ACADEMIC IMPACT OF RURAL IDAHO SCHOOLS ON THE FOUR-DAY SCHOOL WEEK: A QUANTITATIVE RESEARCH STUDY

A Dissertation

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AUTHORIZATION TO SUBMIT

DISSERTATION

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ABSTRACT

A number of school districts throughout the nation have changed their delivery method of a five-day school week to a four-day school week. Between 2009 and 2015, 27 Idaho school districts transitioned to a four-day school week, bringing the total number of school districts on a four-day week to 44 by 2015. This number increased to 45 by 2018. As school districts have become more comfortable with the four-day week schedule, school employees and constituents alike have increased satisfaction. A four-day school week results in about 20% fewer days of student and teacher contact days. This leads to a concern of how a four-day school week impacts academic performance. The purpose of this quantitative research study was to look at student achievement scores, specifically in Idaho rural public schools. The research compared standardized test scores of rural school districts on the four-day school week to the same test scores of rural school districts on the five-day school week. Additionally, sub populations with similar demographics were analyzed. These demographics included economically disadvantaged (free and reduced lunch percentages) and the percentage of Hispanics/Latinos. Schools districts that had an economically disadvantaged population of at least 45% were also analyzed. Five years of historical standardized test scores were gathered from the Idaho Department of Education beginning with the 2014-2015 school year and ending with the 2018-2019 school year. The standardized test scores that were analyzed included the Idaho Reading Indicator (IRI) and the Idaho Standards Achievement Test (ISAT). While results indicate that school districts on a five-day school week consistently had a higher percentage of proficient/advanced students on standardized tests when compared to four-day week school districts, there was no statistically significant impact ($p \geq .05$) on the academic performance, as determined by the previously mentioned standardized metrics. Only one year (instead of five years) of the Hispanic/Latino sub

population was able to be compared because of the significant redactions that took place in order to be compliant with privacy laws.

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Chapter I

Introduction

One of the primary responsibilities of school administrators and boards of trustees is to ensure financial stability of the school district (Abshier, Harris, & Hopson, 2011; Copeland, 2013; Curry & Wolf, 2017). This fiduciary authority often results in on-going patron concern and input, causing unrest in school district communities. Handling the responsibility of school finances is stressful (Lamkin, 2006; Tekniepe, 2014), yet it is an essential role of a superintendent (Forner, Bierlein-Palmer, & Reeves, 2012; Copeland, 2013; Cox & McLeod, 2014; Lashley, 2014). This pressure of making a struggling budget functional has led district leaders to employ financial creativity. In troubled economic times, one example of financial creativity has been the restructuring of the school calendar to one less day per week (Cline, 2017; Hill & Heyward, 2017; Grau & Shaughnessy, 1987; Plucker, Cierniak, & Chamberlin, 2012). School districts transitioning from a traditional five-day school week to a four-day school week is one of the most substantial as well as most notable changes taking place throughout many of the western states (National Conference of State Legislatures, 2018; Tharp, 2014).

The number of rural schools transitioning to the four-day school week increases when the economy is struggling. In rural areas it is most common to find school districts taking advantage of the four-day school week (Hill & Heyward 2015; List of School Districts Four-Day School Week, n.d.). In districts that have smaller enrollments and are rural, there is increased student attendance. This improved student attendance suggests some of the reasons for students performing better on standardized tests (Anderson, & Walker, 2012; Roby, 2004). The shortened school week is highly desired by teachers because it requires less time commuting. Additionally, teachers have time to take care of personal needs. This practice has proven helpful as many rural

districts are battling challenges of attracting and retaining school teachers. The practice of the four-day school week increases the chances of teachers choosing a rural district to be employed (Heyward, 2017; Ayala, 2017; Leal, 2017; Levin, Lewis, 2017; 2016; Marion, 2018). In many cases, school districts are the largest employers in rural school districts (Heyward, 2018). The longer a school districts remains on a shortened week, the more stakeholders support the practice (Gee, 2018; Turner et al., 2017; Dam, 2006). Studying the impact that a four-day school week has on student academic achievement is complicated because this method is generally only implemented in small and rural school districts (Davy & Hall, 2015; Donis-Keller & Silvernail, 2009). Past experience has shown that rural school districts are more likely to implement the four-day school week (Hill & Heyward, 2015).

School districts throughout the United States have changed from a five-day school week to a four-day school week, and since that change districts have felt both positive and negative impacts (Beesley & Anderson, 2007; Heyward, 2018). When school districts make the transition to the four-day school week, it increases the duration of the school day about 60 minutes. Most often school districts that make the transition to the four-day school week don't come to school on Friday. The shortened week results in savings in transportation-related costs, classified employee salaries, and energy costs (Hill & Heyward 2015; Levin, 2016). Whatever day schools don't attend, they may choose to provide various academic enhancement activities (Dam, 2006; Feaster, 2002; Hill & Heyward 2015). A number of situations are analyzed by constituents when making the change to a four-day school week is how it impacts academic performance (Tharp et al., 2016). Naturally this is a concern as the number of instructional hours are similar in a four-day week and a five-day week (Cooper, Valentine, Charlton, & Melson, 2003). There are close

to 20% fewer days of student and teacher to contact days (Hill & Heyward, 2017; National Conference of State Legislatures, 2018; Tharp et al., 2016).

The transition from a five-day school week to a four-day school week has occurred at a greater rate in Idaho public education over the past ten years (List of School Districts Four-Day, n.d.). In most cases, the lack of funding was the rationale for such change (Saunders, 2012). In 2008, Idaho schools experienced the fourth largest financial cuts in the United States. This financial cut resulted in 42 school districts, effecting 9.2% of all the student population in Idaho, making the transition to the four-day school week by the beginning of the 2014 academic year (Richert, 2015). This number grew to 45 in 2018 (List of School Districts Four-Day School Week, n.d.). Currently, the transition to the four-day school week represents nearly 40% of all traditional school districts in the state of Idaho. However, when considering rural school districts only, students attending school in a district utilizing the four-day school week accounts for 25,757 students by the fall of 2018. This is 23% of the student body population in rural Idaho schools (Enrollment by District and Charter, n.d.).

Statement of Problem

As a result of the nationwide recession that began at the end of 2007 (Dearien, 2010), many states saw significant reductions in education budgets. The states that were hurt the most significant were Arizona, Alabama, Oklahoma, and Idaho (Saunders, 2012). These reductions forced school districts to consider a number of options to make up for the financial shortages. The four-day school week helped to fill the financial void (Cline, 2017; Levin, 2016; Yarbrough & Gilman, 2011). For many districts on the four-day week schedule, it has been cost effective (Cline, 2017; Tharp, Matt, & O'Reilly, 2016). With this change of a shortened school week, stakeholders are greatly concerned about the academic impact being negative (Cline, 2017;

Tharp et al., 2016). Implementation of the four-day week was a critical concern for the Missouri legislature. As a result of such concern a statute for school districts who failed to perform was enacted. If student achievement lacked on two or more performance standards for two consecutive years, then that district would be required to add additional days back to into their schedule of 174 days or more (Four-Day School Week Authorized, 2009; MO Rev Stat §171.029, 2016). To really know the negative impacts of a four-day school week, further research is requisite to determine if a four-day school week impacts job placement or monetary profit when being considered over a long time period (Heyward, 2018).

Some research indicates there is an impact on academic performance with schools on a four-day week. In some settings, academic performance was impacted negatively (Heyward, 2018; Tharp et al., 2016), and in other settings, the performance of students seems to be enhanced (Anderson & Walker, 2012; Heyward, 2018; Yarbrough & Gilman, 2011). Some researchers assert that there isn't a statistically significant academic impact with the implementation of four-day school weeks (Anderson & Walker, 2012; Feaster, 2002; Muir, 2013; Effects of Four-Day School Schedule Undecided, 2002; Gower, 2017; Reeves, 1999).

Over a seven-year period, in one western state, student achievement from criterion-referenced testing seriously declined (Tharp et al., 2016). Contrarily, in a study by Anderson and Walker (2012), the four-day week showed a slight increase of test scores in elementary schools, and their research suggested there was little evidence that implementing a four-day week harms students' achievement. Additional analysis is needed to determine the academic impact of a four-day school week (Gower, 2017; Heyward, 2018).

The current research is limited on the impact, both positively or negatively, that a four-day school work may have on student academic achievement (Gaines, 2008; Cline, 2017; Hill,

2017). As of current, only one study has been conducted that compares student achievement in schools on a four-day week. The results were inconclusive and the perception, at this point, is there is no positive or negative impact on student learning (Cline, 2017; Dam, 2006). Only a small amount of peer-reviewed research related to student performance is available when analyzing test results with schools that are on a four-day week (Tharp, 2014). Additionally, academic achievement associated with the four-day school week is narrow in scope because this model is most often implemented in small and rural school districts (Cline, 2017; Donis-Keller & Silvernail, 2009). Hill and Heyward (2015) stated, "The educational consequences of the four-day week are essentially unknown; without serious causal analysis, effects on student achievement are not measurable in the short run" (p. 13). More research on the implications with the four-day school week related to student performance is paramount (Gower, 2017; Heyward, 2018).

The populous in rural Idaho counties are responsible for 30% of the states total inhabitants (Dearien, 2010). Idaho counties that were impacted financially of the greatest significance were rural communities. An example that demonstrates this is in December of 2009, seven counties had unemployment rates of at least 15%. Each of these counties met the classification as rural. Likewise, with national trends, Idaho's poverty rate is greater in rural communities when compared to those rates in urban communities. During the recession, only six counties in Idaho that had poverty rates that exceeded 25%, all of which were rural (Dearien, 2010). This statistic is of great importance as 100% of the schools in Idaho that are on a four-day school week meet the criteria of a rural school (Rural School Districts in Idaho, n.d.).

Additionally, since many Idaho districts instituted the four-day week to address school funding reductions, there has not been follow-up research on the impact on student academic

achievement within those districts that adopted a four-day week. Hill and Heyward (2015), who did specific research in Idaho, found that districts who had implemented a four-day week had not aggressively analyzed the impacts on student achievement. However, one district stated that it would return to the five-day week if the outcome of the shortened week proved to be a detriment to student achievement (Hill & Heyward, 2015). The researchers additionally resolved that the four-day school week had not been in place long enough to allow for accurate data to be analyzed to determine if there were long-term negative impacts from a shortened week (Hill & Heyward, 2015). As a result of the substantial increase of four-day school weeks over the last ten years in Idaho, data from multiple faucets are now available for analysis (List of School Districts Four-Day School Week, n.d.). From a nation-wide perspective, Tharp et al. (2016) found that research is available in specific districts that are on a four-day week, but no conclusive studies have been conducted examining the impact of student achievement on a four-day week.

The purpose of this study was to determine the academic impact of a four-day school week on student achievement specifically in traditional Idaho rural public schools. The research was conducted to compare standardized test scores of rural school districts that are on the four-day school week to test scores of rural school districts on the five-day school week. When analyzing student achievement, the time that a school district had been on the four-day week was an essential factor. For example, one study found that after the initial two years that the condensed week had been in practice, test scores were higher (Tharp et al., 2016). Nonetheless, after the shortened week was integrated into the climate of a school, student achievement was adversely impacted (Tharp et al., 2016).

Measurements that were considered included the Idaho Reading Indicator (IRI) and Idaho Standards Achievement Test (ISAT). This study included school districts that were on four-day

school week by the fall of 2014 and that were classified as rural school districts as defined by Idaho Statute (Idaho Code §33-319, 2009; List of School Districts Four-Day, n.d.; Rural School Districts in Idaho, n.d.). Only the school districts that had been on a four-day week for at least five years were included in this research.

In this study the academic performance of all students in rural school districts on a four-day week were compared to school districts on a five-day week. School districts were then compared after they had been grouped with those that had similar demographics. These demographics included economically disadvantaged (free and reduced lunch percentages) and the percentage of Hispanics/Latinos. School districts that had a student population receiving free and reduced lunch services greater than 45% were also analyzed.

Background

Following the impact of the great recession in 2008, Idaho school districts received some of the largest financial cuts in the nation (Saunders, 2012). In an effort to save money, school districts transitioned to the four-day school week (Cline, 2017; Levin, 2016; Yarbrough & Gilman, 2011). The lack of sufficient financial resources was the primary reason to make the transition to a four-day week (Anderson & Walker, 2012; Donis-Keller & Silvernail, 2009; Griffith, 2011; Henton, 2015; Hill & Heyward, 2017; Plucker et al., 2012; Sagness & Salzman, 1993; Tharp et al., 2016). In Idaho specifically, at the start of the 2014 school year over 40 school districts had made this transition (Richert, 2015). This accounted for almost 40% of the school districts in Idaho (Enrollment by District and Charter, n.d.). Four years later the list grew to 45 schools, (List of School Districts Four-Day School Week, n.d.) accounting for 25,757 (by the fall of 2018) students, representing over 9% percent of the total student population of traditional Idaho public schools from the 2017-2018 school year. However, with rural school

districts only, 25,757 students are enrolled in a four-day school district which accounts for 23% of the student body population in rural Idaho schools by the fall of 2018 (Enrollment by District and Charter, n.d.).

This shortened school week was not new concept as South Dakota implemented a four-day week in the 1930's (Donis-Keller & Silvernail, 2009; Heyward 2018). Later it was implemented in New Mexico during the 1970's because of an energy crisis that skyrocketed the expenses for transportation and utility related costs (Feaster, 2002; Gaines, 2008). The National Conference of Legislatures in 2018 reported that throughout time, but especially during times of financial deficiencies, the number of states that utilized the shortened week grew tremendously (National Conference of State Legislatures, 2018).

The four-day school week is found in 25 states with at least 560 school districts utilizing this model. Well over half of these school districts are located in Colorado, Montana, Oklahoma, and Oregon. Before the transition to the shortened week was allowed, a number of states required modifications to state statutes (Gaines, 2008; National Conference of State Legislatures, 2018; Reeves, 1999). However, many states mandated a minimum number of hours and days for the entire year, while other states require only a specific number of days to meet the requirement. For example, most states in the nation require close to 180 days in a school year. School districts which are on a four-day week typically attend closer to 142 days in a school year (Pompelia, 2018). As states have a minimum number of hours for a school year instead of days, school leaders have added 30-90 minutes to the school day to ensure minimum requirements have been met (Hill & Heyward, 2015, 2017). For example, in Idaho, there is not a specific number of days as a requirement for a school year. Idaho requires kindergarten to attend 450 hours; grades 1-3,

810 hours; grades 4-8, 900 hours, and grades 9-12, 990 hours (Idaho Code §33-512, 1991; Pompelia, 2018).

There are a number of benefits from the four-day school week. One of which is that more time is available for teachers to have productive or collaborative time planning (Yarbrough & Gilman, 2011; Plucker et al., 2012; Heyward, 2017). The days in which students are not in attendance, teachers will sometimes have scheduled work days for collaboration with departments, individual planning time, preparation of lessons, and professional development. Staff work days eliminate the need for faculty or other meetings after the school day is over (Levin, 2016; Yarbrough & Gilman, 2011; Hanson, 2017). Additionally, with students on the compacted scheduled, school districts are able to provide a setting for focused teacher training and professional development (Anderson, 2018; Donis-Keller & Silvernail, 2009; Yarbrough & Gilman, 2011; Heyward, 2017; Gaines, 2008). Other research noted teacher attendance at school increases (Gaines, 2008; Beesley & Anderson, 2007; Effects of Four-Day School Schedule Undecided, 2002; Plucker et al., 2012; Farris, 2013). As teacher attendance improves, a direct link to increased student performance can be documented. (Beesley & Anderson, 2007; Effects of Four-Day School Schedule Undecided, 2002; Donis-Keller & Silvernail, 2009; Gaines, 2008; Miller, Murnane, & Willett, 2008). Specifically, in small and rural districts, increased student attendance also suggests some of the reasons for higher student performance (Anderson, & Walker, 2012; Roby, 2004).

A number of schools document fewer discipline problems and vandalism (Beesley & Anderson, 2007; Cline, 2017; Effects of Four-Day School Schedule Undecided, 2002; Muir, 2013; Hill & Heyward 2015; Gaines, 2008; Kordosky, 2012). Teachers reported positive feelings with the shortened schedule because it helped with student behavior and increased morale

(Effects of Four-Day School Schedule Undecided, 2002; Muir, 2013). Moreover, this condensed scheduled is desired among some teachers because it requires less commute time and also provides teachers with more time for taking care of personal matters. As many rural and small school districts already face challenges of "attracting and retaining" school teachers, the four-day school week is an option that enhances employment in a rural district (Heyward, 2017; Ayala, 2017; Leal, 2017; Levin, Lewis, 2017; 2016; Marion, 2018).

Disadvantages also accompany the four-day school week. Researchers documented that the four-day school week is accompanied by the greater challenge of at-risk students retaining information (Gaines, 2008; Muir, 2013; Plucker et al., 2012). The duration of the school day for students younger in age is especially taxing (Donis-Keller & Silvernail, 2009; Gaines, 2008; Muir, 2013; Heyward, 2017; Hill & Heyward, 2017). Because of the lengthened day, elementary students were found to be especially tired (Hill & Heyward, 2015, 2017; Kordosky, 2012). Some school leaders expressed the concern that the condensed schedule would increase food insecurity as some students would not be provided needed nutrition on the off school day. Food insecurity occurs when there is an insufficient supply of food as well as when food is lacking in quality (Banyan, 2018; Cline, 2017). This situation is compounded as it contributes to the lack of nutrient that is essential for the vital development and overall health and well-being of students.

Leaders in various states have a number of concerns about the four-day week and possible negative implications. These concerns have led to states taking action directed towards school districts on a four-day week. At the start of the 2013-2014 school year, leaders of the state of California passed Senate Bill 236 that required school districts on a condensed week to change back to five-day weeks if minimum academic measures were not accomplished (Cline, 2017). During this same year, the Minnesota Department of Education specified that school districts

must transition back to the five-day traditional week if certain levels of academic proficiency were not attained. After more time transpired, the Minnesota Department of Education restricted new applications for school districts to make the change to a four-day school week (Cline, 2017). During 2017 the Oklahoma State Department of Education mandated that any school district considering making this transition to non-traditional calendar to outline a detailed plan on what they plan to achieve with the transition. Close to the same time period, Oklahoma State Department of Education arranged for an in-depth research regarding the financial expenditures of school districts on the shortened week as well as academic achievement levels, crime rates in youth, and food insecurity (Cline, 2017). Additionally, New Mexico restricted more school districts from transitioning to a condensed week (Heyward, 2018; Ordway, 2018).

The Research Questions

It was the intent of this research project to determine the academic impact of the four-day school week in traditional Idaho public school districts. The current research lacks information and documentation that the four-day school week impacts academic achievement, either positively or negatively (Gaines, 2008; Cline, 2017; Hill & Heyward, 2015; Hill, 2017). The results of this study may assist key stakeholders to make the best choice for their educational institution. The study was focused on two primary questions:

1. What are the academic achievement levels of Idaho school districts that are on a traditional five-day school week compared to school districts on four-day school week as measured by the Idaho Reading Indicator (IRI) and the Idaho Standards Achievement Test (ISAT) over a five year period?

2. What relationships can be drawn between variables associated with the student sub populations of school districts on a traditional five-day school week compared to school districts on four-day school week?

Description of Terms

These terms defined in this section are used regularly throughout this document. The definitions provided will assist the readers with a higher level of understanding and comprehension of the content which will facilitate a correct interpretation (Creswell, 2014; Marshall & Rossman, 2011). This will allow readers to understand the research portrayed with clarity and in an accurate manner as the author intended.

Economically Disadvantaged Student. A student who qualifies to receive a free lunch or receive lunch at a discounted rate under the Richard B. Russell national school lunch act (Idaho Code §33-1001, 1980; K. Everitt, personal communication, January 17, 2020).

English Language Learner (ELL). A student who will be enrolling in a school with an age that is greater than 2 but less than 22 and whose native language is not English. This learner came from a home or environment where English is not the primary language which greatly restricts the learners' ability to communicate in all forms of language. This impacts the learners' ability to be proficient in state assessments, limits comprehension of classroom instruction where English is the spoken language and minimizes the ability to participate at a high level in society (Idaho State Department of Education, n.d.b)

Five-day school week. A five-day school week is where students in school districts attend classes five days a week, Monday through Friday (Thomason, 2013).

Four-day school week. A four-day school week is where students in school districts only attend classes four days a week, generally Monday through Thursday. This is made possible

because school districts increase the amount of time on the days when school is in session. Most districts do not attend school on Friday, but occasionally a school district will not attend school on Monday (Hill & Heyward, 2015).

Idaho Standards Achievement Test (ISAT). This is a mandatory assessment of Idaho State standards for grades three through eight and once in grades 9-12 in the subjects of Mathematics and English Language Arts/Literacy. Grades five and seven are also required to take the ISAT science assessment (Idaho State Department of Education, n.d.b).

Idaho Reading Indicator (IRI). This is a required reading skills assessment that is administered to all public school students in grades kindergarten through third grade. The IRI is classified as an early reading screener (Idaho State Department of Education, n.d.a).

Standardized Test or Assessment. A standardized test is a formal assessment that necessitates all students be asked the same questions in a similar way. The answers to these questions will also be scored the same way. This process makes it reliable to compare student performance to separate students or a particular class (Great Schools Partnership, 2015)

Rural Idaho School District. A school district in Idaho will be classified as rural if it meets one of the following criteria: 1. Less than 20 students enrolled per square mile that is within the school districts established boundaries. 2. The county in which the school district is located has less than 25,000 residents as measured by the most recent decennial United States census (Idaho Code §33-319, 2009).

Significance of the Study

The purpose of this study was to determine the academic impact on traditional Idaho rural school districts which have moved to the four-day school week. Between 2009 and 2015, 27 Idaho school districts transitioned to a four-day school week, bringing the total number of school

districts in the state on a four-day week to 44. An additional school district made the transition in 2018, bringing the total to 45 Idaho school districts (List of School Districts Four-Day School Week, n.d.). With this change to a compacted school week, stakeholders were largely concerned with possible negative impacts on academics (Tharp et al., 2016). Thus, educational researchers began to examine the academic impact on a shortened week; however, limited analyzed data exists on the academic impact of the four-day week among Idaho schools. The results of this study may help key decision makers, school districts leaders, and communities make the best choice for their educational structure. This study will provide current research and valid data to school districts which are operating on a four-day week and to those districts considering the shortened week. After the results of data are analyzed, community and school stakeholders will have current data with which to make decisions for their educational communities.

