to their budgetary challenges. Between 2008 and 2013, school funding saw an 8.4 percent reduction, resulting in $1,025 less per student (Leachman et al., 2017). This again caused school

districts to seek ways to decrease spending and realign their budgets (Plucker et al., 2012).

These challenges are among the reasons why school districts are continually seeking solutions to address budget shortfalls. Implementing a four-day school week has emerged as a strategy to potentially reduce costs related to utilities and transportation (Hewitt & Denny, 2011). Studies have demonstrated districts can achieve cost savings, but the percentage saved can vary depending on how the fifth day is utilized (Hewitt & Denny, 2011). Nonetheless, it is important to note that some research has found the financial savings from adopting a four-day school week can be relatively small, ranging from 0.4%to 2.5% (Griffith, 2011; Morton, 2020) and, in some cases, up to 5.0% (Griffith, 2011).

To illustrate, a New Mexico school district implemented a four-day school week to reduce operational costs, leading to a substantial 10 to 25% decrease in fuel and electricity expenses (Grau & Shaughnessy, 1987). Similarly, Kentucky school districts reported savings in areas like transportation, utilities, and insurance costs, though the savings were more moderate at 2% rather than the expected 20% (Kingsbury, 2008; Yarbrough & Gilman, 2006). Regardless, this cost-saving approach remains a primary rationale for adopting a four-day school week (Donis-Keller & Silvernail, 2009; Feaster, 2002; Morton, 2020).

A study completed by Thompson (2021) found school districts that transitioned to a four-day school week experienced minimal reductions, typically in the range of 1.0 to 2.0 percent, in their expenditures from 1999 to 2017. Thompson (2021) also noted schools were able to reduce expenditures in support services by 4%, as well as in salaries and benefits, and non-personal expenditures such as supplies and materials.

Teacher Outcomes

In a study conducted by Turner and colleagues in 2018, strong support for the four-day

school week emerged when analyzing the perspectives and viewpoints of teachers and support staff. The findings indicated all staff members perceived a boost in staff morale following the transition to a four-day school week (Turner et al., 2018a). Certified staff members also noted a positive impact on curriculum and an enhancement in the academic quality of their school district. Furthermore, the study revealed staff members preferred working for schools with a four-day workweek. Teachers also reported the non-student attendance day provided them time to work on curriculum or paperwork, which freed up the weekend and ultimately increased job satisfaction and morale (Savage, 2018). Some districts also reported an increase in the number of qualified and experienced applicants for posted job openings after adopting a four-day school week (Marion, 2018).

Student Outcomes

Regarding the impact of a four-day school week on student performance, the available research presents a mixed picture, and there is a notable lack of peer-reviewed studies addressing this topic (Donnis-Kellerman & Silvernail, 2009; Heyward, 2018). Some studies suggested altering the length of the school week has no clear impact on student achievement (Donis-Keller & Silvernail, 2009; Hewitt & Denny, 2011), but the results are inconsistent in determining its effects on academic success.

In 1984, a school district in Custer County, Colorado, piloted a four-day school week for four years and found test scores increased every year (Blankenship, 1984). Additionally, students attending schools in New Mexico between 1972 and 1975 on a four-day school week performed comparably to those in schools operating five days a week. A study by Richburg and Daly (1984) analyzed standardized assessments from five Colorado districts and found no significant effect on the academic achievement of students in schools that transitioned to four-day school

weeks.

Research by Grau and Shaughnessy (1987) has found the four-day school week was effective in rural school districts in the early 1990s. In comparing Colorado districts using four and five-day school weeks, Hewitt and Denny (2011) found while the five-day schooler performed slightly better, there was no statistically significant difference overall. Data collected from schools in Colorado by Anderson and Walker (2015) also revealed a positive relationship between four-day school weeks and student achievement on standardized tests, with 4 to 7% of students performing above the proficiency threshold in math and ELA. However, Thompson (2019) found a 5 to 7% decrease in students scoring above proficient thresholds in math and ELA.

Another study indicated, in the initial two years of implementing a four-day school week, assessment scores were higher, but as time went on, students attending schools with four-day school weeks saw a decline in their scores, ultimately achieving lower results as compared to five-day school counterparts (Tharp et al., 2016). An additional study focused on students in Montana and found similar results. Schools in their first two years of a four-day school week achieved higher rates of proficient or advanced on the state assessment, but every year after, fewer students achieved proficient or advanced than the rest of the state (Tharp, 2014). Tharp (2014) also examined the proficient and advanced students who had been attending schools four-days a week for at least five years and found students achieving proficient and advanced at a lower rate than the state average, with the gap growing.

Morton et al. (2022), found concerns with the effect of a four-day school week on student academic and achievement growth in non-rural areas. They noted within the study, “that how the four-day school week is implemented may be an important factor in its effects on students” (p.

31). While research generally suggests a four-day school week does not have a negative effect on student achievement and learning (Dam, 2006; Donis-Keller & Silvernail, 2009; Morton, 2020; Yarbrough & Gilman, 2006), it remains unclear what additional factors may contribute to student achievement.

Stakeholder Satisfaction

Grau's 1987 study revealed teachers, students, and parents expressed general approval for the four-day school week. In a separate study, Richberg (1983) examined 12 school districts in Colorado and found students' attitudes and school performance improved, alongside a greater focus on academic learning. Furthermore, a satisfaction survey conducted by Dam (2006) indicated 80 to 90% of community members favored continuing four-day weeks in Colorado.

However, while teachers, students, and parents generally viewed the four-day school week positively, business and community leaders hold contrasting views (Turner et al., 2018b). Both community leaders and business owners were divided when it came to assessing the economic impact and the quality of the school districts. A notable 44% expressed a desire to return to five-day school weeks (Turner et al., 2018b). Interestingly, business owners who had students attending the district felt the shortened school week positively impacted their business.

Fifth Day Activities

Many schools that adopt a four-day school week allocate the fifth day for various activities. These can include remedial or enrichment services for students and teachers, as well as extracurricular activities (Thompson, 2021). However, there is limited research regarding the use of the fifth day. Some school districts are using the fifth day for extracurricular activities, professional development, or enrichment and remediation to address the needs of struggling students (Heyward, 2018).

Lewis (2018) found high-quality professional development was a significant advantage of the four-day school week and concluded the four-day week allowed for increased professional development which fostered trust and communication between the teachers. Many schools host professional development days throughout the school year by using late start, early dismissal, or student days off, which interrupt student learning. The four-day school week allows schools to use the non-student attendance day for professional development without disrupting student learning (Lewis, 2018).

Missouri Making the Change

In 2009, Missouri made changes to its educational laws, granting school districts the option to adopt a four-day school week through Senate Bill 291. These changes were clearly outlined in Senate Bill 291 and the accompanying administrative rules, which provided specific guidelines for Missouri districts seeking a four-day model. However, the decision to transition to this alternative schedule still required approval from the local school board. The new model involved reducing the number of instructional days to four while extending the length of each school day to compensate for the lost day.

During the 2010-2011 school year, one Missouri school district adopted the model for a four-day school week (MoDESE, 2023). Subsequently, more schools across the state continued to adopt the four-day model each consecutive year, with the exception of the 2014-2015 school year. Notably, from the 2018-2019 school year to the 2019-2020 school year, the number of schools utilizing the four-day model doubled, resulting in 62 Missouri school districts implementing the four-day school week model. As of the 2022-2023 school year, 144 out of 518 school districts in Missouri have adopted the four-day school week (MoDESE, 2023).

The primary motivation cited by Missouri schools for adopting the four-day school week

is recruitment (Katnik, 2022) and retention of highly qualified staff (Monk, 2007), along with addressing the increased demands for professional development (Turner et al., 2019). Rural schools, in particular, face challenges competing with teaching salaries, and the four-day school week is a way to attract and retain quality teachers (Turner et al., 2019). Schools utilizing a four-day schedule typically utilize the fifth day once a month to provide opportunities for academic collaboration and professional development (Turner et al., 2019). A study was conducted to determine parents' perceptions of the four-day school week, and the results were generally positive. Families reported their students were just as successful as their previous experience with the traditional five-day school week, and the impact on their families due to the extra day off was also seen as positive (Turner et al., 2019).

A study completed by Streeter (2021) examined the reading scores of third-grade students who attended a school utilizing a four-day or five-day school week. Streeter (2021) found third-grade students who attended the districts utilizing four-day school weeks scored at the same level of proficiency on the MAP reading test as third-grade students who attended school five days a week. However, the fourth and fifth-grade students who attended schools utilizing a four-day school week performed at the same level or slightly higher than a five-day school week. Based on a survey Streeter (2021) conducted, this may be due to the remedial courses that were offered to struggling students on the fifth day or "off-day."

Another study examined high school students' scores on MAP and EOCs in the state of Missouri. Daily (2019) found Missouri students attending a high school utilizing a four-day school week scored significantly lower on both ELA and mathematics state assessments than students attending school on the five-day school week. No significant difference was found in academic performance on the social studies state assessment. The Department of Elementary and

Secondary Education (DESE) completed a study on academic achievement and building growth within districts using four-day school weeks. The study found the "four-day school week was neither helpful nor harmful for academic achievement or building growth in Missouri" (Weissman, 2024).

Pros and Cons

The implementation of a four-day school week offers several advantages. Firstly, it provides flexibility for teachers and families, allowing them to schedule doctor appointments and other activities more conveniently (Dam, 2006). Additionally, it often leads to increased attendance for both staff and students due to the extended weekends, reducing absenteeism (Donnis-Keller & Silvernail, 2009; Hewitt & Denny 2011; Yarbrough & Gilman, 2006). The reduction in absenteeism not only benefits the educational process but also leads to cost savings by reducing the need for substitute teachers (Yarbrough & Gilman, 2006). Schools have also noticed teachers become more efficient with their instructional time within a four-day school week (Donnis-Keller & Silvernail, 2009). Overall, the four-day school week has the potential to boost morale among both teachers and students (Donnis-Keller & Silvernail, 2009). A study even found fewer days in a school week resulted in a decrease in behavior problems (Dam, 2006; Hewitt & Denny, 2011).

