A BRIEF ANALYSIS OF THE POSSIBLE IMPACT OF A FOUR DAY SCHOOL WEEK ON STUDENT PERFORMANCE IN COLORADO SCHOOLS

By

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Submitted to

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Submitted in Fulfillment for the Requirements for
61-683 Research Paper
Fall 2011

July 2, 2012
ABSTRACT

This study contains information about the history of the four-day school week and how it has been implemented throughout the United States. It looks at which states currently have school with a four-day school week and reasons behind changing to this style. The main idea behind this study was to determine if changing to a four-day school week from the standard five-day school week would affect overall student academic achievement. The study focused mainly on the state of Colorado where there are currently sixty-two school districts operating on the four-day school week. Results from the Colorado Student Assessment Program (CSAP) were used as well as research by Paul Hewitt and George Denney from the University of Arkansas. The results of the study conclude that reasons to change to a four-day school week do not drastically effect student academic achievement.
INTRODUCTION TO THE STUDY

If you were an administrator in a school district that is currently using the five-day school week and there was a buzz around the community about switching to a four-day school week, wouldn’t you want to know the benefits and concerns associated with that change? This study is a brief analysis of a study performed by Hewitt and Denney at the University of Arkansas. The researchers discussed the impact on student academic performance of the four-day school week. Information can be used to determine if the benefits are great enough to change from a five-day school week to a four-day school week.

Background

In recent years, the four-day school week has been a topic of conversation among school leaders. A typical four-day school week schedule will start on Tuesday and end on Friday or they will start on Monday and end on Thursday. The main difference is the length of the day. Each state has a mandated number of hours that the students must receive instruction, so for the four-day school week to work, each day has to be lengthened for the students to receive an adequate amount of instruction. According to the National Conference of State Legislatures (NCSL), there are currently twenty-one states that have school districts operating on a four-day week (NCSL, 2012). These states include Arizona, California, Colorado, Georgia, Idaho, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Missouri, Montana, Nebraska, New Mexico, Nevada, Oklahoma, Oregon, South Dakota, Utah, Wisconsin, and Wyoming. Within these states, there are currently more than 120 schools that have implemented the four-day school week (NCSL, 2012).
Statement of the Problem

There is little evidence how the four-day school week impacts student achievement. The possibility of these students performing poorly on the standardized tests raises eyebrows. Everyone seems to be looking at the four day school week as a way to cut costs and save money, but the bottom line is student performance. Is moving to a four-day school week going to affect the students learning ability? Can we cut costs and still produce students that are performing at a high level in the classroom? These are big questions that need to be answered, because after all, the students should be the ones that come first when making these types of decisions.

Purpose of Study

The main reason to switch to the four-day school week was focused on saving money. However, the purpose of the study should determine if the four-day school week impacts student performance. Supporters of the four-day school week boast the benefits of saving on transportation. If there is only a need for school buses four days a week instead of five days a week, schools can save on fuel used that fifth day. With the increased price of fuel in recent years, this would be one of the main reasons. Another money saving initiative would be on energy savings. If electricity throughout the building was reduced one more day a week, school districts would see a decrease in their electricity bill each month. Each school leader has certain reason on why they would like to switch their school district to a four-day school week, but overall the main reason why school districts want to switch is because of the amount of money they can save their district. The purpose of the study was to investigate school district that are switching to the four-day school week and determine if those schools are performing at least the same or better on the standardized tests as five-day school week schools. Overall, the purpose is
to determine if students are able to perform well in the classroom if they are attending fewer days of school for a longer daily time period.

Research Question

In the Colorado Schools (2008), did the four day school week impact student performance?

Anticipated Benefits of Study

The results of this study will allow administrators to make an informed decision on whether or not to pursue the possibility of a four-day school week based on student performance.
THEORETICAL FRAMEWORK AND CONCEPTUAL UNDERPINNINGS

Theoretical Framework

The theoretical framework behind this study is the learning theory. Learning theory basically brings together environmental influences and experiences for acquiring or making changes in one’s knowledge, skills, values, and world views. There are two main values that go along with the learning theory. One is having a conceptual framework for interpreting examples of learning that we observe. The second value is to look for solutions to practical problems. They do not give solutions, but direction to the variables that are crucial in finding solutions.