With current data and research from this study, key stakeholders and decision makers may consider implementing strategies to improve academics or consider transitioning back to the traditional five-day week. The results of this data may guide policymakers such as legislatures, school boards, superintendents, community members, and other stakeholders on policy development related to four-day school week. If a school district is considering the transition to a four-day week yet is concerned about protecting the integrity of the school day, the data from this study may outline and analyze the pros and cons of this schedule change. In summary, the results of this study may provide school districts with current and reliable data as decisions are made as to the organizational structure of the school day.

Overview of Research Methods

The purpose of this quantitative research study is to look at student achievement scores specifically in Idaho rural public schools. This study did not include any charter schools, only

traditional public schools. The research compared standardized test scores of rural school districts that are on the four-day school week to test scores of rural school districts on the five-day school week. These school districts were later grouped by similar percentages of economically disadvantaged (free and reduced lunch percentages), and Hispanics/Latinos. School districts that had a student population receiving free and reduced lunch services greater than 45% were also analyzed.

Idaho school districts were only included in the study if they had been on a four-day week for at least five years. The research was conducted by gathering historical standardized test scores from the Idaho Department of Education beginning with the 2014-2015 school year and ending with the 2018-2019 school year. The standardized test scores that were analyzed included the Idaho Reading Indicator (IRI) and the Idaho Standards Achievement Test (ISAT). Using the results of these scores, the researcher compared school districts on four-day school week to school districts on a five-day school week with similar demographics. Student performance results were analyzed using IBM SPSS Statistics.

With accumulative Idaho Standards Achievement Test (ISAT) data, Idaho rural school districts on a four-day week were compared to Idaho rural school districts on a five-day week. Such was done by the percentage of students that scored proficient/advanced. Similarly, results from the Idaho Reading Indicator (IRI), were analyzed by the percentage of students who scored a three (benchmark). This method helped illustrate the percentage of students that were proficient/advanced as measured by the Idaho Standards Achievement Test (ISAT) and the percentage of students that scored a three (benchmark) as measured by the Idaho Reading Indicator (IRI) when comparing rural schools that are on a five-day school week to those that were on a four-day school week.

Chapter II

Review of Literature

Introduction

Districts throughout the nation have changed their delivery method of a five-day school week to a four-day school week, and since that change districts have felt both positive and negative impacts (Beesley & Anderson, 2007; Heyward, 2018). Researchers have concluded a school district increases the length of the school day about 60 minutes depending on individual circumstances and stops coming one day a week which is most often on Friday. This leads to savings in transportation-related costs, classified employee salaries, and energy costs (Hill & Heyward 2015; Levin, 2016). During the day not in session, school districts may choose to provide various academic enhancement activities (Dam, 2006; Feaster, 2002; Hill & Heyward 2015). Public school districts have been utilizing this model of a shortened week for nearly nine decades (Donis-Keller & Silvernail, 2009; Heyward, 2017). Over the last years, Idaho school districts have transitioned to this school day structure at a drastic pace (List of School Districts Four-Day School Week, n.d.; Hill & Heyward, 2017; Turner, Finch, & Ximena, 2018). As with any change, there are a number of notable advantages and disadvantages to the shortened school week (Gaines, 2008; Heyward, 2018). One of the most important considerations for all stakeholders when moving a four-day school week is how it impacts academic performance (Tharp et al., 2016). This would be an obvious concern because even though the numbers of instructional hours are similar in a four-day week and a five-day week (Cooper, Valentine, Charlton, & Melson, 2003), there are about 20% fewer days of student and teacher to contact days (Hill & Heyward, 2017; National Conference of State Legislatures, 2018; Tharp et al., 2016). When the test results are analyzed, whether the academic impact was positive, null, or

negative, specific cause and effects need to be explored in detailed. The effectiveness of any initiative needs to be assessed by the level of impact it has towards increased student achievement (Hewitt & Denny, 2011).

Throughout this chapter information will be outlined regarding the history of the four-day school week including when the four-day week was first was introduced. It will also detail the rapid growth of this practice during trying economic times which occurred mostly in rural communities in some western states. For the change to the four-day school week to be approved, some states required legislative changes. Once school districts make the switch to the four-day week, they are not likely to return to the traditional five-day school week (Hill & Heyward 2015; Tharp et al., 2016; Tharp, 2014). The academic impact of the shortened school week has been analyzed, and many studies specify that the academic effect is of little to no influence (Anderson & Walker, 2012; Feaster, 2002; Gower, 2017; Muir, 2013). A few studies have documented the negative impact of the four-week and noted significant decreases in student achievement (Tharp et al., 2016; Tharp, 2014). In some districts, fifth-day activities have been implemented to help teachers and students (Dam, 2006; Heyward, 2018; Hill & Heyward, 2015). As school districts become more comfortable with the shortened schedule, school employees and constituents alike have increased satisfaction with the change (Gee, personal communication; Turner, Finch, & Ximena, 2017; Dam, 2006).

Rural School Districts on the Compacted Week

School districts in Idaho are classified as rural in two ways. First, if there are less than 20 students enrolled per square mile that is within the school districts established boundaries. Secondly, if the county in which the school district is located has less than 25,000 residents as measured by the most recent decennial United States census (Idaho Code §33-319, 2009).

History has demonstrated that the number of rural schools transitioning to the four-day school week has significantly increased during times of economic shortfalls. It is most likely to have occurred in rural communities (Hill & Heyward 2015; List of School Districts Four-Day School Week, n.d.). In districts that don't have a high number of students enrolled and are rural, there is increased student attendance. This improved student attendance suggests some of the reasons for higher student performance (Anderson, & Walker, 2012; Roby, 2004). The shortened school week is preferred with teachers because it requires less travel time to and from work. It allows teachers more time to take care of personal matters. This is especially helpful as most rural and small school districts already face challenges of "attracting and retaining" school teachers. The practice of the four-day school week is method that increases the likelihood of teachers choosing a rural district for employment (Heyward, 2017; Ayala, 2017; Leal, 2017; Levin, Lewis, 2017; 2016; Marion, 2018). In many cases school districts are the most significant employers in rural school districts (Heyward, 2018). Studying the impact that a four-day school week has on academic achievement is limited because this method is generally only implemented in small and rural school districts (Davy & Hall, 2015; Donis-Keller & Silvernail, 2009).

Rural school districts are generally more likely to implement the four-day school week (Hill & Heyward, 2015). The Idaho counties which were impacted financially the most were rural communities. For example, in December of 2009, seven counties had unemployment rates of at least 15%. All of these counties were classified as rural. Additionally, parallel with national trends, Idaho's poverty is higher in rural communities than urban. During the previously mentioned recession, only six counties in Idaho had poverty rates higher than 25%, all of which were rural (Dearien, 2010). This statistic is important to note because 100% of the schools in

Idaho that are on a four-day school week meet the definition of a rural school (Rural School Districts in Idaho, n.d.).

Legislative Requirements

In the United States, 560 districts in 25 states have at least one school on a four-day week. Over 330 of these schools reside in the states of Colorado, Montana, Oklahoma, and Oregon. Some states required legislative changes prior to school districts implementing a four-day school week schedule (Gaines, 2008; National Conference of State Legislatures, 2018; Reeves, 1999). During a four-year time span between 2009-2013, additional states attempted to pass legislation allowing for the four-day school week. Some were successful in passing legislation; others were unable to pass the necessary legislation to allow the shortened week (National Conference of State Legislatures, 2018). All states in the nation have various statutory requirements for school attendance that varies by grade level (Pompelia, 2018). A number of states require a minimum number of hours and days. While other states necessitate a number of days only, yet the number of days is so high it would be impossible to accomplish the minimum requirements on a four-day week without going to school a considerable amount during the summer months. For example, most states in the nation require close to 180 days in a school year. School districts which are on a four-day week typically attend closer to 142 days in a school year. Therefore, these states would not be able to operate on a four-day week without modification of current state statutes. In states where a number of hours are the only requirement or where a state has a minimum number of days that is required during a traditional school year, states are found utilizing the four-day school week (Pompelia, 2018). The minimum number of hours is met even though they are attending one less day a week because when school districts

make the transition to the shortened week, they add approximately 30-90 minutes to each day of school (Hill & Heyward, 2015, 2017).

The Education Commission of the States has tracked instructional time statutes since 1980. In the state of Idaho through 1980-1990, Idaho required 180 days and had no requirement of hours. In 1991, Idaho began mandating the hours per year by grade levels that are similar to what is currently in law by passing ID HB 311. Before this time, the statute specified that schools should be in session for at the minimum of nine months. Idaho currently does not have a specific number of days as a requirement for a school year. Instead, Idaho requires kindergarten to attend 450 hours; grades 1-3, 810 hours; grades 4-8, 900 hours, and grades 9-12, 990 hours (Idaho Code §33-512, 1963; Pompelia, 2018).

History of Four-Day School Weeks

As the name implies, the four-day school week refers to students attending school four-days a week. Some districts take Monday off, but a majority of districts don't attend school on Fridays (Anderson & Walker, 2012; Dam, 2006; Fischer & Argyle, 2018; Giger, 2012; Hill & Heyward, 2017; National Conference of State Legislatures, 2018). The four-day school week has been around for almost 90 years. It began in South Dakota in the 1930's (Donis-Keller & Silvernail, 2009). It also became common in New Mexico during the 1970's due to an energy crisis that exceedingly increased the expenses for transportation and utility related costs (Feaster, 2002; Gaines, 2008). The National Conference of Legislatures in 2018 reported that throughout time but especially during times of financial deficiencies, the number of states that utilized the shortened week grew tremendously (National Conference of State Legislatures, 2018).

In 1987 it was estimated nationwide that there were 100 schools in 10 states that were participating in the four-day school week (Grau & Shaughnessy, 1987). At the start of the 2007

school year, less than 38% of school districts in Colorado were on the four-day school week. By the beginning of the 2017-18 school year, this percentage had grown to 55% (Colorado Department of Education, 2017). Oklahoma reported in 2016 that 19% of school districts have implemented the compacted week (Cline, 2017). In Montana at the beginning of the 2006-2007 school year, only 207 students who were on the four-day week that were tested in science. That number grew to 71,000 in the 2013-14 school year, indicating a significant number of districts were operating on a four-day school week (Tharp, 2014). At the beginning of the 2016 school year, Montana had more that 60 school districts on this schedule (Ordway, 2018). At the start of school in the fall of 2017, 25 school districts in the state of Missouri were utilizing the four-day school week (Turner et al., 2018). In Idaho during the school year 2007-2008, only three school districts were utilizing the four-day school week. By the beginning of the 2014 school year, 42 traditional school districts in Idaho had made the transition to the shortened week. This number grew to 45 in 2018 (List of School Districts Four-Day School Week, n.d.). By 2018, a minimum of 25 states and 550 school districts have implemented the four-day school week (Heyward, 2018). However, throughout the nation, only 1% of school districts have implemented the four-day week (Hill & Heyward 2015).

In a vast majority of cases, once school districts change to the four-day week schedule, they do not return to the standard five-day week school as it develops into an established part of the school community (Tharp et al., 2016; Tharp, 2014; Hill & Heyward, 2017; Hill, 2017). Since 1991, only one school district in Colorado made the transition back to a five-day school week (Dam, 2006). Additionally, in 1993 another district in Idaho made the transition back to the five-day school week (Sagness & Salzman, 1993). The shortened school week has become so ingrained in the school community that the change back to five-day week is likely going to

necessitate increased compensation to teachers. Most school districts have decided to stay on the compacted schedule indefinitely (Hanson, 2017; Hill & Heyward 2015, 2017).

One example of school districts not transitioning back to the four-day school week is the Preston School District located in southeastern Idaho. This district initially made the transition to the four-day school week in the fall of 2011 (M. Gee, personal communication, February 12, 2018). In the fall of 2015, the board of trustees sent a survey to every household in the school district that had students attending. The return rate was 72%. The survey demonstrated that 85% of the community felt it either had no significant impact or a positive impact on their students and families. Fifteen percent reported adverse effects. The final question asked patrons to respond on a scale of 1 to 10 to rank their overall satisfaction with the four-day week with ten being the most satisfied and one being the least satisfied. The average of that question was 7.70 with the most significant response being a ten which was 47% (Gee, 2018). Even though the Idaho governor would like to see funding restored so school districts could make the transition back to five-day school weeks (Richert, 2014), no school districts in Idaho have permanently moved back to the five-day model since 2007 (List of School Districts Four-Day, n.d.). School districts transitioning back to a five days school week isn't something that is likely (Richert, 2014; Gee, 2018; Tharp et al., 2016; Tharp, 2014, Dam, 2006; Hill & Heyward 2015).

After 10 years on the compacted week, one school district in Kentucky changed back to the five-day week for the 2014-2015 school year. The leaders of the school district cited the reasons for the change back to a traditional school week as low academic performance, lack of a desire to improve, and the consternation that students would not be ready to make the transition to a five-day work week. Michigan had some districts make the change to a five-day school week because of the preference of parents. In Minnesota, seven school districts on a four-day week were

required to make the change back to a five-day week because of poor academic performance. In Montana and South Dakota, 11 school districts attempted the four-day week and then changed back. Despite the few that made this transition back to the five-day week, they are small in number when considering the estimated 550 school districts currently on the four-day week schedule (Heyward, 2018).

Where one school district had implemented a four-day week, patron input was gathered in two surveys, one in 1996 and again in 2002. In 1996 when asked if the four-day week should be continued, 70% of parents, 91% of students, and 94% of teachers, 100% of non-certified staff, and 64% of businesses voted in favor of continuing the four-day week. In 2002 when surveyed again about the continuation of the four-day week, 86% of parents, 98% of students, and 100% of teachers, 89% of non-certified staff, and 73% of businesses voted in favor of continuing the four-day week. The only group to lose satisfaction from 1996 to 2002 was the non-certified staff (Feaster*,* 2002*).*

The decision to move to a four-day week was based on financial deficiency (Anderson & Walker, 2015; Donis-Keller & Silvernail, 2009; Griffith, 2011; Henton, 2015; 2015; Hill & Heyward, 2017; Plucker et al., 2012; Sagness & Salzman, 1993; Tharp et al., 2016), yet this decision increased student achievement (Reeves, 1999). This decision would have been an unintended consequence as Dam (2006) pointed out that it is not known of any school districts that made the transition to a four-day school week for the sole intent to increase student performance.

The Four-Day School Week in Idaho

In Idaho, school districts transitioning from a five-day school week to a four-day school week is one of the most substantial and most notable changes ever to take place in Idaho public

education. In the school year 2006-2007, only ten school districts were utilizing the four-day school week (List of School Districts Four-Day School Week, n.d.). By the fall of 2018, 23% of all rural Idaho students were enrolled in a school district that was utilizing a four-day week (List of School Districts Four-Day School Week, n.d.). This represented 47% of all rural school districts in Idaho (Enrollment by District and Charter, n.d.).

After 2014, additional school districts made the transition to the shortened week. At the end of the 2018-2019 school year, the number of potential participants for four-day school week districts was 45 (List of School Districts Four-Day School Week, n.d.).

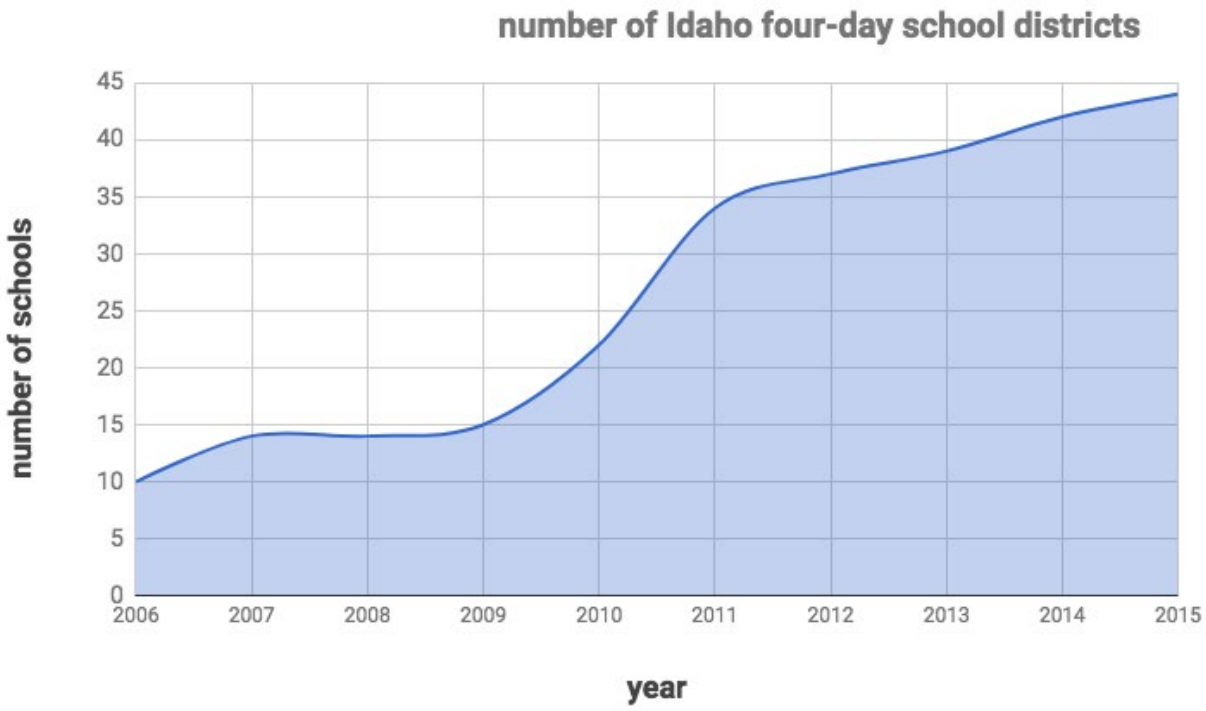

Figure 1. This figure provides a visual of the number of school districts that moved to the four-day school week from 2006 through 2015. Information for this graph was compiled from information provided by the Idaho Department of Education. Compiled from, (List of School Districts Four-Day School Week, n.d.).

This graph illustrates graph, the sharp incline of the number of school districts transitioning to a four-day school week beginning in 2010. This steep increase of schools making the transition

to a shorter school week can be attributed to a lack of funding (National Conference of State Legislatures, 2018).

Impacts of a Four-Day School Week

There are many impacts when the transition is made to a four-day school week. Some of these impacts are positive while others are negative. These impacts affect all stakeholders including students, school district employees, constituents, and business owners. However, the actual perceptions with the change to the condensed week are not always accurate by those involved.

Advantages of a Four-Day Week

One of the benefits of the four-day school week is that it allows for a productive planning time for teachers (Yarbrough & Gilman, 2011; Plucker et al., 2012; Heyward, 2017). Whatever day is not in session, teachers can spend collaborative time in departments, individual planning time, preparation of lessons, and faculty meetings. It also eliminates the need to have a faculty or other meetings after the school day is over (Levin, 2016; Yarbrough & Gilman, 2011; Hanson, 2017). The four-day week allows for teachers to spend time preparing for their class on the fifth day instead of doing it over the weekend (Dam, 2006). Additionally, as there is an extended block of planning time for lessons, the instruction given in the classroom is more effective (Yarbrough & Gilman, 2011). This transition to a four-day week has helped to minimize the wasted time that is found in the traditional five-day week calendar (Gaines, 2008; Yarbrough & Gilman, 2011). On the four-day week, teachers are just more direct in their instruction. This transition leads to better use of instructional time and an increase in standardized test scores (Yarbrough & Gilman, 2011). With students on the shortened scheduled, it also allows for focused teacher training (Anderson, 2018; Donis-Keller & Silvernail, 2009; Yarbrough & Gilman, 2011; Heyward, 2017; Gaines, 2008).

The four-day school week increases student attendance (Hale, 2007) and teacher attendance at school (Gaines, 2008; Beesley & Anderson, 2007; Effects of Four-Day School Schedule Undecided, 2002; Plucker et al., 2012; Farris, 2013). In districts that are small in size and more rural, improved student attendance suggest some of the reasons for higher student performance (Anderson, & Walker, 2012; Roby, 2004). In one school district, the year before the transition of the four-day school week, student attendance was at 95.2%. The year after implementation of the four-day week, attendance dropped .3% and then rose .1% the following year. Every year after this attendance improved until it peaked to 98.3% five years after implementation (Feaster, 2002). Teacher attendance has also improved which can have a direct link to increased student performance (Beesley & Anderson, 2007; Effects of Four-Day School Schedule Undecided, 2002; Donis-Keller & Silvernail, 2009; Gaines, 2008; Miller et al., 2008).

Some school districts attribute the four-day school week to increased student grade point averages and fewer number of students failing classes (Effects of Four-Day School Schedule Undecided, 2002). The four-day week allows for fewer hours commuting and increased blocks of time to finish class work in lab settings (Gaines, 2008). Schools reported fewer discipline problems and vandalism (Beesley & Anderson, 2007; Cline, 2017; Effects of Four-Day School Schedule Undecided, 2002; Muir, 2013; Hill & Heyward 2015; Gaines, 2008; Kordosky, 2012). Teachers liked the shortened schedule because it helped with student behavior and increased morale (Effects of Four-Day School Schedule Undecided, 2002; Muir, 2013). The increased length of the day provides additional time for students and teachers to have better communication (Hill & Heyward, 2015).

The four-day school week allows for teachers and students to take care of other needs such as doctor appointments the day when they are not in school, thus helping to maintain higher

attendance rates (Effects of Four-Day School Schedule Undecided, 2002; Hill & Heyward, 2017; Muir, 2013). This change may lead to why feedback from various stakeholders on the overall contentment of a four-day week is positive (Donis-Keller, & Silvernail, 2009; Dam, 2006). Comparatively, this structure also acquiesces families as they have more time to spend together (Dam, 2006; Hill & Heyward, 2017; Grau & Shaughnessy, 1987). One study recorded that 91% of teachers favored the four-day work week. District employees had increased satisfaction with their workplace (Turner et al., 2017). Teachers who have been a part of the four-day school week now consider the fifth day a luxury, and district leaders feel that the shortened week is a recruiting tool for teachers (Hill & Heyward 2015; Heyward, 2018; Levin, 2016; Perez-Carrillo, 2018; 27J Schools, 2018). Teachers appreciate the additional time that it provides them spend with members of their family (Hill & Heyward 2015; Heyward, 2018).

The four-day week schedule is less likely to be a burden to families who have above average incomes, have one stay-at-home parent, or live have an agrarian life (Anderson & Walker, 2012). Additionally, high school students sometimes need to work part-time at the same time they are attending high school, and they can provide a much-needed labor force. The shortened week certainly favors students who are in this position as they have one additional day off a week to work (Anderson & Walker, 2012; Muir, 2013; Yarbrough & Gilman, 2011).