However, there are also some drawbacks to consider. Parents are faced with the difficulty of finding child care for the fifth day (Dam, 2006; Donnis-Kellerman & Silvernail, 2009). The four-day school week may also have a negative impact on at-risk students who struggle to retain information and require additional time in school for support and resources (Dam, 2006). Moreover, the four-day model may lead to financial strain for staff who are paid hourly, as they would work fewer hours under this new school schedule (Griffith, 2011).

CHAPTER III

METHODOLOGY

Problem Statement/Purpose of the Study

Four-day school weeks have been increasing in Missouri since 2010 with the enactment of Senate Bill 291. Currently, approximately 27% of Missouri's school districts have made the transition to a shorter school week. From the literature review, schools initially cited financial reasons for adopting the four-day school week; however, schools are now using it as a strategy to attract, hire, and retain teachers. Research studies have explored the academic outcomes, financial benefits, and perspectives of community and school stakeholders. However, there's limited research comparing the academic performance of students in districts utilizing a four-day school week versus a five-day school week. As more schools continue to transition to a nontraditional school week, further research is needed to determine the impact of the four-day school week on the academic performance of students.

To examine the four-day versus five-day school week in Missouri, a non-experimental, quantitative, comparative study was conducted to analyze the relationship between academic performance and the length of a school week. Specifically, the study sought to determine whether there is a statistical difference in the academic achievement of students who attend school four days per week compared to those who attend school five days per week as measured by the Missouri Assessment Program (MAP). In addition to academic data, a quantitative survey was emailed to building administrators in districts that have maintained a four-day school week from school year 2017-2018 to 2022-2023 without reverting back to a five-day school week. The survey’s objectives were to understand how the fifth day was utilized, gather stakeholder perspectives, and determine the reasons for their district’s shift to a four-day school week.

Research Questions

This study aimed to examine the academic performance trends in schools using a four-day or five-day school week as measured by the MAP assessment. Student achievement scores will be examined in the areas of Math and English Language Arts (ELA) in grades three through twelfth.

Research Questions (RQ1): How does using a four-day versus five-day school week impact the overall academic performance of students in Missouri public schools?

Research Questions (RQ2): How are schools that implement a four-day school week utilizing the fifth day?

Research Design

According to Creswell and Creswell (2018), quantitative research "is an approach for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures" (p. 4). The purpose of quantitative research is to "generate knowledge and create understanding about the social world" (Allen, 2017, p. 15). For this reason, the research design that best suited the purpose of this specific study was causal-comparative.

Salkind (2010) defined a causal-comparative research design as a "design used to investigate relationships between independent and dependent variables after an event has already occurred" (p. 124). Ultimately, it is looking at cause-and-effect relationships. The goal of this design is to find out if the independent variable (cause) impacted the dependent variable (effect) by comparing two or more groups of people (Salkind, 2010). This type of design is also known as ex post facto, which means the "researcher has no control over the variables; he can only report what has happened" (Kothari, 1990, p. 3).

In this particular study, the causal-comparative research design was used to examine the relationship between the length of the school week and student achievement. The independent variable, which is the length of the school week, was identified as the four-day and five-day school week. The dependent variable, representing student achievement, was assessed using the MAP assessment in Math and ELA between 2018 and 2023.

Participants

In this comparative study, the participants were students in grades third through twelfth who participated each year in the MAP assessment between 2018 and 2023. These students attended schools that follow a four-day or five-day school week exclusively, with no overlap between the two models. Schools that have used both models between 2017 and 2023 were not included in the data collection. Furthermore, schools that do not administer the MAP assessment annually were excluded.

Out of Missouri's 518 school districts, 359 schools met the criteria to be analyzed. There were 26 schools identified from the DESE document titled "*District and Charters Attending a 4-day Week,"* which was available in the Data Portal System (MoDESE, 2023) as four-day week schools between 2017 and 2023. That left 359 school districts that used a 5-day school week between 2017 and 2023.

Furthermore, a quantitative survey was sent to the building-level administrators leading one of the identified 26 schools using a four-day school week between 2017 and 2023. Administrators in school districts that adhered to the traditional five-day school week were excluded from the survey, as the survey focused on the perspective of administration regarding the four-day week, how the fifth day is utilized, and the reasons behind the transition to the four-day school week. Participation in the survey were voluntary.

Instrumentation

The survey was comprised of 10 questions comprised of multi-select and short answer questions (see Appendix A). The questions in the survey were directly related to the research questions. The survey included two demographic questions, inquiries about the reasons for adopting a four-day work week, concerns related to the transition, how the fifth day was utilized, the impact on instruction and teacher retention, and two open-ended questions aimed at assessing the impact on instruction and student learning, as well as exploring the potential for maintaining a four-day school week. A panel of experts and a local building administrator reviewed the questions, and appropriate revisions were made to ensure clarity and understanding.

Data Collection

Before the study began, the researcher received approval from the SIU Human Subjects Committee (see Appendix B). To initiate the process, all 518 school districts in Missouri were examined to identify which schools utilized a four-day school week between 2017 and 2023 and which schools maintained a five-day school week during that same time period. Any school district that switched between both schedules between 2017 and 2023 were excluded from the data collection, which resulted in 26 schools being identified for the four-day school week and 359 schools exclusively adhering to the five-day school week. This information was organized in an excel spreadsheet. Then, the overall district scores in ELA and Math were recorded for each assessment year between 2018 and 2023, with the exception of 2020. The MAP assessment was not administered in 2020 due to the COVID-19 pandemic, resulting in no reported scores for that year. The scores obtained in 2021, though not used for school accreditation, were still incorporated into the data collection for the purposes of this study.

The data collected and analyzed for this study are archived on the Department of

Elementary and Secondary Education (DESE) website. All the data collected is available to the public. No identifiable information is provided within the archived data through the DESE website, which ensures confidentiality.

Data Analysis

The data collected were analyzed utilizing Excel Spreadsheets, google sheets, and SPSS for independent sample *t*-tests. The *t*-tests were applied and analyzed by an individual not associated with the research study. The *t*-tests were used to test differences between the means (average) of two groups (Mishra et al., 2019). It determined if there is a significant difference between the academic achievement of the two groups and how they were related to measuring the mean test scores. An alpha of .05 was used to determine significance. It was essential to determine whether academic differences existed between the students who attend four-day school weeks and students who attend five-day school weeks.

Each Missouri school district was analyzed separately to determine the mean score of students performing proficient and advanced in ELA and Math on the MAP. The districts' data for students performing basic or below basic was omitted. The schools were sorted into two groups based on their length of school week, four days or five days. When all data were sorted into an Excel Spreadsheet, the percentage of students falling into each category was analyzed by school year and year-to-year to determine if there was growth or regression over time. Finally, the survey the researcher sent out to four-day districts was analyzed for similarities and differences.

Internal and External Validity

Experimental designs are a valuable approach to investigating causal relationships between the dependent (MAP assessment) and independent variables (length of school week) by

applying an intervention to one group and not the other. Within this research study, the intervention being studied was the implementation of the four-day school week. The study aimed to compare the end-of-year MAP assessment between the 26 school districts that have adopted a four-day school week and the 359 school districts utilizing the five-day school week. This comparison analyzed the potential impact of the four-day school week on student achievement. The degree to which the dependent variable changes can be attributed to the manipulation of the independent variables, which is known as internal validity (Kaya, 2015).

One challenge to internal validity will arise when measuring the achievement of students in school districts that have had less than 5 years in a four-day school week. Research indicates that schools in the initial two years of implementing a four-day school week often produce high test scores, followed by a decline over time (Tharp et al., 2016). This is also known as "leveling" of student achievement (Daly & Richburg, 1984). To mitigate this issue, the study focused exclusively on the 26 schools that have consistently followed the four-day schedule since the 2017-2018 school year.

External validity, conversely, is concerned with the generalizability of a study's findings (Findley et al., 2021). Conclusions drawn from the data collected will need to be applied cautiously to other schools in Missouri, considering variations in demographics were not analyzed specifically. Findings should also not be applied to other states due to differing structures of the school day and student assessments.

Bias

Another risk exists within the selection of participants or selection bias. Selection bias is a concern when examining pre-existing groups, such as school districts (Kaya, 2015). In this study, the analyzed school districts participated in a four-day or five-day school week between

2017 and 2023, but not both. Factors such as district demographics, student population, cognitive levels, or district size will not be considered when analyzing overall test scores for below-basic, basic, proficient, or advanced levels. Districts with high levels of poverty or special education students may have a negative impact on test scores.

Summary

As more school districts in Missouri continue to transition to four-day school weeks, there is a continued need for further research to inform and guide other school districts considering the transition. School districts need to know the effectiveness of a modified school week and its impacts on student achievement. This study examined student achievement on the end-of-year MAP assessment in school districts that consistently utilized a four-day or five-day school week between 2017 and 2023. A quantitative survey was also sent to the 26 school districts examined for the four-day school week to determine their perspective of the modified schedule, how the fifth day is used, and the reason for transitioning to a modified school week. The selection of participants was purposeful because only a school district that utilized one type of school week, a four-day or five-day, between 2017 and 2023 were analyzed.

CHAPTER IV

RESULTS AND DISCUSSION

Missouri is seeing growth in districts modifying their traditional school calendars to utilize a four-day school week. The motivating factor for moving away from a traditional five-day school week varies across districts; however, the question still stands, how is student achievement impacted over time? This study aimed to provide further documentation and relationships between student achievement in Missouri school districts who attend four-days a week or the traditional five-days a week as measured by the Missouri Assessment Program (MAP). There were 26 four-day school districts and 359 five-day school districts that met the qualifying criteria to analyze their MAP data between 2018 and 2023 of proficient and advanced scores in ELA and Math. This study also included a survey that investigated the reason(s) and concerns behind the transition to a four-day school week, the use of the fifth day, and the administrator's perspective on the impact of the modified schedule.

