The Four-day School Week in Montana: A Comprehensive Study 2008-2023

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ACKNOWLEDGMENTS

This comprehensive research of the four-day school week schedule in Montana would not have been possible without the support and guidance of the following individuals.

Special recognition goes to Julie Murgel, Ph.D., the Montana Office of Public Instruction Chief Program Officer, for her vision in initiating a study of this scope.

Data for district expenditures, student achievement, student attendance, student graduation rates, and student behavior were provided by the Montana Office of Public Instruction and verified for accuracy through their data assurance process. Special thanks go to Robin Clausen, Ph.D., Montana SLDS Program Manager for timely responses regarding data needs, as well as thorough and consistent data compilation.

Dr. Dan Lee, Dean of the Phyllis J. Washington College of Education at the University of Montana, provided indispensable support for a study of this magnitude. His leadership and encouragement have been instrumental to the success of this study.

Thanks go to Kristine Steinberg, Phyllis J. Washington College of Education Director of Accreditation and Licensure Manager, for coordinating the survey of Teacher Education Program completers with Montana Educational Preparation Programs.

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INTRODUCTION

Historically, Montana schools have adhered to the traditional five-day school week (5dsw) schedule. However, in 2005, the Montana legislature passed Senate Bill 170, introducing increased flexibility in school schedules. This bill changed attendance requirements from the traditional 180 pupil instruction day school year, to instead requiring 1,080 minimum aggregate hours of pupil instruction (Montana Code Annotated, 20-1-301).

> **20-1-301. School fiscal year.** (1) The school fiscal year begins on July 1 and ends on June 30. At least the minimum aggregate hours required in subsection (2) must be conducted during each school fiscal year, except that 1,050 aggregate hours of pupil instruction for graduating seniors may be sufficient. The minimum aggregate hours required in subsection (2) are not required for any pupil demonstrating proficiency pursuant to **20-9-311**(4)(d).
>
> (2) The minimum aggregate hours required by grade are:
>
> (a) 360 hours for a half-time kindergarten program or 720 hours for a full-time kindergarten program, as provided in **20-7-117**;
>
> (b) 720 hours for grades 1 through 3; and
>
> (c) 1,080 hours for grades 4 through 12.
>
> (3) Except for a circumstance related to an unforeseen emergency pursuant to Title 20, chapter 9, part 8, for any elementary or high school district that fails to provide for at least the minimum aggregate hours, as listed in subsections (1) and (2), to any pupil not demonstrating proficiency pursuant to **20-9-311**(4)(d), the superintendent of public instruction shall reduce the BASE aid for the district for that school year by two times an hourly rate, as calculated by the office of public instruction, for the aggregate hours missed by each pupil not demonstrating proficiency pursuant to **20-9-311**(4)(d).

This change allowed schools to explore alternative schedules, leading to ten Montana school districts transitioning to a four-day school week (4dsw) schedule by the conclusion of the 2006-2007 school year (OPI, 2024). Since that time, a total of 152 Montana school districts, comprising 260 individual schools, have adopted a four-day school week schedule (OPI, 2024). With 32 school districts adopting the 4dsw schedule in the 2022/23 and 2023/24 school years (OPI, 2024), the number of Montana school districts transitioning to a 4dsw is increasing.

Every student deserves access to a high-quality education (U.S. Department of Education, 2021). Article X of the Montana Constitution states, “It is the goal of the people to establish a system of education which will develop the full educational potential of each person” (Montana Constitution). According to Sultana et al. (2009), quality in education is multidimensional and typically comprises student well-being, the quality of the curriculum, teacher quality, teaching methods, governance, and financing. Furthermore, according to Sack-Min (2018), successful schools design and carry out programs that provide students with a rich educational experience focused on the total child.

In a published report addressing national concerns regarding the allocation of time and the use of the school day for instructional purposes, The National Education Commission on Time and Learning (1994) stated, "Learning in America is a prisoner of time…The degree to which today's American school is controlled by the dynamics of clock and calendar is surprising even to people who understand school operations" (p. 7). Canady and Rettig (1995) emphasized that school scheduling is a valuable resource used for improvement in high quality schools. They suggest that innovative schedules can lead to a more effective use of time, space, and resources, improve instructional climate, and aid in implementing desired programs and instructional practices.

However, despite the growing number of schools seeking innovation through a 4dsw schedule, there remains a lack of analysis on multiple indicators of educational quality between school districts who have maintained a 5dsw schedule and those that have adopted the 4dsw schedule (Anderson & Walker, 2015; Heyward, 2018; Morton, 2021; Morton, et al., 2023; Thompson & Ward, 2022). According to an early study comparing achievement in Montana schools who had adopted a 4dsw schedule compared to achievement in schools retaining the 5dsw schedule there was a disparity in academic achievement (Tharp, 2014).

Tharp (2014) found that in the first two years of implementation, student achievement scores in school districts utilizing the 4dsw schedule are better than the state average achievement scores. However, once the 4dsw schedule becomes part of the culture, the loss of the days of instruction appear to negatively affect student performance (Tharp et al., 2016).

Consequently, some policymakers question whether the 4dsw schedule provides the same level of educational quality as a 5dsw schedule (Irving, 2023). As districts continue to implement the 4dsw schedule, policymakers need to understand the implications for educational quality between a 5dsw schedule and the 4dsw schedule (Hayward, 2018). Policy decisions regarding school scheduling need to be based on empirical evidence for each of the quality indicators of an effective education.

According to Irving (2023), research on the effects of a 4dsw schedule is limited. Most of the existing research has primarily focused on school finances, student achievement, and teacher recruitment and retention (Anderson & Walker, 2015; Hayward, 2018; Morton, 2021; Morton et al., 2023; Thompson & Ward, 2022). As Montana school districts continue to adopt the 4dsw schedule, it becomes increasingly important to understand the long-term outcomes of choosing a 4dsw schedule instead of the traditional 5dsw schedule (Morton et al., 2023; Thompson & Ward, 2022).

This study (The Four-day School Week in Montana) explored multiple implications of choosing a 4dsw schedule instead of a 5dsw schedule through eight research questions:

1. Is there a difference in cost effectiveness on instructional and non-instructional costs (instruction, maintenance, transportation, and food service) between schools operating on a four-day school week schedule and those operating on a five-day school week schedule?
2. Is there a difference in academic achievement by grade-level and sub-groups between schools operating on a four-day school week schedule and those operating on a five-day school week schedule?

3. Is there a difference in educational engagement, as measured by cohort graduation rate, between the four-day school week schedule and the five-day school week schedule?
4. Is there a difference in student attendance between the four-day school week schedule and the five-day school week schedule?
5. Is there a difference in student behavior between the four-day school week schedule and the five-day school week schedule?
6. Is there a difference in teacher recruitment and retention between the four-day school week schedule and the five-day school week schedule?
7. Is there a difference in the structure of daily schedules and yearly calendars between the four-day school week schedule and the five-day school week schedule?
8. Is there a difference in professional development and teacher planning between the four-day school week schedule and the five-day school week schedule?

For research Questions one through five, a census of the population was obtained. A census consists of all data related to the population for the research question. In this case, the population is every student and every school district in the state of Montana. Therefore, data were not analyzed with inferential statistics since the purpose of inferential statistics is to infer findings from a sample to a population. Since a census was obtained, there is no need to sample or infer. Because the statistics are not inferential, no probability (*p* value) was needed or calculated.

There are numerous approaches to the four-day school week schedule within Montana school districts. For the purposes of this study, any school reporting to the Montana Office of Public Instruction (OPI) as using a 4dsw schedule was recognized as following the 4dsw schedule, regardless of specific configuration.

This report is organized by research questions. Each research question is stated, followed by a brief discussion of the findings. Finally, a detailed description of the data analysis and outcomes follows.

RESEARCH QUESTIONS

Research Question 1 - *Is there a difference in cost effectiveness on instructional and non-instructional costs (instruction, maintenance, transportation, and food service) between schools operating on a four-day school week schedule and those operating on a five-day school week schedule?*

Question 1 Discussion

School districts that utilized the four-day school week (4dsw) schedule spend more on a per Average Number Belonging (ANB) basis than school districts utilizing the five-day school week (5dsw) schedule for the years 2006-2023 in the areas of Instruction, Maintenance, and Transportation. The only area of analysis where school districts utilizing the 4dsw schedule spent less per ANB was in Food Services. Specific analysis of per ANB expenditures before and after schools transitioned to utilizing the four-day school week (4dsw) schedule revealed that school districts spent less while on the five-day school week (5dsw) schedule, even when adjusted for inflation. To address the confounding variable of school size (large schools are more efficient to operate than small schools), large school districts (Class A and AA) were removed from the data set. This analysis also demonstrated that when comparing small schools (Class B and C) the per ANB expenditures in the school districts utilizing the 4dsw schedule exceeded those in school districts utilizing the 5dsw schedule. (See Figures 1.4, 1.5, 1.6, 1.7, & 1.8)

Trustee Financial Data

Data Collected

The school board from each school district is required to submit a Trustee Financial Summary (TFS) to the Montana Office of Public Instruction (OPI). These summaries contain all revenues and expenditures by category for the preceding fiscal year. For this research, data from all Montana school districts in the years 2006 through 2023 were analyzed. The analysis included 860,969 rows of data, with each row containing fourteen columns, totaling 12,053,566 individual cells of data.

The four major variables examined were:

- Instruction
  - Expenditures paid through the General Fund
  - Expenditures paid through all funds
- Maintenance
  - Expenditures paid through the General Fund
  - Expenditures paid through all funds
- Transportation
- Food Service

Limitations of Research Question One

- The analysis is reliant on school district clerks assigning expenditures to funding codes in an accurate and consistent manner.
- This analysis is completed on data provided by Montana school districts to the OPI.

Data Analysis

ANB (Average Number Belonging) data for each school were added to the Trustees Financial Summary (TFS) data.

ANB is calculated by each school's enrollment on the first Monday in October and February 1st each school year. This number is averaged, then multiplied by 187 and, finally, divided by 180. ANB = ((October Count + February Count) / 2) X 187 / 180.

Each school was then identified as operating under a four-day or five-day school week schedule (Noted as Calendar in Figure 1.1) for each year from 2006 to 2023. These data were provided by the Office of Public Instruction (OPI).

Figure 1.1

Example of How Data Were Organized for the Analysis for Each Legal Entity (School District)

Year	District	Calendar	ANB
2006	District A	5	229
2007	District A	5	221
2008	District A	5	211
2009	District A	5	199
2010	District A	5	198
2011	District A	5	189
2012	District A	5	184
2013	District A	5	182
2006	District B	5	319
2007	District B	5	307
2008	District B	5	312
2009	District B	5	305
2010	District B	4	294
2011	District B	4	289
2012	District B	4	288
2013	District B	4	324

The instructional costs, by school district, by year, were extracted from the TFS for the General Fund (Fund 01). Instructional costs were identified by function code 1XXX. The funding code assigned to all instructional costs by the school district clerk is 1XXX. All function codes in the 1,000s are instruction related. In the TFS these are combined under the function code 1XXX.

The same process was followed using instruction codes from All Funds within the school district budget. These additional funds to the General Fund (Fund 01) include: Tuition Fund

(Fund 13), Miscellaneous Program Fund (Fund 15), (including Title I Funds), Federal Impact Aid (Fund 26), Technology Fund (Fund 28).

Maintenance costs by school district, by year were extracted from the TFS for the General Fund (Fund 01). The function code for maintenance is 26XX. The same process was followed using maintenance function codes (26XX) from All Funds within the school district budget. These additional funds to the General Fund (Fund 01) include: Transportation Fund (Fund 10), Miscellaneous Program Fund (Fund 15), Federal Impact Aid (Fund 26), Technology Fund (Fund 28), and Building Reserve Fund (Fund 61).

Transportation costs by school district, by year were extracted from the TFS for the Transportation Fund (Fund 10). The function code for student transportation is 27XX.

Food service costs by school district, by year were extracted from the TFS for the Food Service Fund (Fund 12). This fund includes all expenditures for running a school district's food services.

The totals for each function by school district (Instruction: General Fund, Instruction: All Funds, Maintenance: General Fund, Maintenance: All Funds, Student Transportation, and Food Service) were then divided by each school district's total ANB for each year. These calculations generated a function cost per ANB by school district, by year (Figure 1.2).

Figure 1.2

Example of Cost per ANB in the Target Funds

				Instruction				Maintenenace				Transportation		Food Services	
Year	District	Calendar	ANB	GF	perANB	All	perANB	GF	perANB	All	perANB	10	perANB	12	perANB
2006	District A	5	229	$804,558.41	$3,513.36	$ 973,054.13	$4,249.14	$129,277.53	$564.53	$150,979.25	$ 659.30	$45,834.30	$200.15	$58,345.70	$169.61
2007	District A	5	221	$835,810.90	$3,781.95	$1,000,332.28	$4,526.39	$128,651.48	$582.13	$236,444.69	$1,069.89	$43,918.18	$198.72	$61,406.77	$185.52
2008	District A	5	211	$860,277.57	$4,077.14	$1,145,421.04	$5,428.54	$112,163.36	$531.58	$280,188.74	$1,327.91	$48,483.96	$229.78	$62,037.54	$192.66
2009	District A	5	199	$865,162.89	$4,347.55	$1,066,344.95	$5,358.52	$151,164.63	$759.62	$228,159.64	$1,146.53	$59,317.85	$298.08	$63,085.82	$201.55
2010	District A	5	198	$866,994.46	$4,378.76	$1,089,030.18	$5,500.15	$145,819.00	$736.46	$273,137.54	$1,379.48	$62,168.11	$313.98	$67,400.06	$216.72
2011	District A	5	189	$805,257.15	$4,260.62	$1,038,226.53	$5,493.26	$166,281.52	$879.80	$234,278.61	$1,239.57	$65,618.29	$347.19	$70,966.68	$235.77
2012	District A	5	184	$794,249.47	$4,316.57	$1,039,903.32	$5,651.65	$173,756.55	$944.33	$248,388.69	$1,349.94	$80,591.59	$438.00	$73,123.42	$249.57
2013	District A	5	182	$801,317.12	$4,402.84	$1,051,457.11	$5,777.24	$158,168.83	$869.06	$205,189.85	$1,127.42	$91,845.36	$504.64	$71,999.47	$250.87
2014	District A	5	177	$786,879.65	$4,445.65	$1,098,434.35	$6,205.84	$145,523.10	$822.16	$188,340.36	$1,064.07	$93,086.11	$525.91	$65,914.19	$238.82

Cost per ANB was averaged for each year the school districts utilized the 4dsw schedule and the 5dsw schedule. For each year, each fund, the average per ANB costs were calculated for the districts utilizing the 4dsw schedule and districts utilizing the 5dsw schedule. These analyses yielded average costs for students in school districts utilizing a 4dsw schedule and school districts utilizing a 5dsw schedule for each year (Figure 1.3). The difference was then calculated between the 4dsw and the 5dsw schedules.

Figure 1.3

Example of Cost per ANB

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
				Instruction				Maintenenace				Transportation		Food Services	
Year	District	Calendar	ANB	GF	perANB	All	perANB	GF	perANB	All	perANB	10	perANB	12	perANB
2006	District A	5	229	$804,558.41	$3,513.36	$ 973,054.13	$4,249.14	$129,277.53	$564.53	$150,979.25	$ 659.30	$45,834.30	$200.15	$58,345.70	$169.61
2007	District A	5	221	$835,810.90	$3,781.95	$1,000,332.28	$4,526.39	$128,651.48	$582.13	$236,444.69	$1,069.89	$43,918.18	$198.72	$61,406.77	$185.52
2008	District A	5	211	$860,277.57	$4,077.14	$1,145,421.04	$5,428.54	$112,163.36	$531.58	$280,188.74	$1,327.91	$48,483.96	$229.78	$62,037.54	$192.66
2009	District A	5	199	$865,162.89	$4,347.55	$1,066,344.95	$5,358.52	$151,164.63	$759.62	$228,159.64	$1,146.53	$59,317.85	$298.08	$63,085.82	$201.55
2010	District A	5	198	$866,994.46	$4,378.76	$1,089,030.18	$5,500.15	$145,819.00	$736.46	$273,137.54	$1,379.48	$62,168.11	$313.98	$67,400.06	$216.72
2011	District A	5	189	$805,257.15	$4,260.62	$1,038,226.53	$5,493.26	$166,281.52	$879.80	$234,278.61	$1,239.57	$65,618.29	$347.19	$70,966.68	$235.77
2012	District A	5	184	$794,249.47	$4,316.57	$1,039,903.32	$5,651.65	$173,756.55	$944.33	$248,388.69	$1,349.94	$80,591.59	$438.00	$73,123.42	$249.57
2013	District A	5	182	$801,317.12	$4,402.84	$1,051,457.11	$5,777.24	$158,168.83	$869.06	$205,189.85	$1,127.42	$91,845.36	$504.64	$71,999.47	$250.87
2014	District A	5	177	$786,879.65	$4,445.65	$1,098,434.35	$6,205.84	$145,523.10	$822.16	$188,340.36	$1,064.07	$93,086.11	$525.91	$65,914.19	$238.82

Note. Figure 1.3 is an example of the data analysis performed for cost per ANB. Column A = year, Column B = School District, Column C = 5dsw schedule or 4dsw schedule calendar, Column D = ANB, Column E = General Fund Instruction Expenditures, Column F = Cost per ANB in the General Fund Instruction, Column G = All Funds Instruction Expenditures, Column H = Cost per ANB for all Funds Instruction, Column I = General Fund Maintenance Expenditures, Column J = Cost per ANB in the General Fund Maintenance, Column K = All Funds Maintenance Expenditures, Column L = Cost per ANB for all Funds Maintenance, Column M = Transportation Fund Expenditures, Column N = Cost per ANB in the Transportation Fund, Column O = Food Services Fund Expenditures, Column P = Cost per ANB in the Food Services Fund.

Total expenditures per ANB were calculated for school districts utilizing a 4dsw schedule and school districts utilizing a 5dsw schedule (Appendix A). Figure 1.4 represents the average cost per ANB from 2006 to 2023 for school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule.

