

Case Study: Impact of the 4-day School Week on Stakeholders, Savings & Student Achievement
Compared with the Traditional 5-day School Week

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Abstract

The purpose of this case study is to investigate the impact of the 4-Day School Week, specifically on (a) the stakeholders (students, parents, staff, community, etc.) in general, (b) the savings a school or district might expect to gain from implementation, as well as (c) the effects on student academic achievement. This study specifically investigates the Tintic School District & American Leadership Academy (aka ALA), two of the very few different local public school districts in Utah to follow this model. After review of the available material, it was discovered that while savings can and do occur, they are often smaller than expected, though not insignificant. Academic achievement meanwhile can also be affected for better or worse following a school / district decision to implement a 4-Day School Week. While some schools improved achievement, many were found to have about the same levels of achievement as before the change. However, some limited studies found that overall, student achievement declined after such a change. It was concluded that for many schools, the 4-Day School Week can be successful in creating savings while not affecting academic achievement in a negative way, especially for schools that are more rural and / or have a lower population of low socioeconomic status students. More research is warranted however, especially considering the effectiveness of different varieties of these programs, as well as the impacts these may hold. While the 4-Day model may work for some schools / districts, it is not a fool-proof plan to gain savings and / or improve academic achievement, and the author of this study recommends careful research and community debate before any such implementation.

Keywords: four-day school week; flexible scheduling; rural schools; school scheduling.

Introduction

A major concern for educators and administrators alike is the challenge of helping their students meet state and national academic standards, while at the same time having enough funds to cover their operational costs. As globalization and the advent of technology continue to grow at ever-increasing speed, the demand for a skilled and educated workforce grows as well (Stromquist & Monkman, 2014). Thus this dilemma is a persisting one for all concerned.

To help improve their *academic achievement* (or overall academic performance, as calculated by standardized tests), schools & districts across the country continually search for innovative ways to increase academic achievement, while minimizing or even decreasing costs if possible. Different measures have been utilized from time to time, which promise to increase academic student achievement, with varying results. One potential solution is the concept of the *4-day school week*. This scheduling model usually entails extended hours during four school days per week, as most states require minimum instruction hours per year. Many schools across the country have implemented the 4-day school week, with some saying it has led to positive or at least similar outcomes in academics while also creating significant savings in operational costs (Anderson & Walker, 2015; Kingsbury, 2008), while others argue it is detrimental to student learning, and may not even save any costs at all (Tharp, Matt & O'Reilly, 2016).

Those who have heard of the 4-day school week model may wonder whether these (or other) claimed benefits are true, and whether they outweigh the problems that might arise from less instructional time / days in the classroom. This study resolved to seek answers to these questions by investigating in detail two public schools: Tintic School District as well as American Leadership Academy, two public school districts (Grades K-12) with somewhat

different populations, and also comparing their academic achievement with similar, nearby traditionally-scheduled public schools.

Research Purpose & Questions

As the results regarding the impact of the 4-day school week model have varied, it seems further investigation is prudent. Therefore, the purpose of this study is to investigate the 4-day school week's impact on (a) stakeholders in general, (b) school / district operational costs, and (c) student academic achievement (per standardized testing).

This study focused specifically on answering the following research questions:

1. What impact has changing from a traditional five-day school week to the 4-day model had on the students, the staff, and the community in general?
2. What effect has changing to the 4-day model had on operational savings / costs for a school or district?
3. What impact does the model have on student academic achievement?

Statement of Hypotheses

After a thorough review of related literature, more specific hypotheses were identified to answer these questions. The following null and alternate hypotheses directly address these research questions:

- 1a. (Null Hypothesis): There is no impact on students, staff, and the community in general from changing from a traditional school week to the 4-day model.
- 1b. (Alternate Hypothesis): This is an impact on students, staff, and the community in general from changing from a traditional school week to the 4-day model.

- 2a. (Null Hypothesis): There is no effect on operational savings / costs for a school / district changing from a traditional five-day school week to the 4-day model.
- 2b. (Alternate Hypothesis): There is an effect on operational savings / costs for a school / district changing from a traditional five-day school week to the 4-day model.
- 3a. (Null Hypothesis): There is no impact on student academic achievement for schools / districts implementing the 4-day model.
- 3b. (Alternate Hypothesis): There is an impact on student academic achievement for schools / districts implementing the 4-day model.

Based on the initial review of related literature, the authors of this study believed that the transition to a 4-day model would (a) certainly have impacts on the students, staff, and other stakeholders in the community studied; it was also believed that (b) there would be a significant positive impact on the operational costs of these districts; and (c) that student academic achievement would not be negatively affected by the implementation of this model.

Methodology

In seeking to answer these questions, this study sought to gather information from many different sources, over the course of several years. This included students, who provided information via cross-sectional surveys, interviews, and several years of standardized test scores, as well as adult stakeholders. These adults were also surveyed and interviewed, and all of this information was then reviewed and analyzed to help provide further insight into these questions. Below are summaries of the participants involved, instruments used to gather data, research design, etc.