Testing Selection

The analysis was conducted utilizing a non-experimental, quantitative, comparative study to determine if there was a difference in student achievement levels between the two delivery configurations. Scores from the MAP assessment from 2018-2023, except for 2020, were compiled and analyzed to examine the impact of the four-day week implemented between 2018-2023. Figures were created based on the MAP's annual mean scores of the four-day and five-day districts and the state of Missouri's overall scores in ELA and Math. To test the first research question, "How does using a four-day versus five-day school week impact the overall academic performance of students in grades third through twelfth in Missouri public schools?" an independent sample *t*-test was administered. The *t*-test was selected because it measured the

significance of the average difference between the four-day and five-day school districts.

Ten independent sample *t*-tests were conducted to compare the annual mean scores of ELA and math between the four-day and five-day school districts during Academic Year (AY) AY2018-2023, with the exception of 2020 when the State did not administer the MAP assessment. Ten additional *t*-tests were administered to determine the effect of the length of school week on student achievement in ELA and Math by analyzing comparable school districts from four-day and five-day school districts. Schools were matched based on the population size of the district, percent of students qualifying for free and reduced lunch, percent of Black and White students, percent of students with an individualized education plan (IEP), and the school locale classification (city, suburban, town, rural). In addition, the survey results were compared to investigate similarities and differences to test the second research question: How are schools that implement a four-day school week utilizing the fifth day?

Research Participation

For the quantitative portion of the study, the total sample size of Missouri school districts meeting was 385: 26 four-day school districts and 359 five-day school districts. A survey was e-mailed to the 26 four-day school districts, of which 9 districts responded. One of the 9 districts that responded declined to participate in the survey, which resulted in a response rate of 8 out of 26 (or 31%).

Results

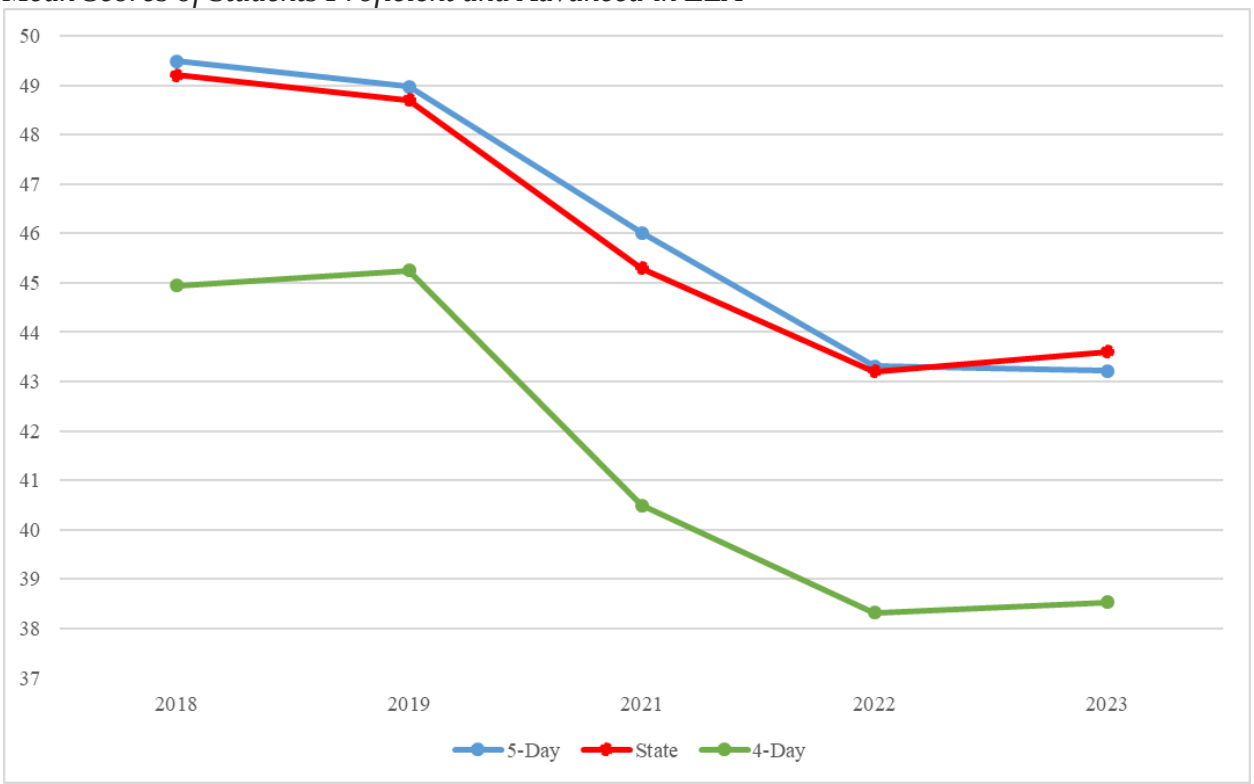
Research Question One

Based upon the first research question, the mean scores of students performing proficient and advanced on the MAP in ELA and Math were calculated for each qualifying four-day and five-day school district between 2018-2023, while 2020 was excluded due to the MAP

assessment not being administered. Figure 2 and Figure 3 serve as a visual representation of how students perform on the MAP assessment each year. Figure 2 represents the mean scores for the five-day, four-day, and state averages in ELA from 2018-2023. The five-day school weeks maintained the highest mean score from 2018-2022 in ELA. The state mean score was the highest achieving in 2023. Figure 2 shows the 26 four-day school districts underperforming the 359 five-day school districts as well as the annual state average. Overall, test scores from all three sources followed a similar trend of increases and decreases in scores between AY2018-2023 which also indicated the five-day school weeks produce higher mean ELA averages than the four-day school weeks.

Figure 2

Mean Scores of Students Proficient and Advanced in ELA

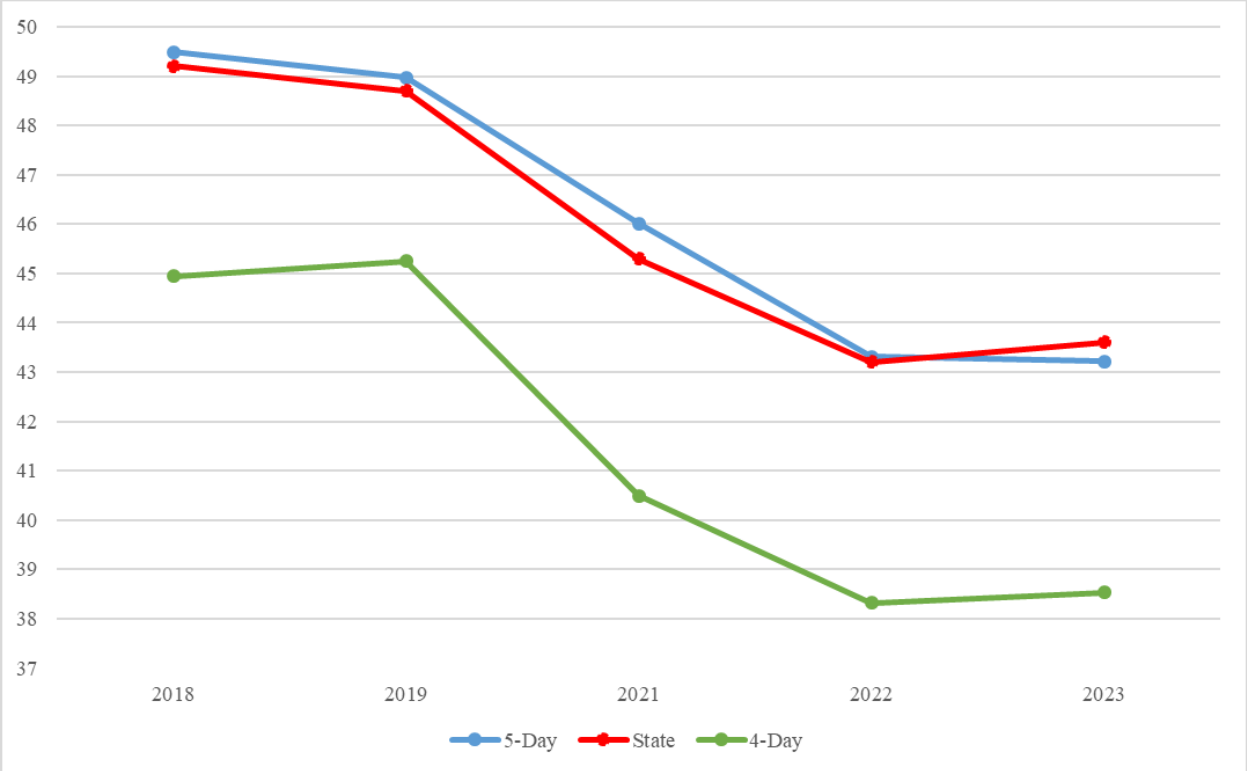


Note. The chart represents student performance in four-day and five-day school districts compared to the state average on the MAP assessment.

The average Math scores from 2018-2023 for the five-day, four-day, and the state are represented in Figure 3. The state average maintained the highest mean score for 2018 and 2019 in Math. The five-day school districts earned the highest mean scores from 2021-2023. Figure 3 shows the 26 four-day school districts underperforming the 359 five-day school districts as well as the annual state average. In general, the data for the three sources continued to follow the same trend as depicted in ELA between AY2018-2023. This indicated the five-day school weeks produce higher mean ELA averages than the four-day school weeks.

Figure 3

The Mean Score of Students Proficient and Advanced in Math



Note. The chart represents student performance in four-day and five-day school districts compared to the state average on the MAP assessment.

MAP: Math Analysis

Ten independent sample *t*-tests were conducted to assess whether significant differences

existed within ELA and Math scores between the four- and five-day school districts. Specifically, the mean scores of students who performed “proficient” and “advanced” were measured and compared between Missouri’s 26 four-day school districts and its 359 five-day school districts. The districts’ data for students performing “basic” or “below basic” were omitted.

The yearly mean Math scores for four-day and five-day districts from 2018-2023 are represented in Table 1. The N describes the number of school districts measured each year. In 2018, one of the 359 schools did not have Math scores to report and was eliminated from the analysis that year. The mean demonstrates the average score, while the standard deviation demonstrates the spread of scores relative to the mean. The highest mean was found in 2018 by five-day districts (M = 42.07, SD = 12.81). The standard deviation represents the value by which the scores may deviate around the mean. The lowest mean occurred in 2021 by the four-day districts (M = 30.00, SD = 8.36). The smaller standard deviation represents the value by which the scores may deviate around the mean.