Figure 1.4

Analysis of Total Cost per ANB

A	B	C	D	E	F	G	H	I	J	K	L	M
	Instruction				Maintenance				Transportation		Food Services	
	GF	perANB	All	perANB	GF	perANB	All	perANB	10	perANB	12	perANB
5dsw		$4,908.92		$7,314.41		$1,231.13		$1,834.33		$ 672.88		$ 290.82
4dsw		$5,390.13		$8,246.75		$1,468.05		$2,176.12		$ 781.64		$ 218.01
		8.93%		11.31%		16.14%		15.71%		13.91%		-33.40%
		$ (481.20)		$ (932.33)		$ (236.93)		$ (341.80)		$ (108.76)		$ 72.81

Note. Column A = 5dsw or 4dsw, Column C = Cost per ANB in the General Fund Instruction, Column E = Cost per ANB for all Funds Instruction, Column G = Cost per ANB in General fund Maintenance, Column I = Cost per ANB for all Funds Maintenance, Column K = Cost per ANB in the Transportation Fund, Column M = Cost per ANB in the Food Services Fund.

Total Cost per ANB

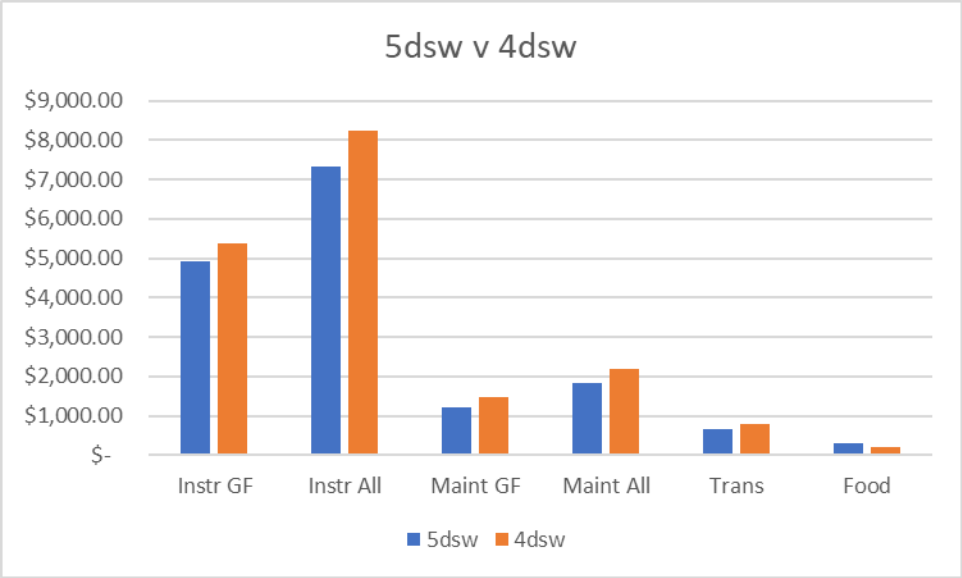
The cost per student for Instruction in the General Fund was 8.93% (481.20) higher for school districts utilizing the 4dsw schedule ($5,390.13) than school districts utilizing the 5dsw schedule ($4,908.92). The cost per student for Instruction in All Funds was 11.31% ($932.33) higher for school districts utilizing the 4dsw schedule ($8,246.75) than school districts utilizing

the 5dsw schedule ($7,314.41). The cost per student for Maintenance in the General fund was 16.14% ($236.93) higher for school districts utilizing the 4dsw schedule ($1,468.05) than school districts utilizing the 5dsw schedule ($1,231.13). The cost per student for Maintenance in All Funds was also 15.71% ($341.80) higher for school districts utilizing the 4dsw schedule ($2,176.12) than school districts utilizing the 5dsw schedule ($1,834.33). The cost per student for Transportation in school districts utilizing the 4dsw schedule was 13.91% ($108.76) higher for school districts utilizing the 4dsw schedule ($781.64) than school districts utilizing the 5dsw schedule ($672.88). The cost per student for Food Services in school districts utilizing the 4dsw schedule was 33.40% ($72.81) lower for school districts utilizing the 4dsw schedule ($218.01) than school districts utilizing the 5dsw schedule ($290.82).

School districts utilizing the 4dsw schedule spent more per ANB in all six fund categories, except Food Services (See Figure 1.5). In OPI's (2011) Four-Day School Week Report in Montana Public Schools, one of the reasons identified for transitioning to the 4dsw schedule was cost savings. Based on this comprehensive analysis of these Fund Categories expenditures from 2006-2023, the anticipated cost savings were not realized and, indeed, expenditures were higher for students in school districts utilizing the 4dsw schedule ($1,268.07 per ANB).

Figure 1.5

Comparison of School Districts Utilizing the 4dsw Schedule and School Districts Utilizing the 5dsw Schedule



A confounding variable when analyzing the difference between school districts utilizing a 4dsw schedule and school districts utilizing a 5dsw schedule data is school district size. Due to the concept of economy of scale, larger school districts should cost less per student to operate (Lovenheim & Turner, 2018). To address this variable, data from large schools were removed from the data set and a separate analysis was conducted comparing small school districts utilizing the 4dsw schedule with small school districts utilizing the 5dsw schedule. A similar comparison was not performed on large school districts because only one school district utilizing a 4dsw

schedule met the criteria for a large school district. Large was determined by the largest two Montana High School Association (MHSA) classifications (Class A & AA). These classifications delineate school sizes for co-curricular competition. This is the most common classification method used in Montana.

Small school districts utilizing a 4dsw schedule spent $258.92 more per ANB than small school districts utilizing a 5dsw schedule for Instruction in the General Fund. In Instruction, for All Funds in small school districts utilizing a 4dsw schedule spent $537.54 more per ANB than small school districts utilizing a 5dsw schedule. In General Fund Maintenance, small school districts utilizing a 4dsw schedule spent $134.50 more than small schools utilizing a 5dsw schedule. In Maintenance from All Funds, small school districts utilizing a 4dsw schedule spent $164.08 more than small school districts utilizing a 5dsw schedule. In Student Transportation, small school districts utilizing a 4dsw schedule spent $49.03 more than small school districts utilizing a 5dsw schedule. In the Food Service Fund, small school districts utilizing a 4dsw schedule spent $30.91 less than small school districts utilizing a 5dsw schedule. Food services is the only funding area analyzed where cost savings were realized in school districts utilizing the 4dsw schedule (Figure 1.6 & 1.7).

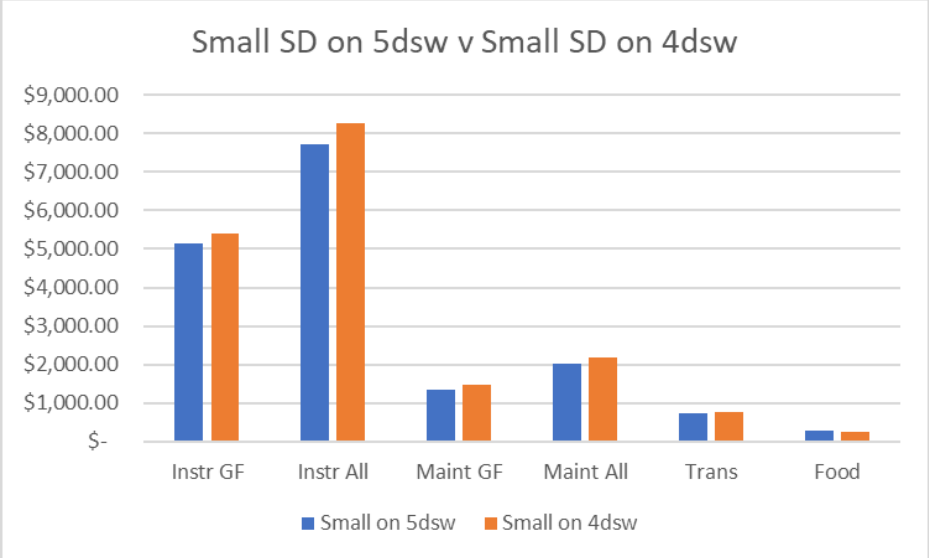
Figure 1.6

Small School Districts Utilizing the 4dsw schedule and 5dsw Schedule

	Instruction				Maintenance				Transportation		Food Services	
	GF	perANB	All	perANB	GF	perANB	All	perANB	10	perANB	12	perANB
5dsw		$5,131.20		$7,709.21		$1,333.55		$2,012.04		$ 732.62		$ 295.36
4dsw		$5,390.13		$8,246.75		$1,468.05		$2,176.12		$ 781.64		$ 264.45
		4.80%		6.52%		9.16%		7.54%		6.27%		-11.69%
		$ (258.92)		$ (537.54)		$ (134.50)		$ (164.08)		$ (49.03)		$ 30.91

Figure 1.7

Graph of Small School Districts Utilizing the 5dsw Schedule Versus Small Districts Utilizing the 4dsw Schedule



Note. Small was determined by the smallest two Montana High School Association (MHSA) classifications (Class C & B).

Before and After: Expenditures

For each school district that transitioned to utilizing the 4dsw schedule, the per student expenditures were calculated for two years prior to the transition and two years after the transition. Two years before and after were used to allow data from the initial school districts that transitioned to a 4dsw schedule to be included. The categories that were studied were Instruction (General Fund and All Funds), Maintenance (General Funds and All Funds), Transportation, and Food Services (Figure 1.8).

In the General Fund, school districts utilizing the 5dsw schedule spent an average of $5,101.59 per ANB on instruction for the two years prior to the transition to the 4dsw schedule. For each of the two years following the transition, these same schools experienced districts spent an average of $5,455.85 per ANB. This is a difference of $354.26 per ANB, resulting in a 6.94% difference. In the years included in this study, the four-year average inflation rate was 6.50%.

In All Funds, school districts utilizing the 5dsw schedule spent an average of $7,343.19 per ANB on instruction for the two years prior to the transition to the 4dsw schedule. For each of the two years following the transition, these same schools experienced 8.33% difference. In the years included in this study, the four-year average inflation rate was 6.50%.

In the General Fund, school districts utilizing the 5dsw schedule spent an average of $1,395.49 per ANB on maintenance for the two years prior to the transition to the 4dsw schedule. For each of the two years following the transition, these same school districts spent an average of $1,532.25 per ANB. This is a difference of $136.76 per ANB, resulting in a 9.80% difference. In the years included in this study, the four-year average inflation rate was 6.50%.

In the All Funds, school districts utilizing the 5dsw schedule spent an average of $2,104.13 per ANB on maintenance for the two years prior to the transition to the 4dsw schedule. For each of the two years following the transition, these same school districts spent an average of $2,281.45 per ANB. This is a difference of $177.31 per ANB, resulting in a 8.43% difference. In the years included in this study, the four-year average inflation rate was 6.50%.

In the Transportation Fund, school districts utilizing the 5dsw schedule spent an average of $936.56 per ANB on student transportation for the two years prior to the transition to the 4dsw schedule. For each of the two years following the transition, these same school districts spent an average of $958.92 per ANB. This is a difference of $22.36 per ANB, resulting in a 2.39% difference. In the years included in this study, the four-year average inflation rate was 6.50%.

In the Food Service Fund, school districts utilizing the 5dsw spent an average of $386.26 per ANB on meals for the two years prior to the transition to the 4dsw schedule. For each of the two years following the transition, these same school districts spent an average of $437.58 per ANB. This is a difference of $50.32 per ANB, resulting in a 12.99% difference. In the years included in this study, the four-year average inflation rate was 6.50%.

Figure 1.8

2006-2023 Before and After Expenditures

A	B	C	D	E	F	G	H	I	J	K	L	M
	Instruction				Maintenance				Transportation		Food Services	
	GF	perANB	All	perANB	GF	perANB	All	perANB	10	perANB	12	perANB
5dsw		$5,101.59		$7,343.19		$1,395.49		$2,104.13		$ 936.56		$ 386.26
4dsw		$5,455.85		$7,955.05		$1,532.25		$2,281.45		$ 958.92		$ 437.58
		6.94%		8.33%		9.80%		8.43%		2.39%		12.99%
		$ (354.26)		$ (611.86)		$ (136.76)		$ (177.31)		$ (22.36)		$ (50.32)

Note. Two years before transitioning to the 4dsw and two years after transitioning to the 4dsw Column A = 5dsw or 4dsw, Column C = Cost per ANB in the General Fund Instruction, Column E = Cost per ANB for all Funds Instruction, Column G = Cost per ANB in General fund Maintenance, Column I = Cost per ANB for all Funds Maintenance, Column K = Cost per ANB in the Transportation Fund, Column M = Cost per ANB in the Food Services Fund.

For school districts who have transitioned to the 4dsw schedule during the period from 2006-2023, there were higher expenditures even when adjusted for inflation on a per ANB basis in Instruction, Maintenance, and Food Services. Whereas, in Transportation, cost per ANB for school districts utilizing the 4dsw schedule was found to be less when adjusted for inflation. In OPI's (2011) Four-Day School Week Report in Montana Public Schools, one of the reasons identified for transitioning to the 4dsw schedule was cost savings. Based on this comprehensive analysis of expenditures before schools transitioned to utilizing the 4dsw schedule and after schools transitioned to utilizing the 4dsw schedule, from 2006-2023 the anticipated cost savings were realized only in Transportation in some districts when data was adjusted for inflation.

Examining the data over the years of 2006-2023, the total difference in Instruction, Maintenance, Transportation, and Food Services between school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule for the two years before the school districts transitioned and the two years after the school districts transitioned was $861.85 per ANB higher than those school districts utilizing the 4dsw schedule. This represented an 8.00% difference, which exceeds the average inflation rate of 6.50% by 1.50 %, resulting in an additional cost of $198.89 per ANB. Based on this data, schools that transition to a 4dsw schedule could expect to spend an additional $39,778.00 for a school district with 200 ANB (Class C); for a school district with 500 ANB (Class B) the extra cost would be $99,445.00; for a school district with 1,500 ANB (Class A) the extra cost would be $298,335.00.

Research Question 2 – *Is there a difference in academic achievement by grade-level and sub-groups between schools operating on a four-day school week schedule and those operating on a five-day school week schedule?*

Question 2 Discussion

For the years 2008-2023, students in school districts utilizing the 4dsw schedule demonstrated a lower percentage of proficiency in the state-wide assessments than school districts utilizing the 5dsw schedule. This analysis included the state-wide MontCas (2008-2013) and

SBAC (2016-2023, excluding 2020) summative assessments in the areas of Reading and Math for grades 3-8. Additionally, ACT scores were examined for the years (2016-2023, excluding 2020) for grade 11. The analysis of student achievement by grade level demonstrated that students in school districts utilizing the 4dsw schedule had a lower percentage of proficiency in grades 3-8.

Reading and Math Achievement – MontCas

Examining Reading and Math proficiency percentage data revealed that students in school districts utilizing the 5dsw schedule had a higher rate of proficiency in every grade in both the MontCas and SBAC assessments than students in school districts utilizing the 4dsw schedule.

Combined MontCas and SBAC Reading assessment scores for the years 2008 to 2023 showed that students in school districts utilizing the 5dsw schedule had a higher rate of proficiency, in every grade, than students in school districts utilizing the 4dsw schedule. By grade level, the disparity in the rate of proficiency ranged from 14.03% (801 students) to 15.85% (861 students). This proficiency disparity in each grade was evident in both the MontCas and SBAC assessments. (See Figures 2.1, 2.2, & 2.3)

Combined MontCas and SBAC Math assessment scores for the years 2008 to 2023 showed that students in school districts utilizing the 5dsw schedule had a higher rate of proficiency, in every grade, than students in school districts utilizing the 4dsw schedule. By grade level, the disparity in the rate of proficiency ranged from 11.65% (648 students) to 16.21% (939 students). This proficiency disparity in each grade was evident in both the MontCas and SBAC assessments. (See Figures 2.8, 2.9, & 2.10)

Reading and Math by Year and Grade

For each year 2008 to 2023, students in school districts utilizing the 5dsw schedule had a higher rate of proficiency in Reading than students in school districts utilizing the 4dsw schedule (range of disparity: 1.21% - 8.86%) (See Appendix B). Further analyses by grade level showed that out of the 78 possible combinations of year and grade level there were five instances where students in districts utilizing the 4dsw schedule had a higher rate of Reading proficiency than those in districts utilizing the 5dsw schedule (range of disparity: 0.14% - 5.33%). In the 73 combinations in which districts utilizing the 5dsw schedule had a higher rate of Reading proficiency than those in districts utilizing the 4dsw schedule, the range of disparity was 0.12% - 12.36%. (See Figure 2.5)

For each year 2008 to 2023, students in school districts utilizing the 5dsw schedule had a higher rate of proficiency in Math than students in school districts utilizing the 4dsw schedule (range of disparity: 2.04% - 14.03%) (See Appendix B). Further analyses by grade level showed that out of the 78 possible combinations of year and grade level, there were nine instances where students in districts utilizing the 4dsw schedule had a higher rate of Math proficiency than those in districts utilizing the 5dsw schedule (range of disparity: 0.08% - 5.13%). In the 69 combinations in which districts utilizing the 5dsw schedule had a higher rate of Reading proficiency than those in districts utilizing the 4dsw schedule, the range of disparity was 1.67% - 21.62%. (See Figure 2.12)

Before and After: Student Achievement Analysis

Data were analyzed by comparing student Reading and Math achievement two years before and two years after transitioning from the 5dsw schedule to the 4dsw schedule. This analysis was only relevant for a limited number of districts because, (a) no achievement data were provided for the years before 2008, (b) no achievement data were collected for 2014 and 2015, (c) no achievement data were collected in 2020, and (d) the assessment instrument changed between MontCas to SBAC in 2013 and 2016. Therefore, no data analysis was provided comparing student Reading and Math achievement two years before and two years after transitioning from the 5dsw schedule to the 4dsw schedule.

Basic/Novice Proficiencies Compared to Advanced in Cohort School Districts Utilizing the 4dsw Schedule

The percentage of students achieving at the Basic/Novice Level was compared to Advanced Level in school districts utilizing the 4dsw schedule by cohort. School districts were identified in cohorts based on the year they started utilizing the 4dsw schedule. Their achievement was tracked as a group from the year they entered the 4dsw schedule until 2023. School districts who were not continuously utilizing the 4dsw schedule for the duration of the cohort were removed from the 4dsw data during the years they utilized the 5dsw schedule. The general trend, as the cohort progressed, was for the percentage of students scoring basic/novice to increase and the percentage of students scoring advanced to decrease in school districts utilizing the 4dsw schedule. (See Figures 2.7 & 2.15)

Students Receiving Special Education Services

Data were organized to represent student achievement scores for students receiving Special Education services attending school districts utilizing the 5dsw schedule and students attending school districts utilizing the 4dsw schedule. Because of the large discrepancy in student numbers between students attending school districts utilizing the 5dsw and 4dsw schedules, caution must be used in interpreting these findings.