Participants

This study specifically involved students and adult stakeholders from the populations of both the Tintic School District and ALA. Tintic School District (a very rural district) has around 250 students spread out over 2,000 square miles, while ALA / American Leadership Academy (a suburban independent charter school) has a population of about 1,700 students in its schools. Tintic School District has a minority enrollment population of 7%, while 41% of students enrolled are considered “economically disadvantaged” based on receiving free or reduced lunch; ALA has a minority population of 29%, and 39% of students are considered economically disadvantaged (*U.S. News & World Report*, 2017). While an analysis of multiple different schools throughout the area would be preferable, the relative scarcity of 4-day school programs in Utah is a contributing factor to this lack of diversity.

All ALA and Tintic School District student scores from the Utah Student Assessment of Growth and Excellence (aka SAGE) standardized test were analyzed for the most recent 3 years. These scores were reviewed and then compared with student scores for the same 3 years from two other local Utah public schools, comparable in size and demographics, in order to compare student achievement.

Students were also randomly chosen from among those whose parents gave consent, with four students (two boys and two girls) per grade level (K-12) interviewed and surveyed, as well as a single parent / guardian for each child. Additionally, one randomly-chosen elementary teacher per grade level was surveyed and interviewed at each school. For the 7-12 grades, two different teachers per grade were randomly chosen to be surveyed and interviewed, while one

administrator (e.g. a principal, vice-principal, director, etc.) and two different additional staff members were randomly chosen to be surveyed and interviewed as well.

Instruments

To answer these different questions, different instruments were utilized to bring perspective to what occurs in schools adopting the 4-day school week model. And as there are multiple different questions, all were addressed with several appropriate methods. The first two questions, regarding the effects in general on stockholders, as well as the effect on costs, were in part be answered with a questionnaire, filled out by selected adults and students involved at the school. Obviously, some of the questions were applicable only to parents versus others that only administrators / staff familiar with the financial numbers could answer.

Next, interviews were then carried out with these same parents, students, administrators, and other school faculty who know the school personally. The interviews consisted of two parts; the first part addressed the effects on costs for the school, as well as other additional costs that families may have (this is an issue often referred to in previous research, but not much hard data had been gathered on it). The second part of these interviews focused on the last major issue this study investigated; that is, the effects on student achievement. These interviews provided valuable insight into how parents and students feel about the model, as well as the perception of school faculty and personnel.

Finally, rather than requiring the student participants at these schools to be administered an additional standardized test, the authors of the study instead utilized the SAGE (Student Assessment of Growth and Excellence) examination, a regularly administered state-created and state-mandated standardized test battery that is well-rounded and assesses a broad range of

academic skills (including formative, interim and summative assessments in math, science and English language arts).

At the same time, students scores from comparable schools nearby that employ the traditional 5-day school model were compared with those from the schools following the 4-day model, to analyze what effect (if any) the 4-day model may / may not have had on academic achievement. This method of utilizing the previously existing SAGE scores avoided creating an additional undue burden on the schools and students involved, and still allowed a thorough review of academic achievement progression as well as comparison with other schools.

This SAGE data is available for past years. Making comparisons between the schools for the past 2 years were possible. Additionally, the possibility also exists to extend the length of this portion of the study to include multiple years of student achievement, to help further verify the data's consistency.

Research Design

The case study was a bit of a longitudinal one, in the sense that it was carried out over the course of 3 years (3 years of previous SAGE score data analysis), but also a cross-sectional one, specifically in regard to the questionnaires and interviews, which were only carried out once. However, the possibility remains open that this study could be repeated over the course of the next several years as well, making these surveys longitudinal in nature as well.

The questionnaire was created with a cover letter explaining the importance and purpose of the study, with most of the questions utilizing a variety of attitude scales, although some of them were also short answer. These short answer sections also later helped guide the later interview questions. Additionally, a pilot test was carried with a sampling of a variety of the participants, and the pilot group was encouraged to give feedback and suggestions. As a result of

said feedback about the questionnaire, several adjustments were made as a result, including the simplifying of question language for younger participants, and the clarification of certain terms, as well as the elimination of several questions and the inclusion of several others. The feedback received was invaluable.

Table 1. Questionnaire Question Examples

<p><i>On the following scale, rate the following by circling the most appropriate number:</i></p> <p>5. How you personally feel about the fact that your school utilizes a 4-day school week model?</p> <p>Strongly Agree = 5, Agree = 4, Undecided 3, Disagree = 2, Strongly Disagree = 1</p>
<p><i>For the following questions, fill out the given space below. Please explain your answer with as many details as possible:</i></p> <p>25. What do you think is the greatest benefit from the 4-day school week model, in your own opinion? Explain why:</p> <hr/> <hr/> <hr/> <hr/>

Questions 5 and 25 as found in the questionnaire given to study participants

The interviews were created to be different for each group as well, with teachers being asked different questions than the students were. Each interview consisted of 10 questions, with instructions for more probing questions to be asked if certain information was ascertained. While this was a time-consuming process, it provided valuable insight into how participants feel and perceive the 4-day model and their place in it. As for the SAGE score data, this was already gathered by the school, so the authors procured permission to review general school data and scores after the fact. The analysis of that data will be described further in the “Data Analysis” section.