Table 1

Yearly Mean Math Scores for Four-day and Five-day

Math		N	Mean	Std. Deviation
2018	4-Day	26	35.20	8.14
	5-Day	358*	42.07	12.81
2019	4-Day	26	34.29	9.31
	5-Day	359	41.97	13.08
2021	4-Day	26	30.00	8.36
	5-Day	359	37.19	13.54
2022	4-Day	26	33.37	10.87
	5-Day	359	39.66	13.42
2023	4-Day	26	34.69	9.13
	5-Day	359	41.23	13.57

**Note.* The 5-Day school representation was 358 and not 359 due to missing data.

As illustrated in Table 1, the mean difference was largest in 2019 between the four-day and five-day school weeks. 2022 had the smallest difference in means when comparing four-day and five-day districts. The average score of students performing proficient and advanced in five-day school weeks demonstrated a higher mean each year between 2018 and 2023 than the students performing proficient and advanced in the four-day school weeks. This indicates students attending five-day school districts outperformed four-day school districts between AY2018-2023 in Math.

The results of the five sample *t*-tests provided in Table 2 (below) showed the statistical difference between four-day and five-day school weeks was significant. Each year, the five-day

districts scored higher than the four-day districts. In 2018, the five-day districts' mean Math score (M = 42.07, SD = 12.81) was significantly higher as compared to four-day school districts' (M = 35.20, SD = 8.14), t(34.712) = -3.961, p <.001, *Cohen's d* = .547. In 2019, the five-day school districts' mean Math score (M = 41.97, SD = 13.01) were significantly higher as compared to four-day school districts' (M = 34.29, SD = 9.31), t(383) = -2.938, p = .004, *Cohen's d* = .597. In 2021, the five-day districts' mean Math score (M = 37.19, SD = 13.54) were significantly higher as compared to four-day school districts' (M = 30.00, SD = 8.36), t(35.321) = -4.020, p <.001, *Cohen's d* = .542. In 2022, the five-day districts' mean Math score (M = 39.67, SD = 13.42) were significantly higher as compared to four-day school districts' (M = 33.37, SD = 10.87), t(384) = -2.336, p = .020, *Cohen's d* = .474. Lastly, in 2023, the five-day school districts' mean Math score (M = 41.23, SD = 13.57) were significantly higher as compared to four-day school districts' (M = 34.69, SD = 9.12), t(383) = -2.415, p = .016, *Cohen's d* = .491.

Table 2

Five Math Sample t-tests

Math	*t*	*df*	*p*	Mean Difference	Std. Error Difference	Cohen's d
2018	-3.961	34.712	< .001*	-6.87	1.73	0.547
2019	-2.938	383	.004	-7.68	2.61	0.597
2021	-4.020	35.321	<.001*	-7.19	1.79	0.542
2022	-2.336	384	.020	-6.29	2.69	0.474
2023	-2.415	383	.016	-6.54	2.71	0.491

**Note.* <.001 is the lower bounds of true significance. In 2018-2023, four-day district sample (n = 26). In 2018, five-day districts (n = 358), 2019-2023 (n = 359).

These data indicate five-day school weeks scored significantly higher in Math each year than its four-day school counterparts. In addition, the effect size of each year, measured by *Cohen's d*, indicated a moderate effect. Based on the five years of analyzed data, 2019 had the largest magnitude of difference between the means (*Cohen's d* = .597), while 2022 had the smallest difference between the means (*Cohen's d* = .474).

MAP: ELA Analysis

Table 3 provides the yearly mean ELA scores for four-day and five-day districts from 2018-2023. The N describes the number of school districts measured each year. The mean demonstrates the average score, while the standard deviation demonstrates the spread of scores relative to the mean. The highest mean was found in 2018 by five-day districts (*M* = 49.49, *SD* = 10.55). The standard deviation represents the value by which the scores may deviate around the mean. The lowest mean occurred in 2022 by the four-day districts (*M* = 38.32, *SD* = 9.27). The smaller standard deviation represents the value by which the scores may deviate around the mean.

Table 3

Yearly Mean ELA Scores for Four-day and Five-day

ELA		N	Mean	Std. Deviation
2018	4-Day	26	44.94	8.51
	5-Day	359	49.49	10.55
2019	4-Day	26	45.25	8.96
	5-Day	359	48.97	10.42
2021	4-Day	26	40.50	7.95
	5-Day	359	46.02	11.03
2022	4-Day	26	38.32	9.27
	5-Day	359	43.31	10.78
2023	4-Day	26	38.53	8.52
	5-Day	359	43.22	10.79

Table 3 displays the difference in the means was largest in 2021 between the four-day and five-day school weeks. 2019 had the smallest difference in means when comparing four-day and five-day districts. The average score of students performing proficient and advanced in school districts utilizing a five-day week demonstrated a higher mean each year between 2018 and 2023 than similarly-situated students' in the four-day school weeks. This indicates each year five-day school weeks produce higher ELA mean scores on the annual MAP assessment.

The results of the five sample *t*-tests are depicted in Table 4 and indicate from 2018 through 2023, the statistical difference between four-day and five-day school weeks was significant, with the exception of 2019. In 2018, the five-day districts' mean ELA score (M = 49.49, SD = 10.55) was significantly higher as compared to four-day school districts' (M = 44.94, SD = 8.51), $t(383) = -2.149$, p .032, *Cohen's d* = .436. In 2019, the five-day school districts' mean ELA score (M = 48.97, SD = 10.42) was not significantly higher as compared to

four-day school districts' (*M* = 45.25, *SD* = 8.96), *t*(383) = -1.770, *p* .078, *Cohen's d* = .359. In 2021, the five-day districts' mean ELA score (*M* = 46.02, *SD* = 11.03) was significantly higher as compared to four-day school districts' (*M* = 40.50, *SD* = 7.95), *t*(383) = -2.503, *p* .013, *Cohen's d* = .508. In 2022, the five-day districts' mean ELA score (*M* = 43.31, *SD* = 10.78) was significantly higher as compared to four-day school districts' (*M* = 38.32, *SD* = 9.27), *t*(383) = -2.299, *p* .022, *Cohen's d* = .467. In 2023, the five-day school districts' mean ELA score (*M* = 43.22, *SD* = 10.79) was significantly higher as compared to four-day school districts' (*M* = 38.53, *SD* = 8.52), *t*(383) = -2.167, *p* .031, *Cohen's d* = .440.

Table 4

Five ELA Sample t-tests

ELA	*t*	*df*	*p*	Mean Difference	Std. Error Difference	Cohen's d
2018	-2.149	383	.032	-4.55	2.12	0.436
2019	-1.770	383	.078	-3.71	2.10	0.359
2021	-2.503	383	.013	-5.52	2.21	0.508
2022	-2.299	383	.022	-4.99	2.17	0.467
2023	-2.167	383	.031	-4.69	2.16	0.440

Note. In 2018-2023, four-day district sample (n=26) and five-day districts (n=358).

This indicates each year, five-day school weeks scored higher in ELA compared to the four-day school weeks. In addition, the effect size of each year, measured by *Cohen's d*, indicated a moderate effect. Based on the five years of analyzed data, 2021 had the largest magnitude of difference between the means (*Cohen's d* = .508), while 2019 had the smallest difference between the means (*Cohen's d* = .359).

MAP: Matched Schools Math Analysis

An additional 10 independent sample *t*-tests were administered to measure the five school years of data in ELA and Math between Missouri's four-day and comparable five-day school districts. Tables 5-8 are representative of the matched schools for four and five-day school weeks. Comparable schools were identified and analyzed to control for demographic confounds.

The yearly mean Math scores for the comparable four-day and five-day districts from 2018-2023 are conveyed in Table 5. The N describes the number of school districts measured each year. The mean demonstrates the average score, while the standard deviation demonstrates the spread of scores relative to the mean. The highest mean was found in 2019 by five-day districts (M = 45.47, SD = 13.17). The standard deviation represents the value by which the scores may deviate around the mean. The lowest mean occurred in 2021 by the four-day districts (M = 30.00, SD = 8.36). The smaller standard deviation represents the value by which the scores may deviate around the mean.

Table 5

Yearly Mean Math Scores for Comparable Four-day and Five-day

Math		N	Mean	Std. Deviation
2018	4-Day	26	35.20	8.14
	5-Day	26	43.79	14.31
2019	4-Day	26	34.29	9.31
	5-Day	26	45.47	13.17
2021	4-Day	26	30.00	8.36
	5-Day	26	40.44	12.11
2022	4-Day	26	33.37	10.87
	5-Day	26	42.28	8.76
2023	4-Day	26	34.69	9.13
	5-Day	26	44.13	10.72

Table 5 outlines the average score of students performing proficient and advanced in five-day school weeks demonstrated a higher mean each year between 2018 and 2023 than the students performing proficient and advanced in the four-day school weeks. The difference in the means was largest in 2019 between the four-day and five-day school weeks. 2018 had the smallest difference in means when comparing four-day and five-day districts. This indicates each year, five-day school weeks produce higher mean Math scores on the annual MAP assessment.

The results of the five sample *t*-tests indicated that from 2018 through 2023, the statistical difference between the comparable four-day and five-day school weeks was significant, as displayed in Table 6. In 2018, the five-day districts' mean Math score (M = 43.79, SD = 14.31) was significantly higher as compared to four-day school districts' (M = 35.20, SD = 8.14), $t(25)$ = -2.666, p .013, *Cohen's d* = .523. In 2019, the five-day school districts' mean Math score (M = 45.47, SD = 13.17) was significantly higher as compared to four-day school districts' (M =

34.29, *SD* = 9.31), *t*(25) = -3.475, *p* .002, *Cohen's d* = .682. In 2021, the five-day districts' mean Math score (*M* = 40.44, *SD* = 12.11) was significantly higher as compared to four-day school districts' (*M* = 30.00, *SD* = 8.36), *t*(25) = -3.576, *p* .001, *Cohen's d* = .701. In 2022, the five-day districts' mean Math score (*M* = 42.28, *SD* = 8.76) was significantly higher as compared to four-day school districts (*M* = 33.37, *SD* = 10.87), *t*(25) = -3.751, *p* <.001, *Cohen's d* = .736. In 2023, the five-day school districts' mean Math score (*M* = 44.13, *SD* = 10.72) was significantly higher as compared to four-day school districts' (*M* = 34.69, *SD* = 9.13), *t*(25) = -3.541, *p* .002, *Cohen's d* = .694.