The data for students receiving Special Education services were analyzed by subject areas (Reading and Math) by MontCas, SBAC, and combined MontCas and SBAC achievement (Appendix F). For Reading, students in school districts utilizing the 5dsw schedule showed higher percentages of proficiency than students attending school districts utilizing the 4dsw schedule in five out of six grades as per MontCas scores, six out of six grades per SBAC scores, and six out of six grades per combined MontCas and SBAC scores. Examining student achievement in Math, students in school districts utilizing the 5dsw schedule showed higher percentages of proficiency than students attending school districts utilizing the 4dsw schedule in five out of six grades as per MontCas and SBAC scores, and six out of six grades per combined MontCas and SBAC Math scores.

Reading and Math Cohorts

Data were organized by cohorts. A cohort is a group of school districts who transitioned to utilizing the 4dsw schedule in the same year. There were 14 individual cohorts beginning 2008

and ending in 2022. In the years 2014-2015, no data were collected because of the transition from the MontCas to the SBAC assessment. In 2020, student achievement was not assessed due to the COVID-19 pandemic. There were no school districts starting the 4dsw schedule in 2014. In the 2018 school year, there was only one school district with too few students to report due to FERPA requirements. In the 2009 cohort, one of the school districts returned to the 5dsw schedule in 2017. The remaining school districts in this cohort did not have an adequate number of students to report in the years following 2017, due to FERPA requirements.

Five cohorts (cohort start years 2008, 2010, 2011, & 2012), comprised of 34 school districts which utilized the MontCas assessment, experienced a decrease in student Reading achievement. Only the 2009 cohort, comprised of six districts, demonstrated a Reading achievement gain. Nine cohorts (cohort start years 2010, 2012, 2013, 2015, 2016, 2019, 2020, 2021, & 2022), comprised of 93 school districts which utilized the SBAC assessment, experienced a decrease in student Reading achievement. Only the 2011 and 2017 cohorts, comprised of eight school districts, demonstrated Reading achievement gains. (See Figure 2.6)

Four cohorts (cohort start years 2008, 2011, 2012, & 2013), comprised of 47 school districts which utilized the MontCas assessment, experienced a decrease in student Math achievement. Only 2 cohorts (2009 & 2010), comprised of 19 districts, demonstrated a Math achievement gain. Eight cohorts (cohort start years 2008, 2010, 2015, 2016, 2017, 2019, 2020, & 2021), comprised of 69 school districts which utilized the SBAC assessment, experienced a decrease in student Math achievement. The 2011, 2012, 2013, & 2022 cohorts, comprised of 58 school districts, demonstrated Math achievement gains. (See Figure 2.13)

ACT

The ACT assessment was administered to all eleventh-grade students, beginning in 2013. The ACT score consists of five areas: (a) English, (b) Math, (c) Reading, (d) Science, and (e) Composite. The Composite score is the rounded average of English, Math, Reading, and Science. This calculation is performed by the ACT testing service.

ACT scores for all students for the years 2013-2023 were analyzed by calculating the (a) overall average ACT scores for all students in school districts utilizing the 5dsw schedule and school districts utilizing the 4dsw schedule in the areas of English, Math, Reading, Science, and Composite scores, (b) differences in the average ACT scores by year between school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule, and (c) the relationship between the length of time in school districts utilizing the 4dsw schedule and the ACT scores.

Comparing ACT data for 11th grade students, these students exhibited lower ACT scores the longer they had been in school districts that utilized the 4dsw schedule. This disparity between students who were in the first year of the 4dsw and students who were in the twelfth year of the 4dsw was 2.3 points on the Composite ACT score, with the largest disparity found in Reading, at 2.8 points.

Data Collected

Individual student achievement data from 2008 to 2023 for every student in every school district in the State of Montana was provided by OPI. These data were contained in three separate files: The first file ranging from 2008 to 2013, the second from 2016 to 2021, the final file ranging from 2022 to 2023. The first file included MontCas assessment scores for all students. The remaining files included SBAC assessment scores for all students in grades 3-8 and ACT scores for grade 11 students. These data included 79,568,581 individual cells of data. The OPI did not collect data for the years 2014, 2015, and 2020.

Limitations for Research Question Two

- Two different assessments were utilized during the years analyzed in this research (MontCas & SBAC).
- Assessments were not taken by students during 2020 due to the COVID-19 pandemic.
- ACT scores were not collected as a state-wide assessment prior to 2016.

Variables

The variables in research question two were the school week schedule used in each school district (4dsw & 5dsw) and student achievement (MontCas, SBAC & ACT).

Data Analysis

MontCas and SBAC – Data analysis began by creating a chart with every school district in the state and each year in the study. A block was then created for each grade level, starting with third grade. For each grade level and each school district and each year, the number for novice, nearing proficient, proficient, and advanced were counted. The number of students for each grade level, for each school district, for each year was totaled. Each school district, for each year, was identified as being in a school district that utilized a 5dsw schedule or school districts that utilized a 4dsw schedule. Then, for each grade level the number of students in school districts that utilized the 4dsw schedule who were novice were totaled, the number nearing proficiency, the number proficient, and the number advanced were totaled. The same process was then followed for the school districts utilizing the 5dsw schedule. The total number of students who were proficient and advanced were then added together and the sum was divided by the total number of students in each category, yielding the percentage of students who were proficient or advanced in school districts utilizing the 4dsw schedule and students in school districts utilizing the 5dsw schedule in each grade level.

Cohorts – Data were organized by cohorts. A cohort is a group of school districts who began utilizing the 4dsw schedule in the same year. OPI provided a list of school districts who were utilizing the 4dsw schedule for each year. A chart was then developed to identify cohort groups of school districts to gauge their combined achievement over the period of time they were utilizing the 4dsw schedule. The percentage of students who were proficient or advanced was then calculated for each year and for each cohort.

ACT Data – Assessment data at the High School level is limited to the ACT Assessment taken in the eleventh grade. For each high school, and each year, the average English, Math, Reading, Science, and Composite ACT score was calculated using a data extraction formula. The Composite ACT score is a unique score calculated by ACT and not a sum or average of the subject scores. The Composite score was calculated by ACT by adding up the English, Math, Reading, and Science scores and dividing them by 4. These average scores were compared for students in school districts utilizing the 4dsw schedule with the students in school districts utilizing the 5dsw. These data were validated by extracting individual Composite scores for each student in ten high schools. The mean was then calculated and compared with the mean in the formula driven approach.

It was determined for each school district and for each year how many years students experienced a 4dsw schedule. To explore the relationship between length of time in a 4dsw schedule and student achievement, a correlation was run between the number of years in a 4dsw schedule and student's ACT scores.

Results

Reading Achievement

In the third grade, 48.10% of the students in school districts utilizing the 4dsw schedule were proficient or advanced and 63.21% of students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 15.11% when comparing third grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule.

In the fourth grade, 47.35% of the students in school districts utilizing the 4dsw schedule were proficient or advanced and 62.58% of students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 15.23% when comparing fourth grade student achievement in school districts utilizing the 4dsw and 5dsw schedule.

In the fifth grade, 49.96% of the students in school districts utilizing the 4dsw schedule were proficient or advanced and 65.29% of students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 15.33% when comparing fifth grade student achievement in school districts utilizing the 4dsw and 5dsw schedule.

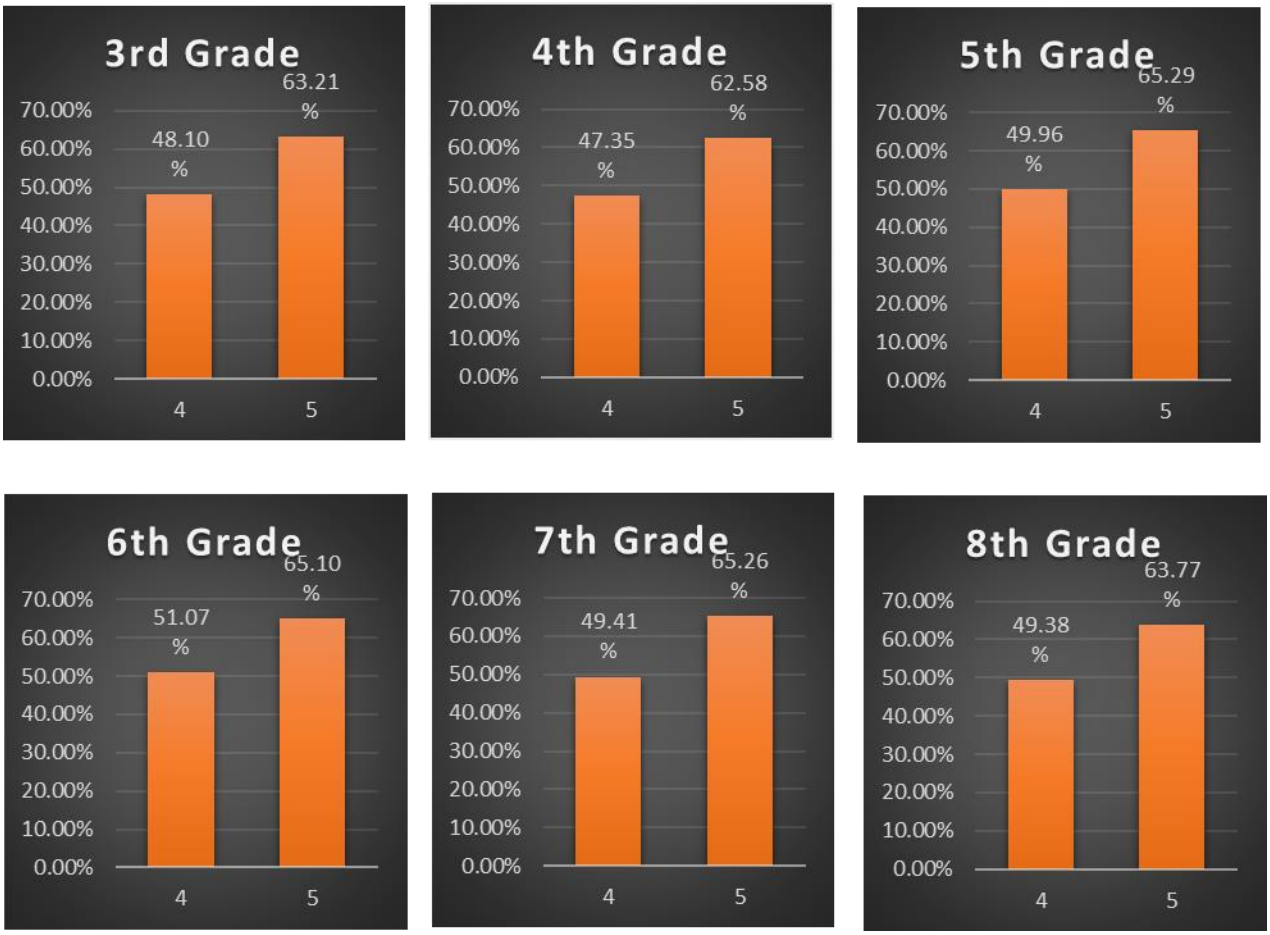
In the sixth grade, 51.07% of the students in school districts utilizing the 4dsw schedule were proficient or advanced and 65.10% of students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 14.03% when comparing sixth grade student achievement in school districts utilizing the 4dsw and 5dsw schedule.

In the seventh grade, 49.41% of the students in school districts utilizing the 4dsw schedule were proficient or advanced and 65.26% of students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 15.85% when comparing seventh grade student achievement in the school districts utilizing the 4dsw and 5dsw schedule.

In the eighth grade, 49.38% of the students in school districts utilizing the 4dsw schedule were proficient or advanced and 63.77% of students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 14.39% when comparing eighth grade student achievement in the school districts utilizing the 4dsw and 5dsw schedule.

Figure 2.1

Combined MontCas and SBAC Achievement Data: Percentage Proficient and Advanced in Reading by Grade Level Comparing the School Districts Utilizing the 4dsw Schedule and School Districts Utilizing the 5dsw Schedule



The previous section combined both assessments, MontCas and SBAC. This section will address MontCas and SBAC data separately.

MontCas Reading Achievement

In the third grade, 78.34% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 83.57% of third grade students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 5.23% when comparing third grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In the fourth grade, 76.81% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 81.23% of fourth grade students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 4.42% when comparing fourth grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In the fifth grade, 80.34% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 84.32% of fifth grade students attending school districts utilizing the 5dsw were proficient or advanced. This is a difference of 3.98% when comparing fifth grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In the sixth grade, 80.56% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 85.03% of sixth grade students attending school districts utilizing the 5dsw were proficient or advanced. This is a difference of 4.47% when comparing sixth grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In the seventh grade, 77.50% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 83.62% of seventh grade students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 6.12% when comparing seventh grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In the eighth grade, 76.55% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 82.37% of eighth grade students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 5.82% when comparing eighth grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

Figure 2.2

MontCas Achievement Data: Percentage Proficient and Advanced in Reading by Grade Level Comparing School Districts Utilizing the 4dsw Schedule and School districts Utilizing the 5dsw Schedule

SBAC Reading Achievement

In the third grade, 39.80% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 45.51% of third grade students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 5.71% when comparing third grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

In the fourth grade, 39.35% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 46.59% of fourth grade students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 7.24% when comparing fourth grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

In the fifth grade, 41.66% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 48.92% of fifth grade students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 7.26% when comparing fifth grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

In the sixth grade, 43.40% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 47.71% of sixth grade students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 4.31% when comparing sixth grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

In the seventh grade, 41.61% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 49.04% of seventh grade students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 7.43% when comparing seventh grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule.

In the eighth grade, 41.92% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 46.97% of eighth grade students attending school districts utilizing the 5dsw were proficient or advanced. This is a difference of 5.05% when comparing eighth grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

Figure 2.3

SBAC Achievement Data: Percentage Proficient and Advanced in Reading by Grade Level Comparing School Districts Utilizing the 4dsw Schedule and School districts Utilizing the 5dsw Schedule

Reading Achievement by Year (See Figure 2.4)

In 2008, 79.63% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 80.85% of the students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 1.22% when comparing 2008 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In 2009, 77.51% of the students attending school districts using the 4dsw schedule were proficient or advanced and 81.95% of the students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 4.44% when comparing 2009 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In 2010, 81.30% of the students attending school districts using the 4dsw schedule were proficient or advanced and 83.70% of the students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 2.40% when comparing 2010 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In 2011, 81.01% of the students attending school districts using the 4dsw schedule were proficient or advanced and 84.27% of the students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 3.26% when comparing 2011 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In 2012, 77.85% of the students attending school districts using the 4dsw schedule were proficient or advanced and 86.05% of the students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 8.20% when comparing 2012 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In 2013, 76.79% of the students attending school districts using the 4dsw schedule were proficient or advanced and 83.35% of the students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 6.56% when comparing 2013 student achievement in the 4dsw and 5dsw using the MontCas assessment.

In 2016, 43.00% of the students attending school districts using the 4dsw schedule were proficient or advanced and 49.31% of the students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 6.31% when comparing 2016 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

In 2017, 39.38% of the students attending school districts using the 4dsw schedule were proficient or advanced and 48.24% of the students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 8.86% when comparing 2017 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

In 2018, 41.00% of the students attending school districts using the 4dsw schedule were proficient or advanced and 49.48% of the students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 8.48% when comparing 2018 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

In 2019, 41.62% of the students attending school districts using the 4dsw schedule were proficient or advanced and 49.19% of the students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 7.57% when comparing 2019 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

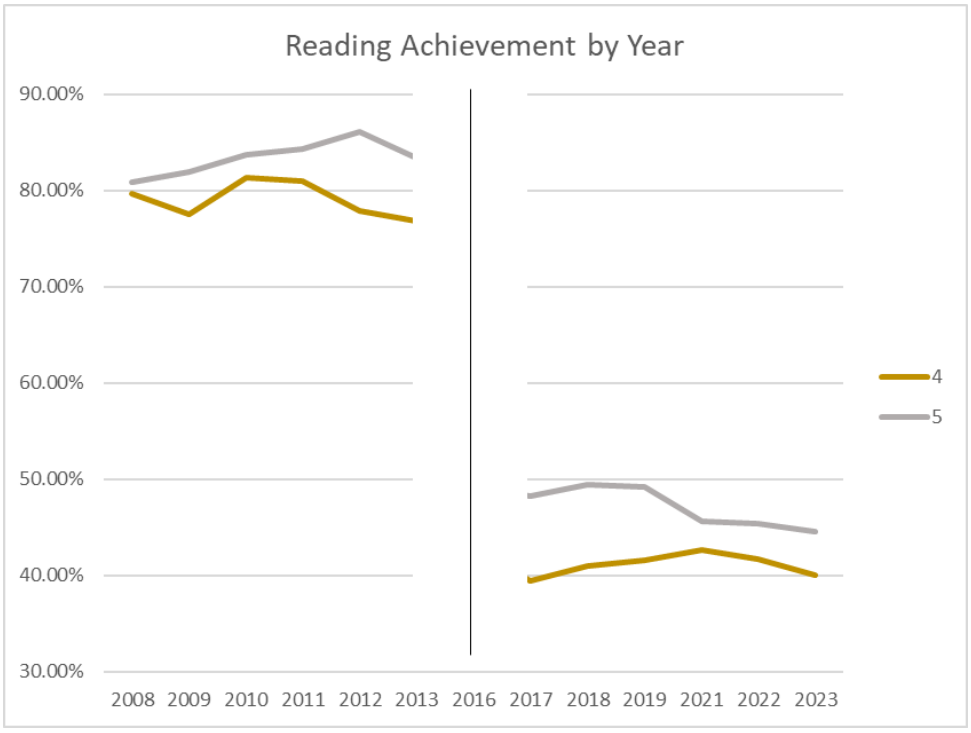
In 2021, 42.58% of the students attending school districts using the 4dsw schedule were proficient or advanced and 45.63% of the students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 3.05% when comparing 2021 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

In 2022, 41.62% of the students attending school districts using the 4dsw schedule were proficient or advanced and 45.43% of the students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 3.81% when comparing 2022 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

In 2023, 39.96% of the students attending school districts using the 4dsw schedule were proficient or advanced and 44.51% of the students attending school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 4.55% when comparing 2023 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

Figure 2.4

Reading Achievement by Year



Note. The gold line denotes the 4dsw and the grey line denotes the 5dsw. In the years 2014-2015, no data were collected because of the transition from the MontCas to the SBAC assessment. In 2020, student achievement was not assessed due to the COVID-19 pandemic.