As there is a teacher shortage nationwide (Boe & Cook, 2006; Brownell, Bishop & Sindelar, 2005; Brundin, 2013; Martin & Mulvhill, 2016), implementing the condensed school week is a way to "recruit and retain" teachers in a school district (Cooley, 2017; DeNisco, 2013; Heyward, 2018; Hinton, 2017; Marion, 2018; Stotts, 2017; Turner, et al., 2017; Quinton, 2018).

Likewise, the four-day school week is favored among teachers because it requires less commuting time and provides teachers with an increased amount of time for attending to

personal matters. As many rural and small school districts already face challenges of "attracting and retaining" school teachers, the four-day school week is an option that enhances employment in a rural district (Heyward, 2017; Ayala, 2017; Leal, 2017; Levin, Lewis, 2017; 2016; Marion, 2018). Teacher recruitment (Reeves, 1999; Ronfeldt, Lankford, Loeb, & Wyckoff, 2011) and retention is especially important considering that teacher turnover is directly correlated to student achievement (Ronfeldt et al., 2011). When there is a high rate of teacher turnover, districts experience unfavorable outcomes, especially in English and mathematics positions. Teacher turnover in these subjects impacts underachieving students and certain ethnic populations (Ronfeldt et al., 2011).

Disadvantages to a Four-Day Week

Some researchers have reported that a disadvantage of the four-day school week is the increased challenge of at-risk students retaining information (Gaines, 2008; Muir, 2013; Plucker et al., 2012). The length of the school day for younger students are especially taxing (Donis-Keller & Silvernail, 2009; Gaines, 2008; Muir, 2013; Heyward, 2017; Hill & Heyward, 2017). Due to the lengthened day, elementary students were tired (Hill & Heyward, 2015, 2017; Kordosky, 2012), and teachers had to consider scheduling time for naps and to provide a snack (Hill & Heyward, 2015, 2017). It is further noted that because the four-day school week increases the length of time that a student is out of the classroom on the weekend, some teachers felt that it took extra time to get the students back to a level of where they were when they left. Because the four-day school week increases the time students don't have contact with teachers, it has been compared to the traditional Christmas break (Muir, 2013; Hill & Heyward, 2015). In addition to students being tired, teachers also felt more tired and less effective when compared to being on a five-day week schedule (Feaster, 2002; Hill & Heyward, 2015). Additionally, when a

student misses a day of school on a four-day week, it is more detrimental compared to a student who misses a day on a five-day week because a student was absent for more instruction time (Beesley & Anderson, 2007; Gaines, 2008).

After the transition to the shortened week, it was a concern for some teachers that there wasn't enough time to do what is best for students (Hill & Heyward, 2015). For example, some teachers were unable to teach all of the content in high school courses even with the extended time during the day of the four-day schedule. Other stakeholders expressed the concern that the students who needed the school the most would feel negatively impacted the most by the four-day week schedule. Some teachers acknowledged being excessively tired which lead to reduced productivity. Teachers expressed a hope that students could learn in an equal percentage of the time that they are spending in class. Even though the fifth day could be a time for professional development with teachers because there were no students, teachers were rarely found working on the fifth day. When teachers were required by the school district to work on the fifth day when students were not in session, it often required additional pay for the teachers. It was often found that teachers who helped choose to adopt the transition to the four-day week felt a professional obligation to work on the fifth day. However, recently hired teachers after the adoption of the four-day week felt less of an obligation to work on the fifth day (Hill & Heyward, 2015, 2017). The fifth day must be carefully designed, as the success of the four-day school week is contingent upon the quality of the fifth day (Cline, 2017; Roling, Carter, Hull, & Odneal, 2013).

A number of school leaders expressed the concern that with a four-day school week it would increase food insecurity. Food insecurity is inclusive of having an insufficient supply as well as an inadequate quality of food (Banyan, 2018; Cline, 2017). Both of these concerns

contribute the to the lack of nutrient that is essential for the vital development and growth of students. Therefore, with the transition to the shortened school week, many students would have one less day a week in which they were able to eat a balanced meal. More students will go hungry if they attend schools on a four-day week (Banyan, 2018; Cline, 2017). This is even a greater concern for vulnerable groups such as families who have a meager income (Banyan, 2018; Cline, 2017). Sometimes four-day school weeks put an undue burden on local churches to provide food for those that were traditionally in school on the fifth day (Turner et al., 2017). The same concern exists with when considering a number of different learner groups such as special education, poverty, and minorities. The academic achievement gap is only magnified in a negative manner with a modified calendar (Thompson, 2017). This is especially true when low performing students can't receive additional instruction on the day off (Thompson, 2017). Because of the negative perceptions associated with four-day school week, when school districts adopt the four-day school week, the transition will put leaders under a close watch (Tharp, 2014; Turner, et al., 2017).

On the four-day week schedule, crime may actually decrease for part of the week. As most crimes are committed by juveniles during the time of 3:00 p.m. and 6:00 p.m. (Cline, 2017; Snyder & Sickmund, 2006), the transition to the four-day school week requires a student to be in school longer on the days in which school is in session. This limits a juveniles' ability to commit crimes as they have less time that is unsupervised after school. However, this change, unfortunately, increases the time for students to commit crimes because Thursday evening is now another weekend. In addition to this, students potentially now have another full day to commit crimes. This is especially true in the situation where parents don't provide or arrange for proper supervision (Cline, 2017; Snyder & Sickmund, 2006). Specifically, the review of data showed

that there was a 20% increase or property crimes for juvenile aged students that attended a four-day week school. Property crimes were defined as burglary, car theft, shoplifting, and sometimes incendiarism. The crimes were committed on the day that students didn't attend school (Fischer & Argyle, 2018; Jacob & Lefgren, 2003). When kids are out of school, criminal behavior is committed at a higher rate (Cline, 2017; Snyder & Sickmund, 2006).

Misconceived Factors

One of the negative impacts of the four-day school week is the burden of childcare for constituents on the fifth day when students are not in session (Feaster, 2002). However, acceptable daycare was found because students are not in session on this day, and they are available to babysit **(**Yarbrough & Gilman, 2011; Muir, 2013). Additionally, because the school day had been lengthened it "reduced or eliminated latchkey issues" that have been a concern for years because now students came home from school closer to the same time as their parents do from work. The topic of childcare for the fifth day is considered a non-issue (Gaines, 2008; Muir, 2013). As the topic of finding a babysitter has been perceived as a concern on the fifth day or the day that students are not the session, one school district in Colorado offered a babysitting service for $30 a day to constituents of the district (Anderson, 2018; 27 J Schools, 2018).

Rationale for Change

When a school district is in a financial crisis, a number of factors are considered to create a viable school budget. This unfortunate situation may include reducing teachers and classified staff, closing schools, and decreasing the number of programs, none of which are welcomed by the community. A feasible option is a four-day week **(**Yarbrough & Gilman, 2011).

The primary reasons for changing to the four-day school week is the cost savings (Tharp et al., 2016; Hanson, 2017). School districts can save in transporting of students, substitute

compensation, less overtime for support staff, and workman compensation fees (Yarbrough & Gilman, 2011). Saunders (2012) calculated that the only states in the nation to have larger cuts than Idaho since 2008 were Arizona, Alabama, and Oklahoma. This financial cut was so deep that by the beginning of the 2014 school year, 42 school districts in Idaho had made the transition to the four-day week school which represented 9.2% of the students in Idaho (Richert, 2015) or 23% of the student population in Idaho rural school districts by the fall of 2018 (List of School Districts Four-Day School Week, n.d.). This number grew to 45 school districts in 2018 (List of School Districts Four-Day School Week, n.d.). This it represented nearly 40% of all school districts in Idaho (Enrollment by District and Charter, n.d.).

In 2010, the Colorado Department of Education surveyed school administration who had submitted a request to change their schedule to a four-day week or sought to continue in the current status on the shorted scheduled on their rationale for a shortened week. Over two-thirds responded to the survey that the reasons for the modified schedule were financial related and the remaining third noted the reason being community support (Anderson & Walker, 2012). The reason for the shortened schedule changes is almost always due to a lack of funds (Anderson & Walker, 2012; Effects of Four-Day School Schedule Undecided, 2002; Reeves, 1999; Feaster, 2002; Gaines, 2008; Tharp, 2014).

In one school district, there was no choice but to change to a four-day school week so finances could be preserved (Alves, 2017). Lack of funding was so extreme that the school district was borrowing money to pay bills and was facing bankruptcy. The change in Orearville saved the school district over 4% of its annual operating budget (Alves, 2017).

As discussed earlier in this chapter, beginning in 2009 school districts in Idaho transitioned to a four-day school week at an astonishing rate (National Conference of State

Legislatures, 2018; Richert, 2015). As the state of Idaho was financially deficient during the recession in 2008 (Dearien, 2010), the number of school districts that utilized the financial advantages of a four-day week grew considerably (List of School Districts Four-Day School Week, n.d.). The financial shortfall is what forces school districts to make the change to the four-day week (Reeves, 1999). School districts that are very remote that are located mostly in the western United States are generally more probable to implement the four-day school week (Hill & Heyward, 2015). A rare example of a large school district implementing the four-day school week happened in the Colorado School District 27J beginning at the start of the 2018-2019 school year (Anderson, 2018).

Continuing with the rationale that Idaho school districts were short on finances, it wasn't until 2018 that the number of dollars allocated per student in the general fund was at least equal to what it was before the funding level before the recession began. This would be considering the fiscal year of 2008 compared to the fiscal year of 2019. Additionally, this figure also has calculated inflation for the last 11 years and was not figures solely upon allocated finances (Examining Idaho's Education Funding Over the Last Decade, 2018).

Some districts aren't saving any money (Heyward, 2017) while others are saving a small amount of money but not as significant of savings as what they had planned (Heyward, 2017; Tharp, 2014). District leaders can expect to save 1.5 to 5% of their annual budget. The percentage of savings is contingent upon abiding by the four-day schedule and not adding a program or personnel costs on the fifth day or the day that students are not in the schedule (Davy & Hall, 2015). One source noted that some school districts who transitioned to the compacted school week are cutting 20% of their school day that only results in less than 1% of their annual operating budget (Hill, 2017). The level of savings is contingent upon facility usage during to

off- day (Donis-Keller, & Silvernail, 2009). Gaines (2008) pointed out that school district budgets consist mostly of fixed costs such as teacher and administrative salaries and benefits. Therefore, costs that are "non-fixed" such as transportation, non-salaried employees, and utilities make up a small portion of the districts overall budget. In the end, school districts only save about 2% of the overall budget. Most districts' costs are fixed. Additionally, many districts incur other costs because the buildings are still open on the fifth day to provide student services (Gaines, 2008). Others have reported a .4 to 2.5% cost savings of their overall budget by making the change to a four-day school week (Griffith. 2011).

Academic Impact of the Four-Day School Week

Little if any confirmation that the change to a four-day school week offers negative correlation with academic achievement (Anderson & Walker, 2012; Cline, 2017; Hill & Heyward, 2017; Henton, 2015). More elementary schools exist than do secondary schools. Thus more data exists for analysis. When comparing 5th-grade mathematics scores from 2001-2010 with school districts on a four-day week with those on a five-day school week, there was no statically significant data to imply that the four-day week had a negative impact on student achievement. A similar analysis was discovered with the 4th-grade reading scores (Anderson & Walker, 2012). When standardized test results were compared in one school district which included elementary scores and students in high school with the ACT results, no negative impact was recorded as a result of the modified calendar schedule (Feaster, 2002). When comparing school districts in the state of Missouri, the shortened school week appeared to have no impact on the dropout rate (Gower, 2017). Dropout rates in other states were found to decline because of the four-day school week (Muir, 2013).

The shortened school week has had no quantifiable effect on student test scores (Effects of Four-Day School Schedule Undecided, 2002; Muir, 2013). It was also determined that the compacted school schedule possibly has a positive impact on student achievement, and in most cases, no adverse effect has been recorded. When comparing school districts in the state of Missouri, five out of eight school districts on a four-day week had ACT scores with a slight increase. However, the increase was minor enough that it was deemed that there was not a "statistically significant difference" (Gower, 2017). The results of student achievement tests and the percentage of students who graduate did not decrease when "roughly measured" (Hill & Heyward 2015). Student performance on standardized assessment results continues to be acceptable (Reeves, 1999). Additionally, Thompson's (2017) research discovered that the impacts of negative student performance were only temporary and that after four years of implementation students were back to scoring at the same level as they were previous to the implementation of the shortened school week.

Insufficient documentation indicates a four-day school week impacts academic achievement, positively or negatively (Gaines, 2008). There has only been one study that analyzes district test scores on schools on a four-day week. The "results were inconclusive," and the perception at this point is there is no positive or negative impact on student learning (Dam, 2006). "There is very little peer-reviewed research concerning student achievement in schools that have made the transition from a 27 traditional school week to a four-day week" (Tharp, 2014, p. 24). Other well-known researchers on the topic have stated the same thing (Hill, 2017). Academic achievement associated with the four-day school week is somewhat narrow because this model is usually only implemented in small and rural school districts (Davy & Hall, 2015; Donis-Keller & Silvernail, 2009). The academic impacts of the four-day school week are not

currently known. To properly assess these impacts, one needs a well-planned approach to measure student performance over an extended period of time (Hill & Heyward, 2015).

Positive Academic Impact

One school district with over 1,800 students compared to end-of-year tests scores in grades three and nine in the subjects of math, reading, and language subtests while on the five-day week in the years 2002 and 2003 to the years 2004 and 2005 which was after the transition to the four-day school week. Before the change to the shortened school week, test scores had already begun to increase and continued even after the transition. The results from this district show the student achievement was not negatively impacted, and in all actuality, likely attributed to increased test scores **(**Yarbrough & Gilman, 2011). A study in Colorado showed the four-day week with a slight increase of test scores in elementary schools. A positive relationship was noted with four-day school week and student performance (Anderson & Walker, 2012).

Negative Academic Impact

A Montana study determined when analyzing data over a period of seven years from schools on a four-day school week; there have been "serious declines" in student achievement as determined by benchmark testing (Tharp et al., 2016). This data included every school in the entire state and was analyzed between the years 2007-2013. During this time frame, the total number of students who took this test statewide was over 70,000. In 2007 a little over 200 students took this test, but it increased on an annual basis to nearly 2,700 students in the year 2013. When comparing reading scores during this time frame, students who scored proficient or advanced from schools on a four-day week beginning in 2007 were at 87%, yet those scores declined in 2013 to below 79%. Additionally, a comparison of reading scores during this time frame from schools on a five-day week beginning in 2007 was at 82% proficient yet increased to

above 85% and at one point in 2012. Test scores improved further to above 87% proficient or advanced (Tharp et al., 2016).

When correlating mathematics scores during this time frame, students who scored proficient or advanced a school on a four-day week beginning in 2007 were at 70.5%, and those scores declined to 57.2% in 2013. Mathematics scores during this same time frame from schools on a five-day week beginning in 2007 were at 64.2% proficient and increased in 2013 to 67.3% proficient or advanced (Tharp et al., 2016).

Tharp et al. (2016) did further research and sorted schools that had been on a four-day school week for at least five years and compared it to the rest of the schools in Montana that had been on five-day school week. In 2011 students who attended school on the four-day week scored proficient or advanced in reading at just over 84% yet declined to below 79% in 2013. Comparatively, students attending school on the five-day week scoring proficient or advanced in reading in 2011 was nearly 86% and remained above 85% in 2013. The difference in mathematics was even more drastic. In this comparison, the decline in students scoring proficient or advanced was close to 5%, even lower with schools attending a four-day school week. Students attending school on the four-day week schedule who scored proficient or advanced in mathematics in 2011 was just nearly 63% and finished close to 53% in 2013. Conversely, students attending school on the five-day week schedule scoring proficient or advanced in mathematics in 2011 was just nearly 69% and stayed close to 67% in 2013. In this comparison, the drop in students scoring proficient or advanced was almost 8% worse with schools attending a four-day school week (Tharp et al., 2016).

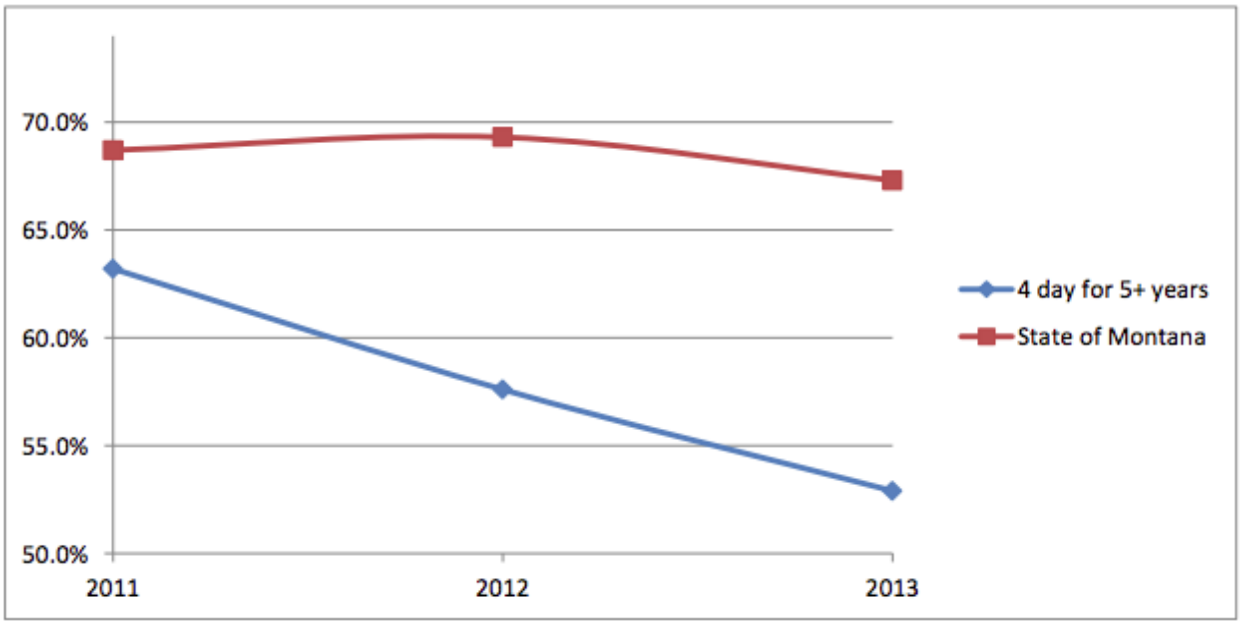

Figure 2. This figure illustrates the percentage of students who scored "proficient or advanced" in math when comparing schools that have been functioning on a four-day school week for or five or more years when compared to schools in Montana that are on the traditional five-day week. From "*A comparison of student achievement in rural schools with four and five day weeks,"* by T. W. Tharp, 2014, p. 57. Copyright 2014 by Timothy W. Tharp. Reprinted with permission (see Appendix A).

Schools where the four-day week had been implemented for at least five years were put into a group all by themselves and compared to the rest of schools in Montana that were on a five-day week, and the differences in scores were analyzed. Students on a four-day schedule performed at a diminished level when compared to the five-day schedule and this trend is still developing at an elevated pace (Tharp, 2014). "Even though the early-adopters of the four-day school week in Montana out-performed the state averages, in time, nearly every single method of measurement indicated that the students in four-day week schools are achieving proficient and advanced on the MontCAS at a lower rate than the rest of Montana's schools" (Tharp, 2014, p. 66). After comparing four-day week schools to five-day week schools, the five-day schools scored slightly higher (Hewitt & Denny, 2011). One discovery was elementary writing scores for schools on the five-day week were "significantly higher."

Other Academic Considerations

Researchers have documented no negative impact on academics scores as well as a slight or significant increase in test scores when transitioning to the four-day school week. Yet, "in the first two years of implementation student scores in four-day week schools are better than the rest of the state. However, once the four-day week becomes part of the culture, the loss of the days of instruction appears to negatively affect student performance" (Tharp et al., 2016, p.131). Opponents of the four-day school week are worried that the undesired impacts of this changes will only be evident after many years of the implementation (Hill & Heyward 2015). District leaders make the transition to a four-day week under increased pressure and inspection from every stakeholder involved to ensure the change is implemented properly (Tharp, 2014). After a few years, these expectations diminish because the expected negative impacts don't occur. As strategies are implemented to help ease possible harmful effects of the four-day school week, they "erode" as time passes because those who originally implemented them leave the school district and those who are employed after them have different backgrounds and desires (Hill & Heyward 2015). Tharp (2014) noted circumstance where students attending a four-day week perform better academically during the initial years of adoption and decline after is intriguing. This change may be credited to what is called "derivation of the Hawthorne Effect" (p. 68). This effect is recorded when people know they are being observed act differently than they normally would. Therefore, in the case of the transition to a four-day school week, school officials recognize that because of the transition they are being observed frequently and carefully. This leads them to make a concerted effort to ensure the transition goes well. After the implementation has gone smoothly, their efforts relax which may cause the test scores to decline (Tharp, 2014). Nonetheless, after the shortened week is integrated into the climate of a school,

student achievement seems to be adversely impacted (Tharp et al., 2016). After the shortened week is integrated into the climate of a school, student achievement seems to be adversely impacted (Tharp et al., 2016).

Growing Concerns

Even though there are districts throughout the nation that are pleased with the shortened week, many states still have significant concerns with this practice. These concerns have led to the adoption of more stringent criteria of answerability. Effective during the 2013-2014 year, the state of California passed Senate Bill 236 that mandates four-day a week school district to change back to five-day weeks if minimum academic measures were not attained. In the same year, the Minnesota Department of Education required school districts to transition back to the five-day traditional week if academic proficiency was not acquired. It eventually led to the Minnesota Department of Education halting any applications for school districts to make the transition to the shorter week. In 2017 the Oklahoma State Department of Education required any school district considering to make this transition to non-traditional calendar to proffer a detailed plan on what they plan to achieve with the change. In the same year, Oklahoma State Department of Education has also ordered a study on the fiduciary expenditures in four-day week school districts in additional student performance, delinquency rates, and food insecurity (Cline, 2017). Lastly, New Mexico has temporary prohibited additional school districts from transitioning to a compacted week (Heyward, 2018; Ordway, 2018).

Mitigating Factors

As a result of schools being on a four-day week, there are a number of factors that mitigate any perceived or possible negative impacts of this transition. Gaines (2008) suggested that the day out of school could be used to provided students tutelage in classes, teacher training,

facilitating of “special programs,” and participation in school-sanctioned student activities. Furthermore, because the transition of a four-day school week can lessen financial burdens, it allows districts to offer resources “gifted students, remedial programs, and disciplinary programs” (Dam, 2006, p. 8). On some occasion school districts will even provide transportation for such programs. In some situations, day-care providers offer supplemental academic instruction (Anderson, & Walker, 201). School districts can help by using the fifth day in an effective manner by providing targeted instruction to low performing students, encouraging enrollment in college-level classes, completing project work with digital platforms and field trips. These all have the possibility of enhancing education on the fifth day (Hill & Heyward, 2015; Lewis, 2017). It is important to note that there is a lack of peer-reviewed research on the effectiveness of fifth-day activities with school districts that are on a four-day school week (R. Birch, personal communication, September 24, 2018).