Table 6

Five Math Sample t-tests for Comparable Schools

Math Comparable	*t*	*df*	*p*	Mean Difference	Std. Deviation	Cohen's *d*
2018	-2.666	25	.013	8.59	16.43	0.523
2019	-3.475	25	.002	11.18	16.41	0.682
2021	-3.576	25	.001	10.44	14.89	0.701
2022	-3.751	25	<.001	8.91	12.11	0.736
2023	-3.541	25	.002	9.44	13.60	0.694

This indicates each year, five-day school weeks scored higher in Math compared to the four-day school weeks. In addition, the effect size of each year, measured by Cohen's d, indicates a large effect. Based on the five years of analyzed data, 2022 had the largest magnitude of difference between the means (*Cohen's d* = .736), while 2018 had the smallest magnitude of difference between the means (*Cohen's d* = .523).

MAP: Matched Schools ELA Analysis

The yearly mean ELA scores are displayed in Table 7 for the comparable four-day and five-day districts from 2018-2023. The N describes the number of school districts measured each year. The mean demonstrates the average score, while the standard deviation demonstrates the spread of scores relative to the mean. The highest mean was found in 2018 by five-day districts (M = 50.47, SD = 11.37). The standard deviation represents the value by which the scores may deviate around the mean. The lowest mean occurred in 2022 by the four-day districts (M = 38.32, SD = 9.27). The smaller standard deviation represents the value by which the scores may deviate around the mean.

Table 7

Yearly Mean ELA Scores for Comparable Four-day and Five-day

ELA		N	Mean	Std. Deviation
2018	4-Day	26	44.94	8.51
	5-Day	26	50.47	11.37
2019	4-Day	26	45.25	8.96
	5-Day	26	49.52	9.96
2021	4-Day	26	40.50	7.95
	5-Day	26	46.57	10.17
2022	4-Day	26	38.32	9.27
	5-Day	26	45.34	9.62
2023	4-Day	26	38.53	8.52
	5-Day	26	44.71	9.32

As indicated in Table 7, the average score of students performing proficient and advanced in ELA in the comparable five-day school weeks demonstrated a higher mean each year between 2018 and 2023 than the students performing proficient and advanced in the four-day school

weeks. The difference in the means was largest in 2022 between the four-day and five-day school weeks. 2019 had the smallest difference in means when comparing four-day and five-day districts. This indicates that each year five-day school weeks produce higher mean ELA scores on the annual MAP assessment.

Table 8 highlights the results of the five independent samples *t*-tests which indicated the performance difference between four-day and five-day school districts was significant across the five years. In 2018, the five-day districts' mean ELA score (M = 50.47, SD = 11.37) was significantly higher as compared to four-day school districts' (M = 44.94, SD = 8.51), $t(25)$ = -2.143, p .042, *Cohen's d* = .420. In 2019, the five-day school districts' mean ELA score (M = 49.52, SD = 9.96) was not significantly higher as compared to four-day school districts' (M = 45.25, SD = 8.96), $t(25)$ = -1.746, p .093, *Cohen's d* = .342. In 2021, the five-day districts' mean ELA score (M = 46.57, SD = 10.17) was significantly higher as compared to four-day school districts' (M = 40.50, SD = 7.95), $t(25)$ = -2.61, p .015, *Cohen's d* = .512. In 2022, the five-day districts' mean ELA score (M = 45.34, SD = 9.63) was significantly higher as compared to four-day school districts' (M = 38.32, SD = 9.27), $t(25)$ = -2.944, p .007, *Cohen's d* = .577. In 2023, the five-day school districts' mean ELA score (M = 44.71, SD = 9.32) was significantly higher as compared to four-day school districts' (M = 38.53, SD = 8.52), $t(26)$ = -3.074, p .005, *Cohen's d* = .440.

Table 8

Five ELA Sample t-tests for Comparable Schools

ELA Comparable	*t*	*df*	*p*	Mean	Std. Deviation	Cohen's *d*
2018	-2.143	25	.042	-5.53	13.15	0.420
2019	-1.746	25	.093	-4.27	12.47	0.342
2021	-2.61	25	.015	-6.08	11.87	0.512
2022	-2.944	25	.007	-7.02	12.16	0.577
2023	-3.074	25	.005	-6.18	10.25	0.603

This indicates that each year, five-day school weeks scored higher in ELA compared to the four-day school weeks. In addition, the effect size of each year, measured by Cohen's d, indicated a moderate effect. Based on the five years of analyzed data, 2023 had the largest magnitude of difference between the means (*Cohen's d* = .603), while 2019 had the smallest magnitude of difference between the means (*Cohen's d* = .342).

Research Question 2

This research question was answered through a survey sent to the 26 qualifying four-day school districts. The survey had 10 questions, comprised of eight multi-select and two short-answer questions. They were developed in an effort to determine the main factors and concerns leading to implementing the four-day school week, its impact on student learning, teacher recruitment and retention, and whether the district continued to support a four-day school week. The results from each survey question were compiled and organized into bar graphs. After follow-up correspondence on three separate occasions, a total of eight superintendents completed the survey within a three-week timeframe, for a response rate of 31 percent.

Figure 4 represents the district role of each participant who completed the survey. The figure shows the four multiple-choice options provided to the survey respondents to answer the question, “What is your current administrative assignment?” The results showed eight superintendents agreed to participate in the survey. Since no other administrative role/position completed the survey, only the perspective of a superintendent will be represented for each question.

Figure 4

Role of the Individual Filling Out the Survey

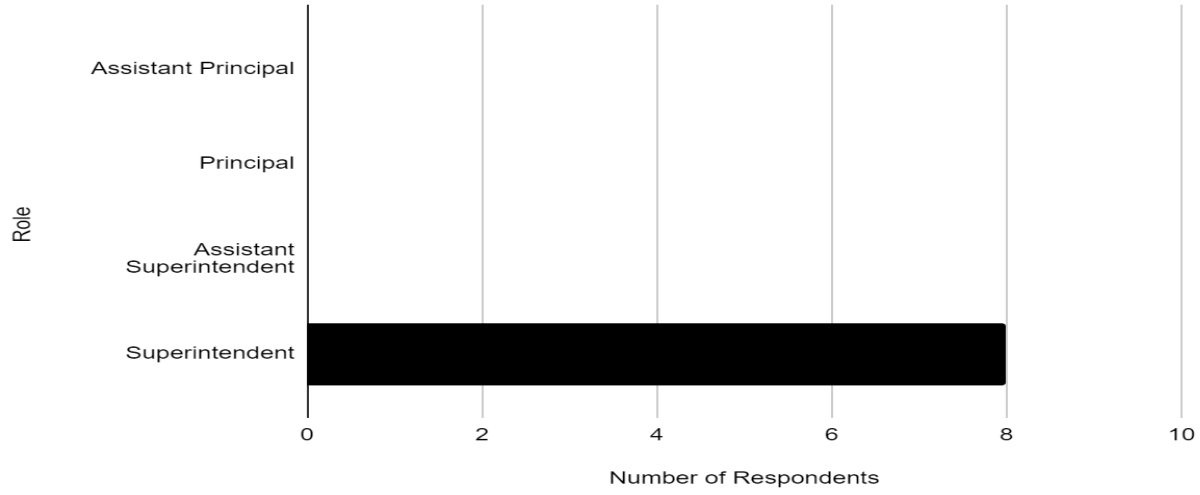


Figure 5 represents the years a participant has served in their district. These data show the four multiple-choice options provided to the respondent to answer the question, “How many years have you been in your current administrative assignment?” The results indicated most respondents had held their administrative role for 1-3 years (37.5%). Followed by respondents serving 4-5 years (25%) and an additional serving in their role for 6-8 years (25%). The lowest response was 9-10+ (12.5%). Overall, the data represent that most superintendents who responded have worked in their current school district for less than three years.