Reading Achievement by Year and Grade (Figure 2.5)

Student Reading achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule was compared based on year and grade. Out of seventy-eight combinations of year and grade, the performance in the 4dsw exceeded that of the 5dsw in five instances. Figure 2.5 was developed to analyze these differences. The red highlighted cells indicate instances where the school districts utilizing the 4dsw schedule underperformed the school districts utilizing the 5dsw schedule in Reading.

Figure 2.5

Reading Achievement by Year and Grade

		3rd Grade					4th Grade					5th Grade	
2008	4	78.46%	-4.36%		2008	4	78.18%	0.56%		2008	4	77.61%	-2.74%
2008	5	82.82%			2008	5	77.63%			2008	5	80.35%	
2009	4	79.76%	-3.65%		2009	4	70.53%	-9.74%		2009	4	82.05%	-0.81%
2009	5	83.41%			2009	5	80.27%			2009	5	82.86%	
2010	4	83.87%	0.14%		2010	4	76.19%	-5.90%		2010	4	84.43%	-0.89%
2010	5	83.73%			2010	5	82.09%			2010	5	85.32%	
2011	4	81.48%	-2.71%		2011	4	82.82%	1.08%		2011	4	85.09%	-0.88%
2011	5	84.19%			2011	5	81.75%			2011	5	85.98%	
2012	4	78.60%	-4.55%		2012	4	72.49%	-11.57%		2012	4	79.64%	-7.22%
2012	5	83.14%			2012	5	84.06%			2012	5	86.86%	
2013	4	75.25%	-8.87%		2013	4	78.81%	-2.78%		2013	4	77.91%	-6.63%
2013	5	84.12%			2013	5	81.58%			2013	5	84.54%	
2016	4	38.86%	-8.55%		2016	4	39.04%	-9.22%		2016	4	46.04%	-1.98%
2016	5	47.41%			2016	5	48.26%			2016	5	48.02%	
2017	4	40.61%	-5.30%		2017	4	37.59%	-8.46%		2017	4	37.84%	-12.36%
2017	5	45.90%			2017	5	46.04%			2017	5	50.21%	
2018	4	41.48%	-6.43%		2018	4	37.00%	-11.16%		2018	4	42.33%	-9.97%
2018	5	47.90%			2018	5	48.16%			2018	5	52.31%	
2019	4	41.77%	-5.57%		2019	4	40.97%	-5.38%		2019	4	42.99%	-9.81%
2019	5	47.34%			2019	5	46.36%			2019	5	52.80%	
2021	4	39.32%	-3.77%		2021	4	41.73%	-3.74%		2021	4	41.36%	-5.25%
2021	5	43.09%			2021	5	45.47%			2021	5	46.61%	
2022	4	39.24%	-4.32%		2022	4	38.11%	-7.49%		2022	4	42.77%	-4.02%
2022	5	43.56%			2022	5	45.60%			2022	5	46.79%	
2023	4	38.80%	-3.99%		2023	4	40.29%	-5.68%		2023	4	39.36%	-5.43%
2023	5	42.79%			2023	5	45.97%			2023	5	44.79%	
		6th Grade					7th Grade					8th Grade	
2008	4	81.54%	-0.99%		2008	4	87.04%	5.33%		2008	4	76.62%	-3.43%
2008	5	82.53%			2008	5	81.71%			2008	5	80.06%	
2009	4	73.81%	-9.65%		2009	4	84.62%	2.64%		2009	4	75.95%	-3.84%
2009	5	83.46%			2009	5	81.97%			2009	5	79.79%	
2010	4	83.10%	-2.08%		2010	4	79.02%	-3.78%		2010	4	80.65%	-2.42%
2010	5	85.18%			2010	5	82.80%			2010	5	83.06%	
2011	4	84.38%	-1.87%		2011	4	72.61%	-11.91%		2011	4	79.31%	-3.67%
2011	5	86.25%			2011	5	84.52%			2011	5	82.99%	
2012	4	80.41%	-7.57%		2012	4	80.88%	-7.44%		2012	4	74.90%	-11.14%
2012	5	87.98%			2012	5	88.32%			2012	5	86.04%	
2013	4	79.59%	-5.33%		2013	4	73.78%	-8.66%		2013	4	75.37%	-7.09%
2013	5	84.91%			2013	5	82.44%			2013	5	82.45%	
2016	4	46.07%	-4.82%		2016	4	41.94%	-9.61%		2016	4	46.67%	-3.34%
2016	5	50.89%			2016	5	51.55%			2016	5	50.00%	
2017	4	43.80%	-3.83%		2017	4	40.54%	-11.87%		2017	4	36.19%	-11.27%
2017	5	47.64%			2017	5	52.41%			2017	5	47.47%	
2018	4	40.38%	-9.67%		2018	4	43.32%	-7.11%		2018	4	41.68%	-6.34%
2018	5	50.05%			2018	5	50.43%			2018	5	48.02%	
2019	4	45.57%	-4.64%		2019	4	40.31%	-10.99%		2019	4	37.34%	-9.46%
2019	5	50.20%			2019	5	51.30%			2019	5	46.81%	
2021	4	44.98%	-0.12%		2021	4	44.07%	-2.16%		2021	4	43.86%	-3.39%
2021	5	45.10%			2021	5	46.23%			2021	5	47.25%	
2022	4	42.84%	-2.16%		2022	4	44.99%	-1.84%		2022	4	42.05%	-2.69%
2022	5	44.99%			2022	5	46.83%			2022	5	44.74%	
2023	4	41.26%	-3.33%		2023	4	36.78%	-7.43%		2023	4	43.02%	-1.68%
2023	5	44.60%			2023	5	44.21%			2023	5	44.70%	

Note. The red highlighted cells indicate instances where school districts utilizing the 4dsw schedule underperformed the school districts utilizing the 5dsw schedule in Reading.

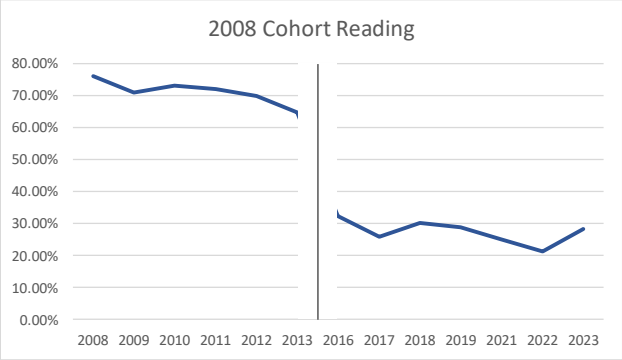
4dsw Cohort School District Reading Achievement

School districts were identified in cohorts based on the year they started utilizing the 4dsw schedule. Their achievement was tracked as a group from the year they entered the 4dsw schedule until 2023. School districts who did not continuously utilize the 4dsw schedule for the duration of the cohort were removed from the 4dsw data during the years they were utilizing the 5dsw schedule. Figure 2.6 represents fourteen cohorts from the years 2008 to 2022. The first cohort began in 2008.

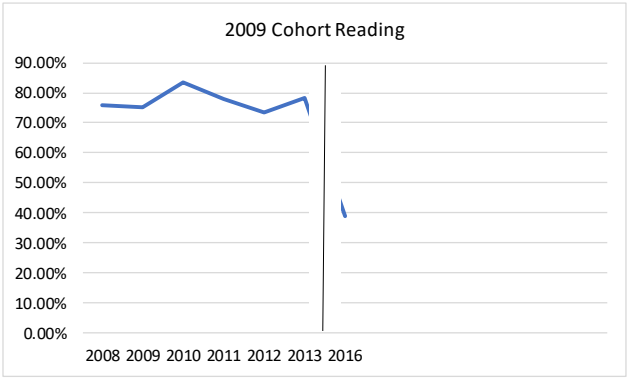
Figure 2.6

MontCas and SBAC Reading Achievement by Cohort Start Year

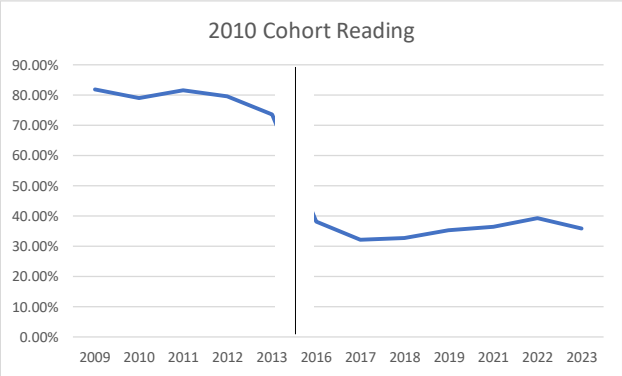
2008 Cohort	2008	2009	2010	2011	2012	2013	2016	2017	2018	2019	2021	2022	2023
7 Districts	76.10%	70.95%	73.08%	72.00%	69.79%	64.85%	32.37%	25.97%	30.12%	28.73%	25.00%	21.35%	28.26%



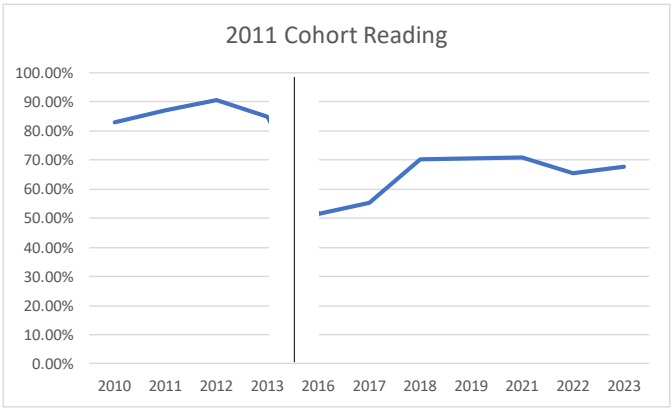
2009 Cohort	2008	2009	2010	2011	2012	2013	2016
6 Districts	75.81%	75.00%	83.33%	77.86%	73.58%	78.29%	38.84%



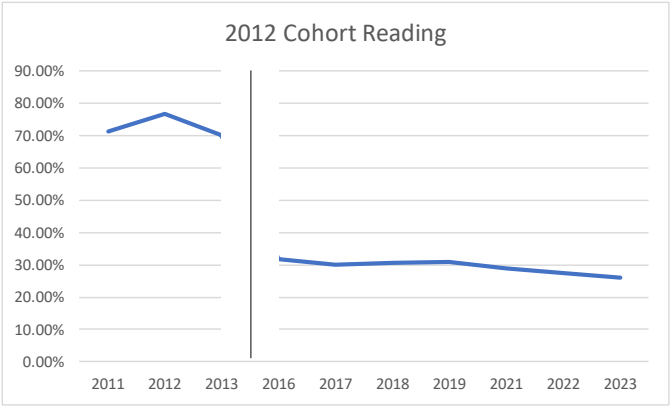
2010 Cohort	2009	2010	2011	2012	2013	2016	2017	2018	2019	2021	2022	2023
9 Districts	81.99%	78.97%	81.76%	79.57%	73.77%	38.24%	32.14%	32.70%	35.42%	36.48%	39.21%	35.84%



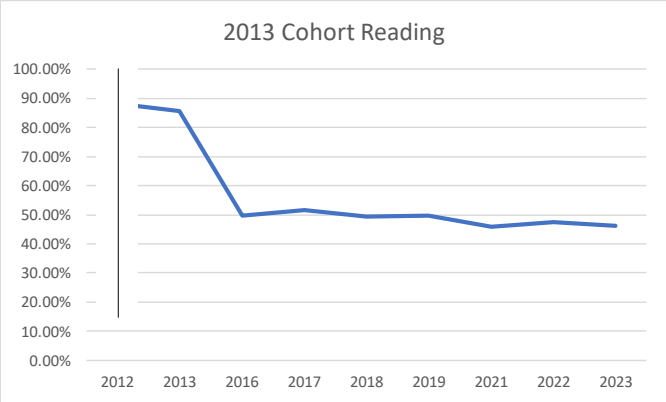
2011 Cohort	2010	2011	2012	2013	2016	2017	2018	2019	2021	2022	2023
5 Districts	82.98%	87.23%	90.70%	85.00%	51.35%	55.26%	70.27%	70.73%	70.97%	65.52%	67.86%



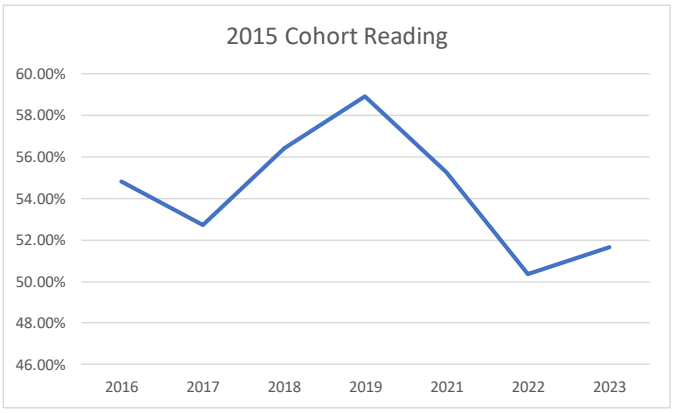
2012 Cohort	2011	2012	2013	2016	2017	2018	2019	2021	2022	2023
13 Districts	71.28%	76.76%	70.06%	31.74%	30.14%	30.53%	30.97%	28.96%	27.56%	26.14%



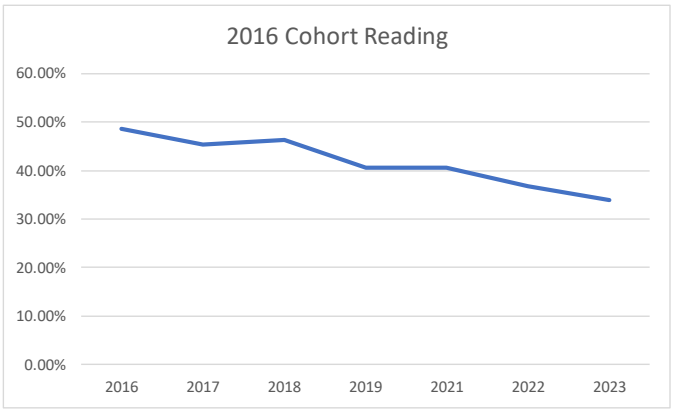
2013 Cohort	2012	2013	2016	2017	2018	2019	2021	2022	2023
22 Districts	88.07%	85.55%	49.78%	51.52%	49.44%	49.78%	46.02%	47.50%	46.06%



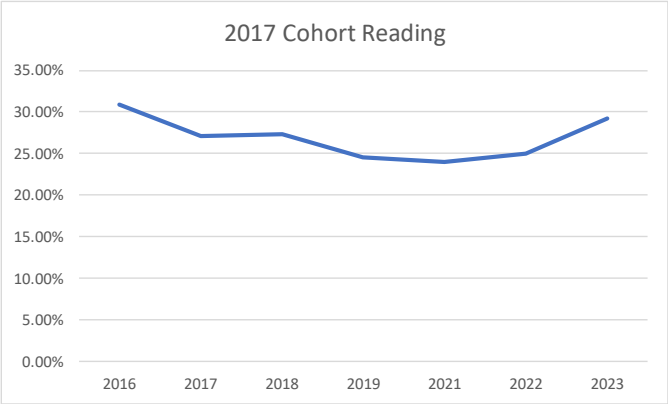
2015 Cohort	2016	2017	2018	2019	2021	2022	2023
16 Districts	54.80%	52.72%	56.42%	58.91%	55.26%	50.35%	51.64%



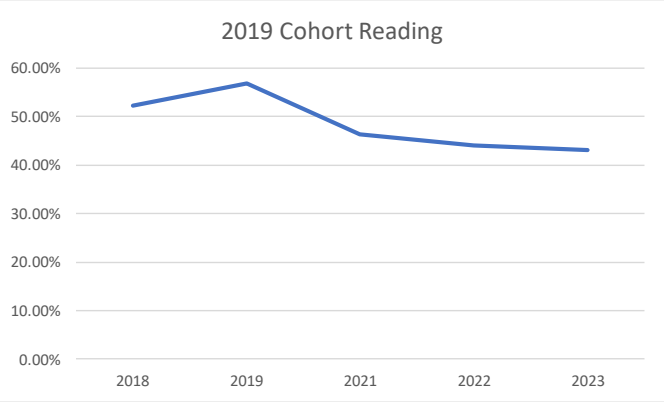
2016 Cohort	2016	2017	2018	2019	2021	2022	2023
6 Districts	48.55%	45.45%	46.24%	40.51%	40.66%	36.74%	33.98%



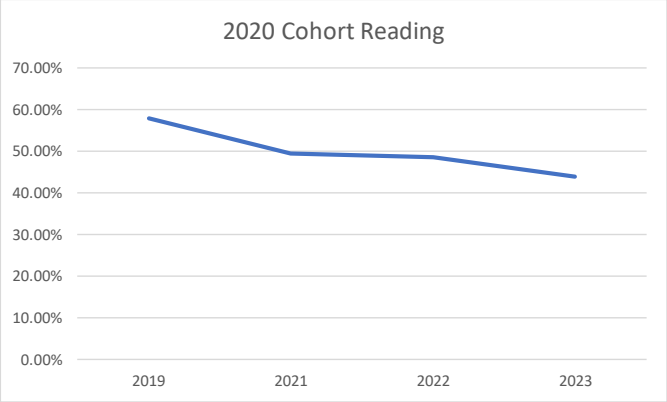
2017 Cohort	2016	2017	2018	2019	2021	2022	2023
3 Districts	30.91%	27.12%	27.27%	24.53%	24.00%	25.00%	29.17%



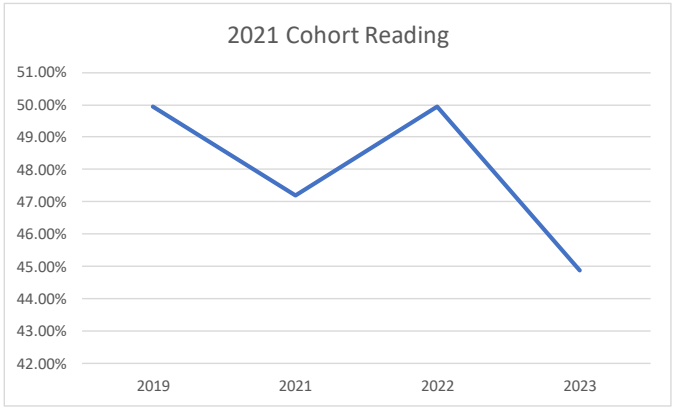
2019 Cohort	2018	2019	2021	2022	2023
6 Districts	52.17%	56.80%	46.41%	44.12%	43.16%