Thompson (2017) believes that when the policy surrounding four-day school weeks is implemented carefully, it can help mitigate perceived or actual negative impacts. For example, as the transition to a four-day school week requires longer school days, it is imperative that school not start any earlier in the morning. Rather extend the length of the school day by adding the needed additional time to the end of the school day. Comparatively, on the day that there is no school in session, it is of great advantage for districts to offer instruction that helps students who are low performing as well implementing programs that assist students who are on an accelerated learning track (Thompson, 2017)

Four-day school weeks encourage schools to execute their responsibilities in a more productive manner (Reeves, 1999). Correspondingly, it helps when districts minimize possible distractions which enhance instructional time (Dam, 2006). Classroom instruction is improved

because classes are structured for lengthy instructional times and fewer transitions throughout the school. This change results in an increased overall quality of teaching (Muir, 2013). This change to a four-day week has helped to lessen the ineffective time that is found in the traditional five-day week calendar. Teaches are more direct in their instruction **(**Yarbrough & Gilman, 2011). The four-day school week has the same and even more instructional time than the five-day week (Anderson, 2018; Gaines, 2008). A rural school district in Idaho benefited from the transition to four-day week by increasing their school year equivalent to eight school days a year (Richert, 2014). A school district in Missouri increased the amount of time that teachers and students actually spend together, even though they are in school one day less a week (Hinton, 2017).

Unknown Factors

The school district is the largest employer in most rural school districts. Because of this, the local school district and the business community are closely interwoven. There is a difference in the perception of the economic impact between community members and business owners who have students attending a four-day school week when compared to those that don't. 44% of business owners were neutral when asked if they felt the changed to a shortened school week had a positive result on the city. 22% of business owners felt the transition to the compacted week had a positive economic impact on the local city. The consequences of a four-day school week on the economy are not currently known. However, the most intriguing discovery of this research was that if a business owner had a student enrolled in the four-day school week, he would more likely feel that this change positively influenced the local economy (Turner et al., 2018). There is also uncertainty on the level of impact for varying grade levels, sex, size of district, level of ruralness. Further research is need to determine if a four-day school week impacts job placement or monetary profit when being considered over a long time period (Heyward, 2018).

Conclusion

The four-day school week has been employed since the 1930's (Donis-Keller & Silvernail, 2009). Before some states allowed the change, legislation had to be amended because the number of school days would be reduced by about 20% (Gaines, 2008; National Conference of State Legislatures, 2018; Reeves, 1999). Most of the school districts that utilize this model are smaller rural communities (Donis-Keller & Silvernail, 2009; Heyward, 2017; Tharp et al., 2016; Tharp, 2014). A majority of school districts that make this change did so because of a lack of funding, (Anderson & Walker, 2012; Effects of Four-Day School Schedule Undecided, 2002; Reeves, 1999; Feaster, 2002; Gaines, 2008; Tharp, 2014) and others, because the community sought after it (Anderson & Walker, 2012). Since the recession in 2007 the number of school districts transitioning to four-day school weeks in Idaho (List of School Districts Four-Day School Week, n.d.), Colorado (Colorado Department of Education, 2017), and Montana (Tharp, 2014) has increased at a staggering rate. After the change has been made, some districts sadly discovered the rate of savings was much lower than anticipated (Heyward, 2017; Tharp, 2014). Despite this drawback, positives consequences have occurred on a four-day week (Effects of Four-Day School Schedule Undecided, 2002; Muir, 2013; Hill & Heyward 2015; Plucker et al., 2012). Mitigating strategies can be implemented to counteract the possible negative impacts of the four-day week. Many of these are taken advantage of on the fifth day or the day that there is no school (Hill & Heyward, 2015; Gaines, 2008). The longer school districts operate on the compacted schedule, the more satisfaction there is with almost all stakeholders (Gee, 2018; Turner et al., 2017; Dam, 2006). One concern with the four-day week is the academic impact to student achievement, which is one of the highest priorities for school systems (Tharp et al., 2016). Most of the research that has been done supports that there is no harmful impact on student

performance with the four-day school week. The difference isn't statistically significant enough to be concerned (Anderson & Walker, 2012; Feaster, 2002; Muir, 2013; Effects of Four-Day School Schedule Undecided, 2002; Gower, 2017; Reeves, 1999). However, recent research supports very noticeable differences that have negative impacts on student achievement when comparing the shortened schedule with the traditional school calendar (Tharp et al., 2016; Tharp, 2014). If school districts are going to make the transition, a thorough plan must be developed to address the loss of the student-to-teacher contact days (Tharp et al., 2016). Making the transition to a four-day week should not be done to increase student achievement (Gaines, 2008; Hill, 2017).

Chapter III

Research Design and Methodology

Introduction

School districts began implementing the four-day school week as early as the 1970's (Gaines, 2008). Such calendar modification has been steadily increasing in states located in the western portion of the United States (Tharp, 2014). In 2018, the National Conference of Legislatures reported that during times of financial shortages, the number of states that utilized the shortened week increased significantly (National Conference of State Legislatures, 2018). The shortened school week is found in 25 states with nearly 560 school districts employing this model (Gaines, 2008; National Conference of State Legislatures, 2018; Reeves, 1999).

In 2014, 42 Idaho school districts were on a four-day week, which represented 9.2% of the students in Idaho (Richert, 2015) or 23% of the student population in Idaho rural school districts by the fall of 2018 (List of School Districts Four-Day School Week, n.d.). By the start of the 2018 school year, nearly 40% of all school districts (or 45 school districts) in the state of Idaho had moved to a four-day school week (List of School Districts Four-Day, n.d.).

The purpose of the compacted week is generally because of a financial shortage, and this transition is one of the most common reasons for making the change to the four-day school week (Cline, 2017; Levin, 2016; Tharp et al., 2016; Yarbrough & Gilman, 2011). When considering academic achievement with districts on this schedule, there has been minimal evidence of a negative impact (Anderson & Walker, 2012). However, another study discovered when looking at test scores over an extended period of time, there was a notable decline in student performance as measured by standardized testing (Tharp et al., 2016). Other researchers concluded the impact on academics of a four-day school week is currently undecided, (Hill & Heyward, 2015) and that

there is limited research to determine the academic impact on this school calendar model (Gaines, 2008; Cline, 2017; Hill, 2017). It is important to note that the more time that transpired after school districts have implemented the shorter week, the greater satisfaction with almost all stakeholders (Gee, 2018; Turner, et al., 2017; Dam, 2006).

The purpose of this study was to determine the academic impact of a four-day school week on student achievement in Idaho rural public schools. This research study analyzed standardized test scores of school districts on the four-day school week compared to test scores of school districts on the five-day school week. A rural Idaho school district was only included in the study if they had been on a four-day week for at least five years. In addition to comparing all students in a school districts on the four-day week to the five-day week school districts, sub populations of students including Hispanic/Latino and economically disadvantaged as well as school districts that had a student population receiving free and reduced lunch services greater than 45% were also examined.

The Research Questions

1. What are the academic achievement levels of Idaho school districts that are on a traditional five-day school week compared to school districts on four-day school week as measured by the Idaho Reading Indicator (IRI) and Idaho Standards Achievement Test (ISAT) over a five year period?
2. What relationships can be drawn between variables associated with the student sub populations of school districts on a traditional five-day school week compared to school districts on four-day school week?

Research Design

To determine what relationships can be drawn with academic performance between rural Idaho school districts on a traditional five-day school week compared to school districts on four-day school week a quantitative study was utilized (Creswell, 2015; Marshall & Rossman, 2016). Specifically, within the quantitative research design, the causal-comparative design was the chosen method. The causal-comparative design is a structure that attempts to discover if relationships exist between independent and dependent variables after the phenomenon has taken place (Brewer & Kuhn, 2010). It was the intended purpose of this research to determine whether or not an independent variable had an impact on the result (Brewer & Kuhn, 2010). In this study, school districts that are on a four-day week and a five-day week are the independent variables. The level of student achievement in school districts was identified as the dependent variable.

This quantitative study reviewed five years of ex post facto data. Ex post facto research provides insight and a foundation for testing by a more rigorous experimental method (Creswell, 2014; Tanner, 2012). The researcher compared ex post facto data of the academic performance of school districts that were on a four-day week when compared to those on a five-day week. Standardized test scores from the 2014-2015 school year and ending with the 2018-2019 school year were included. Only school districts that had been operating on a four-day week for at least five years were a part of the research.

Participants

Traditional Idaho public school districts that were classified as rural by the Idaho definition were included in the study (Idaho Code §33-319, 2009). Additionally, school districts that were on a four-day week for at least five years qualified to be in the study. In summary, this study focused on the rural Idaho school districts that have been on a four-day school week since

the start of the 2014-2015 school year (List of School Districts Four-Day School Week, n.d.). This study also included traditional Idaho school districts that were on a five-day school week.

Appendix C presents the previously mentioned demographics of all school districts in the state of Idaho. This information was compiled in an effort to assist the author in accurately categorizing school districts with similar demographics. When school districts were categorized in this manner, it provided more data points for the researcher to analyze. Additionally, grouping school districts with similar demographics provided additional relevancy to the results of the research when determining the academic impact of the four-day school week.

Data Collection

Prior to starting the research associated with this study, the researcher sought approval from the Institutional Review Committee (IRB) found in Appendix L. In addition to this, the researcher also sought and received approval for the Professional Standards Committee (PSC). It was important for the Institutional Review Committee (IRB) to review the proposed dissertation research plan including subjects, assessment procedures, proposed data and collection procedures, data analysis, and purpose of the study. All of which were approved by required organizations.

Standardized test results from the assessments utilized by the Idaho Department of Education were chosen. The results from the Idaho Reading Indicator (IRI) were retrieved from the Idaho Department of Education by way of an official public records request in the fall of 2019. This request was submitted through the Online Tool for IT Support (OTIS) to the Accountability Coordinator in the Division of Assessment and Accountability at the Idaho State Department of Education. Results from the Idaho Standards Achievement Test (ISAT) were available on the Idaho State Department of Education's website. Waiting until the fall of 2019

allowed for all standardized test results to be available from the previous school year. The standardized test results were requested for every traditional public school at the district level only, it did not include requests to individual schools. No charter schools or private schools were included in this study.

To determine if there was an academic impact resulting from Idaho school districts transitioning to a four-day school week, a quantitative research method was utilized. That data analysis is requisite as it provides the necessary insight to construct a theory to identify emerging trends (Creswell, 2015; Field, 2013). Standardized test scores from school districts on a four-day week were compared to school districts on the five-day week.

This study compared Idaho rural school districts that were on a four-day week with Idaho rural school districts that were on a five-day week. These groups performance were compared against each other by the way of subject areas that were tested by the standardized assessments. Furthermore, in an effort to analyze more data points (Research Question Two), school districts that were on a four-day week were organized and then compared to five-day week rural school districts with similar demographics. These demographics included the state wide economically disadvantaged (free and reduced lunch percentages) population and the percentage of Hispanics/Latinos. School districts that had a student population receiving free and reduced lunch services greater than 45% were also analyzed.

In order to compare school districts in more than one way, the researcher gathered data so school districts with similar demographics could be compared. The percentage of special education students and English Language Learners (ELL) was obtained through a public records request (see Appendix B). A public records request was also necessary to gather the Idaho Reading Indicator (IRI) results of respective school districts (see Appendix G). All other

information including the list of school districts on four-day week, economically disadvantaged (free and reduced lunch percentages), enrollment numbers, percentages of ethnicity, results from the Idaho Standards Achievement Test (ISAT), and rural school district classification can all be found on the Idaho State Department of Education's website.

Analytical Methods

The compilations of student achievement results by individual districts were examined using IBM SPSS Statistical Software Version 25. The researcher used IBM SPSS Statistics to analyze the data in an effort to determine if there was a significant difference in the academic performance of rural school districts on a four-day school week when compared to rural school districts on a five-day week.

When analyzing ISAT data, rural school districts were compared specifically, the percentage of students that were proficient/advanced. This type of comparison gives a clear picture of the percentage of students that were proficient to those that were not proficient as measured by the ISAT when comparing rural schools that are on a five-day school week to those that were on a four-day school week.

When comparing IRI data, rural school districts were analyzed by the percentage of students who scored three (benchmark) for the years 2014-2018 and tier one (at grade level) for 2019. This type of comparison also gives a clear picture of the percentage of students that were proficient to those that were not proficient when comparing rural schools that are on a five-day school week to those that were on a four-day school week as measured by the IRI.

In this study, a t-test was utilized to compare the percentage of students that were proficient/advanced on the ISAT for rural schools on a four-day school week compared to rural schools on a five-day school week. A t-test is helpful as it analyzes differences in overall means

with both samples (Field, 2013). This strategy is simple as it makes comparisons. In addition to this, the standard deviation is also compared. If the difference in standard deviation is high, then significant differences are possible. Conversely, when analyzing the two sample means if the differences in standard deviation is minute, then it can be concluded that the small differences between sample means are not significant (Field, 2013).

A two-sample t-test was utilized to determine if there is a significant difference in the percentages as measured by the ISAT between number of students that scored proficient in Idaho rural school districts that were on a four-day school week compared to Idaho rural school districts on a five-day week. A t-test between will determine whether or not there was a statistical significant difference between two groups. The p-value that results from a t-test is specific determining if the results are statistically significant. This would be the case if the p-value is less than .05 (Field, 2013; Hoy & Adams, 2016).

Limitations

Limitations associated with a study are possible problems or weaknesses that may lead to false information or results that don't contain a solid foundation (Creswell, 2015). Outlining limitations allows the reader to assess to what level research results may or may not be related to other people including the applicability to other situations (Creswell, 2015; Marshall & Rossman, 2016). Additionally, defining limitations in a study allows the reader to make inferences based upon the results of the study (Marshall & Rossman, 2016).

Idaho adopted the Common Core standards in 2009, and they were officially implemented into Idaho classrooms beginning in the fall of 2013. In 2014 the new Common Core standards were assessed by the ISAT (K. Laraway, personal communication, April 26, 2018). The difference in test scores may be attributed to change in standards and not the change

to a four-day school week. This is an additional limitation because it didn't allow for the researcher to compare test scores before and after the implementation of the four-day week. Another limitation to consider is that testing vendors have changed for the ISAT. Some may also perceive this as a reason why test scores were impacted even though the experts say the validity of the test should not be impacted by the test vendor changing. The IRI underwent significant changes and was implemented in the fall of 2018. This limited the researcher so that he was not able to compare the 2018-2019 IRI data in the analysis with the previous four years of scores. The Istation software was utilized and was administered as computer adaptive test whereas before it was done with paper and pencil. Additionally, Istation was improved to also to include enhanced accommodation mechanisms for students with disabilities and English learners (Idaho State Department of Education, n.d.a). The researcher was able to classify and then compare school districts in similar groups including economically disadvantaged (free and reduced lunch percentages) and the percentage of Hispanics/Latinos. School districts that had a student population receiving free and reduced lunch services greater than 45% were also analyzed.

In each of the previously mentioned areas, not all school districts in the state were included in the study. In some instances, no data was available because it was redacted pursuant to Idaho Code § 33-133 and the State Board of Education's Data Management Council's implementing Policies and Procedures. The intent is to protect student privacy which led to a redaction of data in any cells of less than 5 students or where the difference between the total of one or more cells of categorical data is less than 5 of the total student population. (K. Everitt, personal communication, November 15, 2019). A complete list of redacted schools is found in Appendix H, List of Excluded and Redacted Schools. These redaction policies and procedures reduced the number of school districts that the author was able to research in every category. The

most notable redactions were in the Hispanic/Latino sub population. In this sub population the redactions were so significant that only the data in 2019 was large enough to be analyzed for the possibility of statistical significance.

Due to the small number of English Language Learners (ELL), African Americans, and special education students, there was not enough data available to compare the academic impact of diverse students on a four-day school to school districts on a five-day week. Parallel to this limitation is the fact that many special populations groups are so small, they are not able to be reported publicly for privacy reasons. The same was true for individual grade levels. These small numbers restricted the researcher's ability to compare these previously mentioned groups and sub groups.

In conclusion, because of the economic recession in 2008, it is possible that districts minimized resources to survive the financial deficiency. Possible resources that were affected may include fewer teachers resulting in larger class sizes, less administrative support, fewer supplies, outdated curriculum, less or no help from a curriculum and content coaches, etc. Some district leaders or researchers may feel that these unquantifiable circumstances could have been reasons that negatively have impacted standardized test scores. Lastly, the researcher also recognizes that other variables may influence the academic performances of students in their respective school districts. The researcher was unable to control factors such as leadership quality and teacher retention within districts. These factors may have positively or negatively influenced student achievement.

Chapter IV

Results

Introduction

As a result of the economic recession that occurred in 2008, Idaho public school districts experienced nearly the largest financial cutbacks in the entire nation (Saunders, 2012). Other states that were similarly impacted included Arizona, Alabama, and Oklahoma (Saunders, 2012). These significant financial cutbacks resulted in school districts making the decision to modify the academic calendar to a four-days school week (Cline, 2017; Levin, 2016; Yarbrough & Gilman, 2011). Having a lack of necessary funds to operate a school district was the most prevalent reason to make the change to the shortened week (Anderson & Walker, 2012; Donis-Keller & Silvernail, 2009; Griffith, 2011; Henton, 2015; Hill & Heyward, 2017; Plucker et al., 2012; Sagness & Salzman, 1993; Tharp et al., 2016).

The four-day school week has been utilized in 25 states with at least 560 school districts adopting this modified schedule. A majority of these school districts are located in Colorado, Montana, Oklahoma, and Oregon. In order to make this change possible a four-day week schedule, many states required modifications to state statutes (Gaines, 2008; National Conference of State Legislatures, 2018; Reeves, 1999).

Considering this transition in Idaho, by 2014 over 40 school districts had made the transition to a four-day school week (Richert, 2015; Enrollment by District and Charter, n.d.). Just four years later the list would grow to 45 schools, (List of School Districts Four-Day School Week, n.d.) accounting for 25,757 students and 23% of the student body population in rural Idaho schools. This represents 47% of rural school districts in the state of Idaho (Enrollment by District and Charter, n.d.).

In 2008, the population of Idaho counties that were classified as rural areas consisted of 30% of the states' total inhabitants (Dearien, 2010). Idaho counties that suffered the greatest impact as a result of the economic recession were those located in rural communities. In December of 2009, seven counties had unemployment rates of at least 15%. All seven of these counties had been classified as rural. As seen in the national trends, Idaho's poverty rate is larger in rural communities when compared to the numbers that reside in urban communities. During this recession, poverty rates higher than 25% were found in six counties, all of which were rural (Dearien, 2010). This statistic is of great significance, as 100% of the schools in Idaho that are on a four-day school week meet the criteria of a rural school (Rural School Districts in Idaho, n.d.).

Purpose

The research was designed to compare standardized test scores of rural school districts that are on the four-day school week to the results of rural school districts on the five-day school week. Between 2009 and 2015, 27 Idaho school districts made the change to a four-day school week, bringing the total number of school districts in the state on a four-day week to 44. One more additional school district completed the transition in 2018, which resulted in a total of 45 Idaho school districts on the four-day week (List of School Districts Four-Day School Week, n.d.). With changes to a compacted school week, educational stakeholders were largely concerned with possible negative impacts on academics (Tharp et al., 2016).

When disaggregating student performance on standardized test scores, the duration of time that a school district had been utilizing the four-day week was an important factor to consider. One study discovered that after the initial two years of the four-day week had been implemented, test scores were higher (Tharp et al., 2016). However, after the compacted week was amalgamated into the culture of a school for five years, student achievement was negatively

impacted (Tharp et al., 2016). Therefore, only school districts that had been operating on a four-day week for at least five years were included in this research.

These results will provide current research and valid data to school districts that have implemented a four-day week and to those districts that may have contemplated the shortened week. After the results of data are analyzed, community stakeholders and school district employees will have up-to-date data with which to make decisions for their educational institutions. With these results, those that are in a position to make decisions will have appropriate data as they consider implementing strategies to improve academics or consider transitioning back to the traditional five-day week. The results of this data may guide key position holders such as legislatures, school boards, superintendents, community members, school district employees, and other stakeholders on policy development related to four-day school week. If a school district is giving thought to the transition to the shortened week yet is apprehensive about protecting the integrity of the school day, the data from this focused research will outline and analyze some of the pros and cons of this schedule change. In conclusion, the outcome of this study may provide school districts with current and reliable data as decisions are made as to the organizational structure of the school day.

The intent of this study was to analyze the academic performance of schools districts on four-day school week when compared to school districts on a five-day school week. This research focused on the following questions:

1. What are the academic achievement levels of Idaho school districts that are on a traditional five-day school week compared to school districts on four-day school week as measured by the Idaho Reading Indicator (IRI) and the Idaho Standards Achievement Test (ISAT) over a five year period?

2. What relationships can be drawn between variables associated with student sub populations of school districts on a traditional five-day school week compared to school districts on four-day school week?

In this chapter, the results of the data collected and analyzed on academic performance of four-day school weeks compared to five-day school weeks will be discussed. The research was conducted by compiling historical standardized test scores from the Idaho Department of Education beginning with the 2014-2015 school year and ending with the 2018-2019 school year. The standardized test scores that were analyzed included the Idaho Reading Indicator (IRI) and the Idaho Standards Achievement Test (ISAT). The academic metrics that were utilized were the IRI (Idaho Reading Indicator) and the ISAT (Idaho Standards of Achievement) in the subjects of mathematics and ELA (English Language Arts). Standardized test scores of students from districts on a four-day school week were compared to test scores of students from districts on a five-day school week. Districts were compared as whole groups. Additionally, sub populations that included economically disadvantaged and Hispanic/Latino populations were also examined. Furthermore, school districts that had a student population receiving free and reduced lunch services greater than 45% were also compared. In summary, the average scores of students that were proficient/advanced that were on a four-day school week and a five-day district scores were outlined.

Research Design and Methodology

In an effort to examine the academic performance between rural Idaho school districts on a traditional five-day school week compared to school districts on four-day school week a quantitative study was utilized (Creswell, 2015; Marshall & Rossman, 2016). In the quantitative research design, the causal-comparative design is a quality method of research. It was the

purpose of this research to determine whether or not an independent variable had an impact on the result (Brewer & Kuhn, 2010). Within this research, school districts that were on a four-day week and a five-day week are the independent variables. The level of student achievement in school districts was labeled as the dependent variable (Field, 2013).