Figure 5

Number of Years in Current Administrative Assignment

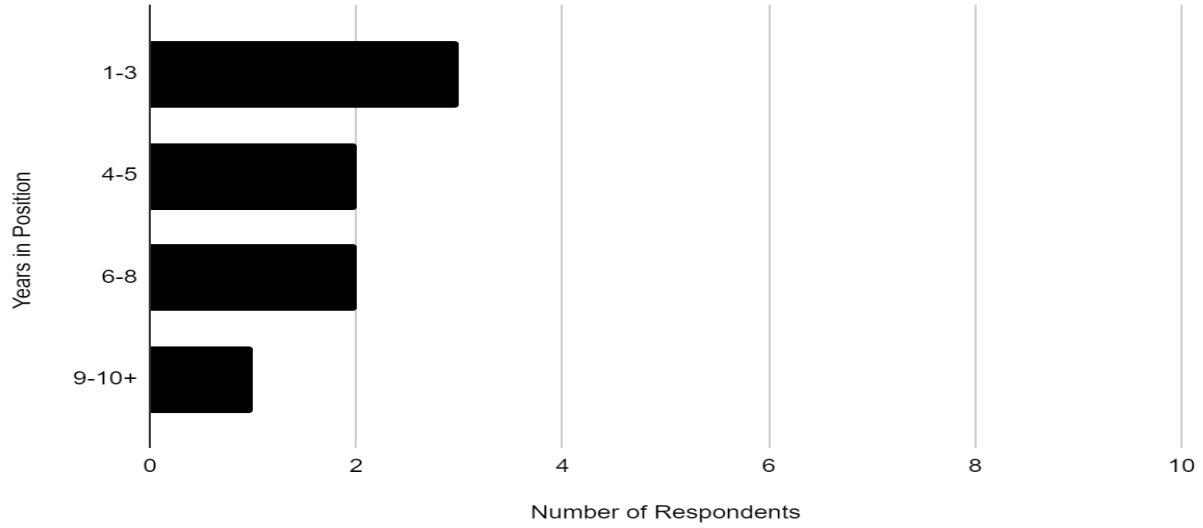
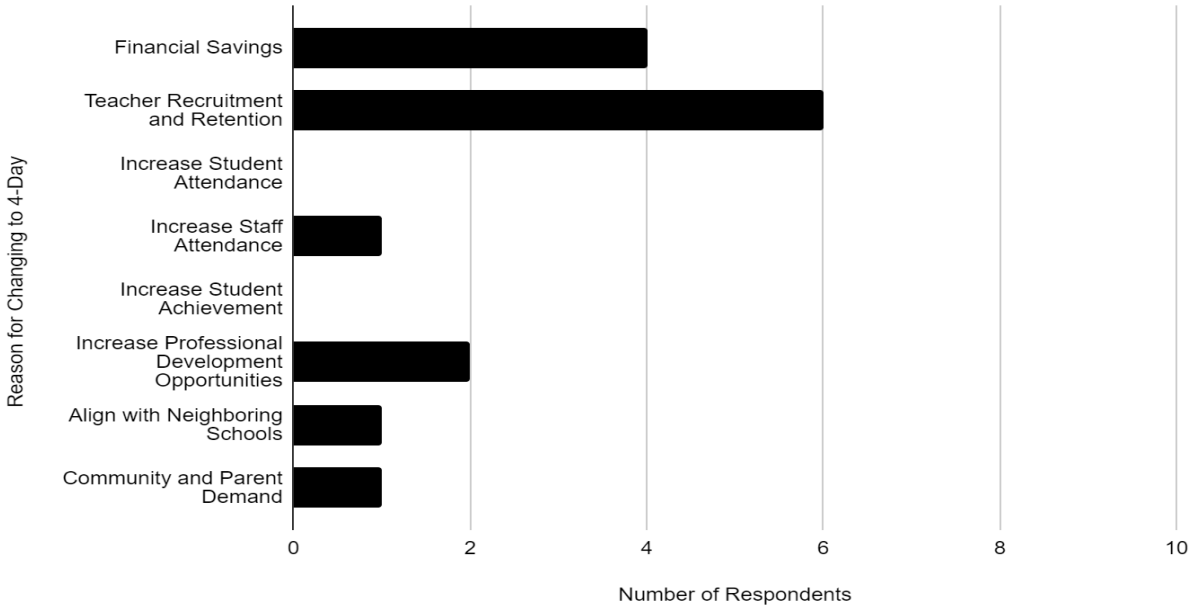


Figure 6 represents the primary reasons a superintendent's district transitioned to a four-day school week. These data show the eight multiple-choice options provided to respondents to answer the question, "What were the two primary reasons for moving to a four-day school week?" The respondents were asked to check two boxes that apply in no particular order. The results indicated the main two reasons for moving to a four-day school week were for teacher recruitment and retention (75%) and for financial savings (50%). Increased professional development was the third ranked reason (25%). Each of the next three options—alignments with neighboring schools, response to community and parent demand, and attendance issues related to staff— had a 12.5% response rate. No respondent indicated either of the final two reasons— attendance related to students or increased student achievement—on the survey.

Figure 6

Two Primary Reasons for Moving to a Four-Day School Week



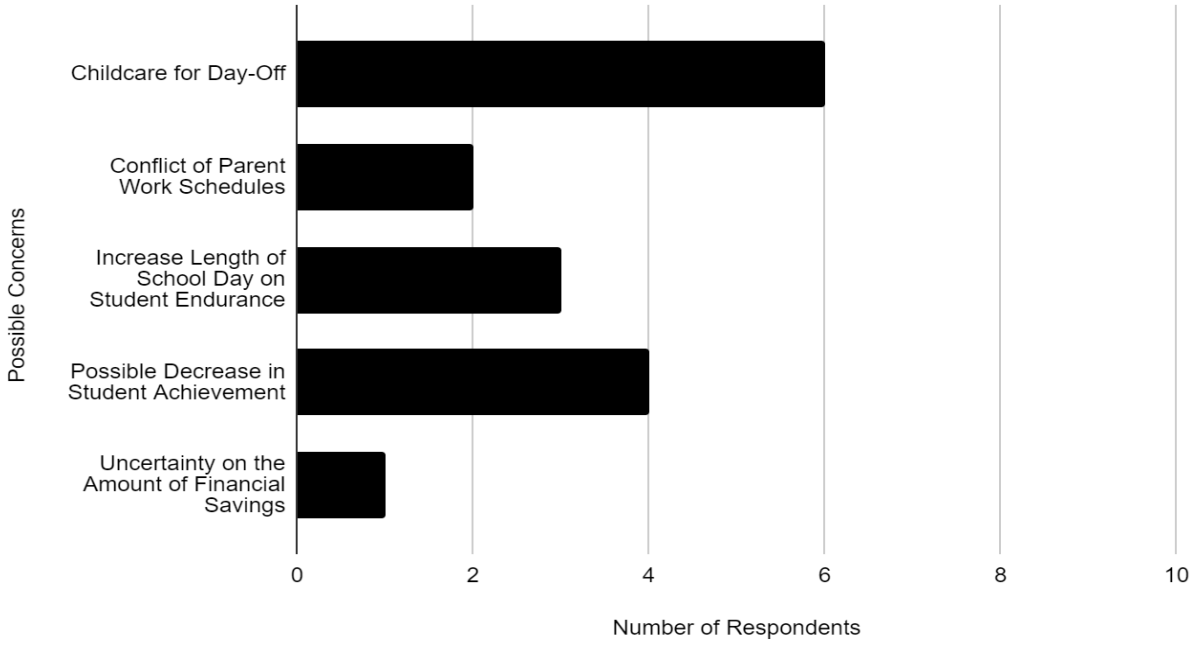
Two respondents commented on the "other" option included in the multiple-choice options. One respondent stated, "Our district moved to the 4-day week primarily as a teacher recruitment/retention issue, along with cost savings." As a rural district, the respondent stated they had lower salaries than surrounding districts and bordered two other four-day districts. The transition to a four-day week found significant savings in transportation costs. A second respondent added Mondays, non-student days, are used to equip the teachers.

Figure 7 represents the primary concerns a district considered when exploring a four-day school week. These data show the five multiple-choice options provided to the respondents to answer the question, "What were the two primary concerns when considering the transition to a four-day school week?" The respondents were asked to check two boxes that apply in no particular order. The respondents indicated childcare for the day-off was the primary concern (75%) in transitioning to a four day school week. This was followed by the concern of a possible

decrease in student achievement (50%). Respondents gave moderate consideration to the next two concerns: length of a school day on student endurance (37.5%) and conflict with parent work schedules (25%). Coming in with the lowest consideration (12.5%) was the uncertainty of the amount of financial savings to the district.

Figure 7

Two Primary Concerns When Considering the Transition to a Four-Day School Week



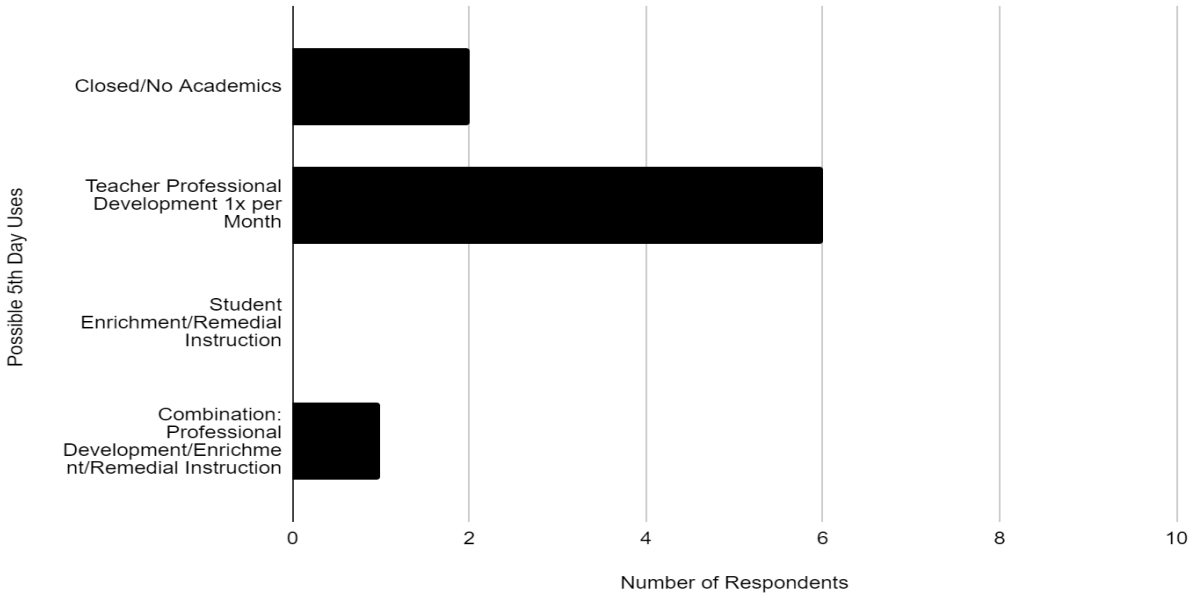
Under "other" responses, one respondent sought to include additional information regarding their multiple choice answer: "Parent surveys now indicate more support for the 4-day week because it keeps the schedule more consistent." The respondent further elaborated by sharing that their fifth day off, Mondays, is used for all professional development, parent-teacher conferences, and other district meetings.

Figure 8 represents how the fifth day or the day "off" is utilized within a four-day school week. These data show the four multiple-choice options provided to the respondents to answer the question, "On the 5th day of a typical 4-day week (when students are not in attendance), what

does your district's off-day look like?" In calculating the frequency, seven respondents marked only one response, while the eighth individual selected two of the responses. By a wide margin, the results of Figure 8 indicate the fifth day is used for teacher professional development at least once a month (75%). Coming in a distant second and third, the respondents noted the building is closed/no academics (25%). The lowest response rate was a combination of professional development/enrichment/remedial instruction (12.5%). No respondents utilized the fifth day for only student enrichment/remedial instruction. The respondent who chose two answers selected teacher professional development at least once a month and closed/no academics.