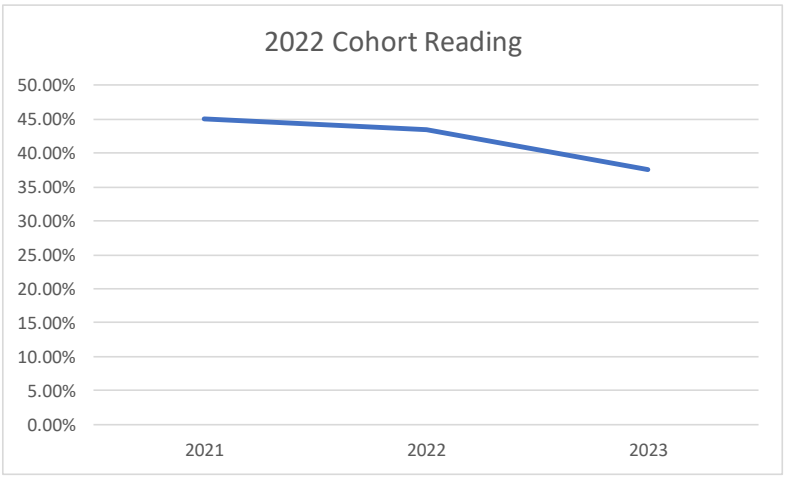
2020 Cohort	2019	2021	2022	2023
8 Districts	57.98%	49.38%	48.64%	43.85%



2021 Cohort	2019	2021	2022	2023
14 Districts	49.95%	47.20%	49.95%	44.89%



2022 Cohort	2021	2022	2023
5 Districts	45.10%	43.51%	37.50%



2023 Cohort	2022	2023
20 Districts	39.90%	42.61%

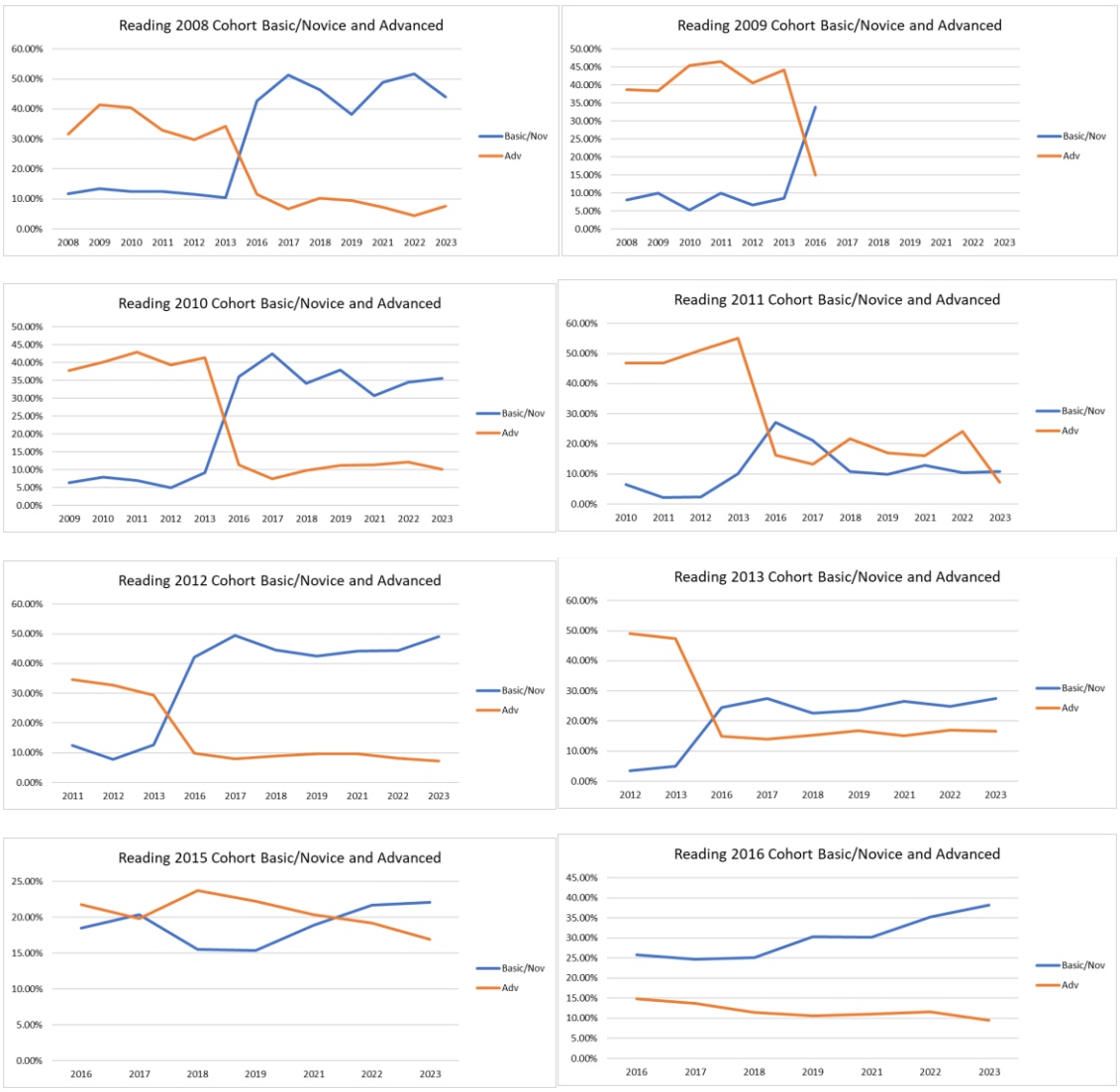
Note. In the years 2014-2015, no data were collected because of the transition from the MontCas to the SBAC assessment. In 2020, student achievement was not assessed due to the COVID-19 pandemic, therefore, there will be no data for that year. There were no school districts starting the 4dsw schedule in 2014. In the 2018 school year, there was only one school district with too few students to report due to FERPA requirements. In the 2009 cohort, one of the school districts returned to the 5dsw schedule in 2017. The remaining school districts in this cohort did not have an adequate number of students to report in the years following 2017, due to FERPA requirements. Data highlighted in green represent the baseline year data (5dsw schedule) prior to transitioning to the 4dsw schedule for each cohort.

Basic/Novice Proficiencies Compared to Advanced in Cohort School Districts Utilizing the 4dsw Schedule

The data from cohort school districts in the school districts utilizing the 4dsw schedule were analyzed based on percetage of students who were basic (MontCas) or Novice (SBAC) (Appendix D) and Advanced (MontCas & SBAC), from the first year the school districts began utilizing the 4dsw schedule to 2023. Figure 2.7 displays the Reading achievement trends for each cohort of percentage of students scoring Basic/Novice and Advanced.

Figure 2.7

Comparison of the Percentage of Students Achieving at the Basic/Novice Level Compared to Advanced Level in School Districts Utilizing the 4dsw Schedule by Cohort



Note. In the years 2014-2015, no data were collected because of the transition from the MontCas to the SBAC assessment. In 2020, student achievement was not assessed due to the COVID-19 pandemic. There were no school districts starting the 4dsw schedule in the 2014. In the 2018 school year, there was only one school district with too few students to report due to FERPA requirements. In the 2009 cohort, one of the school districts returned to the 5dsw schedule in 2017. The remaining school districts in this cohort did not have an adequate number of students to report in the years following 2017, due to FERPA requirements.

Math Achievement

In the third grade, 42.65% of the students in school districts utilizing the 4dsw schedule were proficient or advanced and 56.09% of students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 13.44% when comparing third grade student achievement in the school districts utilizing the 4dsw schedule and schools utilizing the 5dsw schedule.

In the fourth grade, 40.63% of the students in school districts utilizing the 4dsw schedule were proficient or advanced and 54.05% of students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 13.42% when comparing fourth grade student achievement in the school districts utilizing the 4dsw schedule and schools utilizing the 5dsw schedule.

In the fifth grade, 35.06% of the students in school districts utilizing the 4dsw schedule were proficient or advanced and 51.27% of students in school districts utilizing the 5dsw schedule

were proficient or advanced. This is a difference of 16.21% when comparing fifth grade student achievement in the school districts utilizing the 4dsw schedule and schools utilizing the 5dsw schedule.

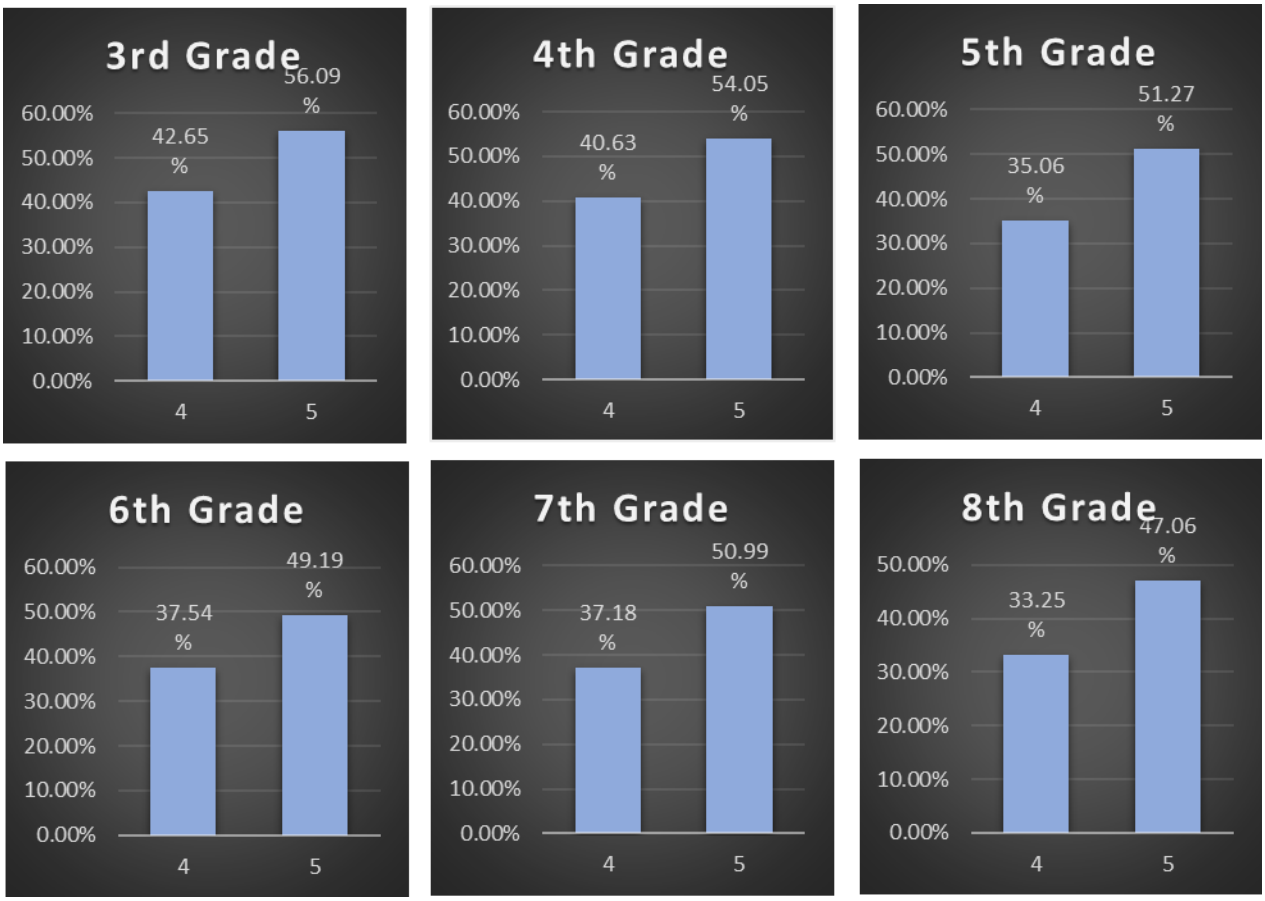
In the sixth grade, 37.54% of the students in school districts utilizing the 4dsw schedule were proficient or advanced and 49.19% of students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 11.65% when comparing sixth grade student achievement in the school districts utilizing the 4dsw schedule and schools utilizing the 5dsw schedule.

In the seventh grade, 37.18% of the students in school districts utilizing the 4dsw schedule were proficient or advanced and 50.99% of students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 13.81% when comparing seventh grade student achievement the school districts utilizing the 4dsw schedule and schools utilizing the 5dsw schedule.

In the eighth grade, 33.25% of the students in school districts utilizing the 4dsw schedule were proficient or advanced and 47.06% of students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 13.81% when comparing eighth grade student achievement in the school districts utilizing the 4dsw schedule and schools utilizing the 5dsw schedule.

Figure 2.8

Combined MontCas and SBAC Achievement Data: Percentage Proficient and Advanced in Math by Grade Level Comparing School Districts Utilizing the 4dsw Schedule and School Districts Utilizing the 5dsw Schedule



MontCas Math Achievement

In the third grade, 55.13% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 67.36% of third grade students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 12.23% when comparing third grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In the fourth grade, 59.68% of the students attending school districts using the 4dsw schedule were proficient or advanced and 66.99% of fourth grade students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 7.31% when comparing fourth grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In the fifth grade, 59.71% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 68.82% of fifth grade students in school districts

utilizing the 5dsw schedule were proficient or advanced. This is a difference of 9.11% when comparing fifth grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

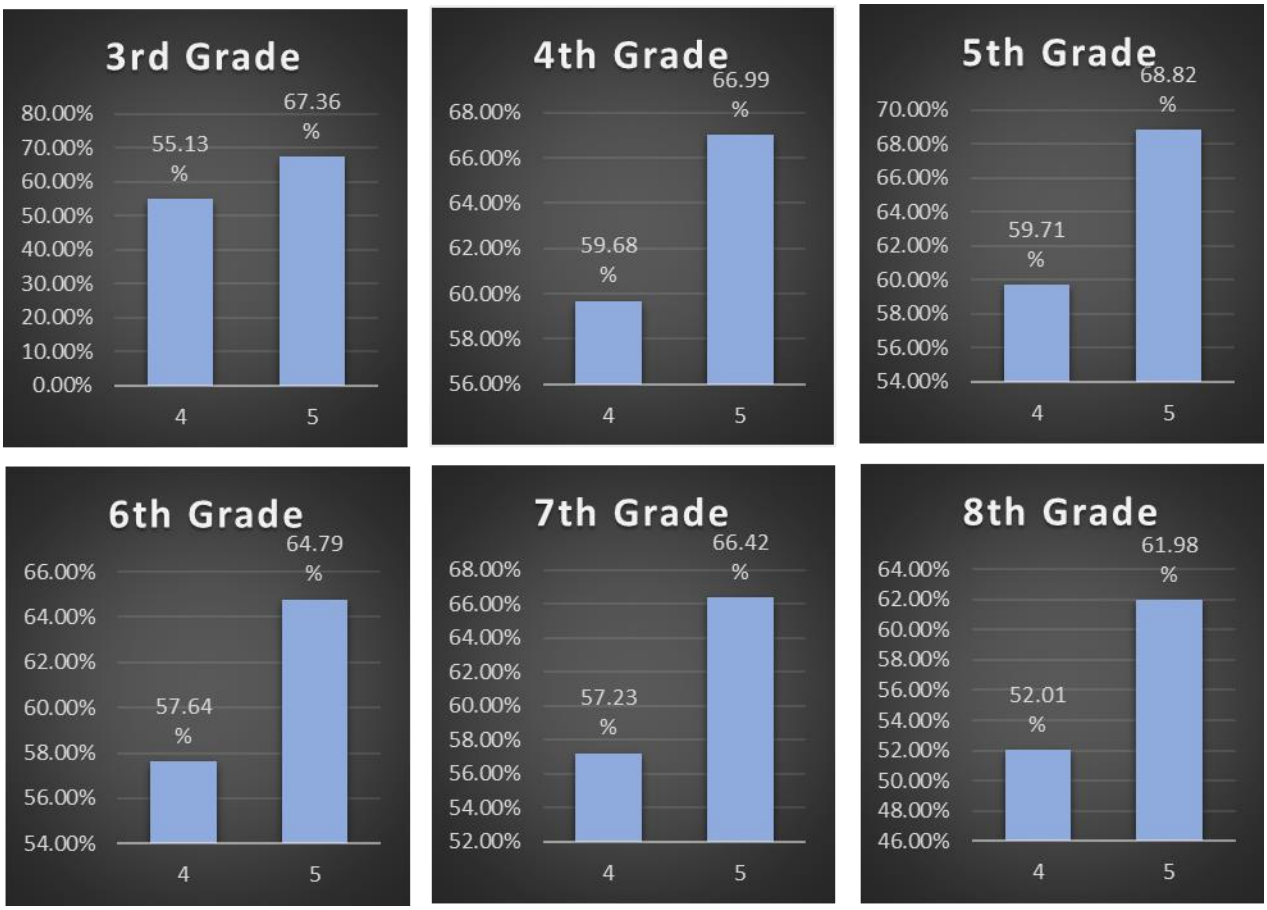
In the sixth grade, 57.64% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 64.79% of sixth grade students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 7.15% when comparing sixth grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In the seventh grade, 57.23% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 66.42% of seventh grade students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 9.19% when comparing seventh grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In the eighth grade, 52.01% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 61.98% of eighth grade students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 9.97% when comparing eighth grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

Figure 2.9

MontCas Achievement Data: Percentage Proficient and Advanced in Math by Grade Level Comparing School Districts Utilizing the 4dsw schedule and School Districts Utilizing the 5dsw Schedule



SBAC Math Achievement

In the third grade, 39.21% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 46.27% of third grade students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 7.06% when comparing third grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

In the fourth grade, 35.43% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 42.93% of fourth grade students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 7.50% when comparing fourth grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

In the fifth grade, 28.28% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 36.15% of fifth grade students in school districts

utilizing the 5dsw schedule were proficient or advanced. This is a difference of 7.87% when comparing fifth grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