Conceptual Underpinnings

Benefits

Some of the topics discussed that would fall under this section of benefits are obviously financial factors, and improved attendance. Also included would be improved discipline and participation as well as extracurricular activities. These factors are important to look at when determining if the switch to a four-day school week. At the same time, the student achievement should be the number one factor used, if there is a drastic change, to determine if the change is going to be effective.

Costs

Implementing the four-day school week takes a lot of thought and preparation. One of the first steps in implementation would be deciding on which day of the week to eliminate. Some of the other things to look at when considering a four-day week is how the financial factors should be looked at to determine if the change is something that can help the school district. Some of the teachers opinions on the effectiveness of class time is another factor that should be looked at as well.
REVIEW OF LITERATURE

In general, the idea of a four-day school week is not held up on a very high pedestal. In fact, the majority of individuals do not support for the idea at all. Probably the greatest difficulty that districts may have in implementing the four-day school week is managing the community and parent reactions to the plan. Ray (2003) found that only 25% of Americans support the four-day week to save money while 74% oppose it, according to a Gallup Poll. Ray believes that support is low due to understanding. York (2009) states that:

Because a four-day week means that at least one more hour, possible one and a half, would be added to each of the four days school is in session, it’s almost a given that this extra time will be wasted on “brain-dead” students and teachers. That is not an efficient approach to education. (p. 3)

The opposition use the following other reasons as to why they are against it: concern for securing child care for the fifth day (Keen, 2007), perceived lessening of instructional time (Harp, 1995), and the perception that school personnel should work five days a week (Dam, 2006). According to Ferak (2006), a school district in Murray, Nebraska, had 30 students transfer out of the district when the four-day week started. The superintendent attributed the change to child-care issues. Parents were concerned that they were going to have a hard time finding child-care during that extra day away from school. At the same time, some districts parents are stating that it is easier to find child-care one day per week than for a few hours five days per week. Parents are taking advantage of having high school students available for babysitting duties on the fifth day that they would normally be attending school (Dam 2006).

However, after students, staff, and parents have been involved with a four-day school week for an extensive period of time, their thoughts have changed and are highly supportive of
the change. Individuals are highly reluctant to change, but for the most part, once the change is made it is easier to support the new system. Experiences can be compared and a new perspective can be seen. Richburg and Wood (1982) found that 95% of the teachers who had taught on the four-day week schedule for at least one year strongly favored the schedule. Chmelynski (2003) found that students and parents loved the four-day school week. Parents were initially concerned, but after one year of its existence, there was not a single complaint, as stated from John Briley, Principal of Midland High School in Louisiana. It is found that once individuals have been exposed to the change, they generally are more acceptable of it.

According to Hunt, the earliest four-day school week could have been implemented in Madison, South Dakota in 1931 in the Madison Central School District (Hunt, 1936). Hunt also commented that this unique system scheduled the required academic subjects for four days a week and all extra-curricular activities on the fifth day. This is not the style of four-day school week that we see today, but this was a very drastic change in the overall aspect of schooling back in this time period.

Since the early use of the four-day school week in South Dakota, the trend really started to develop in the 1970’s in New Mexico. Cimarron School District in New Mexico has the longest established use of the schedule in the country. They have utilized the four-day week schedule since switching to it in 1973-1974 (Feaster, 2002). The main reason for school districts to even consider this type of alternative scheduling was due to the energy crisis. During the school year of 1971-1972, the Main School Administrative District 3 (MSAD 3) began a three-year experiment with a four-day week schedule (Feaster, 2002; Roeth, 1985). One of the main reasons for this district to try this alternative scheduling was that the district was awarded the federal Title III grant for professional development (Roeth, 1985). After the three year
experiment, the school district returned to the five-day week even though there was improved professional practice. The commissioner of education denied the school board’s request for the continuation of the four-day school week due to the increase in the number of required inserviced days for teachers (Roeth, 1985).

In the 1980’s, studies continued in Colorado and New Mexico on the four-day school week. A study by Richburg and Sjorgren in 1982 reported that the four-day school week showed an energy saving by using 7-25% less in heading fuel and paying less gasoline and bus maintenance. However, some staff costs remained the same and some increased due to custodians using the extra to do maintenance that would have normally been delayed until the summer months (Beesley and Anderson, Fall 2007). During this time, a vast majority of individuals preferred the new schedule stating that it gave them “… more time for appointments, family trips, and working on the farm or ranch” (Beesley and Anderson, Fall 2007). Grau and Shaugnessy conducted a study in New Mexico in 1987 that found similar results of lower student and teacher absenteeism, lower transportation costs, and comparable test scores.

