

Data Committee

November 7, 2023 – initial data committee findings.

Committee: Andrea Poser, Debbie Dawson, Janet Hines, David Little

How 4-Day affects student attendance

Requested attendance data from (OSBE) Idaho State Board of Education 10/2023 for all Idaho 4-Day school week districts (4dsw) vs 5-Day school week districts (5dsw) and will provide this information when we receive it back from OSBE. The 2021 RAND report, “Does Four Equal Five?”, indicates student attendance may have improved slightly at the 4dsw schools, but the difference was not statistically meaningful.

How 4-day affects student academic outcomes (Learning, Testing, Student Growth).

Our committee read through some of the most recent comprehensive studies comparing 4dsw versus 5dsw and reached out to OSBE (Idaho State Board of Education) as well as the Montana Office of Public Instruction to get data comparing 4dsw vs 5dsw districts and their academic outcomes.

The 2021 RAND report (included Idaho schools) and 2022 Annenberg Brown University study indicate that student achievement growth was smaller at 4dsw (had a negative impact) in similar districts in the same states that kept a 5dsw schedule. That meant students in the 4dsw districts fell behind a little more every year compared to a similar 5dsw district. The reports indicate a potential for achievement gaps to grow between similar districts the longer a district is on a 4dsw. The RAND report findings show that after eight years, the student achievement gap was roughly equivalent to the achievement losses that schools saw during the pandemic.

The data our committee found for Idaho and Montana corroborated the RAND and Annenberg Brown University studies showing that 4dsw students underperformed 5dsw students in Math and ELA/Reading proficiency.

Idaho State Board of Education put together a 2017 paper showing that Idaho rural schools in traditional districts with a 4dsw have a significantly higher share of students scoring “Below Standard” on both the English Language Arts (ELA) and the Math ISAT than otherwise similar schools with a 5dsw. The result was statistically significant at that time with an increase of 7% for students scoring “Below Standard” for the Math ISATs for grades 5-8 and a 6% increase in students scoring “Below Standard” on the ELA ISATs for grades 5-8. In 2017 it was noted that additional years of data would be helpful to help address the question: Does adoption of a four-day week negatively affect student academic performance?

With more recent data (up to FY2022) obtained from Idaho and Montana we found the following: Idaho (for grades 3-8 as Idaho provided ISAT data) and Montana 4dsw students, on average, were 15% less proficient in math versus 5dsw students and 9-10% less proficient in ELA/Reading. For Idaho, this was a comparison of all 4dsw students in the state on that measurement versus all 5dsw students in the state. The Montana test scores were 4dsw schools versus all Montana schools (one of our members was going to request 4dsw versus 5dsw instead of all schools). Montana did provide graduation rates for 4dsw schools versus 5dsw schools which showed higher graduation rates for 4dsw schools, but no data was provided for Go-On rates after high school.

Idaho schools that transitioned in Idaho during the 2011-2022 capture period were 4% lower in Math on 4dsw and 3% lower in ELA. Based on the RAND report results, showing a continual widening of the difference between 4dsw and 5dsw student achievement results for similar districts, one would expect the differences to grow the longer a district is switched to a 4dsw compared to a similar 5dsw district and is something that needs monitoring.

We have asked OSBE (Idaho State Board of Education) for updated data going forward to help assess differences in student outcomes between Idaho 4dsw and 5dsw schools to see if we can get additional information on the question of whether adoption of a 4dsw week negatively affects student academic performance over time as it appears is the case by the initial data we have gathered.

Calculated

Idaho School Students at Grade Level (proficient): FY 2011-2022

Data from (OSBE) Idaho State Board of Education 12/2022-requested update 10/2023

	5-Day	4-Day	Difference	% Diff.	Comments
ISAT Math	44.02%	38.17%	5.85%	15.33%	ID 5-day schools 15.33% higher proficiency than 4-day
ISAT ELA	53.11%	48.64%	4.47%	9.19%	ID 5-day schools 9.2% higher proficiency than 4-day

Schools transitioning during capture window (FY2011-FY2022), at Grade level rate under two calendars (4 day and 5 day)