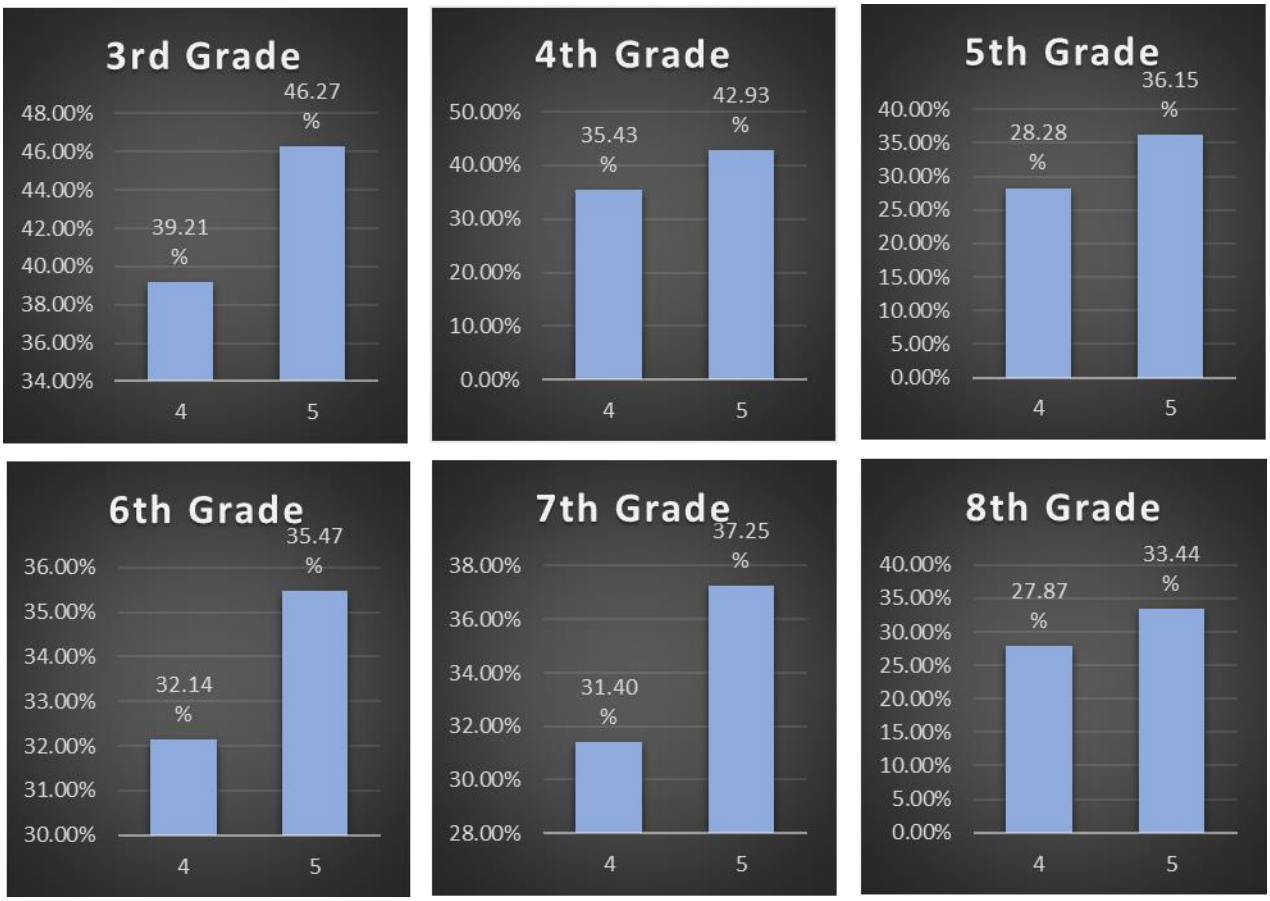
In the sixth grade, 32.14% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 35.47% of sixth grade students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 3.33% when comparing sixth grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

In the seventh grade, 31.40% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 37.25% of seventh grade students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 5.85% when comparing seventh grade student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

In the eighth grade, 27.87% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 33.44% of eighth grade students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 5.57% when comparing eighth grade student in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

Figure 2.10

SBAC Achievement Data: Percentage Proficient and Advanced in Math by Grade Level Comparing School Districts Utilizing the 4dsw Schedule and School Districts Utilizing the 5dsw Schedule



Math Achievement by Year (See Figure 2.11)

In 2008, 60.84% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 63.07% of the students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 2.23% when comparing 2008 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In 2009, 55.82% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 64.10% of the students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 8.28% when comparing 2009 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In 2010, 59.19% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 67.16% of the students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 7.97% when comparing 2010 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In 2011, 59.70% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 67.61% of the students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 7.91% when comparing 2011 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In 2012, 53.98% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 68.01% of the students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 14.03% when comparing 2012 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In 2013, 56.73% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 66.42% of the students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 9.69% when comparing 2013 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the MontCas assessment.

In 2016, 33.07% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 40.51% of the students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 7.44% when comparing 2016 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

In 2017, 31.17% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 40.36% of the students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 9.19% when comparing 2017 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

In 2018, 32.54% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 40.61% of the students in the 5dsw schedule were proficient or advanced. This is a difference of 8.07% when comparing 2018 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

In 2019, 31.55% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 41.10% of the students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 9.55% when comparing 2019 student

achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

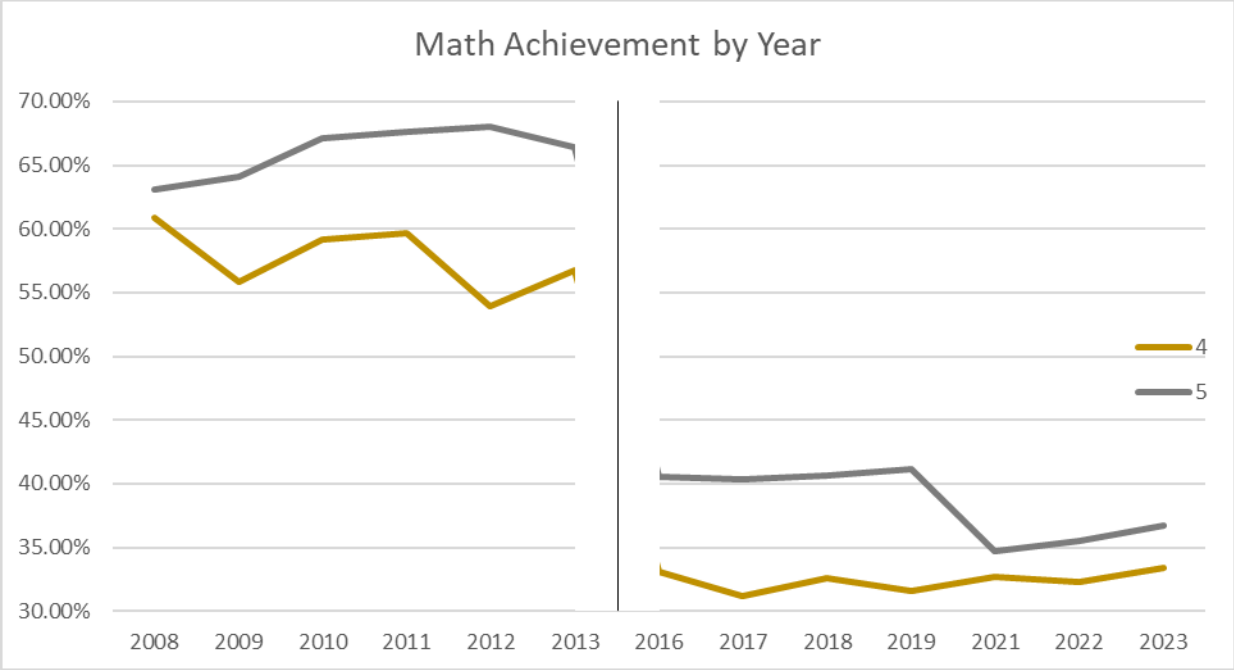
In 2021, 32.66% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 34.69% of the students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 2.03% when comparing 2021 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

In 2022, 32.31% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 35.53% of the students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 3.22% when comparing 2022 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

In 2023, 33.43% of the students attending school districts utilizing the 4dsw schedule were proficient or advanced and 36.70% of the students in school districts utilizing the 5dsw schedule were proficient or advanced. This is a difference of 3.27% when comparing 2023 student achievement in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule using the SBAC assessment.

Figure 2.11

Math Achievement by Year in the School Districts Utilizing the 4dsw Schedule and School Districts Utilizing the 5dsw Schedule



Note. The gold line denotes school districts utilizing the 4dsw schedule and the grey line denotes school districts utilizing the 5dsw schedule. In the years 2014-2015, no data were collected

because of the transition from the MontCas to the SBAC assessment. In 2020, student achievement was not assessed due to the COVID-19 pandemic.

Math Achievement by Year and Grade (See Figure 2.12)

Student Math achievement in the school districts utilizing the 4dsw schedule and the school districts utilizing the 5dsw schedule was compared based on student grade level and school year. Out of 78 combinations of grade and year, the performance in the school districts utilizing the 4dsw schedule exceeded that of school districts utilizing the 5dsw schedule in nine instances. Figure 2.11 was developed to analyze these differences. The red highlighted cells indicate instances where school districts utilizing the 4dsw schedule underperformed school districts utilizing the 5dsw schedule in Math.

Figure 2.12

Math Achievement by Year and Grade

		3rd Grade					4th Grade					5th Grade	
2008	4	49.23%	-12.86%		2008	4	69.09%	3.77%		2008	4	58.21%	-7.95%
2008	5	62.09%			2008	5	65.32%			2008	5	66.16%	
2009	4	45.24%	-20.82%		2009	4	56.84%	-8.95%		2009	4	48.72%	-17.09%
2009	5	66.06%			2009	5	65.79%			2009	5	65.80%	
2010	4	52.26%	-15.53%		2010	4	62.59%	-5.16%		2010	4	61.08%	-8.11%
2010	5	67.79%			2010	5	67.75%			2010	5	69.19%	
2011	4	61.11%	-7.69%		2011	4	61.35%	-7.48%		2011	4	62.73%	-7.96%
2011	5	68.80%			2011	5	68.83%			2011	5	70.69%	
2012	4	57.89%	-12.89%		2012	4	54.69%	-13.04%		2012	4	61.79%	-9.96%
2012	5	70.79%			2012	5	67.73%			2012	5	71.75%	
2013	4	55.05%	-13.66%		2013	4	60.91%	-5.59%		2013	4	59.04%	-10.27%
2013	5	68.71%			2013	5	66.49%			2013	5	69.31%	
2016	4	38.92%	-10.12%		2016	4	31.43%	-12.09%		2016	4	30.25%	-5.76%
2016	5	49.03%			2016	5	43.51%			2016	5	36.01%	
2017	4	38.75%	-7.85%		2017	4	33.04%	-10.68%		2017	4	23.68%	-15.56%
2017	5	46.61%			2017	5	43.73%			2017	5	39.24%	
2018	4	38.90%	-8.99%		2018	4	33.71%	-9.91%		2018	4	29.14%	-10.05%
2018	5	47.89%			2018	5	43.62%			2018	5	39.20%	
2019	4	36.90%	-10.91%		2019	4	35.15%	-9.48%		2019	4	28.75%	-10.96%
2019	5	47.80%			2019	5	44.64%			2019	5	39.72%	
2021	4	38.85%	-4.26%		2021	4	36.34%	-2.66%		2021	4	27.89%	-3.42%
2021	5	43.11%			2021	5	39.00%			2021	5	31.30%	
2022	4	38.48%	-5.69%		2022	4	35.79%	-5.44%		2022	4	30.50%	-2.52%
2022	5	44.17%			2022	5	41.23%			2022	5	33.02%	
2023	4	41.94%	-2.71%		2023	4	39.64%	-4.66%		2023	4	27.36%	-5.99%
2023	5	44.64%			2023	5	44.30%			2023	5	33.36%	
		6th Grade					7th Grade					8th Grade	
2008	4	63.08%	1.24%		2008	4	70.37%	5.13%		2008	4	58.44%	0.45%
2008	5	61.84%			2008	5	65.24%			2008	5	57.99%	
2009	4	52.38%	-10.95%		2009	4	69.23%	4.54%		2009	4	63.29%	4.26%
2009	5	63.34%			2009	5	64.69%			2009	5	59.03%	
2010	4	61.27%	-5.94%		2010	4	63.64%	-2.35%		2010	4	54.84%	-10.26%
2010	5	67.21%			2010	5	65.99%			2010	5	65.10%	
2011	4	58.13%	-7.05%		2011	4	57.32%	-10.70%		2011	4	57.24%	-6.89%
2011	5	65.18%			2011	5	68.02%			2011	5	64.14%	
2012	4	60.14%	-7.61%		2012	4	44.51%	-21.62%		2012	4	45.25%	-18.61%
2012	5	67.75%			2012	5	66.14%			2012	5	63.86%	
2013	4	54.82%	-8.79%		2013	4	60.56%	-7.95%		2013	4	50.11%	-11.77%
2013	5	63.61%			2013	5	68.50%			2013	5	61.88%	
2016	4	34.83%	-3.81%		2016	4	34.75%	-5.15%		2016	4	27.80%	-7.38%
2016	5	38.64%			2016	5	39.90%			2016	5	35.18%	
2017	4	33.82%	-3.25%		2017	4	32.30%	-7.15%		2017	4	25.26%	-10.00%
2017	5	37.07%			2017	5	39.45%			2017	5	35.26%	
2018	4	28.65%	-9.83%		2018	4	34.49%	-3.24%		2018	4	30.77%	-5.49%
2018	5	38.48%			2018	5	37.73%			2018	5	36.26%	
2019	4	32.52%	-5.52%		2019	4	29.01%	-11.80%		2019	4	26.62%	-8.91%
2019	5	38.04%			2019	5	40.82%			2019	5	35.54%	
2021	4	33.77%	3.50%		2021	4	30.17%	-3.64%		2021	4	27.59%	-3.09%
2021	5	30.27%			2021	5	33.81%			2021	5	30.68%	
2022	4	27.30%	-4.61%		2022	4	34.44%	0.08%		2022	4	26.69%	-3.02%
2022	5	31.90%			2022	5	34.35%			2022	5	29.71%	
2023	4	34.19%	1.17%		2023	4	26.75%	-7.49%		2023	4	29.65%	-1.67%
2023	5	33.03%			2023	5	34.24%			2023	5	31.32%	

Note. The red highlighted cells indicate instances where school districts utilizing the 4dsw schedule underperformed school districts utilizing the 5dsw schedule in Math.

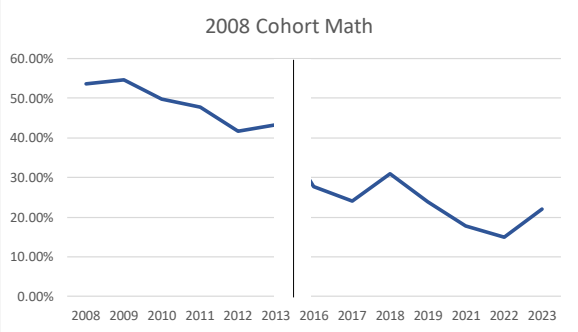
4dsw Cohort School District Math Achievement

School districts were identified in cohorts based on the year they started utilizing the 4dsw schedule. Their achievement was tracked as a group from the year they entered the 4dsw schedule until 2023. School districts who were not continuously utilizing the 4dsw schedule for the duration of the cohort were removed from the 4dsw data during the years they utilized the 5dsw schedule. Figure 2.13 represents fourteen cohorts from the years 2008 to 2022. The first cohort began in 2008.

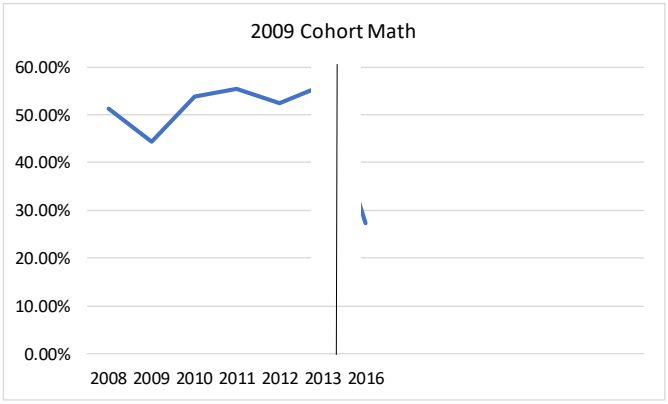
Figure 2.13

MontCas and SBAC Math Achievement by Cohort Start Year

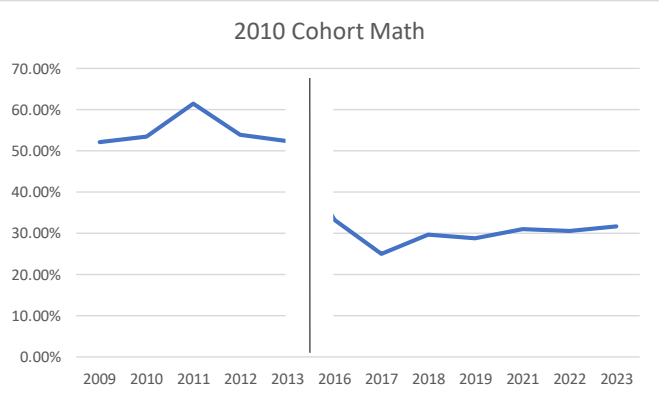
2008 Cohort	2008	2009	2010	2011	2012	2013	2016	2017	2018	2019	2021	2022	2023
7 Districts	53.57%	54.66%	49.69%	47.68%	41.72%	43.29%	27.75%	24.04%	30.91%	23.86%	17.80%	15.00%	21.98%



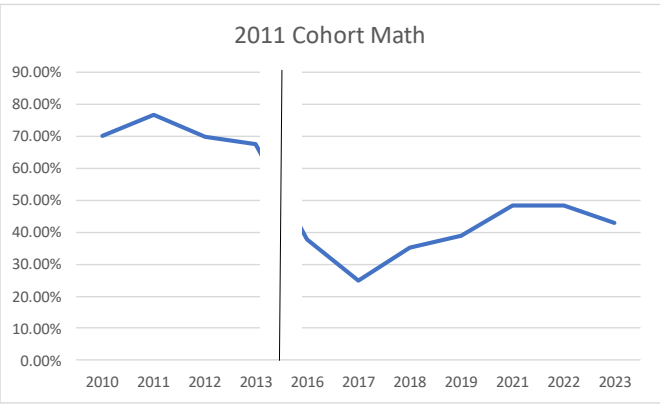
2009 Cohort	2008	2009	2010	2011	2012	2013	2016
6 Districts	51.26%	44.44%	53.85%	55.38%	52.38%	56.10%	27.27%