**BENEFITS**

As times have changed from the 1990’s to the present, studies on the four-day school week have also changed. Reports have been dedicated more toward the individual school district perspective. School districts looking into implementing the four-day school week are not necessarily concerned with other schools, they want to know if it will relate to them and help their school still achieve their goals.

**Financial Factors**

With the numerous factors of changing to a four-day school week, the factor of potential financial savings is the one that stands out in people’s minds the most. Individuals that site this
as the primary reason for change use transportation costs and utilities as their main advantage. Transportation would be the main reason since busses would not be used on the fifth day for transporting students to and from school. However, professional development and tutoring would not allow for much decrease in utility costs.

According to Yarbrough and Gilman (2006), Webster County School District in Western Kentucky had to cut 20% from their budget so they implemented the four-day school week. The district officials expected this change to make a significant difference. However, over a three year period, they realized an annual savings of two percent with this change. Chmelynski (2003) reported that the Morrow County School District in Lexington, Oregon, experienced a savings of only $250,000 in a $14 million budget. This is a less than 2% savings. The Cunningham School District in Cunningham, Kansas implemented a four-day school week calendar for the 2009-2010 school year. Truesdale (2009) reported they anticipated a savings of $45,000 on busing, utilities, and labor costs. This amount was a savings of 1.4% of their operating budget.

The amount of cost savings will differ greatly from school district to school district. If facilities are completely shut down on the non-school days, the savings will obviously be greater than if the schools are open for meetings and other activities. Each district needs to look at how effectively they want to cut costs and how much control they want to have on keeping their school closed on their days off.

*Improved Attendance, Discipline, and Participation*

Saving money for the school district was the leading motivator in making a change to the four-day school week, however, it is not the only motivator. Improving attendance, discipline, and participation plays an important role in the change as well. Several authors report (Shank, Smith, & Truesdale, 2009 and Shoemaker, 2002) that the number of student and staff absences
were reduced as a result of implementing the four-day school week. Time was spent on the off
day attending to business, doctor’s office visits, and dental appointments among other things that
would have normally required them to miss school. The increase in student attendance would
help schools receive more funds from the state based on average daily attendance numbers. The
downside to this would be that if a student did miss a day of school, they would be missing out
on more hours of class time than they would if they were in a five-day week system. Beesley
and Anderson (2007) found that teacher attendance increases ranged from 2% to 50% for the
four-day school week. In rural areas, teachers may have to miss an entire day to get to and from
a doctor’s visit. Chmelynski (2003) also found that there were fewer disciplinary incidents as a
benefit of the four-day week. This report is greatly appreciated by administrators as it allows
them to spend more time in the classroom improving instruction instead of taking care of
discipline referrals.

*Teachers’ Opinions*

Teachers can be creatures of habit and often times resist change. With that said, many
teachers that have taught within a district that has implemented a four-day school week have
found new ways to involve students and have really enjoyed the change to a four-day week.
According to Rouse (2006), teachers who liked the new schedule said they had more time to take
care of personal business, spend time with family, plan lessons, and get supplies. Beesley and
Anderson state, “in Idaho suburban schools, 77% of teachers surveyed said that a greater variety
of learning activities was used after the change, 82% said that enough learning time was
provided, 76% said students participated more actively, 89% said that attendance was better, and
74% said disruption of class lessened” (p. 50). In this same study, only six out of 103 teachers
that responded stated that they were disadvantages of the schedule. Challenges to the four-day
school week from teachers often come from concern for the students. Teachers often wonder what the students will be doing on the day off from school or who will be caring for them if the parents are at work.

**Student Achievement**

With all of the talk on cutting costs and saving money for the school district, many individuals really are reluctant to change to the four-day school week due to their worry about the effect it will have on student achievement. Some critics of the four-day school week state that reducing the number of instructional days will negatively affect student learning. However, there has been a lot of literature published that states that the change in schedule may have a positive effect on students instead of a negative impact.

A study was conducted using achievement data from five rural Colorado schools before and after implementing the four-day school week calendar. Researchers examined scores across the same group of students for four years and across the same grade level for the same time. These researchers found that the change in schedule had no impact on test performance (Daly and Richburg, 1984).