	5-Day	4-Day	Difference	% Diff.	
ISAT Math	45.46%	43.74%	1.72%	3.93%	ID 5-day schools 3.9% higher proficiency on than 4-day
ISAT ELA	52.37%	50.90%	1.47%	2.89%	ID 5-day schools 2.9% higher proficiency than 4-day

Montana School Students at Grade Level (proficient): 2017-2022

Data from Montana Office of Public Instruction 10/27/2023: Requested by Andrea Poser

Year	4-Day	All Montana Schools	% Difference	4-Day	All Montana Schools	% Difference
	Math Proficiency Rate	Math Proficiency Rate		Reading Proficiency Rate	Reading Proficiency Rate	
2022	32.88%	36.54%	-10.02%	42.32%	46.15%	-8.30%
2021	32.56%	35.57%	-8.46%	42.29%	46.39%	-8.84%
2020						
2019	34.90%	41.93%	-16.77%	44.26%	50.04%	-11.55%
2018	32.71%	41.59%	-21.35%	45.53%	50.66%	-10.13%
2017	34.61%	41.20%	-16.00%	44.27%	50.22%	-11.85%
Average	33.53%	39.37%	-14.82%	43.73%	48.69%	-10.18%

References:

2011-2022FY Idaho student ISAT data: provided by Idaho State Board of Education

2017 “Student Outcomes in Idaho School Districts with a Four-Day Week”

2017-2022 Montana student data: provided by Montana Office of Public Instruction

- (One of our committee members had a family member native to Montana and has had kids attend 4dsw in Montana and were aware that Montana has seen a large increase in 4dsw schools and some schools had been on a 4dsw for some time.)

2022 Annenberg Brown University study: “A Multi-State, Student-Level Analysis of the Effects of the Four-Day School Week on Student Achievement and Growth”

2021 RAND Report: “Does Four Equal 5?”

From the 2021 RAND report (included Idaho schools in their study):

“Student academic achievement in 4dsw districts over time. The research team found that student achievement did not grow as fast in the 4dsw districts after the adoption of the 4dsw policy compared with similar 5dsw districts. For example, three years after the policy change, the analysis estimated that 4dsw student achievement in English language arts (ELA) was between 0.040 and 0.096 standard deviations lower compared with that in similar 5dsw districts, and 4dsw student achievement in math is between 0.069 and 0.140 standard deviations lower. By eight years after adoption, the 4dsw achievement in ELA was between 0.145 and 0.229 standard deviations lower compared with similar 5dsw districts, and the 4dsw achievement gap in math was between 0.144 and 0.189 standard deviations lower.”

“After eight years, the gap was roughly equivalent to the achievement losses that schools saw during the pandemic.” (The RAND Blog)

From the 2021 RAND report (included Idaho schools in their study):

“Student absence rates. School leaders, teachers, parents, and students perceived student absences were lower in the 4dsw schedule than in a 5dsw schedule. However, our analysis of district-level attendance rates between the 2011 and 2018 school years in Colorado, Idaho, Missouri, New Mexico, and Oklahoma suggested there were no differences. Furthermore, the survey data reported by parents and students also showed no differences in absences for 4dsw and 5dsw students.”

Data Committee

January 11, 2024 Addendum to initial findings from November 7, 2023

How 4-Day affects student attendance (Addendum)

Data received from Idaho and Montana showed average daily attendance to be similar in 5-Day and 4-Day districts. Idaho’s ADA was 1% lower and Montana’s was 1% higher. Based on this we would expect student attendance to be about the same between the two schedules.

State	School Year	Average ADA (all schools)	5 Day Schools ADA	4 Day Schools ADA	Difference	% Difference	Comments
	2013/2014	-					
Idaho *	2018/2019	93.70%	93.74%	93.23%	1%	1%	5-Day ADA slightly higher
Montana #			89.00%	90.00%	-1%	-1%	5-Day ADA slightly lower

* Idaho data received from Idaho State Board of Education. Used years when school funding determined by ADA (pre-COVID)

Montana data received from Montana Office of Public Instruction

Montana data didn't list what years the ADA data covered but previously gave us data for years 2017-2022.

How 4-day affects student academic outcomes (Learning, Testing, Student Growth).