Figure 8

What Does the Off-Day or Fifth Day Look Like in the District?



Under "other" responses, one superintendent added a comment to their response. They stated the district utilizes the fifth day two times a month for staff professional development. This particular district found remedial or tutoring for students to be a hardship for families who

already had a system in place for the day off. They also stated transportation was found to be difficult for families.

Figure 9 represents how the four-day school week had impacted instruction and learning. These data show the four possible multiple-choice options for respondents to answer the question, “To what degree has the four-day school week impacted instruction and learning in your district.” The respondents selected one option. The respondents indicated the four-day workweek “somewhat” impacted instruction and learning (62.5%). A small portion of the respondents found very little impact on instruction and learning (25%), while others found the impact was “to a great extent” (12.5%). No respondent indicated the four-day week had no impact on instruction and learning.

Figure 9

The Degree a Four-Day School Week has Impacted Instruction and Learning in the District

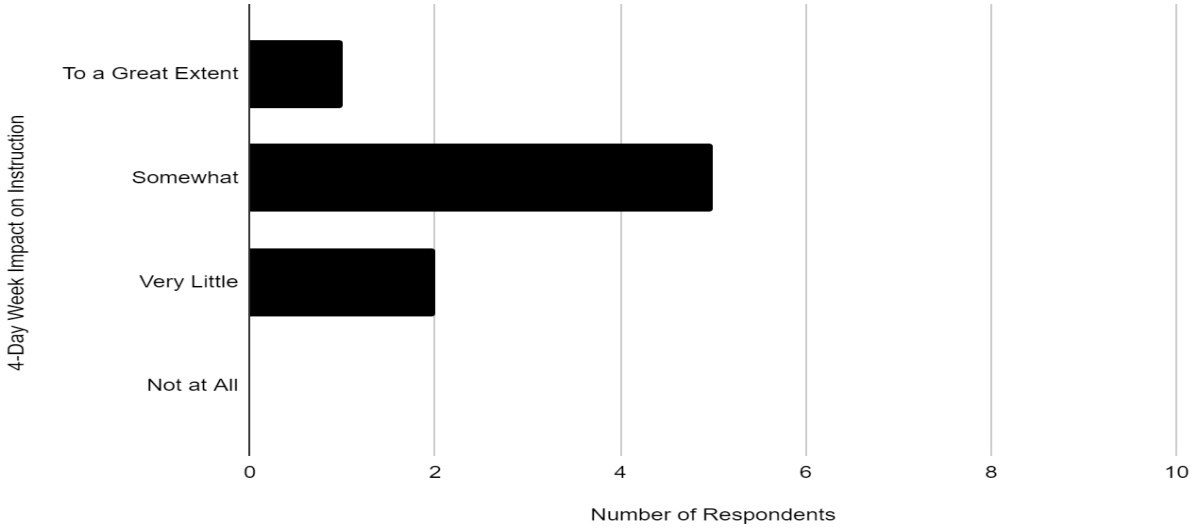


Figure 10 represents the superintendents’ perspective on the impact of the four-day school week on teacher retention and recruitment. These data show the four possible multiple-choice options for respondents to answer the question, “To what degree has the transition to a

four-day school week impacted teacher recruitment and retention." The respondents selected the one option. The results indicated the transition to a four-day school week had a "somewhat" of an impact (62.5%) on teacher recruitment and retention, while other respondents noted the impact was "to a great extent" (37.5%).

Figure 10

The Impact on Teacher Recruitment and Retention with the Transition to a Four-Day School Week

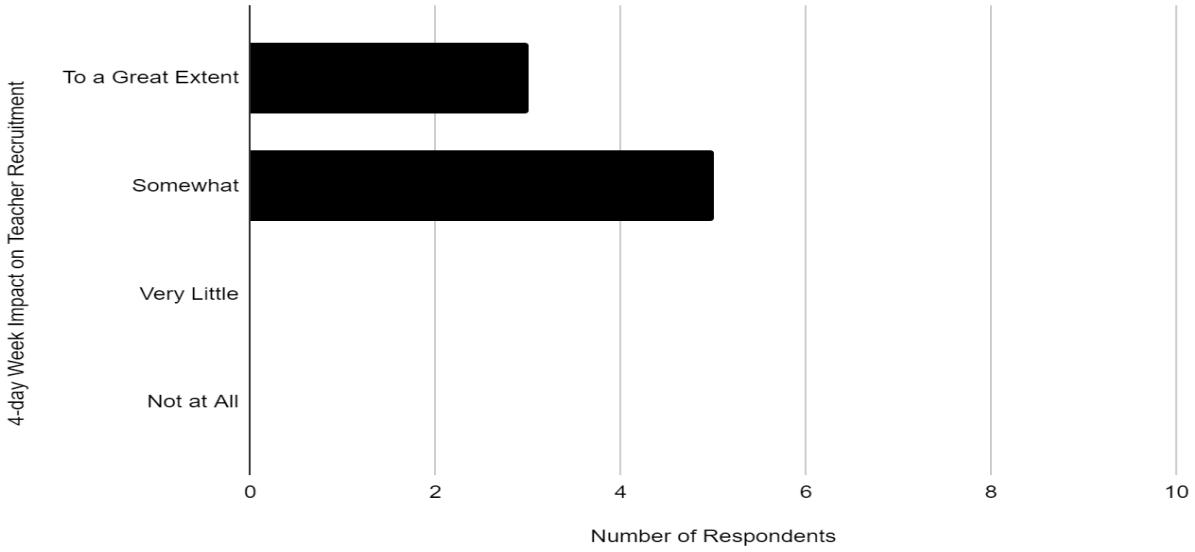
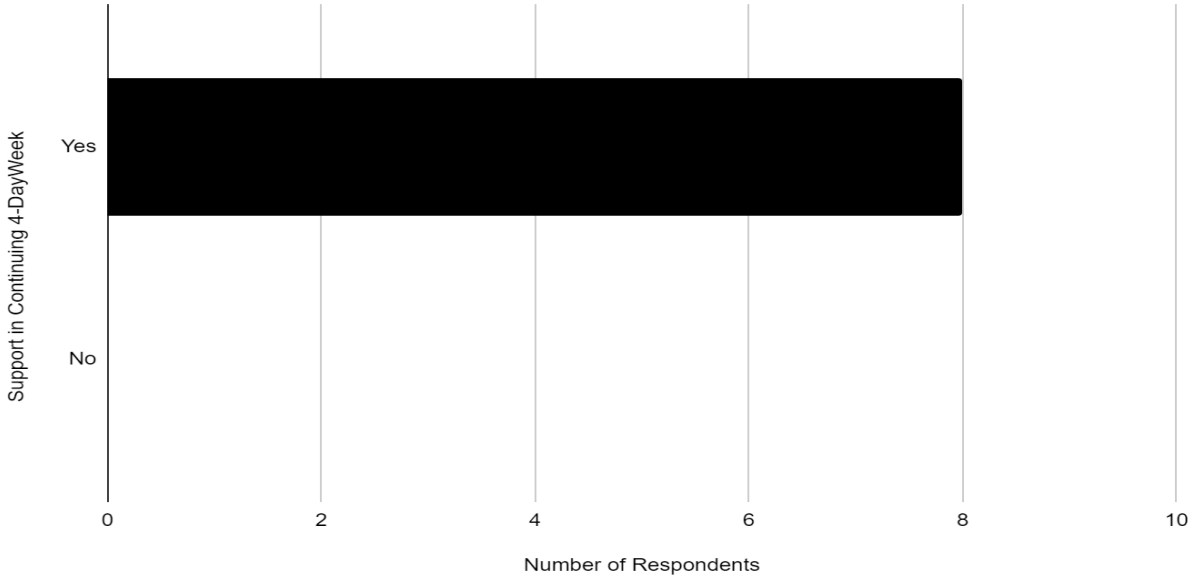


Figure 11 represents if the respondents, superintendents, would continue to use a four-day school week. These data show two possible responses, yes or no, to the question, "Do you support continuing the four-day school week next year? Why or why not?"

Figure 11

Do You Support Continuing the Four-Day School Week Next Year?



All eight respondents (100%) indicated they would support continuing the four-day school week the following year. The question had a second part, "why or why not," that required a short answer. Only seven respondents answered, "why or why not." The following responses were gathered:

1. It provides teachers with extra professional development time along with time. They also have two Mondays to utilize as Mental Health Days. Parents enjoy the three-day weekend because they are to complete the weekend and have a Monday to catch up.
2. This is year 13, and our community is fully invested in the 4-day week.
3. Neighboring districts still pay more money and have a four-day workweek.
4. It is ingrained in our school culture, as this is our district's thirteenth year of its existence.
5. Teacher retention has improved drastically. The most important factor for student

achievement is to have a quality teacher in every classroom.

6. Transitioning to a 5-day week, we could lose teachers to higher paying districts that are within driving distance. This is always a concern, but a 4-day week provides teachers with a greater sense of work/life balance.
7. It allows us as a small school to equip teachers and, in turn, improve and strengthen our instructional program. Teachers are stretched thin. This twice monthly Monday professional development strengthens our team.

The respondents were asked a final question, "Is there any additional information that would be valuable to share?" Four respondents added additional comments. The first respondent stated, "Community support will make or break your decision to move forward." The second respondent provided additional resources regarding the four-day school week. The individual stated, "Jon Turner at Missouri State has done a ton of research on the four-day school week, including visiting every district in Missouri. He is the state's leading guru and has tons of data. He is a great resource." The third respondent stated:

> I think districts need to be extremely diligent in how they use and allocate the extra instructional minutes in the longer school day. We are restructuring our master schedules at the MS and HS levels to provide more structure for RTI with these minutes. It is a complete waste of instructional time to just make this extra time an advisory period with no structure.

The last respondent stated:

> Every school will do a four-day week differently. As a small school with limited staff, using it to pour into our teachers makes sense. For others, it is a time to pour into specific student needs. Also, we keep a consistent 4-day week. Never dismiss early or arrive late.