This quantitative study reviewed five years of ex post facto data. The study analyzed ex post facto data of the academic performance of school districts that were on a four-day week when compared to those on a five-day week. Standardized test scores from the 2014-2015 school year and ending with the 2018-2019 school year were included. In order for school districts to be included in the study, they had to be operating on a four-day week for at least five years.

Data Redaction

In order to be compliant with privacy laws as required in Idaho Code § 74-104 (1), the author was unable to analyze every rural school district in the state of Idaho because some of the information that was received had been redacted. Specifically, data must be redacted in "any cells of less than 5 students or where the difference between the total of one or more cells of categorical data is less than 5 of the total student population. In addition, Data Management Council Policies and Procedures call for at least two cells to be redacted in most cases where any total is available, in order to prevent any cell required for redaction to be derived...additional cells may be required to be redacted until the total of the exempt and therefore redacted aggregate data in a line or column equals 5 or more. Zero is considered a number" (Everitt, 2019). In sub populations that had enough numbers to analyze, as high as 52 school districts were redacted and in other areas were as low as five school districts were redacted. This was more extreme in the sub populations such as economically disadvantaged, and especially in the Hispanic/Latino sub group. For example, in some of the areas, up to 96 school districts were

redacted in order to be compliant. These redactions eliminated the ability to examine some sub populations for some years and merely minimized the ability to conduct an analysis in other areas.

Participant Profile

In order for a four-day school week to be included in this study, a school district must have implemented the compacted calendar for at least five years. This means they would have had to begin the four-day week by the fall of 2014 or sooner. Additionally, this research only included school districts that were a traditional public school. Charter schools were not included in this research. Furthermore, only rural school districts that qualified according to Idaho Code definition (Idaho Code §33-319, 2009) were included in the study. In summary, rural Idaho school districts that were on a four-day week since the fall of 2014 were included in this study. This study also included traditional Idaho school districts that were rural and that were on a five-day school week.

Demographics Comparisons of Districts

Academic performance is often impacted by a number of factors. Varying student populations is one of those key factors (Davila & Michaels, 2016). It was the author's intent to ensure that populations were similar in demographics. This assisted with reasonable and accurate comparison throughout the study. One part of this study included school districts that had a student population receiving free and reduced lunch services greater than 45% were also analyzed. The 45% number was selected as this was percentage of students in Idaho that were receiving free/reduced lunch services in April 2019 (Idaho State Department of Education, n.d.b). The state wide low income rate is synonymous for economically disadvantaged students (Idaho Code §33-1001, 1980; Everitt, 2020).

Furthermore, in order to make an equitable comparison between the academic performance of school districts on four-day school week and school districts on a five-day week, it was key to compare the demographics of these respective school districts. Table 1, *Demographic Data by Four-day vs. Five-day Districts,* details the demographics of the participating school districts, including student enrollment, free and reduced lunch rate, and the percentage of Hispanic/Latino as well as special education population. The student demographics between the four-day districts and five-day districts represented similar populations as indicated in the provided Table below.

Table 1

Demographic Data by Four-day vs. Five-day Districts

	Five-Day Districts	Four-Day Districts
ISAT ELA		
Student Enrollment	82,786	23,352
Free and Reduced Lunch %	49%	53%
Hispanic or Latino %	18%	18%
Special Education %	11%	11%
ISAT MATH		
Student Enrollment	82,101	20,810
Free and Reduced Lunch %	50%	53%
Hispanic or Latino %	19%	20%
Special Education %	11%	11%
IRI 2014-2018		
Student Enrollment	80,753	21,442
Free and Reduced Lunch %	50%	55%
Hispanic or Latino %	19%	21%
Special Education %	11%	12%
IRI 2019		
Student Enrollment	84,708	25,720
Free and Reduced Lunch %	53%	56%
Hispanic or Latino %	18%	18%
Special Education %	11%	11%

A substantial number of rural Idaho school districts have transitioned from a five-day school week to a four-day school week. In the fall of 2006 only ten school districts had implemented the four-day school week (List of School Districts Four-Day School Week, n.d.). Eight years later at the start of the 2014 school year, 42 traditional school districts in rural Idaho schools had made the change to a four-day week school. This represented nearly 40% of all school districts in Idaho (Enrollment by District and Charter, n.d.). At the end of the 2018-2019 school year, 45 traditional school districts moved to the four-day week (List of School Districts

Four-Day School Week, n.d.). This number equates to 23% of the student population in Idaho rural school districts (List of School Districts Four-Day School Week, n.d.). The large number of rural school districts that implemented the four-day school week is one of the significant changes ever to take place public education (National Conference of State Legislatures, 2018; Tharp, 2014). One of the most common concerns with the four-day week is the academic impact to student achievement, which is one of the highest priorities for school systems (Tharp et al., 2016). Lastly, that there is limited research that details the academic impact of the four-day school week (Gaines, 2008; Cline, 2017; Hill, 2017).

Explanation of Research Questions

The first question presented in this study asked, "What are the academic achievement levels of Idaho school districts that are on a traditional five-day school week compared to school districts on four-day school week as measured by the Idaho Reading Indicator (IRI) and Idaho Standards Achievement Test (ISAT) over a five year period?" This question focused on comparing all students in the school districts and did not differentiate between sub populations or school districts based upon characteristics that would have put them in similar categories to other school districts in the state.

The second research question asked, "What relationships can be drawn between variables associated with the student sub populations of school districts on a traditional five-day school week compared to school districts on four-day school week?" This question focused on the sub populations of Hispanic/Latino students as well as students that were economically disadvantaged. Disaggregating this data led the researcher to additional findings where school districts that had a student population receiving free and reduced lunch services greater than 45% were compared to see if there was a statistical significant difference in their academic test scores.

To answer both of these questions, the researcher relied on the analysis of the Idaho Reading Indicator (IRI) and the Idaho Standards Achievement Test (ISAT), both standardized assessments utilized by the Idaho Department of Education, to inform this question. Independent samples t-tests were conducted using SPSS to examine if there was a significant difference ($p \geq .05$) in standardized test scores of Idaho school districts on a traditional five-day school week when compared to school districts on a four-day school week. An independent t-test was used to determine if there was a statistically significant difference between the mean of the two unrelated groups (Fields, 2013; Frey, 2016). If the p-value of the Levene's Test for Equality of Variance was $p \geq .05$, this indicates there was not a statistical significant difference in the performance of each respective group. When analyzing the results from the independent samples t-test, the researcher reviewed the means, standard deviations, t-scores, p-values, and effect size (Field, 2013).

Calculating the effect size is necessary because it is used to display the strength of the difference between two groups. Specifically, the effect size demonstrates the magnitude of the relationship between the two groups that are being compared (Tanner, 2012). The larger the effect size, the stronger the difference between groups. Meaning, the smaller the sample size, the more difficult it is to prove a statistically significant difference with the two groups. When the effect size is small, which is more likely with a large sample size, there is greater similarity between the groups. Thus increasing the chance of discovering a statistically significant difference (Tanner, 2012; Field, 2013). The effect size in this study was calculated to understand the difference in numbers between the five-day school week districts and the four-day school week districts. As noted by Field (2013), to determine the size of the effect, the following was used:

- A small effect is from 0 to .3.
- A moderate effect is from .3 to .5.
- A large effect is above .5

Performance of All Students in School Districts

The results in Tables 2-4 and Figures 3-5 (below) compared all students attending a five-day school week district to all students attending a four-day school week district. The charts and graphs indicate the percentage of students who were proficient/advanced as measured by the IRI (Idaho Reading Indicator) scores, ELA (English Language Arts) ISAT (Idaho Standards Achievement Test), mathematics ISAT (Idaho Standards Achievement Test), from the years 2014-2019. While districts on a traditional five-day school week consistently had a higher percentage of students score proficient/advanced than districts on a four-day school week. Thus, there was no statistically significant difference ($p \geq .05$) between the two populations. The Levene's Test for Equality of Variance showed no violations ($p \geq .05$). Thus, these quantitative results indicate that although districts on a five-day school week consistently performed higher on the IRI and ISAT standardized tests, there is no statistically significant impact (positive or negative) on the academic performance of districts on a four-day school week when compared to districts on a five-day school week, as determined by the previously mentioned metrics.

Results of Research Question 1

The comparison by year of the IRI (Idaho Reading Indicator) scores for the years of 2014-2019 of all students with districts on the four-day week compared to school districts on the five-day week are as follows:

Figure 3

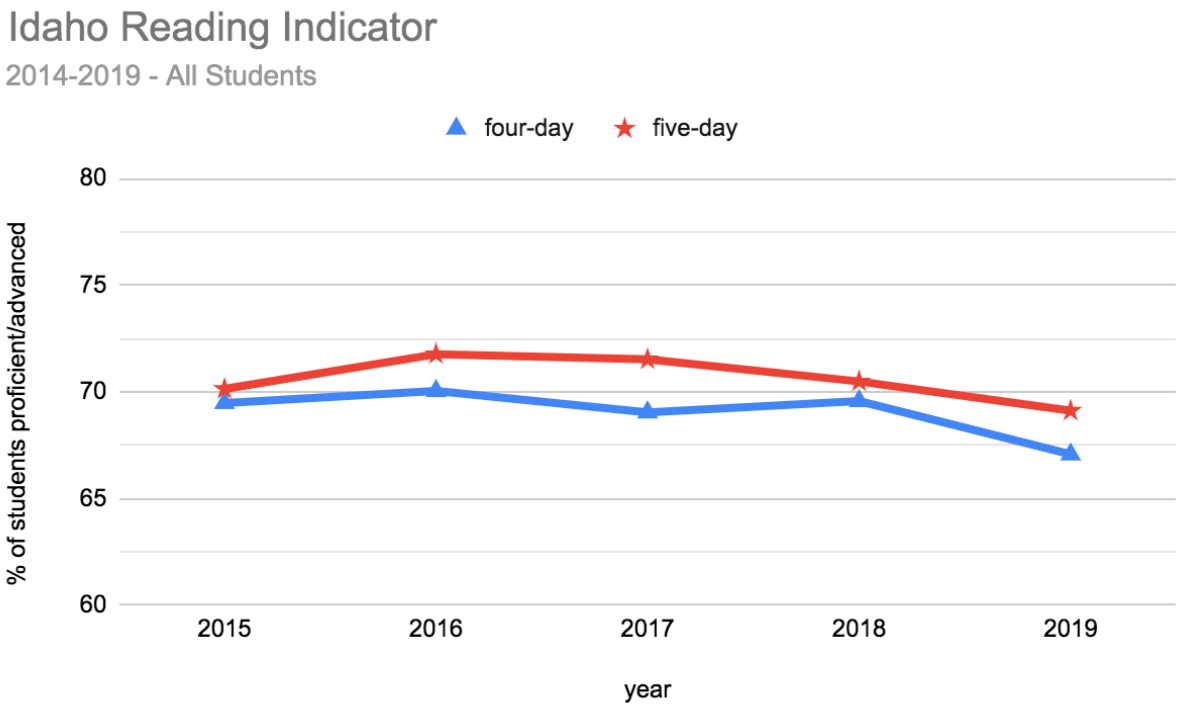

Table 2

All Students IRI Comparison

	Four-Day Districts		**Five-Day Districts**				
year	M	SD	M	SD	t	p	Cohen's d
2015	69.48	8.62	70.14	82.16	-0.306	0.76	.08
2016	70.04	8.99	71.77	73.67	-0.838	0.405	.22
2017	69.04	9.49	71.53	78.81	-1.138	0.259	.29
2018	69.57	9.85	70.49	92.72	-0.377	0.707	.096
2019	67.07	8.89	69.12	10.10	-9.90	.325	.22

The comparison of the ELA (English Language Arts) ISAT (Idaho Standards Achievement Test) scores for the years 2014-2019 of all students with districts on the four-day week compared to school districts on the five-day week are as follows:

Figure 4

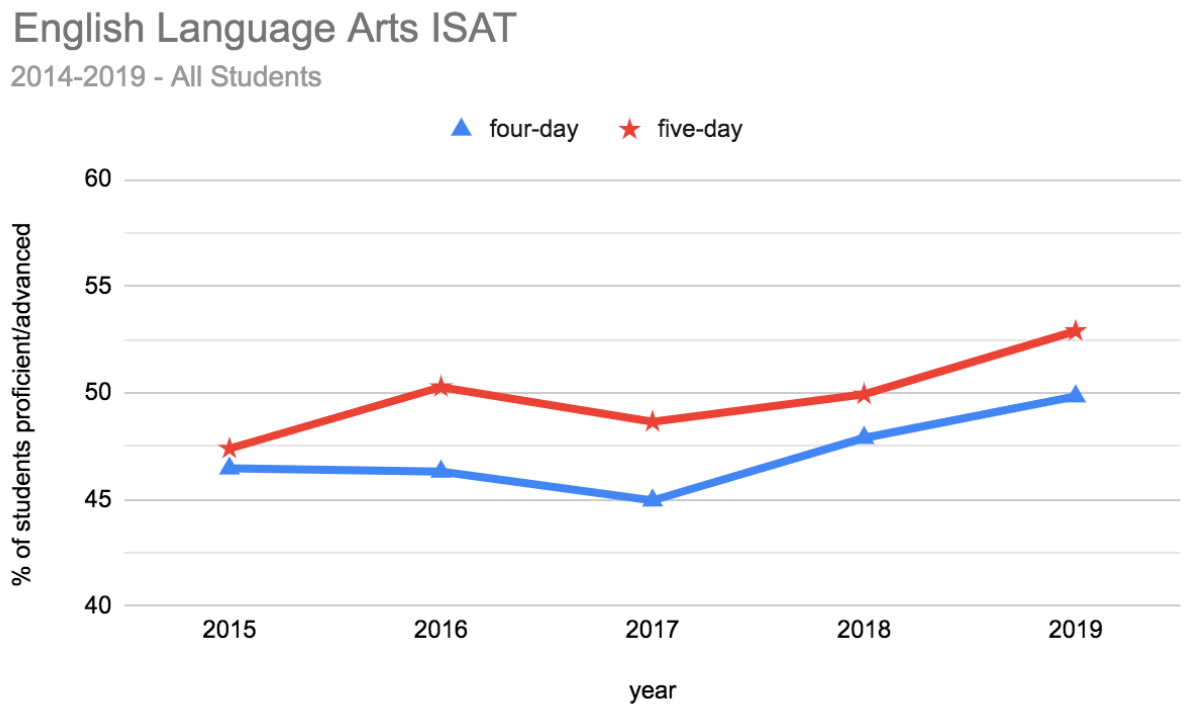

Table 3

All Students ELA ISAT

	Four-Day Districts		**Five-Day Districts**				
year	M	SD	M	SD	t	p	Cohen's d
2015	46.46	10.2	47.39	8.93	-.418	.677	.09
2016	46.31	9.48	50.27	9.45	-1.77	.081	.42
2017	44.96	9.59	48.65	9.22	-1.67	.09	.4
2018	47.89	9.46	49.93	11.29	-.811	.420	.2
2019	49.84	9.30	52.90	10.70	-1.27	.209	.3

The comparison of the mathematics ISAT (Idaho Standards Achievement Test) scores for the years 2014-2019 of all students with districts on the four-day week compared to school districts on the five-day week are as follows:

Figure 5

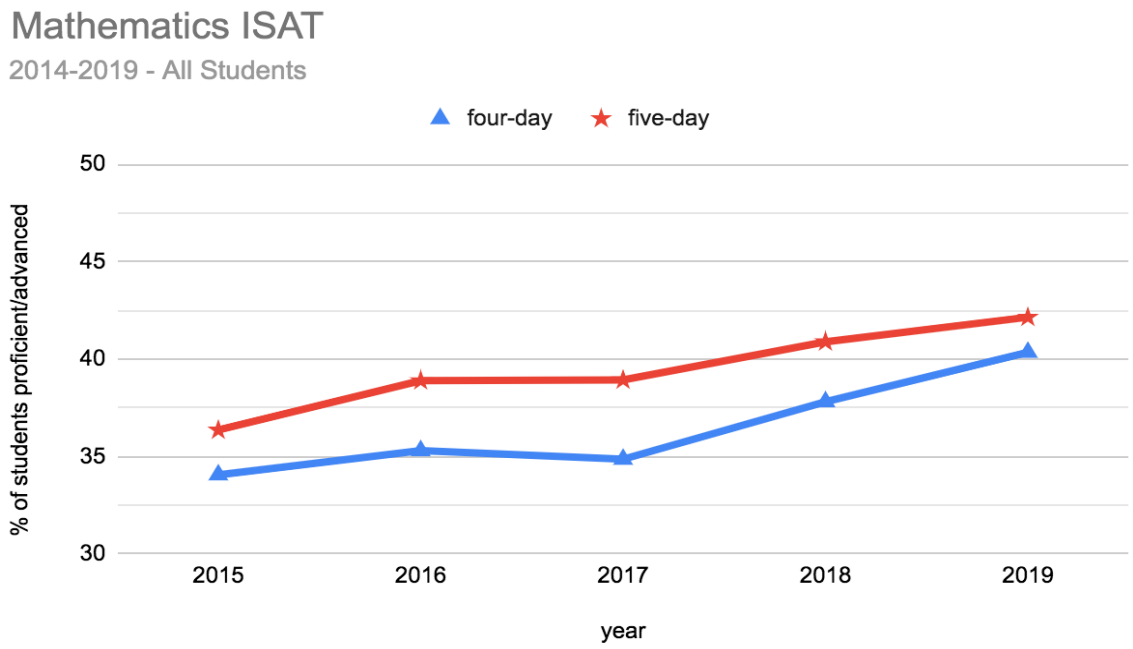

Table 4

All Students Mathematics ISAT

	Four-Day Districts		**Five-Day Districts**				
year	M	SD	M	SD	t	p	Cohen's d
2015	34.06	9.17	36.36	8.96	-.976	.333	.19
2016	35.30	10.35	38.89	9.78	-1.378	.173	.36
2017	34.86	9.77	38.93	10.02	-1.567	.122	.41
2018	37.81	9.70	40.89	11.70	-1.062	.292	.3
2019	40.35	9.65	42.15	10.85	-656	.514	.18

Analysis of Districts Based on Economically Disadvantaged Students

The results in Tables 5-7 and Figures 6-8 display the sub population of economically disadvantaged students. The charts and graphs indicate the percentage of students classified as economically disadvantaged that were proficient/advanced as measured by the IRI (Idaho Reading Indicator) scores, ELA (English Language Arts) ISAT (Idaho Standards Achievement Test), mathematics ISAT (Idaho Standards Achievement Test), from the years 2014-2019. By the end of the 2019 school year, the school districts on a four-day week had a higher percentage of proficient/advanced student than districts on a five-day school week mathematics ISAT (Idaho Standards Achievement Test). Additionally, as measured by the ELA (English Language Arts) ISAT (Idaho Standards Achievement Test) school districts on a four-day week had a higher percentage of proficient/advanced students four of the five years when compared to five-days school districts. The positive t-value also indicates that there was a difference in terms of the mean that favored accepting the null hypothesis. This can be interpreted that on these occasions the four-day districts scored higher than the five-day districts. However, as measured by the IRI (Idaho Reading Indicator), school districts on a five-day week scored higher four out of the five years when compared to the four-day week school districts. However, there was no statistically significant difference ($p \geq .05$) between the two populations on any occasion when comparing the sub population of economically disadvantaged students. The Levene's Test for Equality of Variance showed no violations ($p \geq .05$). When considering the sub population of economically disadvantaged students, these quantitative results indicate that there is no statistically significant impact (positive or negative) sub population of economically disadvantaged students on the academic performance of districts on a four-day school week when compared to districts on a five-day school week, as determined by the previously mentioned metrics.