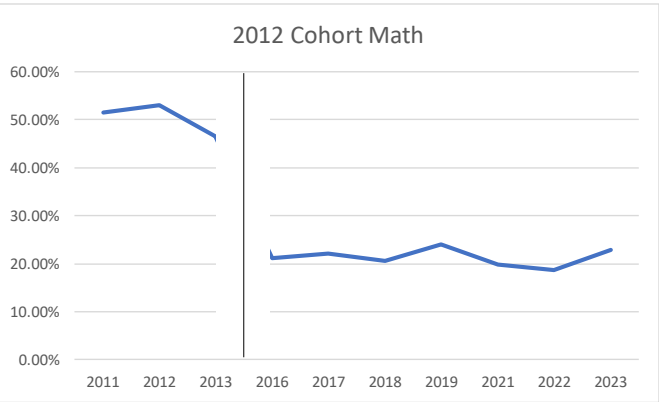
2010 Cohort	2009	2010	2011	2012	2013	2016	2017	2018	2019	2021	2022	2023
9 Districts	52.15%	53.58%	61.57%	54.01%	52.48%	33.25%	25.00%	29.70%	28.81%	31.03%	30.52%	31.70%



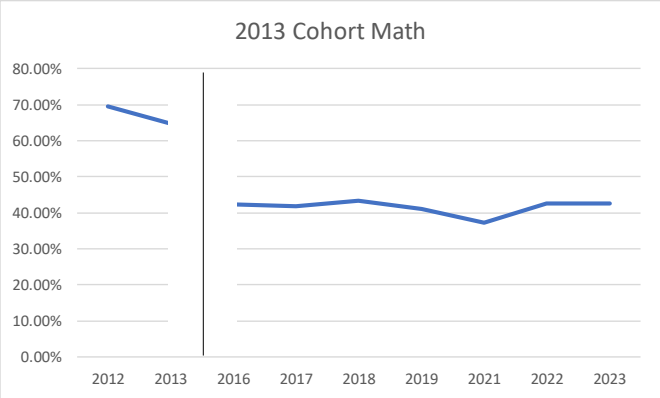
2011 Cohort	2010	2011	2012	2013	2016	2017	2018	2019	2021	2022	2023
5 Districts	70.21%	76.60%	69.77%	67.50%	37.84%	25.00%	35.14%	39.02%	48.39%	48.28%	42.86%



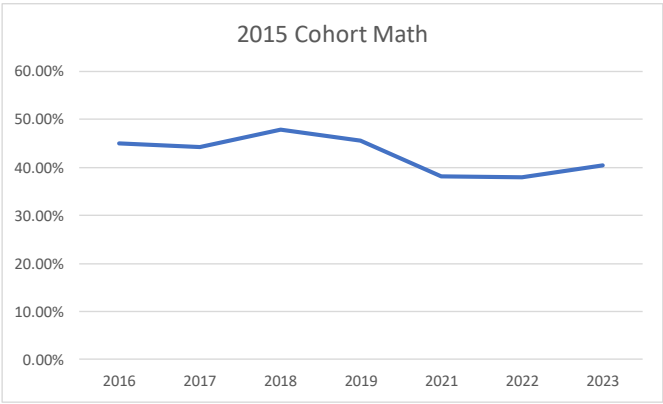
2012 Cohort	2011	2012	2013	2016	2017	2018	2019	2021	2022	2023
13 Districts	51.59%	53.01%	46.51%	21.11%	22.08%	20.63%	24.06%	19.83%	18.64%	22.79%



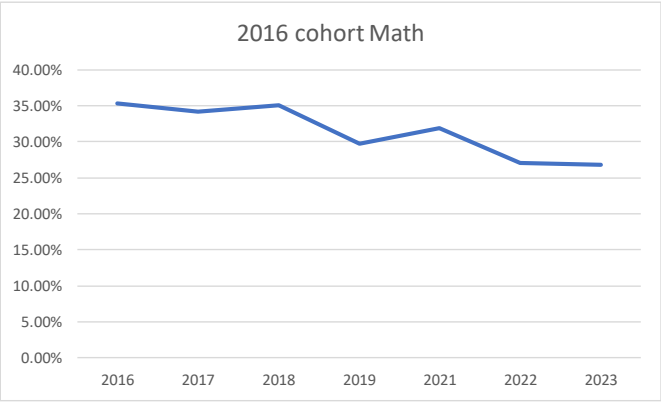
2013 Cohort	2012	2013	2016	2017	2018	2019	2021	2022	2023
22 Districts	69.42%	64.61%	42.37%	41.92%	43.37%	40.97%	37.15%	42.49%	42.47%



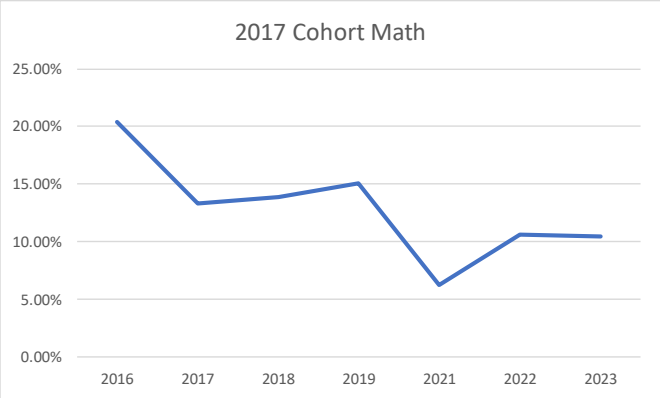
2015 Cohort	2016	2017	2018	2019	2021	2022	2023
16 Districts	44.96%	44.18%	47.84%	45.68%	38.22%	37.88%	40.52%



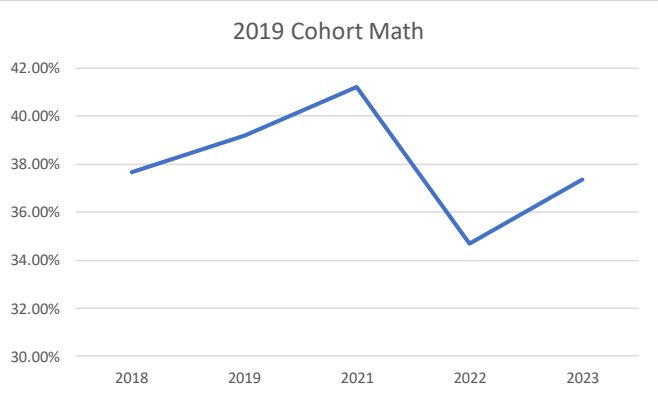
2016 Cohort	2016	2017	2018	2019	2021	2022	2023
6 Districts	35.29%	34.19%	35.08%	29.70%	31.87%	27.07%	26.82%



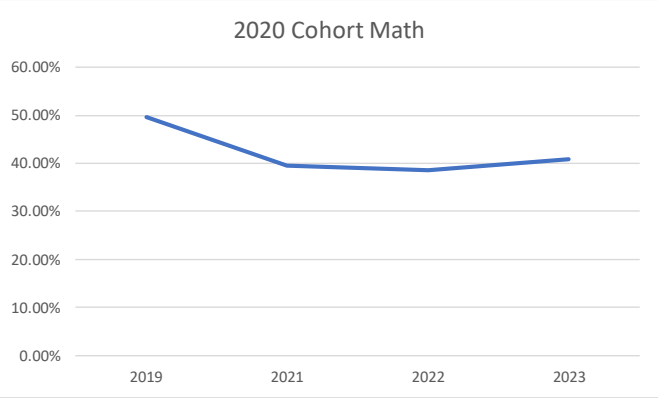
2017 Cohort	2016	2017	2018	2019	2021	2022	2023
3 Districts	20.37%	13.33%	13.85%	15.09%	6.25%	10.64%	10.42%



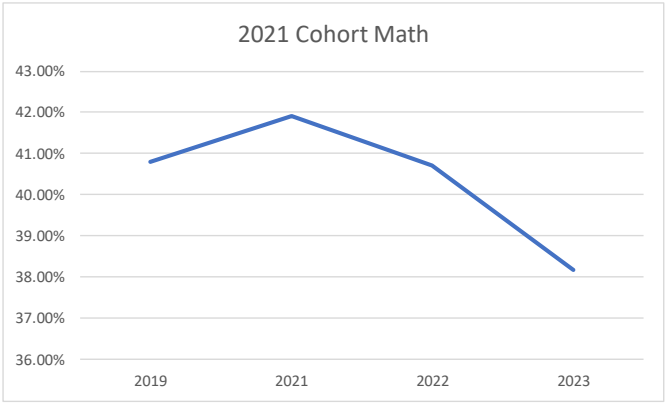
2019 Cohort	2018	2019	2021	2022	2023
6 Districts	37.68%	39.20%	41.22%	34.71%	37.37%



2020 Cohort	2019	2021	2022	2023
8 Districts	49.61%	39.48%	38.52%	40.93%



2021 Cohort	2019	2021	2022	2023
14 Districts	40.79%	41.91%	40.70%	38.17%



2022 Cohort	2022	2023
5 Districts	36.53%	37.52%

2023 Cohort	2023
20 Districts	33.28%

Note. In the years 2014-2015, no data were collected because of the transition from the MontCas to the SBAC assessment. In 2020, student achievement was not assessed due to the COVID-19 pandemic. There were no school districts starting the 4dsw schedule in the 2014 school year. In the 2018 school year, there was only one school district with too few students to report due to FERPA requirements. In the 2009 cohort, one of the school districts returned to the 5dsw in 2017. The remaining school districts in this cohort did not have an adequate number of students to report in the years following 2017, due to FERPA requirements. Data highlighted in green represent the baseline year data prior to transitioning to the 4dsw schedule for each cohort.

Basic/Novice Students in School Districts Utilizing the 4dsw and the 5dsw Schedule

Student Math achievement in school districts utilizing the 4dsw schedule and the school districts utilizing the 5dsw schedule was compared based on grade and year for students who scored Basic (MontCas) or Novice (SBAC) (Appendix E). Out of 78 combinations of student grade level and school year, a higher percentage of students scoring Basic or Novice was found in school districts utilizing the 4dsw compared to school districts utilizing the 5dsw schedule in 64 instances (Figure 2.14).

Figure 2.14

Comparison of Instances of Basic/Novice Student Achievement in School Districts Utilizing the 4dsw Schedule and School Districts Utilizing the 5dsw Schedule

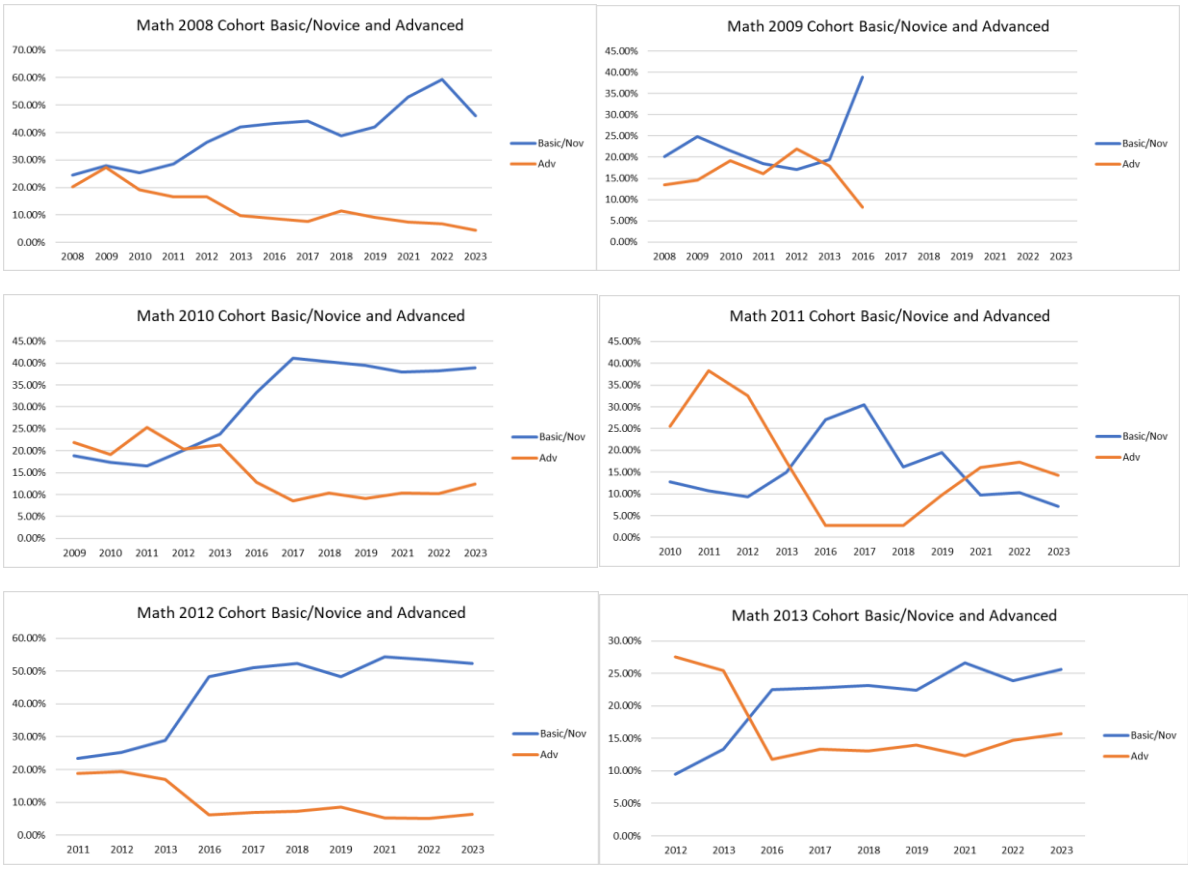
Schedule	Total
4	64
5	14

Basic/Novice Students Compared to Advanced Students in School districts Utilizing the 4dsw Schedule

The data from cohort school districts utilizing the 4dsw schedule were analyzed based on percetage of students who were basic (MontCas) or Novice (SBAC) and Advanced (MontCas & SBAC), from the first year the school districts began utilizing the 4dsw schedule to 2023. Figure 2.15 displays the Math achievement trends for each cohort of percentage of students scoring Basic/Novice and Advanced.

Figure 2.15

Comparison of the Percentage of Students Achieving at the Basic/Novice Level Compared to Advanced Level in School Districts Utilizing the 4dsw Schedule by Cohort



Note. In the years 2014-2015, no data were collected because of the transition from the MontCas to the SBAC assessment. In 2020, student achievement was not assessed due to the COVID-19 pandemic. There were no school districts starting the 4dsw schedule in the 2014. In the 2018 school year, there was only one school district with too few students to report due to FERPA requirements. In the 2009 cohort, one of the school districts returned to the 5dsw in 2017. The remaining school districts in this cohort did not have an adequate number of students to report in the years following 2017, due to FERPA requirements.

ACT

The ACT assessment was administered to all eleventh-grade students, beginning in 2013. The ACT score consists of five areas: (a) English, (b) Math, (c) Reading, (d) Science, and (e) Composite. The Composite score is the rounded average of English, Math, Reading, and Science. This calculation is performed by the ACT testing service.

The ACT data differ from the MontCas and SBAC data in that it is reported as mean scores rather than the percentage of proficient and advanced achievement as used in MontCas and SBAC. These mean scores were verified for accuracy as part of the analyses by manually filtering scores for ten high schools with varying enrollments and then comparing these analyses with the formula generated means.

Unlike MontCas and SBAC assessment scores, the ACT assessment scores can be compared nationally, but with caution. In Montana, all eleventh-grade students take the ACT. Not all states require every eleventh-grade student to take the ACT. In those states, students taking the ACT may be students planning to attend college and using their ACT scores in college applications.

A comparison of the English, Math, Reading, Science, and Composite scores for Montana students from 2013-2023 indicated that students in school districts using the 5dsw schedule outperformed students in school districts using the 4dsw schedule in each category (See figures 2.16 and 2.17).

Figure 2.16

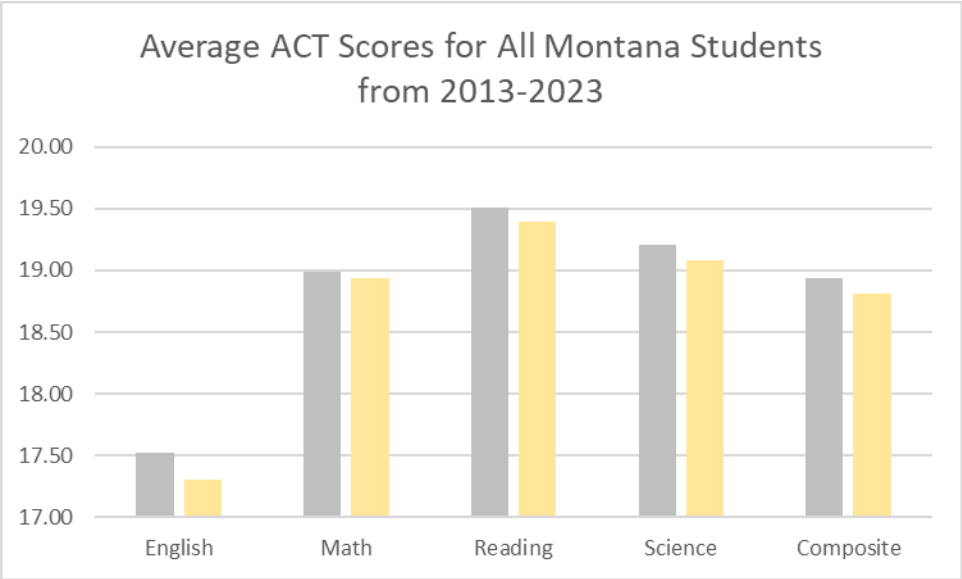
Average ACT Scores for All Students in School Districts Utilizing the 5dsw Schedule and School Districts Utilizing the 4dsw Schedule for the Years 2013-2023

Calendar	English	Math	Reading	Science	Composite
5	17.52	18.99	19.51	19.20	18.93
4	17.31	18.93	19.39	19.08	18.81
Mean Difference	-0.21	-0.05	-0.12	-0.12	-0.12

Note. The ACT Assessment was not administered in the year 2020 due to the COVID-19 Pandemic. The red highlighted cells indicate instances where the 4dsw underperformed the 5dsw in ACT assessment.

Figure 2.17

Comparison of Average ACT Scores for All Montana Students by School Districts Using the 4dsw Schedule and School Districts Utilizing the 5dsw Schedule



Note. The 5dsw is represented by the gray bar and the 4dsw is represented by the yellow bar.

ACT Assessment by Year

ACT assessment data were averaged in each category by year. The scores were divided into school districts utilizing the 5dsw and 4dsw schedule. The comparison was then made noting the difference between students in school districts utilizing the 5dsw and 4dsw schedule (See figure 2.18).