McCoy (1983) performed a study of New Mexico’s four-day school districts that demonstrated that student achievement did not suffer from the change in calendar and that some districts improved their scores. Cimarron, the nation’s longest running four-day school district, has showed more gains on the four-day schedule than those made on the five-day schedule according to Grau and Shaugnessy (1987). Yarborough and Gilman (2006) report similar findings in Webster, KY, which switched to a four-day week in 2003. Feaster (2002) examined achievement data in Custer, SD over a ten-year period and found that district fourth- and eighth
grade students continued to exceed the state average after the implementation of a four-day week.

Reported by Chmelynski (2003), ACT scores at Merryville High School in Merryville, Louisiana were on the rise due to the implementation of the four-day school week. Chmelynski states that ACT scores went from an average of 18.7 to an average of 20 since the implementation of the different schedule. That same school also reported that the number of honor roll students had doubled in the junior and senior high school. According to Grau and Shaughnessey (1987), seven New Mexico school districts found that their achievement test scores were comparable to the state averages. They also found that the seven districts they studies had a collective drop-out rate of 3.3% compared to 8.1% for the rest of the state. This comparison is based on the schools they studies were four-day schools and the rest were traditional five-day schools. Wilmoth (1995) surveyed 84 school districts. In this study, 6% reported a decrease in student standardized test scores, while 75% reported an increase or no change in their students standardized test scores.

In a more recent study by professors from George State and Montana State universities, the four-day school week is associated with a seven percent increase in fifth grade math scores and a three percent increase in fourth grade reading scores. This study found that fifth grade students moving from partially proficient to proficient in math accounted for the largest change. The researchers noted that specific causes to improvement come from more focused instruction, improved student attendance and increased morale. (Scott, 2012). These results are astonishing and provide support for those looking to change to a four-day week schedule.
Extracurricular Activities

The idea of the four-day school week affecting extracurricular activities is another concern that is being brought up by parents and coaches. The possible concern is with the school day lasting longer, the sports practices and other activities are starting later, resulting in longer days. In Idaho, one district simply moved sports practices from 4:30 to 6:30 and limited sports travel to Fridays to avoid missing class time (Geranios, 2006). An increase in participation in extracurricular activities has been observed in some school districts, which is attributed to the increased amount of time available for these activities (Fager, 1997). Evidence has not been found that the four-day school week has harmed extracurricular activities to a large degree, although conflict is less likely when other schools in the area have a similar schedule.

COST

Implementation

Implementing the four-day school week takes a lot of thought and preparation. One of the first steps in implementation would be deciding on which day of the week to eliminate. The normal options are dropping Friday or Monday. According to Shank (2009), Monday should be the day dropped because federal holidays or three-day weekends usually fall on Mondays and therefore reduce the need to add additional make-up days later in the school year. Richburg and Wood (1982) suggest eliminating Fridays would allow extra-curricular activities to take place without students missing school hours for distant athletic events.

One of the next steps in implementation of the four-day school week would be to determine the amount of time students need to be in school each day. When the four-day week was originally implemented in Colorado, students attended school seven and a half hours per day. There is a misconception that students attending four-day per week schools are getting less
instruction time. This is not the case due to state mandated requirements. In fact, some are getting more instructional minutes than students that attend five-day per week schools. Richburg and Wood (1982) recommend that elementary schools have a seven hour day for 144 days for a total of 1,008 hours. This would contrast the five-day week schedule that includes a five and a half hour day schedule for 180 days which provides 990 hours, which is the minimum required by Colorado state law. Weldon (2008) mentions that according to a study by the National School Boards Association, estimated 100 school districts in 17 states have adopted four-day school weeks, which is up from just nine states five years prior. This is due to some states changing their requirements from days in school to a number of hours required.

*Teachers Opinion*

The critical part of the four-day school week from the teacher point of view must be how their time in the classroom is utilized. Cuban (2008) states, the crude policy solutions of more days in the year and longer school days do not even begin to touch the deepest truth that what has to improve is the quality of “academic learning time.” If policy makers could open their ears and eyes to student and teacher perceptions of time, they would learn that the secular Holy Grail is decreasing interruption of instruction, encouraging richer intellectual and personal connections between teachers and students, and increasing classroom time for ambitious teaching and active, engaged learning. (p. 247)
RESEARCH DESIGN AND METHODOLOGY

This study is based upon a brief analysis of Colorado schools four-day school week and five-day school week by Hewitt and Denny of the University of Arkansas (2010).