Results of Research Question 2

The comparison by year of the IRI (Idaho Reading Indicator) scores for the years of 2014-2019 of the sub group economically disadvantaged with districts on the four-day week compared to school districts on the five-day week are as follows:

Figure 6

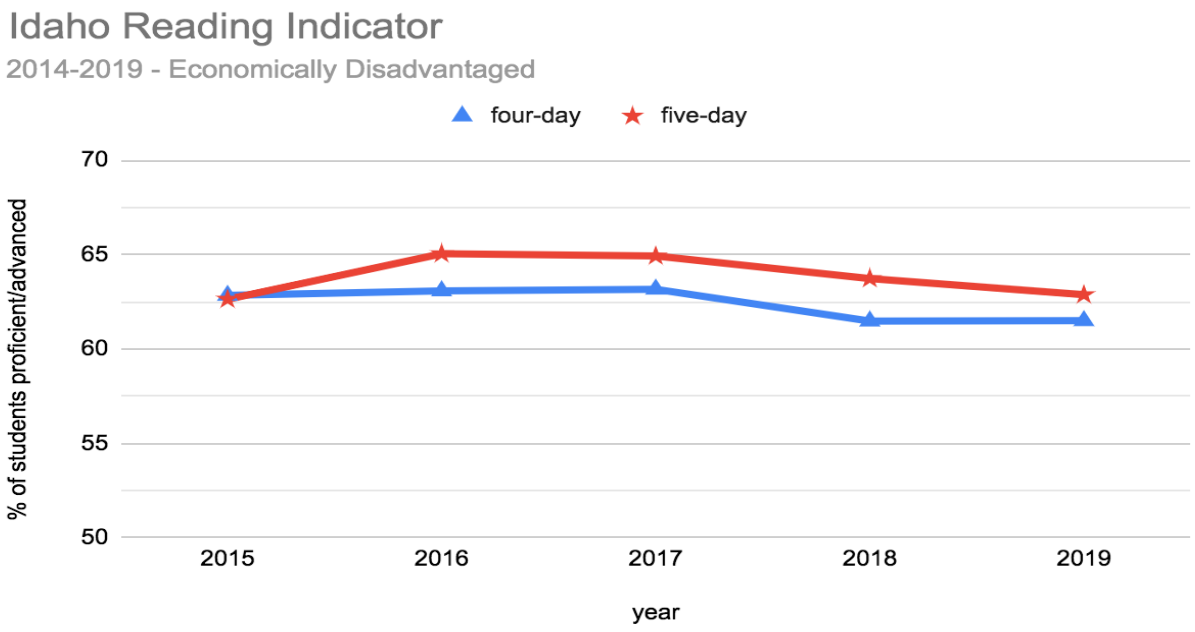

Table 5

Economically Disadvantaged IRI

	Four-Day Students		**Five-Day Students**				
year	M	SD	M	SD	t	p	Cohen's d
2015	62.84	10.19	62.64	11.28	.075	.941	.02
2016	63.08	10.01	65.05	10.08	-.780	.438	.2
2017	63.17	11.12	64.93	9.30	-.697	.488	.17
2018	61.48	11.38	63.73	12.47	-.742	.461	.19
2019	61.50	9.17	62.88	9.51	-.639	.525	.15

The comparison of the ELA (English Language Arts) ISAT (Idaho Standards Achievement Test) scores for the years 2014-2019 of the subgroup economically disadvantaged with districts on the four-day week compared to school districts on the five-day week are as follows:

Figure 7

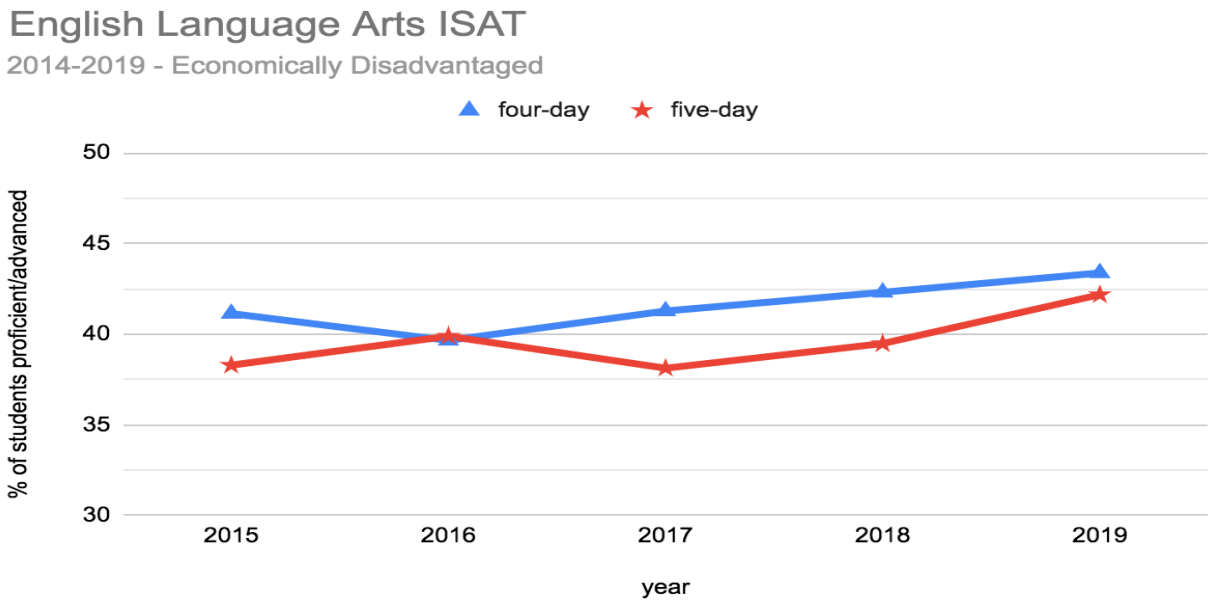

Table 6

Economically Disadvantaged ELA ISAT

	Four-Day Students		**Five-Day Students**				
year	M	SD	M	SD	t	p	Cohen's d
2015	41.14	7.97	38.29	7.84	1.117	.270	.36
2016	39.66	6.77	39.89	7.70	-.095	.924	.03
2017	41.28	7.77	38.13	7.76	1.232	.225	.40
2018	42.31	8.80	39.48	8.57	1.010	.318	.33
2019	43.38	6.33	42.18	8.67	.465	.645	.16

The comparison of the mathematics ISAT (Idaho Standards Achievement Test) scores for the years 2014-2019 of the subgroup economically disadvantaged with districts on the four-day week compared to school districts on the five-day week are as follows:

Figure 8

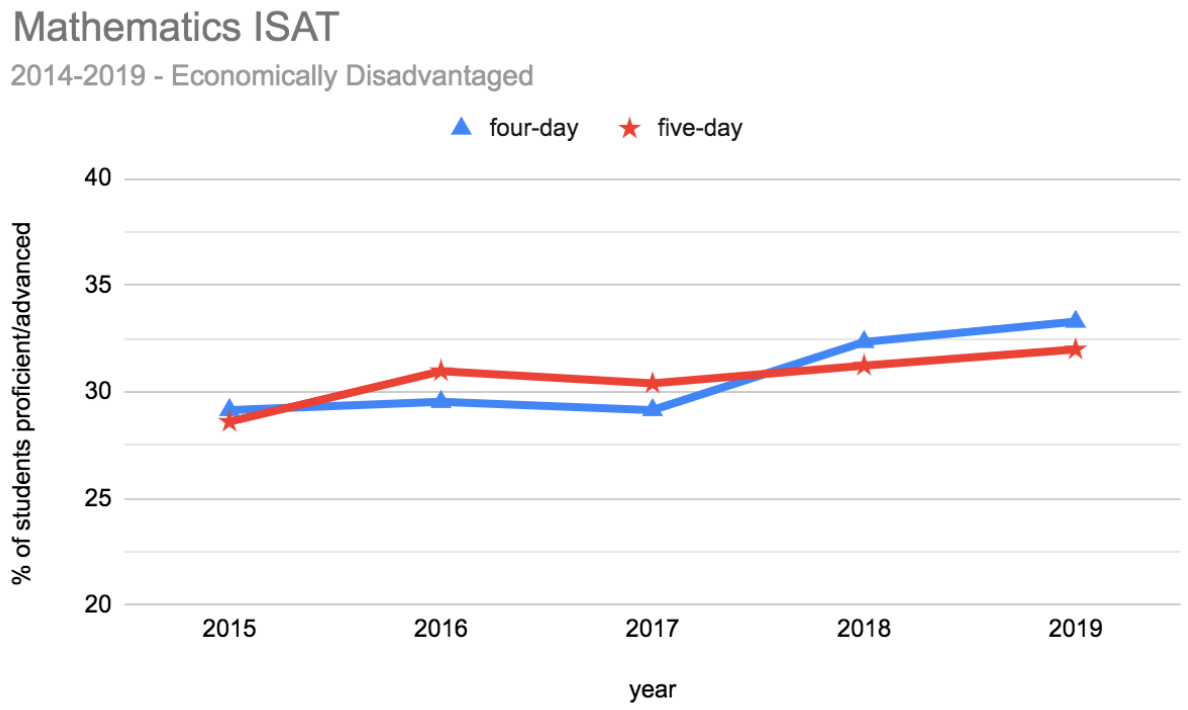

Table 7

Economically Disadvantaged Mathematics ISAT

	Four-Day Students		**Five-Day Students**				
year	M	SD	M	SD	t	p	Cohen's d
2015	29.15	7.29	28.60	7.39	.224	.824	.07
2016	29.53	8.61	30.97	7.34	.557	.581	.18
2017	29.15	10.57	30.40	8.71	-.402	.690	.13
2018	32.34	9.61	31.23	9.49	.348	.729	.12
2019	33.29	8.16	31.99	9.55	.426	.672	.15

Analysis of Districts Sub Population of Hispanic/Latino

The results in Tables 8-10 compared the sub population of Hispanic/Latino attending a five-day school week district to students attending a four-day school week district. As evidenced in the previously mentioned tables, only one year of data was able to be analyzed. The tables indicate the percentage of students classified as Hispanic/Latino that were proficient/advanced as measured by the IRI (Idaho Reading Indicator) scores, ELA (English Language Arts) ISAT (Idaho Standards Achievement Test), mathematics ISAT (Idaho Standards Achievement Test) for the year 2019. While districts on a traditional five-day school week consistently had more Hispanic/Latino students score proficient/advanced than districts on a four-day school week, there was no statistically significant difference ($p \geq .05$) between the two populations. The Levene's Test for Equality of Variance showed no violations ($p \geq .05$). Thus, these quantitative results indicate that there is no statistically significant impact (positive or negative) on the academic performance of districts on a four-day school week when compared to districts on a five-day school week, as determined by the previously mentioned metrics.

The comparison by year of the IRI (Idaho Reading Indicator) scores for the years of 2014-2019 of the sub group Hispanics/Latinos with districts on the four-day week compared to school districts on the five-day week are as follows:

Table 8

Hispanic/Latino IRI

	Four-Day Students		**Five-Day Students**				
year	M	SD	M	SD	t	p	Cohen's d
2015			no data available				
2016			no data available				
2017			no data available				
2018			no data available				
2019	50.95	8.49	54.04	11.7	-1.009	.318	.30

No graph was generated for this sub population because of the redacted data.

The comparison of the ELA (English Language Arts) ISAT (Idaho Standards Achievement Test) scores for the years 2014-2019 of the subgroup Hispanic/Latino with districts on the four-day week compared to school districts on the five-day week are as follows:

Table 9

Hispanic/Latino ELA ISAT

	Four-Day Students		**Five-Day Students**				
year	M	SD	M	SD	t	p	Cohen's d
2015			no data available				
2016			no data available				
2017			no data available				
2018			no data available				
2019	30.71	5.13	35.22	10.19	-1.454	.154	.56

No graph was generated for this sub population because of the redacted data.

The comparison of the mathematics ISAT (Idaho Standards Achievement Test) scores for the years 2014-2019 of the subgroup Hispanic/Latino with districts on the four-day week compared to school districts on the five-day week are as follows:

Table 10

Hispanic/Latino Mathematics ISAT

	Four-Day Students		**Five-Day Students**				
year	M	SD	M	SD	t	p	Cohen's d
2015			no data available				
2016			no data available				
2017			no data available				
2018			no data available				
2019	20.81	6.47	23.43	8.45	-.889	.380	.4

No graph was generated for this sub population because of the redacted data.

Analysis of Districts with Economically Disadvantaged Population of at least 45%

The results in Tables 11-13 and Figures 9-11 display the comparisons of school districts that had student populations that were at least 45% economically disadvantaged or greater. The Tables and Figures compare five-day school week districts to four-day school week districts. Both indicate the percentage of students who were proficient/advanced as measured by the IRI (Idaho Reading Indicator) scores, ELA (English Language Arts) ISAT (Idaho Standards Achievement Test), mathematics ISAT (Idaho Standards Achievement Test), from the years 2014-2019. School districts on a traditional five-day school week generally had a higher percentage of students score proficient/advanced than districts on a four-day school week. However, occasionally the four-day school week districts had a higher percentage of proficient/advanced students than the five-day school week districts. In these cases, the positive

t-value also indicates that there was a difference (in terms of the mean) that favored accepting the null hypothesis. Meaning that on these occasions, the four-day districts scored higher than the five-day districts. With this being said, there still was no statistically significant difference ($p \geq .05$) between the two populations. The Levene's Test for Equality of Variance showed no violations ($p \geq .05$). Thus, these quantitative results indicate that there is no statistically significant impact (positive or negative) on the academic performance of districts on a four-day school week when compared to districts on a five-day school week, as determined by the previously mentioned metrics.

It is important to note the p-value of the comparisons of school districts that had student populations that were at least 45% economically disadvantaged or greater in the years 2016 and 2017 with the results in ELA (English Language Arts) as measured by the ISAT (Idaho Standards Achievement Test). In 2016 the p-value was .081 and in 2017 the p-value was .099 respectively. Even though there was not any statistical significance found when analyzing the percentage of proficient/advanced students on the five-day school week district compared to the four-day school week districts, it was rather close. In 2016 it was only .031 (thirty-one hundredths) and .049 (forty-nine hundredths) away from being statically significant.

Additional Findings

The comparison of districts on the four-day week to school districts on the five-day week as measured by the IRI (Idaho Reading Indicator) for the years of 2014-2019 with school districts that have an economically disadvantaged population of at least 45% (as determined by the percentage of students qualified for free and reduced lunch services) with districts are as follows:

Figure 9

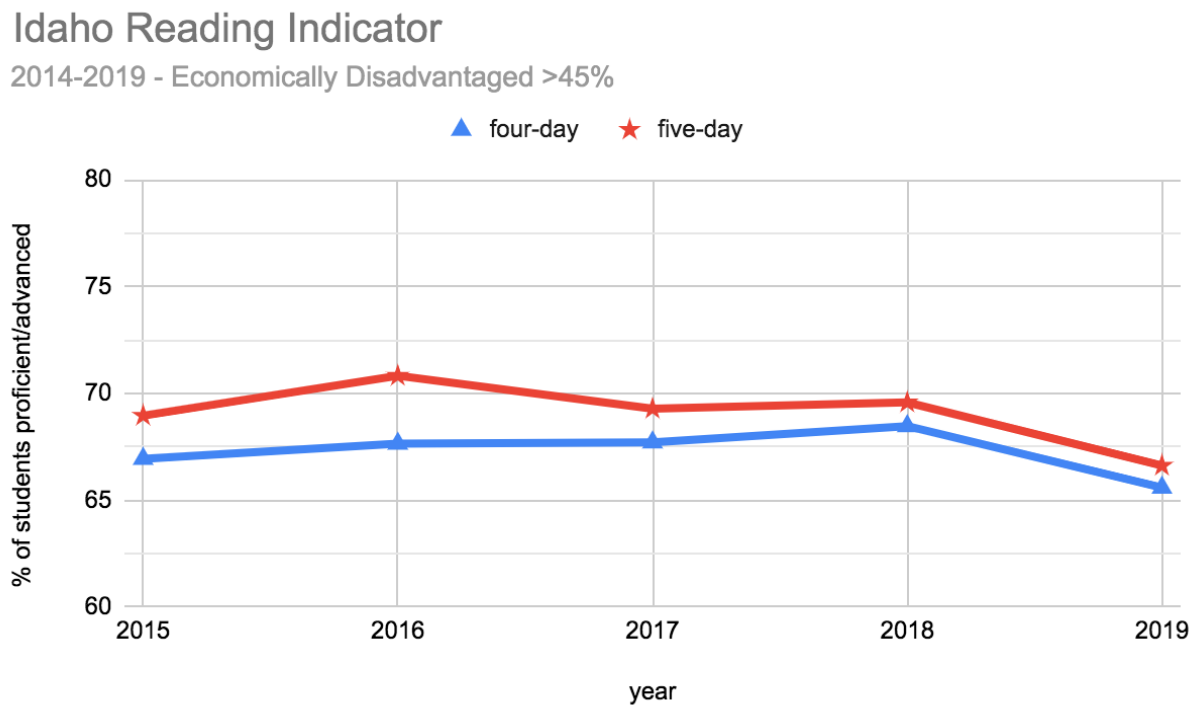

Table 11

45% Economically Disadvantaged IRI

	Four-Day Districts		**Five-Day Districts**				
year	M	SD	M	SD	t	p	Cohen's d
2015	66.94	84.52	68.96	72.86	-.817	.419	.26
2016	67.65	90.13	70.83	69.82	-1.276	.210	.39
2017	67.71	10.49	69.29	74.80	-.566	.575	.03
2018	68.47	10.92	69.58	99.52	-.339	.737	.11
2019	65.59	8.92	66.62	10.77	-.396	.694	.10

The comparison of districts on the four-day week to school districts on the five-day week as measured by the ELA (English Language Arts) ISAT (Idaho Standards Achievement Test) scores for the years 2014-2019 with school districts that have an economically disadvantaged population of at least 45% with districts are as follows:

Figure 10

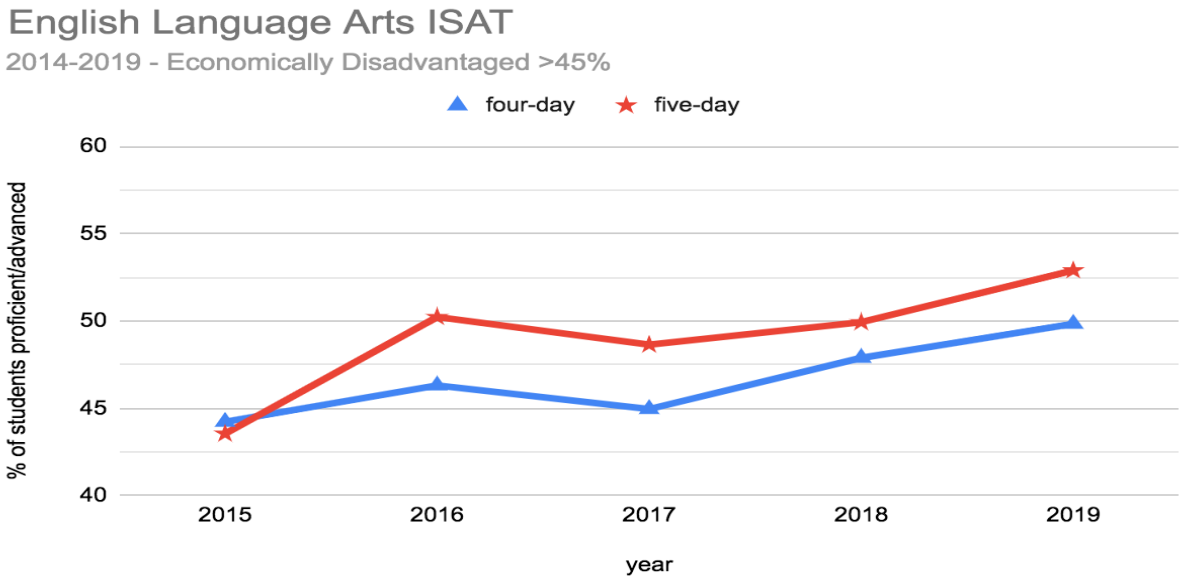

Table 12

45% Economically Disadvantaged ELA ISAT

	Four-Day Districts		**Five-Day Districts**				
year	M	SD	M	SD	t	p	Cohen's d
2015	44.23	10.10	43.55	6.36	.275	.784	.08
2016	46.31	9.48	50.23	9.45	-1.771	.081	.42
2017	44.96	9.59	48.65	9.22	-1.672	.099	.39
2018	47.89	9.46	49.93	11.29	-.811	.420	.20
2019	49.84	9.30	52.90	10.69	-1.269	.209	.30

The comparison of districts on the four-day week to school districts on the five-day week as measured by the mathematics ISAT (Idaho Standards Achievement Test) scores for the years 2014-2019 with school districts that have an economically disadvantaged population of at least 45% with districts are as follows:

Figure 11

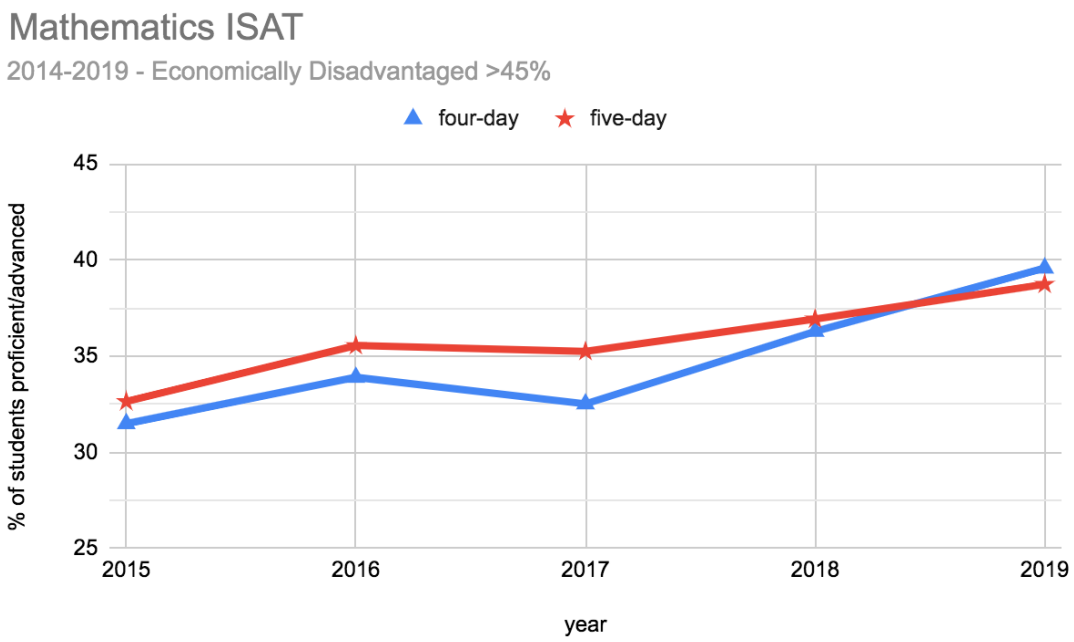

Table 13

45% Economically Disadvantaged Mathematics ISAT

	Four-Day Districts		**Five-Day Districts**				
year	M	SD	M	SD	t	p	Cohen's d
2015	31.49	9.39	32.64	8.68	-.388	.700	.13
2016	33.90	12.07	35.55	9.74	-.468	.642	.15
2017	32.52	10.82	35.25	9.06	-.851	.400	.27
2018	36.29	10.71	36.93	10.94	-.179	.859	.06
2019	39.58	10.95	38.74	10.96	.234	.817	.08

Summary of Findings

Chapter IV outlined the quantitative results of the academic performance of five-day school week districts and the four-day school week districts when comparing the IRI (Idaho Reading Indicator) scores, mathematics ISAT (Idaho Standards Achievement Test), ELA (English Language Arts) ISAT (Idaho Standards Achievement Test) from the years 2014-2019. School districts were compared in the groups of all students as well as school districts that had a student population receiving free and reduced lunch services greater than 45% were also analyzed. Additionally, the sub populations of Hispanic/Latinos and economically disadvantaged students were also compared.

As measured by the mathematics ISAT (Idaho Standards Achievement Test) and the ELA (English Language Arts) ISAT (Idaho Standards Achievement Test), the five-day districts outperformed the four-day districts. The negative t-value indicated that there was a difference in terms of the mean that favored not accepting the null hypothesis. In these cases, this demonstrated the five-day districts scored higher than the four -day districts. With this being said, there was no statistically significant difference ($p \geq .05$) between the two populations. The Levene's Test for Equality of Variance showed no violations ($p \geq .05$). Thus, these quantitative results indicate that there is no statistically significant impact (positive or negative) on the academic performance of districts on a four-day school week when compared to districts on a five-day school week, as determined by the previously mentioned metrics.

The results in Tables 4-6 display the sub population of economically disadvantaged students. The charts and graphs compare five-day school week districts to four-day school week districts. The charts and graphs indicate the percentage of students that were proficient/advanced as measured by the IRI (Idaho Reading Indicator) scores, ELA (English

Language Arts) ISAT (Idaho Standards Achievement Test), mathematics ISAT (Idaho Standards Achievement Test), from the years 2014-2019. The Levene's Test for Equality of Variance showed no violations ($p \geq .05$). Thus, these quantitative results indicate that there is no statistically significant impact (positive or negative) on the academic performance of districts on a four-day school week when compared to districts on a five-day school week, as determined by the previously mentioned metrics.