Procedure

According to OHRP Exempt Categories 45 CFR 46.101(B) - (HRP-312), the authors of this study identified this study as a Category 2 research study, as it involved both the use of educational tests, as well as interviews with relevant adults (parents, faculty, etc.). Additionally, all subjects and their responses, including students, parents, administrators, etc. were anonymous, only known via their random ID code, another condition required for Category 2 studies.

All information was kept strictly anonymous and confidential. All participants, both adults and students, were issued a randomly generated personal identification number (aka PIN), which they used to identify themselves while taking the online questionnaire, as well as the phone interview, which utilized a voice scrambler to further protect identity. A partner in the study retained a code key that connected each participant with their PIN, which they never shared with any of the researchers directly involved in the gathering of this information. No one else had access to this information, and all the instruments / procedures used preserved that anonymity, to both protect the patient's privacy as well as help eliminate unwanted researcher bias.

The questionnaire was available online, to be taken within a week's timeframe by all participants. Depending on a participant's role in the school (parent, teacher, administrator, etc.), they were asked questions that were specific to that roll; the questionnaire took most participants about an hour to complete. The next part involved the interview, which also took roughly an hour to complete. This was done via telephone, and made available a week after the questionnaire closed. This allowed the researchers time to review the questionnaire data and make some adjustments and additional potential questions to ask as needed. All data meanwhile from the

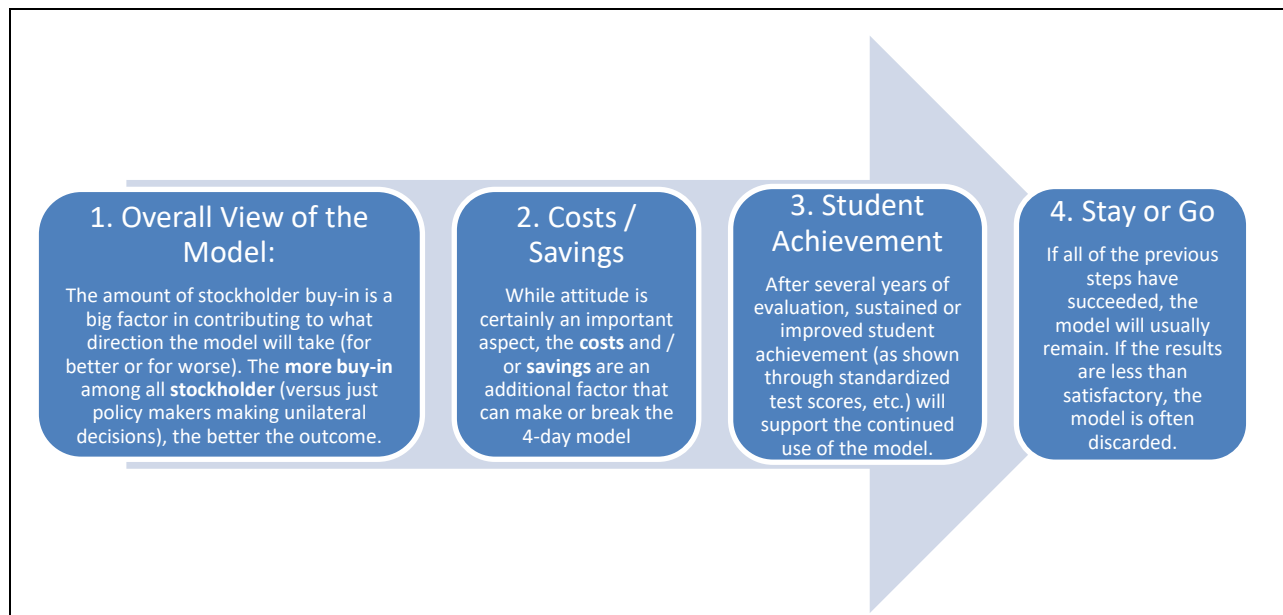
SAGE testing was anonymous and general; only general school scores were known and evaluated, not individual scores.

Data Analysis

The SAGE scores from Tintic School District and ALA were first organized and analyzed according to grade level. Next, these scores were compared over the course of three years, and then compared against each other. Finally, each school's scores were compared with another local public school that was comparable in size and population makeup. The *t* test was utilized in analyzing the data, to compare the mean scores of each grade between previous years as well as between schools, allowing the researchers to verify any meaningful differences in student achievement. This was chosen because as a parametric test, the data tested was normally distributed, and less likely to result in errors (Gay, Mills & Airasian, 2012).

Path analysis allowed review of the data from the interviews and questionnaires, and to create a model that accurately predicted the likely success of the 4-day model, as shown below.

Figure 1. Path Analysis Model for Impact of 4-Day School Model



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