The Idaho State Board of Education provided some additional data on ISAT comparison for 3-8th grades comparing 5-Day Idaho districts to 4-Day Idaho districts. The Idaho State Board had previously put out a paper in early 2017 looking at differences in student outcomes for the two different calendars. This working paper from winter 2023/2024 compared forty-five 5-Day Idaho traditional school districts against forty-three 4-Day Idaho school districts. Emmett was one of the 5-Day school districts in the comparison. School districts were selected for similar characteristics (comparable size, non-charter etc.).

Student outcomes years looked at were 2015-2016, 2016-2017, 2017-2018, and 2018-2019 as these years the ISAT test was the same and were school years preceding COVID.

The working paper confirmed some of what we found in our initial findings. The current working paper found that “students at four-day Idaho districts are less likely to score at grade level on the Math ISAT compared to students who attend 5-day districts.” “The results hold for almost all grade levels.”

Math ISAT Proficiency (At Grade Level: Scores 3 or 4)	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
5-Day at grade level	48%	43%	37%	37%	37%	38%
4-Day at grade level	46%	42%	35%	33%	33%	28%
4-Day vs 5-Day % Difference	-5%	-2%	-7%	-12%	-12%	-27%

The working paper found there were less significant impacts on ELA and the impacts were found to expand in later grade levels. “There are only statistically significant differences in the 7th and 8th grades on the ELA ISAT.”

ELA ISAT Proficiency (At Grade Level: Scores 3 or 4)	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
5-Day at grade level	44%	45%	49%	46%	50%	51%
4-Day at grade level	43%	45%	49%	45%	47%	45%
4-Day vs 5-Day % Difference	-2%	0%	0%	-2%	-6%	-13%

The Idaho working paper also confirmed one of the results of the RAND report that showed that student achievement did not grow as fast in four-day districts compared to similar five-day districts - students that were at grade level in 6th and 7th grades were more likely to fall behind and students that weren't at grade level in 6th and 7th grades had a harder time getting to grade level.

Share of Students at grade level in 8th grade by status in 6th and 7th grades			
At grade level			
	Grade 6	Math	ELA
	5-Day 3 or 4 scores	83%	85%
	4-Day 3 or 4 scores	73%	84%
	4-Day vs 5-Day % Difference	-12%	-1%
	Grade 7	Math	ELA
	5-Day 3 or 4 scores	83%	85%
	4-Day 3 or 4 scores	73%	82%
	4-Day vs 5-Day % Difference	-12%	-3%
Not at grade level			
	Grade 6	Math	ELA
	5-Day 3 or 4 scores	15%	25%
	4-Day 3 or 4 scores	13%	18%
	4-Day vs 5-Day % Difference	-15%	-31%
	Grade 7	Math	ELA
	5-Day 3 or 4 scores	12%	20%
	4-Day 3 or 4 scores	7%	14%
	4-Day vs 5-Day % Difference	-41%	-29%

“Students who attended four-day districts were less likely to achieve grade level proficiency in the 8th grade if they were not at grade level in 6th and 7th grades for both the Math and ELA ISAT. Furthermore, students who were at grade level proficiency in the 6th and 7th grades on the Math ISAT were less likely to maintain being at grade level proficiency in the 8th grade in four-day districts compared to students in five-day districts.”

Mitigating Factors

With the majority of the data indicating negative student achievement results we looked at ways to potentially mitigate the student achievement harm which typically occurs. We talked with Paul Thompson an Oregon State professor who was one of authors of the study “Only a Matter of Time? The Role of Time in School on Four-Day School Week Achievement Impacts”. Most of the research on the time in school/instructional time topic for Four-

Day schools has focused on Oregon schools and the results so far indicate having high-time in school is key to helping mitigate negative academic results from a switch to a four-day school week.

“If school districts are determined to switch to the four-day school week for non-academic reasons, how might these school schedules be structured to mitigate these detrimental achievement effects?”

The low and medium-time in school districts showed disproportionate harm from switching to a four-day calendar compared to the high-time in school districts. A high-time in school district required at least 31 hours/week. Paul thought if you wanted to make a change for non-academic reasons you wanted to be sure and be a high-time in school district and focus on having effective instructional/seat time.