> This consistency builds continuity. Many schools have varied schedules and are sporadically taking time off. However, one of the often overlooked benefits of the four-day week is that you can do snow makeup days quickly and actually make up the day and not tack it on to the end of the year.

Summary

This chapter presented the results from the *t*-test administered to determine if there were any significant statistical differences between the school districts' proficient and advanced scores on the MAP in ELA and Math for the four-day and five-day school districts from 2018-2023. The *t*-test results indicated there were statistical differences in both ELA and Math. To ensure the results were not skewed, *t*-tests were run on comparable schools between the qualifying four-day and five-day districts. These *t*-tests also found statistical differences. In addition to the *t*-tests, a survey was emailed to gather more information regarding four-day school districts. The survey responses were gathered and presented in bar graphs. These graphs provided insight into the considerations and concerns when considering moving to a four-day week and how the school week is currently used within districts.

CHAPTER V

SUMMARY

The four-day school week is not a new concept for the United States. This modified school calendar has been utilized since the 1930s as an approach to combat the financial and operational challenges encountered by school districts. Currently, 24 states have at least one school district operating within a four-day school week, and the trend of school districts embracing this non-traditional school calendar is on the rise.

Similar to the other states with abbreviated school weeks, Missouri is also experiencing an increase in the number of districts adopting this non-traditional school week. As of 2023, 144 school districts, or 27% of all Missouri public schools, have reported utilizing a four-day school week. However, as the number of schools and districts utilizing this delivery format grows, students' academic achievement scores continue to decline.

The researcher examined the academic impacts of the four-day school week on student achievement as measured by the Missouri Assessment Program (MAP). Chapter V analyzes the study's results in relation to both research questions. Specifically, this chapter delves into the implications and provide recommendations for future studies on the impact of four-day school weeks on student achievement.

Response to Research Question One

The researcher posed the following for research question #1: How does using a four-day versus five-day school week impact the overall academic performance of students in Missouri public schools?

Overall, there was a statistically significant difference between four-day and five-day school weeks in both ELA and Math, with the exception of ELA scores in 2019. On an annual

basis, the districts utilizing a four-day school week underperformed when compared to the five-day districts. Specifically, during this review period, students who attended four-day school districts earned a range of 6-7 points lower in Math, while the trend in ELA scores was similar but with a smaller score gap of 3-5 points. Unfortunately, when comparing the 26 similarly matched four-day and five-day school districts, the difference in mean scores was even more substantial—with four-day districts' mean scores underperforming by 8-11 points in Math and 4-7 points in ELA.

Response to Research Question Two

The researcher posed the following for research question #2: How are schools that implement a four-day school week utilizing the fifth day?

Based on the results of the study, 75% of the survey participants mentioned that the fifth day, or the non-student day, was allocated for professional development at least once a month. It is unknown, however, if every fifth day is solely used for professional development or days off as well. This response was not unexpected, given the respondents' primary reasons for implementing a four-day school week were (1) teacher recruitment and retention (75%), and (2) financial saving (50%). Professional development days can effectively address both of these concerns by providing teachers with training and resources, while also reducing the expenditure of hourly personnel.

It is noteworthy that student achievement was not mentioned as a major factor for respondents when considering a switch to a modified schedule. Sadly, not one respondent mentioned improved student achievement (0%) as a possible factor when exploring the transition to a four-day school week, but some districts did note concern with a potential decrease in student achievement (50%). In sum, while the focus was not to increase student achievement,

districts did not want the transition to negatively impact student achievement.

While the four-day school week may not enhance student achievement, superintendents did identify some positive effects on overall teacher satisfaction. They highlighted that its implementation has offered mental health days for staff, provided extended weekends for families, and contributed to improved teacher retention.

Conclusions

Districts are continuing to adopt the shortened weekly schedule, despite data indicating lower levels of student achievement in districts utilizing a four-day school week. Data clearly show that students attending five-day school districts consistently outperform students in four-day districts. Nonetheless, all respondents expressed their desire to continue the four-day school week, noting the benefits for overall teacher satisfaction– a sentiment in alignment with Dr. Turner's finding on the allure of a four-day school week for teachers. This is alarming and a cause for concern, as it highlights a misalignment between the current emphasis on teacher satisfaction and not student success.

Upon reflection, three additional conclusions arose from this study. Foremost, prioritizing student achievement should be the central factor in decision-making across school districts. Regrettably, districts often prioritize teacher recruitment and retention as well as financial savings over addressing students' lower performance on the MAP assessment. It is unfortunate that some district leaders consider teacher satisfaction more important than student success. Fortunately, Missouri state law (RSMo 171.029) includes provisions to prevent districts from maintaining a modified school calendar if they fail to meet performance standards on their annual performance report (APR), which encompasses MAP assessment scores. However, it does not stop already underperforming schools from persisting in their underperformance. For

this reason, proactive measures must be incorporated to ensure educators are equipped to maximize student success within the modified school week.

Secondly, as school districts continue to transition to a shortened and modified school week, it is crucial to restructure how the fifth day is utilized to prioritize the teaching of highly effective instructional strategies. Currently, districts are struggling to make effective use of this extra day. As the data show, the current professional development opportunities have not contributed to academic growth, and one would expect a more significant impact on instructional pedagogy, given the increased time allocated to improving classroom practices.

Lastly, districts need to assess the impact of a four-day school week on the overall success of all students. While the total learning hours are comparable between four-day and five-day school districts, the extended daily schedule may impact the depth of the curriculum covered. Students are being required to attend longer days, raising the questions about the appropriateness and effectiveness of a shortened week. Many students, particularly those who require additional support, might face challenges due to reduced access to teachers and resources. Careful consideration of the long term consequences of altering the traditional school week structure is needed.

Overall, prioritizing student achievement must be at the forefront of decision-making within school districts, whether utilizing a four-day or five-day model. While managerial challenges such as teacher recruitment, retention, and financial savings are significant, they cannot be the focus when trying to improve the students' low performance on the MAP assessment. If Missouri school districts are going to continue the use of four-day schedules, it is vital appropriate steps are taken to ensure the commitment to student success.

Recommendations for Further Study

The findings of the study indicate that four-day school weeks may have a detrimental effect on the academic success of students. However, certain limitations in this study present opportunities for further research. First, a broader selection of four-day school districts should be analyzed to enhance the overall comprehensiveness of the study. Secondly, examining scores before, during, and after the transition can provide insights into whether district MAP scores are declining, remaining the same, or improving over time. For it is possible that the districts currently using a four-day school week have historically struggled with MAP scores. Regardless, additional research is warranted to fully understand the effectiveness of the four-day school week.

Additional areas that need to be further studied and explored include the following:

- Are there school districts within the state of Missouri implementing a four-day week that demonstrate higher year-to-year growth in student achievement as compared to others? If so, why?
- How are the higher achieving four-day school districts utilizing the additional fifth day? Is the focus of that day directed towards student improvement or teacher development?
- Are there additional measures that can be utilized more than once a year to determine student academic success at both four-day and five-day school districts?
- Why are districts continuing to utilize a four-day school week as data shows negative impacts on student achievement?
- How does extending the school day to utilize a four-day school week affect

extracurricular activities?

- Do the extended hours within a four-day school week impact the quality of instruction?

By addressing these recommended research questions, a more comprehensive understanding of the impact and effectiveness of the four-day school week can be established.

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APPENDIX A

Quantitative Survey Questions

1. What is your current administrative assignment?
    1. Assistant Superintendent.
    2. Superintendent.
2. How many years have you been in your current administrative assignment?
    1. 1–3 years.
    2. 4–5 years.
    3. 6–8 years.
    4. 9–10+ years.
3. What were the two primary reasons for moving to a four-day school week?
    1. Financial savings for the district.
    2. Increase teacher recruitment & retention.
    3. Attendance-related issues-student.
    4. Attendance-related issues-staff
    5. Increase student achievement scores.
    6. Increase PD opportunities.
    7. Alignment with other neighboring school districts.
    8. Response to community and parent demand.
    9. Other:
4. What were the two primary concerns when considering the transition to a four-day school week?
    1. Childcare for the off-day.

2. Conflict of parent work schedules.
3. Increased length of school day on student endurance.
4. Possible decrease in student achievement.
5. Uncertainty of the amount of financial savings.
6. Other:

5. On the 5th day of a typical 4-day week (when students are not in attendance), what does your district's off-day look like?
    1. Closed/no academics.
    2. Teacher PD at least 1x per month.
    3. Student enrichment/remedial instruction.
    4. Combination of PD/enrichment/remedial instruction.
    5. Other:
6. To what degree has the four-day school week impacted instruction and learning in your district?
    1. To a Great Extent
    2. Somewhat
    3. Very Little
    4. Not at All
7. To what degree has the transition to a four-day school week impacted teacher recruitment and retention?
    1. To a Great Extent
    2. Somewhat
    3. Very Little

4. Not at All

8. Do you support continuing the four-day school week next year?

9. Why do you or do not support continuing the four-day school week next year?

10. Is there any additional information that would be valuable to share?

APPENDIX B

Approval Form

SIU Southern Illinois University
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To: Stacey Versemann
From: M. Daniel Becque
Chair, Institutional Review Board

Date: December 11, 2023

Title*:* *Impacts of Four and Five-Day School Weeks on Student Achievement*

Protocol Number: 23207

The SIUC Institutional Review Board has approved the above-referenced study. The study is determined to be exempt according to 45 CFR 46.104. This approval does not have an expiration date. However, this approval is valid only for as long as you are a student or employee of SIUC. Additionally, any future modifications to your protocol must be submitted to the IRB for review and approval before implementation.

The IRB requests updates on exempted studies every three years. Failure to file a project update report may lead to the premature closure of your protocol.

When your study is complete, please fill out and return a study close-out form. A study is considered complete when you are no longer enrolling new participants, collecting or analyzing data.

Best wishes for a successful study.

This institution has an Assurance on file with the USDHHS Office of Human Research Protection. The Assurance number is FWA00005334.

MDB:eb

cc: Brad Colwell

VITA

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Capstone Report Title:
The Impact of a Four-Day and Five-Day School Week on Student Achievement in Reading and Math

Major Professor: Dr. William Colwell