Research Design

Scores from elementary, middle, and high school levels for all subjects combined were compared using t tests. Tests were conducted at the .05 level of significance. The independent variable was the district schedule – four day or five day schools. Outcome variables for each district were the total percent of students classified as proficient or higher on the criterion-referenced exam scores for 2008 at the elementary, middle, and high school levels for all subject areas as posted on the District and School Performance Reports for the Colorado Department of Education (http://www.schoolview.org/SchoolPerformance/index.asp) (Hewitt & Denny).

Study Group

The state of Colorado has a high number of four day schools currently in operation. With that said, this study looked at student academic performance in Colorado where 62 out of a total of 178 districts are on the four day school week. The sample for the study consists of districts with a four day week along with districts with a five day week. Matching was based on K-12 enrollments and percentage of students eligible for Free and Reduced Lunch (Hewitt & Denny, 2010). The total student enrollment of the four day week schools was 17,911 while the total student enrollment of the five day week schools was 19,931 (Hewitt & Denny, 2010).

Data Collection and Instrumentation

The overall achievement of the mean levels was not significantly different between the four day school districts and the five day school districts (Table 1). The five day school districts had slightly higher test scores than the four day school districts at each level. Writing scores
were significantly higher for elementary students of five day week schools than those in matched four day week schools. Eight of the nine tests found higher scores for the matched schools with a five-day school week, however there was no significant differences (Hewitt & Denny, 2010).

In Table 1 (Hewitt & Denny, 2010), you will see the results of Mean Achievement when comparing the four day week school with the five day week schools.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Level</th>
<th>N</th>
<th>Schedule</th>
<th>$M$±$SD$</th>
<th>$t$</th>
<th>$df$</th>
<th>$p$</th>
<th>$d$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined</td>
<td>Elem.</td>
<td>45</td>
<td>5 day</td>
<td>67.86±9.98</td>
<td>1.97</td>
<td>44</td>
<td>.06</td>
<td>0.43</td>
</tr>
<tr>
<td></td>
<td></td>
<td>45</td>
<td>4 day</td>
<td>63.60±9.87</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Middle</td>
<td>45</td>
<td>5 day</td>
<td>56.36±11.21</td>
<td>0.68</td>
<td>44</td>
<td>.50</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>45</td>
<td>4 day</td>
<td>55.19±9.52</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>45</td>
<td>5 day</td>
<td>51.05±10.55</td>
<td>0.89</td>
<td>44</td>
<td>.38</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>45</td>
<td>4 day</td>
<td>49.38±10.15</td>
<td></td>
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</tr>
</tbody>
</table>

Lefly (2009) conducted a separate study in 2009 among Colorado schools. This study showed that in 2008 in the area of Reading, four day school districts had 68.9% of their students in the proficient or advanced categories, while districts of a similar size on a normal five day schedule had 67.7% of their students proficient or advanced.

**Findings**

For the combined analysis the mean levels of overall achievement were not significantly different between four-day districts and the matched five-day districts at any of the three school levels (Table 1). At each level, the five-day districts had slightly higher tests scores than the matched four-day districts, with the greatest difference for elementary level students.
CONCLUSIONS AND RECOMMENDATIONS

This study examined the effects of student academic performance while attending either a four-day week school or a five-day week school. One of the main issues that outsiders look at is the fact that they think the students are attending less school, however, the number of minutes each day is increased so students are attending the same amount of time in the classroom. It is difficult to examine the research that has been completed for this topic, however, there is not a significant amount of information that shows that students perform better in either the four-day week school or the five-day week school.

The decision to switch from a five-day week school to a four-day week school would be a decision that is made by the administration of the school district. Administrators may want to change for financial reasons, but it does not appear that concern of student academic performance should be a reason to not implement a four-day school week.

Summary

This brief analysis of the possible impact of a four day school week on student performance demonstrated that there is no significant difference between their scores. While there are some studies out there that are being done to show the differences between scores of students attending five-day school and four-day schools, before one jumps on the bandwagon, more studies need to be done. The growth analysis between grade levels over a period of time should be looked at to obtain a better analysis of scores. Overall, more information needs to be looked at before a change should be made from a five-day week to a four-day week.
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