Chapter IV displayed the quantitative results of the percentage of students who were proficient/advanced. The metrics that were utilized were the IRI (Idaho Reading Indicator) scores, ELA (English Language Arts) ISAT (Idaho Standards Achievement Test), mathematics ISAT (Idaho Standards Achievement Test), from the years 2014-2019. Chapter V illustrates the interpretation of the findings as well as the implications for professional practices and possible paths for further research in related areas.

Chapter V

Discussion

Introduction

As a result of the nationwide recession which started around 2007 (Dearien, 2010), a number of states saw devastating reductions in education budgets. The states which suffered the largest financial casualties were Arizona, Alabama, Oklahoma, and Idaho (Saunders, 2012). The financial shortage forced school districts to analyze a number of choices to accommodate the financial deficiencies. The four-day school week was an implemented strategy where the savings could help a lean budget (Cline, 2017; Lev-in, 2016; Yarbrough & Gilman, 2011) and a number of school districts moved to a four-day week schedule as a result of the potential cost savings (Cline, 2017; Tharp, Matt, & O'Reilly, 2016). With the change to a shortened school week, educational stakeholders questioned the potential impact on the academic performance of the students (Cline, 2017; Tharp et al., 2016).

In the fall of 2006, ten school districts in the state of Idaho had implemented the four-day school week (List of School Districts Four-Day School Week, n.d.). By the end of the 2018-2019 school year, 45 traditional school districts had made the transition to the four-day week schedule (List of School Districts Four-Day School Week, n.d.). When only considering rural schools in Idaho, the 25,757 students attending school on a four-day schedule totals 23% of Idaho's student population (Enrollment by District and Charter, n.d. In summary, 47% of the rural school districts in Idaho currently run on a four-day week schedule.

With the transition to the shorter school week, educational leaders and constituents were concerned about the possible negative impacts such change could have on student academic performance (Tharp et al., 2016). At the time of reporting on this research, only one study was

available that analyzed district test scores on schools on a four-day week. The results were inconclusive (Dam, 2006).

Purpose of The Study and Research Questions

Summary of Results

The purpose of this study was to ascertain the academic achievement levels of rural Idaho school districts that are on a traditional five-day school week when compared to school districts on a four-day school week. The metrics used to provide insight to the questions in this study were the Idaho Reading Indicator (IRI) and the Idaho Standards Achievement Test (ISAT). Specifically, with the Idaho Standards Achievement Test (ISAT), mathematics and ELA (English Language Arts) assessments were utilized to make the comparison. School districts that were on a four-day week were only included in the study if they had been utilizing the compacted schedule for at least five years. Data from school years 2014-2018 to 2018-2019 were analyzed. Additionally, the study examined the relationships between variables associated with the student population of school districts on a traditional five-day school week compared to school districts on a four-day school week. The student subpopulations that were specifically compared were Hispanics/Latinos as well as economically disadvantaged students. Furthermore, four-day school districts that had at least 45% of the student body population classified as economically disadvantaged were compared to five-day school districts with similar demographics. In summary, determining if there was a statistical significant difference in the academic performance of students attending a rural Idaho four-day school when compared to students attending a rural Idaho traditional five-day school week was the purpose for this research. The central research questions for this study included the following:

1) What are the academic achievement levels of Idaho school districts that are on a traditional five-day school week compared to school districts on four-day school week as measured by the Idaho Reading Indicator (IRI) and the Idaho Standards Achievement Test (ISAT) over a five year period?
2) What relationships can be drawn between variables associated with the¬¬ student sub populations of school districts on a traditional five-day school week compared to school districts on four-day school week?

This study investigated the academic impact of rural school districts on a four-day school week when compared to rural school district on a five-day school week. The researcher compared the following:

- IRI (Idaho Reading Indicator) scores for the years of 2014-2019
    - All student population
    - Economically disadvantaged sub population
    - Hispanic/Latino sub population
    - School districts with an economically disadvantaged population of at least 45%
- Mathematics and ELA (English Language Arts) ISAT (Idaho Standards Achievement Test) scores for the years 2014-2019
    - All student population
    - Economically disadvantaged sub population
    - Hispanic/Latino sub population
    - School districts with an economically disadvantaged population of at least 45%

Results for Research Question 1

This research question focused on comparing all students attending a five-day school week district to all students attending a four-day school week district. Districts on a traditional five-day school week consistently had a higher percentage of students scoring proficient/advanced than districts on a four-day school week. However, the analysis of the data indicated that there was no statistically significant difference ($p \geq .05$) between the two populations. The Levene's Test for Equality of Variance showed no violations ($p \geq .05$). Thus, these quantitative results indicate there is no statistically significant impact (positive or negative) on the academic performance of Idaho rural school districts on a four-day school week when compared to districts on a five-day school week, as determined by the previously mentioned metrics.

Results for Research Questions 2

In the sub population of economically disadvantaged, students that were attending a five-day school week district were compared to students attending a four-day school week district. There was no statistically significant difference ($p \geq .05$) between the two populations. The Levene's Test for Equality of Variance showed no violations ($p \geq .05$). When considering the sub population of economically disadvantaged students, these quantitative results indicate that there was no statistically significant impact (positive or negative) on the sub population of economically disadvantaged students in regards to the academic performance of districts on a four-day school week when compared to districts on a five-day school week, as determined by the previously mentioned metrics. It is worth noting in this category, nearly 50% of the time, (eight out of 15 times), the four-day week school district students performed higher that the five-day week students who were economically disadvantaged. It is also of great importance to

recognize the significant redactions in the Hispanic/Latino subpopulation. There was a significant number of redactions which resulted in not enough data to research academic impacts in the years of 2015, 2016, 2017, and 2018 on all standardized tests. Therefore, the only research that was conducted for the Hispanic/Latino subpopulation was in 2019. This significantly restricted the researcher's ability to conduct in depth research with the Hispanic/Latino subpopulation.

In the sub population of Hispanic/Latino, students who were attending a five-day school week district were compared to students attending a four-day school week district. As a result of significant redactions in the data, only one year of data was analyzed. Results demonstrated that school districts on a traditional five-day school week had more Hispanic/Latino students score proficient/advanced than districts on a four-day school week. Furthermore, there was no statistically significant difference ($p \geq .05$) between the two populations. The Levene's Test for Equality of Variance showed no violations ($p \geq .05$). Thus, these quantitative results indicate that there was no statistically significant impact (positive or negative) on the academic performance of districts on a four-day school week when compared to districts on a five-day school week, as determined by the previously mentioned metrics.

Additional Findings

Economically disadvantaged districts with a student population of at least 45% receiving free and reduced lunch who had a traditional five- day school week were compared to four-day school week districts of similar demographics. School districts on a traditional five-day school week most often (86%) had a higher percentage of students score proficient/advanced than districts on a four-day school week. There was no statistically significant difference ($p \geq .05$) between the two populations. The Levene's Test for Equality of Variance showed no violations

($p \geq .05$). Thus, these quantitative results indicate that there is no statistically significant impact (positive or negative) on the academic performance of economically disadvantaged districts on a four-day school week when compared to districts on a five-day school week, as determined by the previously mentioned metrics.

Recommendations for Further Research

The success of further research partially depends on the success of research that was conducted prior. Additional research is navigated by the results of previous results in a particular field of study. These results demonstrate a natural connection to the next field of study as well as possible restrictions (Creswell, 2015). Given the findings of this specific study and taking into consideration the various limitations, the following recommendations for further research are suggested:

1. As indicated in this study on rural Idaho school districts, there was no significant statistical difference in the academic performance when comparing four-day week and five-day week rural school districts. The question as to if school districts transitioning to the compacted schedule intentionally implemented specific strategies to remediate the perception that test scores would decrease should be investigated. Further research is essential in examining the possible implementation of strategies. During the week when there is no school for the employees of the school district, can we quantify the academic impact of implemented strategies such as professional development for teachers, staff and administrators, collaboration time, and focused teacher training? Additionally, on the weekday when there is no school for the students, was there an impact of fifth-day structured activities sanctioned by the school district (Heyward, 2018).

2. The results of this research also lead to other questions about strategies that were implemented after the four-day school week began. What was the impact on other possible implementations such as an increase of monitoring student performance, utilization of a higher quality researched-based curriculum, and increased parent involvement? In summary, did school districts become better at teaching because of the implementation of one or more best practices after the four-day school week was put into practice? This could have been possible as one of the primary concerns with the implementation of the four-day week (Cline, 2017; Tharp et al., 2016).

3. Related to the size of school districts on the compacted calendar, is there a difference in academic performance when considering larger school districts or those that are located in urban communities (Heyward, 2018)? Additionally, it has been noted that there is a trend for charter schools implementing the four-day week schedule (Heyward, 2018). Is there a difference in the academic performance of charter schools on a four-day week compared to charter schools operating on the five-day week schedule? As factors in different schools have the ability to influence student achievement, the answers to these questions would provide insights for district leaders who sought to implement strategies that help students achieve academically at a higher rate.

4. It would be of benefit to know the view from a teacher's perspective on a four-day week:

- In general, are the teachers' perceptions of a four-day week positive or negative?
- Does a four-day school week increase the district's ability to recruit and retain teachers?
- Are teachers more satisfied with their positions who are employed on a four-day week compared to five-day week?

- Are the longer days of a compacted week a detriment to students in general but specifically the younger age students?

5. In Idaho specifically, do school districts that have implemented a four-day school week have a higher retention rate than school districts on a five-day week? How large are the applicant pools for a four-day week school districts when compared to school districts on a five-day week? Is it justifiable for a school district to make the transition to a shortened week for the primary reason of teacher retention and recruitment? The author of this research found a number of media related articles (Ayala, 2017; Leal, 2017; Levin, Lewis, 2017; 2016) and one doctoral dissertation (Marion, 2018) where district leaders felt that the four-day week helped increase teacher recruitment and retention. However, there is a lack of peer reviewed research that supports the statements and perceptions from these leaders.

6. The data mining in this study made it possible for years of data to be easily analyzed for every school district in the state of Idaho. It was apparent that some school districts were of the highest performers in the state, year after year. This was true even when considering a higher economically disadvantaged population. Some of these districts were on a four-day week and some were on five-day week. What best practices are these school districts utilizing that help them have such an exceedingly high student performance as measured by state standardized tests?

7. In Idaho specifically, there is such a small number of students in some sub populations that they are not able to be reported publicly for privacy reasons. Some of the small subpopulations were English Language Learners (ELL), African Americans, and special education students. There was not enough data that could be acquired by the researcher to compare the academic impact of these sub populations of students on a four-day school to school districts on a five-day

week. The same problem existed for individual grade levels. These small numbers restricted the researcher's ability to compare these previously mentioned sub groups. This would include more investigation with the Hispanic/Latino sub population. The same would be true for the school districts that have an economically disadvantaged population that is greater than 75%. As the Idaho State Department of Education has access to this data, it may be considered for the state department to conduct their own data analysis and longitudinal study to determine if the four-day week has an academic impact on these sub populations.

8. It would be of benefit to know the view from a student and parent perspective on a four-day week:

- In general, are the students and teacher perceptions of a four-day week positive or negative?
- Is a typical school day to long, especially for younger age students?
- Are parents and student more satisfied with a four-day school week when compared to a five-day school week.

9. In ELA (English Language Arts) as measured by the ISAT (Idaho Standards Achievement Test) resulted in the p-value of .081 in 2016 and in 2017, the p-value was .099 respectively when comparing school districts that had student populations that were at least 45% economically disadvantaged or greater. There was not any statistical significance found when analyzing the percentage of proficient/advanced students on the five-day school week district compared to the four-day school week districts. However, it is important to recognize that in 2016 it was only .031 (thirty-one hundredths) and .049 (forty-nine hundredths) away from being statically significant. The results of these statistics garner attention and concern. Therefore, it would be

best practice that a longitudinal study be conducted that tracks all subpopulations performance in case the group falls significantly behind academically.

10. This study only looked at district-level performances as measured by the Idaho Reading Indicator (IRI) and the Idaho Standards Achievement Test (ISAT). It would be of additional value if another study was conducted on the school building level that compared the academic performance of school districts on four-day school week and five-day school week. Although this study would provide additional insight to student performance that is more specific to student populations, this recommendation also carries with it the likely hood of high redactions because of small student population.

Implications for Professional Practice

If a school district is going to make the change to the compacted week, the school district has to have a solid reason as well as a plan for implementation. If a school district is considering making the change for financial reasons, it should only be implemented as one of the last methods to save money. Hill (2017) noted that school districts that transition to the compacted school week are cutting 20% of their school day that only results in less than 1% of their annual operating budget. The amount of savings can be increased if facility usage on the day off is minimized. Too often, many districts have additional costs because their facilities are still open on the fifth day to provide student services (Donis-Keller, & Silvernail, 2009). Gaines (2008) noted that much of a school district expenses are “non-fixed” such as transportation, non-salaried employees, and utilities. These expenditures make up a small portion of the districts overall budget. In the end, school districts only save about 2% of the overall budget (Gaines, 2008). Some have reported as low as .04 savings of their overall budget by making the transition to a four-day school week (Griffith. 2011). If a school district is making the transition to a four-day

week for financial reasons, the savings will not be significant. Financial gain generally should not be the primary factor for making the change.

Significant data redaction, in numerous occasions, restricted the ability to analyze sub populations. In the future, state leaders should make every effort possible to minimize data redactions in sub populations. This would allow for further research to take place regarding the academic performance of sub populations with smaller numbers.

The number of school districts on a four-day school week is continuing to grow in Idaho. It shouldn't be something that is discouraged upon by state and district stakeholders. The four-day school week is a viable avenue and meets the needs of many school districts in the state. It should be considered a viable option for districts that have the needs that are offered by the benefits of four-day school week.

School districts should consider the four-day week as a viable method as teacher retention and recruitment. As mentioned earlier, many media articles specify reasons for transitioning to the four-day week. In the most recent years, the major reason is related to teacher retention or recruitment (Ayala, 2017; Bodkin, 2020; Leal, 2017; Levin, Lewis, 2017; 2016). Additionally, one doctoral dissertation (Marion, 2018) outlined where district leaders felt that the four-day week helped increase teacher recruitment and retention. As there is a teacher shortage nationwide (Boe & Cook, 2006; Brownell, Bishop & Sindelar, 2005; Brundin, 2013; Martin & Mulvhill, 2016), implementing the four-day school week is a way to "recruit and retain" teachers in a school district (Cooley, 2017; DeNisco, 2013; Heyward, 2018; Hinton, 2017; Marion, 2018; Stotts, 2017; Turner, et al., 2017; Quinton, 2018).

Conclusions

The purpose of this study was to determine the academic achievement levels of rural Idaho school districts that are on a traditional five-day school week when compared to school districts on a four-day school week. State standardized assessments were used to determine if there was an impact. The metrics utilized to provide insight to the questions in this study were the Idaho Reading Indicator (IRI) and the Idaho Standards Achievement Test (ISAT). Specifically, with the Idaho Standards Achievement Test (ISAT), mathematics and ELA (English Language Arts) assessments were utilized to make the comparison.

The quantitative nature of the study may help key stake holders, leaders of school districts, as well as communities make an educated choice regarding school calendars for their educational structure. The results of this study will provide current research and valid data that is applicable to school districts which are operating on a four-day week and to those districts considering the shortened week. Additionally, the results of this data may guide policymakers such as legislatures, school boards, superintendents, community members, and other stakeholders on policy development related to four-day school week.

The results of the study conclude the following:

1. There is no statistically significant difference between the academic achievement levels of Idaho rural school districts that are on a traditional five-day school week compared to school districts on four-day school week as measured by the Idaho Reading Indicator (IRI) and the Idaho Standards Achievement Test (ISAT) over a five year period
2. With school districts with an economically disadvantaged population of at least 45% relationships can’t be drawn between variables associated with the student sub populations of school districts on a traditional five-day school week compared to school

districts on four-day school week. However, due to the number of redactions which resulted in small amounts of data or no data at all, significantly restricted the researcher's ability to conduct in depth research with the Hispanic/Latino subpopulation.

As this research has displayed, when speaking directly about school districts being compared as entire groups, by the ranges in M, SD, t and p, there was not a significant difference ($p \geq .05$) in the scores from the performance of five-day school week districts and the four day school week districts when comparing the IRI (Idaho Reading Indicator) scores, mathematics ISAT (Idaho Standards Achievement Test), ELA (English Language Arts) ISAT (Idaho Standards Achievement Test) from the years 2014-2019. In almost every case, the five-week school districts had a higher percentage for proficient/advanced students when compared the performance of four-day week school districts. Therefore, a district that is considering making the transition to a four-day week, should not be highly concerned that this change will adversely impact the academic performance of school districts. However, because of significant redactions, the researcher was not able to compare multiple and consecutive years of data in the Hispanic/Latino populations. The one year that was compared, showed no statistical significant difference in the academic performance of school districts operating on four-day school week when compared to school districts operating on a five-day school week.

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Appendix A

Permission to Use Images

Gmail by Google

Spencer Barzee <sbarzee@westside202.com>

Permission to Use Images
2 messages

Spencer Barzee <sbarzee@westside202.com> Mon, Feb 26, 2018 at 11:16 AM
To: Tim.Tharp@mt.gov

Dr. Tharp,

I am currently in a doctorate program at NNU in Idaho. I am writing my dissertation on the impacts of four-day school weeks with a focus on the academics specifically in Idaho. Currently, about 33% of the district in Idaho are on this model, which represents about 9% of the total students.

Can I get your permission to use images/charts from your study in 2014, A comparison of student achievement in rural schools with four and five day weeks?

Thanks for the consideration.

Best,

Spencer Barzee
West Side School District
Superintendent
Phone 208.747.3502 ext 101
Fax 208.747.3705

Tharp, Timothy <Tim.Tharp@mt.gov> Mon, Feb 26, 2018 at 11:19 AM
To: Spencer Barzee <sbarzee@westside202.com>

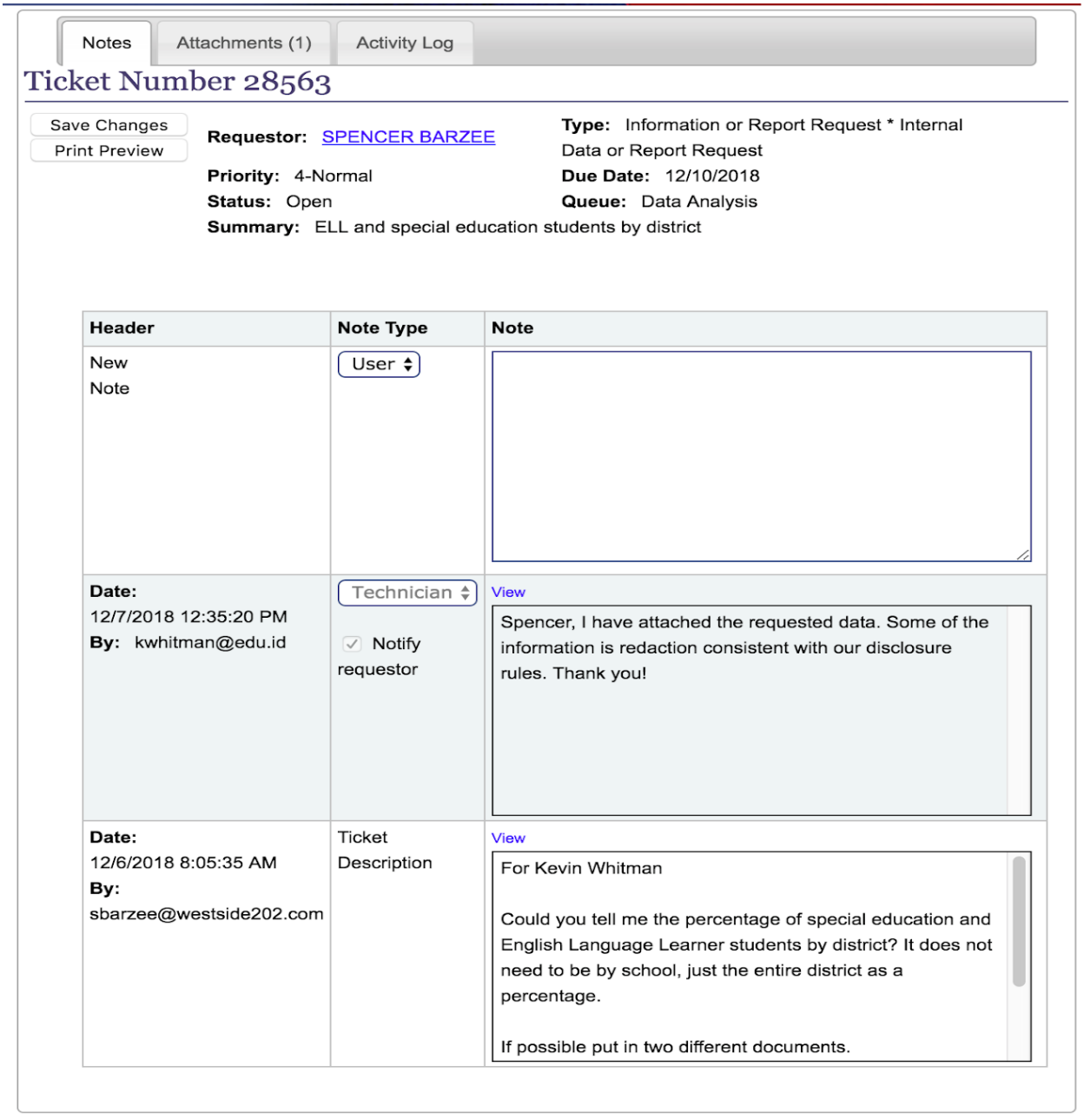
Certainly Spencer, use whatever you can. Obviously, I ask that my work be properly cited in your research. Also, I'd love to see what you end up coming up with if you would be so kind as to share it with me.

T

From: Spencer Barzee [mailto:sbarzee@westside202.com]
Sent: Monday, February 26, 2018 11:16 AM
To: Tharp, Timothy <Tim.Tharp@mt.gov>
Subject: Permission to Use Images

Appendix B

Public Records Request for Special Education and English Language Learners



Notes | Attachments (1) | Activity Log

Ticket Number 28563

Save Changes
Print Preview

Requestor: SPENCER BARZEE
Priority: 4-Normal
Status: Open
Summary: ELL and special education students by district

Type: Information or Report Request * Internal Data or Report Request
Due Date: 12/10/2018
Queue: Data Analysis

Header	Note Type	Note
New Note	User	
Date: 12/7/2018 12:35:20 PM **By:** kwhitman@edu.id	Technician ☑ Notify requestor	View: Spencer, I have attached the requested data. Some of the information is redaction consistent with our disclosure rules. Thank you!
Date: 12/6/2018 8:05:35 AM **By:** sbarzee@westside202.com	Ticket Description	View: For Kevin Whitman Could you tell me the percentage of special education and English Language Learner students by district? It does not need to be by school, just the entire district as a percentage. If possible put in two different documents.

Appendix C

Summary of Demographics for Traditional Idaho School Districts

District Number	Districts	Enrollment	Classified as rural	Four-day week	Hispanic or latino percentage	English Language Learners (ELL) percentage	Economically Disadvantaged (free and reduced lunch) percentages	Special Education
*School districts with an asterisk were not included in the study as the study began a four-day school week after the 2014-2015 school year.								
191	*Prairie Elementary	3	Yes	yes	0%	***	no participation	***
416	Three Creek Joint Elementary	7	Yes	yes	22%	***	no participation	***
364	Pleasant Valley Elementary	11	Yes	yes	0%	***	no participation	***
394	Avery	16	Yes	yes	0%	***	no participation	***
383	Arbon Elementary	18	Yes	no	6%	***	no participation	***
092	Swan Valley Elementary	51	Yes	no	5%	***	45%	20%
342	Culdesac Joint	96	Yes	yes	3%	***	62%	15%
292	South Lemhi	98	Yes	yes	4%	***	56%	7%
392	Mullan	105	Yes	no	5%	***	100%	15%
243	Salmon River Joint	113	Yes	yes	4%	***	53%	8%
433	Midvale	122	Yes	yes	2%	***	58%	10%
234	Bliss Joint	133	Yes	yes	39%	14%	83%	9%
432	Cambridge Joint	137	Yes	yes	2%	***	51%	19%
161	Clark County Joint	137	Yes	yes	57%	18%	72%	11%

274	Kootenai Joint	139	Yes	no	6%	***	50%	16%
302	Nezperce Joint	147	Yes	no	1%	***	49%	6%
121	Camas County	156	Yes	no	5%	***	45%	12%
149	North Gem	171	Yes	yes	2%	***	37%	14%
382	Rockland	175	Yes	yes	2%	***	42%	3%
305	Highland Joint	179	Yes	yes	5%	***	70%	12%
011	Meadows Valley	182	Yes	no	9%	6%	58%	14%
316	Richfield	189	Yes	yes	23%	9%	67%	16%
314	Dietrich	208	Yes	no	22%	12%	62%	8%
182	Mackay Joint	231	Yes	yes	5%	***	38%	8%
283	Kendrick Joint	232	Yes	no	3%	***	46%	15%
422	Cascade	234	Yes	no	5%	***	40%	15%
073	Horseshoe Bend	234	Yes	yes	7%	***	49%	15%
288	Whitepine Joint	235	Yes	no	1%	***	46%	15%
013	Council	262	Yes	yes	4%	***	50%	12%
071	Garden Valley	264	Yes	yes	7%	***	50%	13%
287	Troy	269	Yes	no	2%	***	21%	11%
365	Bruneau-Grand View Joint	303	Yes	yes	37%	15%	68%	13%
417	Castleford Joint	305	Yes	no	30%	11%	58%	6%
282	Genesee Joint	320	Yes	no	2%	***	23%	8%
415	Hansen	334	Yes	yes	38%	10%	60%	13%
233	*Hagerman Joint	351	Yes	yes	24%	7%	60%	13%
418	Murtaugh Joint	351	Yes	no	48%	13%	69%	9%
072	Basin	353	Yes	no	4%	***	38%	13%
044	Plummer / Worley Joint	353	Yes	no	9%	***	100%	21%

181	Challis Joint	354	Yes	yes	6%	***	44%	12%
242	Cottonwood Joint	403	Yes	no	3%	***	36%	8%
135	Notus	412	Yes	yes	23%	9%	59%	14%
192	Glenns Ferry Joint	424	Yes	yes	40%	17%	74%	15%
111	Butte County	433	Yes	yes	4%	2%	46%	16%
304	*Kamiah Joint	437	Yes	yes	7%	***	100%	13%
285	Potlatch	449	Yes	no	2%	***	31%	11%
393	Wallace	488	Yes	no	3%	***	54%	20%
341	Lapwai	503	Yes	no	3%	***	89%	18%
133	Wilder	519	Yes	no	74%	26%	100%	12%
312	Shoshone Joint	520	Yes	yes	52%	32%	78%	10%
148	Grace Joint	521	Yes	yes	6%	***	49%	10%
262	Valley	579	Yes	yes	49%	20%	64%	7%
253	West Jefferson	582	Yes	no	28%	14%	54%	6%
202	West Side Joint	698	Yes	no	4%	***	49%	6%
058	Aberdeen	727	Yes	no	60%	19%	90%	18%
252	Ririe Joint	732	Yes	no	6%	3%	44%	11%
059	Firth	807	Yes	yes	13%	***	46%	4%
291	Salmon	817	Yes	yes	4%	***	55%	13%
363	Marsing Joint	829	Yes	yes	38%	13%	64%	9%
136	Melba Joint	846	Yes	yes	22%	7%	46%	10%
150	Soda Springs Joint	851	Yes	yes	3%	***	33%	11%
041	St. Maries Joint	1,003	Yes	no	2%	***	50%	15%
372	New Plymouth	1,009	Yes	no	13%	6%	42%	8%
137	Parma	1,078	Yes	no	32%	9%	59%	10%
083	West Bonner County	1,098	Yes	no	3%	***	53%	13%
391	Kellogg	1,106	Yes	no	3%	1%	53%	19%
232	Wendell	1,124	Yes	yes	63%	34%	85%	10%

171	Orofino Joint	1,133	Yes	yes	11%	***	60%	12%
033	Bear Lake County	1,174	Yes	yes	3%	***	38%	13%
421	McCall-Donnelly Joint	1,202	Yes	no	9%	2%	30%	11%
370	Homedale Joint	1,210	Yes	yes	37%	14%	66%	12%
021	Marsh Valley Joint	1,297	Yes	yes	3%	***	40%	13%
244	Mountain View	1,305	Yes	no	5%	***	49%	12%
412	Buhl Joint	1,309	Yes	no	39%	16%	86%	11%
231	Gooding Joint	1,362	Yes	yes	33%	13%	73%	11%
351	Oneida County	1,428	Yes	yes	4%	***	40%	10%
381	American Falls Joint	1,451	Yes	no	50%	24%	64%	9%
371	Payette Joint	1,498	Yes	no	34%	11%	100%	13%
101	Boundary County	1,500	Yes	yes	7%	1%	52%	14%
431	Weiser	1,544	Yes	no	29%	10%	54%	10%
322	Sugar-Salem Joint	1,642	Yes	no	6%	3%	43%	8%
413	Filer	1,666	Yes	no	14%	3%	41%	10%
052	Snake River	1,778	Yes	yes	17%	7%	37%	10%
373	Fruitland	1,805	Yes	no	27%	7%	42%	11%
401	Teton County	1,807	Yes	no	30%	15%	37%	11%
414	Kimberly	1,955	Yes	no	13%	4%	32%	7%
215	Fremont County Joint	2,162	Yes	no	18%	8%	50%	9%
060	Shelley Joint	2,346	Yes	no	13%	5%	42%	10%
201	Preston Joint	2,355	Yes	yes	9	2%	41%	10%
221	Emmett Independent	2,370	Yes	no	15%	4%	53%	12%
281	Moscow	2,409	Yes	no	5%	3%	31%	9%

061	Blaine County	3,470	Yes	no	42%	19%	35%	12%
084	Lake Pend Oreille	3,703	Yes	no	5%	1%	41%	12%
055	Blackfoot	3,867	Yes	no	25%	11%	64%	12%
193	Mountain Home	3,891	Yes	no	24%	6%	50%	12%
261	Jerome Joint	4,014	Yes	no	51%	20%	62%	10%
134	Middleton	4,031	No	no	12%	2%	41%	9%
331	Minidoka County Joint	4,222	Yes	no	47%	11%	63%	10%
272	Lakeland	4,371	Yes	no	4%	***	39%	10%
340	Lewiston Independent	4,732	No	no	4%	0%	37%	11%
321	Madison	5,318	Yes	no	7%	4%	37%	10%
003	Kuna Joint	5,397	No	no	11%	3%	37%	12%
151	Cassia County Joint	5,496	Yes	no	34%	13%	48%	10%
273	Post Falls	5,897	No	no	6%	1%	43%	10%
251	Jefferson County Joint	5,901	Yes	no	11%	5%	39%	8%
132	Caldwell	6,424	No	no	62%	20%	100%	11%
139	Vallivue	8,759	No	no	37%	11%	58%	10%
411	Twin Falls	9,478	No	no	20%	8%	64%	10%
091	Idaho Falls	10,167	No	no	23%	7%	46%	11%
271	Coeur d' Alene	10,836	No	no	7%	1%	38%	10%
025	Pocatello	12,496	No	no	12%	1%	48%	11%
093	Bonneville Joint	12,527	No	no	15%	4%	39%	11%
131	Nampa	14,180	No	no	35%	10%	64%	10%
001	Boise Independent	26,048	No	no	12%	9%	51%	12%
002	Meridian Joint	38,907	No	no	10%	4%	25%	10%

This spreadsheet was tabulated from 2017-2018 numbers, except for the schools that are on a four-day school week as it came from 2018-2019 numbers.

*** Indicates that the numbers for this population were too small to report publicly. Data is redacted if it is within four students of 0% or 100%.
In the Economically Disadvantaged status column, any district that is at 100% is considered 100%. 100% stands for “Community Eligibility Provision.” That allows schools in lower income areas to serve the entire student population without having to take direct applications.

Appendix D

List of Idaho Schools on a Four-day Week

Schools Planning a Four-Day School Week 2018-2019		Schools Planning a Four-Day School Week 2017-2018		Schools Planning a Four-Day School Week 2016-2017	
13	Council	13	Council	13	Council
21	Marsh Valley Joint	21	Marsh Valley Joint	21	Marsh Valley Joint
33	Bear Lake County	33	Bear Lake County	33	Bear Lake County
52	Snake River	52	Snake River	52	Snake River
59	Firth	59	Firth	59	Firth
71	Garden Valley	71	Garden Valley	71	Garden Valley
73	Horseshoe Bend	73	Horseshoe Bend	73	Horseshoe Bend
101	Boundary County	101	Boundary County	101	Boundary County
111	Butte County	111	Butte County	111	Butte County
135	Notus	135	Notus	135	Notus
136	Melba Joint	136	Melba Joint	136	Melba Joint
148	Grace Joint	148	Grace Joint	148	Grace Joint
149	North Gem	149	North Gem	149	North Gem
150	Soda Springs Joint	150	Soda Springs Joint	150	Soda Springs Joint
161	Clark County	161	Clark County	161	Clark County
171	Orofino Joint	171	Orofino Joint	171	Orofino Joint
181	Challis Joint	181	Challis Joint	181	Challis Joint
182	Mackay Joint	182	Mackay Joint	182	Mackay Joint
191	Prairie Elementary	191	Prairie Elementary	191	Prairie Elementary
192	Glenns Ferry Joint	192	Glenns Ferry Joint	192	Glenns Ferry Joint
201	Preston Joint	201	Preston Joint	201	Preston Joint
231	Gooding Joint	231	Gooding Joint	231	Gooding Joint
232	Wendell	232	Wendell	232	Wendell
233	Hagerman Joint	233	Hagerman Joint	233	Hagerman Joint
234	Bliss Joint	234	Bliss Joint	234	Bliss Joint
243	Salmon River Joint	243	Salmon River Joint	243	Salmon River
262	Valley	262	Valley	262	Valley
291	Salmon	291	Salmon	291	Salmon
292	South Lemhi	292	South Lemhi	292	South Lemhi
304	Kamiah	305	Highland Joint	305	Highland Joint
305	Highland Joint	312	Shoshone Joint	312	Shoshone Joint
312	Shoshone Joint	316	Richfield	316	Richfield
316	Richfield	342	Culdesac Joint	342	Culdesac Joint
342	Culdesac Joint	351	Oneida County	351	Oneida County
351	Oneida County	363	Marsing Joint	363	Marsing Joint

363	Marsing Joint	364	Pleasant Valley Elem	364	Pleasant Valley Elem
364	Pleasant Valley Elem	365	Bruneau-Grand View Joint	365	Bruneau-Grand View Joint
365	Bruneau-Grand View Joint	370	Homedale Joint	370	Homedale Joint
370	Homedale Joint	382	Rockland	382	Rockland
382	Rockland	394	Avery	394	Avery
394	Avery	415	Hansen	415	Hansen
415	Hansen	416	Three Creek Elementary	416	Three Creek Elementary
416	Three Creek Elementary	432	Cambridge Joint	432	Cambridge Joint
432	Cambridge Joint	433	Midvale	433	Midvale
433	Midvale				
45	School Districts	44	School Districts	44	School Districts

Schools Planning a Four-Day School Week		Schools Planning a Four-Day School Week		Schools Planning a Four-Day School Week	
2015-2016		2014-2015		2013-2014	
13	Council (Grades 7-12)	13	Council (grades 7-12 only)	13	Council
21	Marsh Valley Joint	21	Marsh Valley Joint	21	Marsh Valley Joint
33	Bear Lake County	33	Bear Lake County	33	Bear Lake County
52	Snake River	52	Snake River	52	Snake River
59	Firth	59	Firth	59	Firth
71	Garden Valley	71	Garden Valley	71	Garden Valley
73	Horseshoe Bend	73	Horseshoe Bend	73	Horseshoe Bend
101	Boundary County	101	Boundary County	101	Boundary County
111	Butte County	111	Butte County	111	Butte County
135	Notus	135	Notus	135	Notus
136	Melba Joint	136	Melba Joint	136	Melba Joint
148	Grace Joint	148	Grace Joint	148	Grace Joint
149	North Gem	149	North Gem	149	North Gem
150	Soda Springs Joint	150	Soda Springs Joint	150	Soda Springs Joint
161	Clark County	161	Clark County	161	Clark County
171	Orofino Joint	171	Orofino Joint	171	Orofino Joint
181	Challis Joint	181	Challis Joint	181	Challis Joint
182	Mackay Joint	182	Mackay Joint	182	Mackay Joint
191	Prairie Elementary	192	Glenns Ferry Joint	201	Preston Joint
192	Glenns Ferry Joint	201	Preston Joint	231	Gooding Joint
201	Preston Joint	231	Gooding Joint	232	Wendell
231	Gooding Joint	232	Wendell	234	Bliss Joint
232	Wendell	234	Bliss Joint	243	Salmon River
233	Hagerman Joint	243	Salmon River	291	Salmon
234	Bliss Joint	262	Valley	292	South Lemhi
243	Salmon River	291	Salmon	305	Highland Joint

262	Valley	292	South Lemhi	312	Shoshone Joint
291	Salmon	305	Highland Joint	316	Richfield
292	South Lemhi	312	Shoshone Joint	342	Culdesac Joint
305	Highland Joint	316	Richfield	351	Oneida County
312	Shoshone Joint	342	Culdesac Joint	363	Marsing Joint
316	Richfield	351	Oneida County	364	Pleasant Valley Elem
342	Culdesac Joint	363	Marsing Joint	365	Bruneau-Grand View Joint
351	Oneida County	364	Pleasant Valley Elem	382	Rockland
363	Marsing Joint	365	Bruneau-Grand View Joint	394	Avery
364	Pleasant Valley Elem	370	Homedale Joint	415	Hansen
365	Bruneau-Grand View Joint	382	Rockland	416	Three Creek Elementary
370	Homedale Joint	394	Avery	432	Cambridge Joint
382	Rockland	415	Hansen	433	Midvale
394	Avery	416	Three Creek Elementary		
415	Hansen	432	Cambridge Joint		
416	Three Creek Elementary	433	Midvale		
432	Cambridge Joint				
433	Midvale				
44	School Districts	42	School Districts	39	School Districts
Schools Planning a Four-Day School Week		Schools Planning a Four-Day School Week		Schools Planning a Four-Day School Week	
2012-2013		2011-2012		2010-2011	
13	Council	21	Marsh Valley Joint	21	Marsh Valley Joint
21	Marsh Valley Joint	33	Bear Lake County	33	Bear Lake County
33	Bear Lake County	52	Snake River	71	Garden Valley
52	Snake River	59	Firth	73	Horseshoe Bend
59	Firth	71	Garden Valley	101	Boundary County
71	Garden Valley	73	Horseshoe Bend	148	Grace Joint
73	Horseshoe Bend	101	Boundary County	149	North Gem
101	Boundary County	111	Butte County	150	Soda Springs Joint
111	Butte County	135	Notus	161	Clark County
135	Notus	136	Melba Joint	171	Orofino Joint
136	Melba Joint	148	Grace Joint	181	Challis Joint
148	Grace Joint	149	North Gem	182	Mackay Joint
149	North Gem	150	Soda Springs Joint	231	Gooding Joint
150	Soda Springs Joint	161	Clark County	243	Salmon River
161	Clark County	171	Orofino Joint	291	Salmon
171	Orofino Joint	181	Challis Joint	305	Highland Joint
181	Challis Joint	182	Mackay Joint	351	Oneida

182	Mackay Joint	201	Preston Joint	364	Pleasant Valley Elementary
201	Preston Joint	231	Gooding Joint	365	Bruneau-Grand View Joint
231	Gooding Joint	234	Bliss Joint	382	Rockland
234	Bliss Joint	243	Salmon River	416	Three Creek Elementary
243	Salmon River	291	Salmon	432	Cambridge Joint
291	Salmon	292	South Lemhi		
292	South Lemhi	305	Highland Joint		
305	Highland Joint	312	Shoshone Joint		
312	Shoshone Joint	342	Culdesac Joint		
342	Culdesac Joint	351	Oneida		
351	Oneida	364	Pleasant Valley Elementary		
363	Marsing Joint	365	Bruneau-Grand View Joint		
364	Pleasant Valley Elementary	382	Rockland		
365	Bruneau-Grand View Joint	394	Avery		
382	Rockland	415	Hansen		
394	Avery	416	Three Creek Elementary		
415	Hansen	432	Cambridge Joint		
416	Three Creek Elementary				
432	Cambridge Joint				
433	Midvale				
37	School Districts	34	School Districts	22	School Districts

Schools Planning a Four-Day School Week	Schools Planning a Four-Day School Week	Schools Planning a Four-Day School Week	Schools Planning a Four-Day School Week
2009-2010	2008-2009	2007-2008	2006-2007

21	Marsh Valley Joint	21	Marsh Valley Joint	21	Marsh Valley Joint	21	Marsh Valley Joint
33	Bear Lake County	33	Bear Lake County	33	Bear Lake County	33	Bear Lake County
101	Boundary County	101	Boundary County	101	Boundary County	101	Boundary County
148	Grace Joint	148	Grace Joint	148	Grace Joint	150	Soda Springs Joint
149	North Gem	149	N. Gem	149	N. Gem	171	Orofino Joint
150	Soda Springs Joint	150	Soda Springs Joint	150	Soda Springs Joint	181	Challis Joint
161	Clark County	161	Clark County	161	Clark County	182	Mackay Joint
171	Orofino Joint	171	Orofino Joint	171	Orofino Joint	291	Salmon
181	Challis Joint	181	Challis Joint	181	Challis Joint	364	Pleasant Valley Elementary
182	Mackay Joint	182	Mackay Joint	182	Mackay Joint	416	Three Creek Elementary
231	Gooding Joint	291	Salmon	291	Salmon		
291	Salmon	351	Oneida	351	Oneida		
351	Oneida	364	Pleasant Valley Elementary	364	Pleasant Valley Elementary		
364	Pleasant Valley Elementary	416	Three Creek Elementary	416	Three Creek Elementary		
416	Three Creek Elementary						
15	School Districts	14	School Districts	14	School Districts	10	School Districts

Appendix E

NIH Certification of Completion

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Spencer Barzee** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 01/15/2018.

Certification Number: 2596384.

Appendix F

IRB Approval

Submittable

Dear Spencer,

The IRB has reviewed your protocol: 2012019 - ACADEMIC IMPACT OF THE FOUR-DAY SCHOOL WEEK IN IDAHO. You received "Full Approval". Congratulations, you may begin your research. If you have any questions, let me know.

Northwest Nazarene University
Jennifer Hill
IRB Member
623 S University Blvd
Nampa, ID 83686

Reply | View Submission

Appendix G

IRI Public Records Request

We have received your Public Records Request Form Inbox ×

JotForm publicrecords@sde.idaho.gov via jotform.com 11:29 AM (0 minutes ago)
to me

This email is being sent to acknowledge the receipt of the following public records request by the Idaho State Department of Education:

Name	Spencer Barzee
Phone Number	(208) 747-3502
Email	sbarzee@westside202.com
Address	Street Address: 626 N West Side Hwy City: Dayton State / Province: ID Postal / Zip Code: 83232
Description of Records Requested	Idaho Reading Indicator Scores for the following years: 2014-2015, 2015-2016, 2016-2017, 2017-18. I need the following information in the export. District # District name enrollment size (district level only) performance by tire, all levels (3 - proficient, 2 - near grade level, 1 - below grade level) Overall performance by student sub groups that only includes hispanic/latino, Free and reduced lunch. Overall performance by grade level (kindergarten through 3rd grade) district level and state level only

Appendix H

Number of Redacted Schools

Number of Schools Analyzed				
All Schools				
School Numbers	Math	ELA	IRI (2014-2018)	IRI (2019)
total number of schools to analyze	66	76	66	90
number of four-day week schools to analyze	22	29	23	37
number of five-day week schools to analyze	44	47	43	53
Economically Disadvantaged Sub Population				
School Numbers	Math	ELA	IRI (2014-2018)	IRI (2019)
total number of schools to analyze	42	44	69	78
number of four-day week schools to analyze	13	14	25	32
number of five-day week schools to analyze	29	30	44	46
School Districts With Economically Disadvantaged Population >45%				
School Numbers	Math	ELA	IRI (2014-2018)	IRI (2019)
total number of schools to analyze	39	76	41	60
number of four-day week schools to analyze	15	29	17	27
number of five-day week schools to analyze	24	47	24	33
Hispanic or Latino				
School Numbers	Math (2019)	ELA (2019)	IRI (2014-2018)	IRI (2019)
total number of schools to analyze	38	42	not available	53
number of four-day week schools to analyze	10	12		19
number of five-day week schools to analyze	28	30		34

Appendix I

Schools Districts Excluded From The Study

These schools were excluded from the study altogether because they were:	
Not Rural	**On four-day school week less than five years**
Boise Independent	Council
Bonneville Joint	Hagerman
Caldwell	Kamiah
Coeur d' Alene	Prairie Elementary
Idaho Falls	
Joint School District #2	
Kuna Joint	
Lewiston Independent	
Middleton	
Nampa	
Pocatello	
Post Falls	
Twin Falls	
Vallivue	