Figure 2.18

Average ACT Scores by Year in School Districts Utilizing the 4dsw Schedule and School Districts Utilizing the 5dsw Schedule

		Average ACT Scores					Difference Between the 5dsw and 4dsw Schedule				
		English	Math	Reading	Science	Composite	English	Math	Reading	Science	Composite
2013	5	18.44	19.99	20.11	19.61	19.66	0.16	0.21	0.30	0.34	0.25
	4	18.60	20.20	20.41	19.95	19.91					
2014	5	17.63	19.62	19.76	19.48	19.26	-0.63	-0.79	-0.67	-0.31	-0.60
	4	17.00	18.83	19.10	19.18	18.66					
2015	5	17.68	19.52	19.58	19.55	19.20	-0.33	-0.37	-0.44	-0.48	-0.40
	4	17.36	19.15	19.13	19.07	18.80					
2016	5	17.76	19.31	20.06	19.59	19.30	-0.12	0.15	0.28	0.14	0.09
	4	17.64	19.46	20.34	19.72	19.39					
2017	5	17.53	19.04	19.62	19.03	18.93	-0.36	-0.07	-0.19	-0.11	-0.13
	4	17.17	18.97	19.43	18.92	18.80					
2018	5	17.50	18.91	19.48	19.05	18.88	-0.37	-0.10	-0.18	-0.45	-0.27
	4	17.13	18.81	19.31	18.60	18.61					
2019	5	17.76	18.96	19.70	19.32	19.07	-0.42	0.25	-0.25	-0.32	-0.18
	4	17.34	19.21	19.45	19.00	18.89					
2020	5										
	4										
2021	5	16.75	18.19	18.88	18.72	18.25	-0.01	0.29	-0.04	0.02	0.07
	4	16.74	18.48	18.83	18.74	18.33					
2022	5	16.43	17.96	18.61	18.65	18.03	-0.04	-0.03	0.01	0.00	0.00
	4	16.40	17.93	18.63	18.65	18.03					
2023	5	17.74	18.38	19.29	19.04	18.74	-0.02	-0.08	0.01	-0.06	-0.03
	4	17.72	18.30	19.29	18.98	18.71					

Note. The ACT assessment was not administered in the year 2020 due to the COVID-19 pandemic. The red highlighted cells indicate instances where the 4dsw underperformed the 5dsw on the ACT assessment.

Relationship Between Length of Time in the 4dsw Schedule and ACT Scores

The ACT data were analyzed to determine the relationship (correlation) between the number of years in a 4dsw and the average ACT score for each category (Figure 2.19). The number of years in a 4dsw ranged from 1 year to twelve years. In this study, the resulting correlations are all negative. A negative correlation means that as the number of years students were in a 4dsw accumulated, the average ACT scores decreased.

Figure 2.19

Correlation Between Length of Time in the 4dsw Schedule and ACT Scores

	English	Math	Reading	Science	Comp
r	-0.21	-0.23	-0.25	-0.22	-0.25

Note. r represents the correlation coefficient

Figure 2.16 is a graphic display of the average ACT score in specific categories for each accumulated year in the 4dsw. The average difference between students who took the ACT after

their first year in the 4dsw schedule and students who took the ACT after twelve years in the 4dsw schedule is 2.3 points for the Composite ACT score (See figures 2.20 and 2.21). (Appendix C)

Figure 2.20

ACT Student Achievement Score by Number of Years School Districts Utilized the 4dsw Schedule

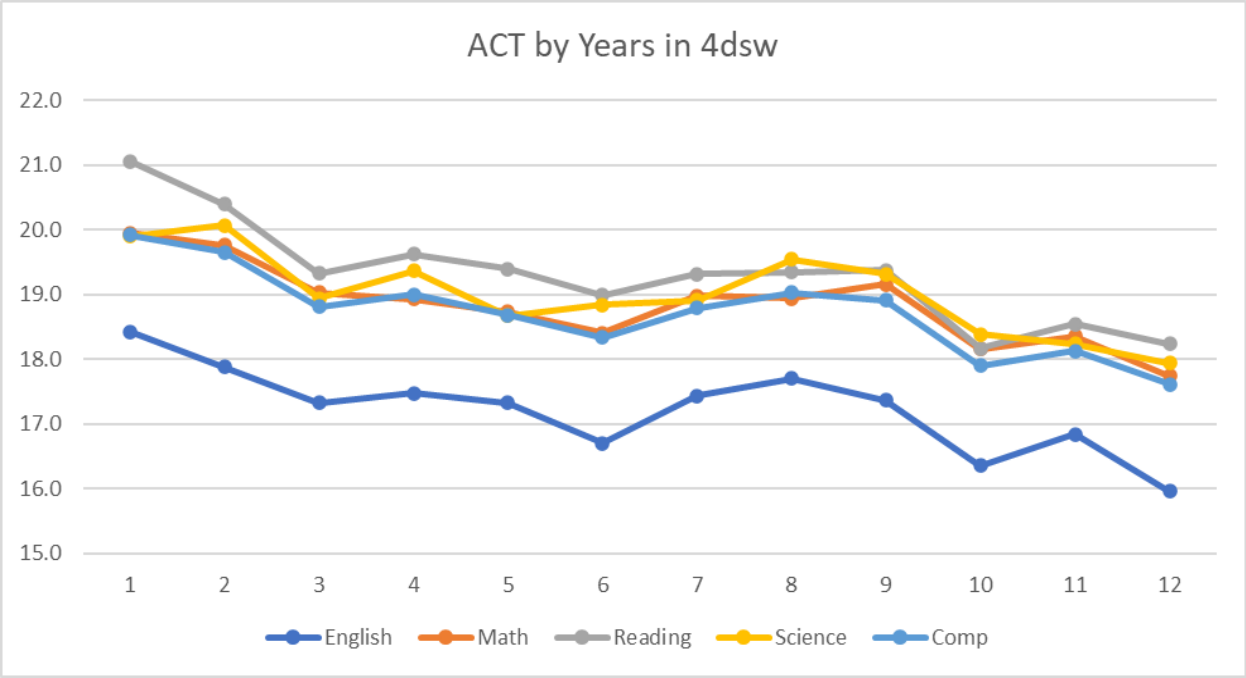


Figure 2.21

Average ACT Scores for Students Attending School Districts Utilizing the 4dsw Schedule for the First Year and for the Twelfth Year

Average ACT Scores for 4dsw Students in the First Year and in the Twelfth Year

	English	Math	Reading	Science	Comp
1	18.4	19.9	21.1	19.9	19.9
12	16.0	17.7	18.2	17.9	17.6
Difference	-2.5	-2.2	-2.8	-2.0	-2.3

Research Question 3 - *Is there a difference in educational engagement, as measured by cohort graduation rate, between the four-day school week schedule and the five-day school week schedule?*

Question 3 Discussion

The analysis of cohort graduation data from Montana school districts between 2011 and 2023 revealed that school districts utilizing a 5dsw schedule had a slightly higher overall graduation rate of 85.46%, compared to school districts utilizing a 4dsw schedule, which had a graduation rate of 84.88%. This suggested that, in general, the schedule type had a marginal impact on graduation outcomes, with the school districts utilizing a 5dsw schedule showing a small advantage.

Further analysis of the data by students who are economically disadvantaged, highlighted a more nuanced picture. For students not economically disadvantaged, the graduation rate was higher in school districts utilizing a 4dsw schedule (95.30%) compared to school districts utilizing a 5dsw schedule (93.10%). Conversely, economically disadvantaged students had better graduation rates in school districts utilizing the 4dsw schedule (80.46%) compared to school districts utilizing the 5dsw schedule (75.36%). This indicated that while the school districts utilizing the 5dsw schedule may be slightly more beneficial overall, it appeared to be less effective for economically disadvantaged students relative to the 4dsw schedule.

Data Collected

For this research question, data from all Montana school districts in the years 2011-2023 were analyzed. The analysis included 2,189 rows of data, with each row containing 9 columns, totaling 19,701 individual cells of data. Cohort graduation data were collected for all school districts in Montana from 2011 to 2023. A Cohort is a class of students who attend the same high school and are considered to have entered grade nine in the same year. These data included cohort graduates and cohort student members. These data were summed for school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule (Figure 3.1). These data were then disaggregated by economically disadvantaged (Figure 3.2).

Data Analysis

<u>Graduation Rates</u>

The cohort graduation rate for students in school districts utilizing the 5dsw schedule from 2011 to 2023 was 85.46%. This compares to schools utilizing the 4dsw schedule from 2011 to 2023, which realized an 84.88% cohort graduation rate (Figure 3.1).

Figure 3.1
Cohort Members Graduating in School Districts Utilizing the 4dsw Schedule and School Districts Utilizing the 5dsw Schedule

	Graduates	Cohort Members	Percentage
5	99084	115937	85.46%
4	17538	20662	84.88%

These data were additionally analyzed by two categories: Not Economically Disadvantaged and Economically Disadvantaged. These designations were determined by the Montana Office of Public Instruction based on eligibility for Free and Reduced lunch and reported by school districts.

The cohort graduation rate for students in school districts utilizing the 5dsw schedule from 2011 to 2023 who were not economically disadvantaged was 93.10%. This compares to schools utilizing the 4dsw schedule, which was 95.30%. The cohort graduation rate for students in school districts utilizing the 5dsw schedule from 2011 to 2023 who were economically disadvantaged was 75.36%. This compares to schools utilizing the 4dsw schedule, which was 80.46% (Figure 3.2).

Figure 3.2
Cohort Members Graduating in School Districts Utilizing the 4dsw Schedule and School Districts Utilizing the 5dsw Schedule Disaggregated by Economically Disadvantaged

	Not Economically Disadvantaged		**Economically Disadvantaged**	
	Graduates	Cohort Members	Graduates	Cohort Members
5	68912	74019	44557	59122
4	2452	2573	3162	3930
5	93.10%		75.36%	
4	95.30%		80.46%	

Research Question 4 - *Is there a difference in student attendance between the four-day school week schedule and the five-day school week schedule?*

Question 4 Discussion

The analysis included a calculation of attendance based on the total days present and days enrolled for students in school districts utilizing a 4dsw schedule and school districts utilizing a 5dsw schedule. This method was preferred over using district-wide attendance percentages due to

the varying sizes of the districts. The categories analyzed were all students, special education students, and homeless students.

The analysis revealed that school districts utilizing a 5dsw schedule had a slightly higher overall student attendance rate at 92.53% compared to 92.18% in districts utilizing a 4dsw schedule. For Special Education students, attendance rates were similarly higher in the school districts utilizing a 5dsw schedule at 90.93% versus 90.55% in the school districts utilizing a 4dsw schedule. For Homeless students, the attendance rates were almost the same between the two schedules: 85.87% in school districts utilizing a 5dsw schedule and 85.76% in school districts utilizing a 4dsw schedule. The overall proportion of Homeless students was quite low, representing just 2.10% of the student population in Montana.

The majority (54%) of the school districts that transitioned from utilizing the 5dsw schedule to utilizing the 4dsw schedule had a higher rate of attendance (average 2.53%) while utilizing the 5dsw schedule. The remaining school districts (46%) that transitioned from utilizing the 5dsw schedule to utilizing the 4dsw schedule had a higher rate of attendance (average 1.37%) while utilizing the 4dsw schedule.

Data Collected

For this research question, data from all Montana school districts in the years 2013 to 2023 were analyzed. The analysis included 951,012 rows of data, with each row containing 56 columns, totaling 53,256,672 individual cells of data. Data included attendance for each student in Montana for the years 2013 to 2023.

Data Analysis

Attendance

Data analysis began by identifying obviously flawed data (e.g., schools where all students had 100% attendance), these school districts were removed from the data set. In addition, not all school district submitted data in 2013 or 2014 and no data were collected before 2013. It is important to note these data include the COVID-19 years of 2020 and 2021.

The days present for all students attending the school districts utilizing the 4dsw and 5dsw schedules were then summed. The days enrolled were summed for the school districts utilizing the 4dsw and 5dsw schedules. The total percent was calculated based on all students in both schedules. A comparison of attendance in these schedules was made. Calculating total days present and total days enrolled at the student level was the most accurate way of accounting for attendance, as opposed to school district attendance percentages, because of the disparity in school district sizes.

Data were grouped by All Students, Special Education Students, and Homeless Students (Figure 4.1). Data analysis revealed that the student attendance rate for All Students in school districts utilizing the 5dsw schedule was 92.53% and for All Students in school districts utilizing the 4dws schedule was 92.18%. For Special Education Students in school districts utilizing the 5dsw schedule, the attendance rate was 90.93% and for school districts utilizing the 4dsw

schedule the attendance rate was 90.55%. Special Education Students in school districts utilizing the 5dsw schedule represented 13.40% of all students in school districts utilizing the 5dsw schedule. Special Education Students in school districts utilizing the 4dsw schedule represent 15.52% of all students in school districts utilizing the 4dsw schedule. All Special Education Students, both in school districts utilizing the 5dsw schedule and school districts utilizing the 4dsw schedule, in the state of Montana is 13.49%. For Homeless Students in school districts utilizing the 5dsw schedule, the attendance rate was 85.87% and for school districts utilizing the 4dsw schedule the attendance rate was 85.76%. All Homeless Students, both in school districts utilizing the 5dsw schedule and school districts utilizing the 4dsw schedule, in the state of Montana is 2.10%.

Figure 4.1

Attendance Data for All Students, Special Education Students, and Homeless Students from 2013–2023 Attending School Districts Utilizing the 4dsw and 5dsw Schedules

Schedule	All Students			Special Education Students			Homeless Students		
	Days Present	Days Enrolled	Percentage	Days Present	Days Enrolled	Percentage	Days Present	Days Enrolled	Percentage
5	123,736,219.01	133,720,912.77	92.53%	16,291,172.47	17,917,076.53	90.93%	2,422,627.92	2,821,299.50	85.87%
4	5,484,867.55	5,949,851.00	92.18%	836,020.56	923,239.00	90.55%	62,191.82	72,522.00	85.76%

Student attendance data for the COVID-19 years of 2020 and 2021 present a potential confounding variable in the understanding of overall attendance rates. To address this issue, student attendance data from the COVID-19 years of 2020 and 2021 were removed from the analysis. With the COVID-19 years removed, data were again grouped by All Students, Special Education Students, and Homeless Students (Figure 4.2). Data analysis revealed that the student attendance rate for All Students in school districts utilizing the 5dsw schedule was 92.46% and for All Students in school districts utilizing the 4dws schedule was 91.88%. For Special Education Students in school districts utilizing the 5dsw schedule, the attendance rate was 90.77% and for school districts utilizing the 4dsw schedule the attendance rate was 90.20%. For Homeless Students in school districts utilizing the 5dsw schedule, the attendance rate was 85.79% and for school districts utilizing the 4dsw schedule the attendance rate was 85.75%.

Figure 4.2

Attendance Data for All Students, Special Education Students, and Homeless Students from 2013–2023 (with COVID-19 years 2020-2021 removed) for Students in School Districts Utilizing the 4dsw and 5dsw Schedules

Schedule	All Students			Special Education Students			Homeless Students		
	Days Present	Days Enrolled	Percentage	Days Present	Days Enrolled	Percentage	Days Present	Days Enrolled	Percentage
5	101,199,405.34	109,449,859.97	92.46%	13,135,413.27	14,471,269.53	90.77%	1,872,739.27	2,183,004.50	85.79%
4	4,335,418.84	4,718,480.00	91.88%	653,247.96	724,254.50	90.20%	49,333.60	57,531.00	85.75%

Before and After

For each school district that transitioned to the 4dsw, the student attendance was calculated for two years prior to the transition and two years after. There were 31 school districts that had better student attendance in the 5dsw prior to the transition and 26 school districts that had better student attendance after transitioning to the 4dsw (Figure 4.3).

Figure 4.3

Student Attendance Before and After Transitioning to the 4dsw Schedule

School Districts that Transitioned to the 4dsw		Difference
School districts with better student attendance in the 5dsw before transitioning to the 4dsw	31	2.53%
School districts with better student attendance after transitioning to the 4dsw	26	1.37%

Note. The difference column represents the average difference in attendance rate between the school district while utilizing the 5dsw schedule and the same school district while utilizing the 4dsw schedule.

Enrollment

For each school district that transitioned to the 4dsw schedule, the student enrollment was calculated for two years prior to the transition and two years after. For all school districts that transitioned to the 4dsw schedule, enrollment decreased a total of 276 students. On average, school districts lost 3.1 students after transitioning to the 4dsw schedule.

Research Question 5 - *Is there a difference in student behavior between the four-day school week schedule and the five-day school week schedule?*

Question 5 Discussion

Student behavior data were acquired from two different sources. School related behavior incidents resulting in expulsions or suspensions were obtained from the Montana OPI. These data are reported annually by each school district. Risky student behavior involving fighting, drinking, and marijuana use is self-reported data from the Youth Risk Behavior Survey (YRBS), which is taken every other year in participating school districts.

Incidents resulting in expulsion and suspension were very similar between school districts utilizing the 4dsw and school districts utilizing the 5dsw schedules. Examination of suspension data revealed a slightly higher rate of out-of-school suspensions without services (2.19%) in school districts utilizing the 5dsw (Figure 5.1).

The Youth Risk Behavior Survey (YRBS) is a bi-annual survey of adolescent health risk and health protective behaviors. This survey is conducted by the Centers for Disease Control and Prevention and surveys students in grades 9 to 12 at their high schools. Not all schools in Montana Participate in the YRBS survey and data are student self-reported.

Three categories were selected from the YRBS: (a) incidents of fights at school, (b) incidents of alcohol use, and (c) incidents of marijuana use. These data indicated that there were less incidents of fights at school in school districts utilizing the 4dsw schedule (84.88% reported no fights at school) than in school districts utilizing the 5dsw schedule (65.87% reported no fights at school). Incidents of student alcohol (69.73% in 4dsw and 72.04% in 5dsw reported no alcohol use) and marijuana use (54.59%% in 4dsw and 58.87% in 5dsw reported no marijuana use) were

higher in school districts utilizing the 4dsw schedule than in school districts utilizing the 5dsw schedule (Figure 5.2).

Data Collected

For this research, disciplinary action data from all Montana school districts in the years 2007 to 2023 were analyzed. The analysis included 169,558 rows of data, with each row containing 61 columns, totaling 10,343,038 individual cells of data. Analysis of the YRBS data included 240,237 rows of data, with each row containing 15 columns, totaling 3,603,555 individual cells of data. Analysis of these data were completed by comparing frequencies which are reported as percentages.

Data Analysis

School districts annually report the number of expulsions where the student is placed in an alternative educational setting (code = 250), the number of expulsions without service (code = 260), the number of suspensions where the student is placed in an interim alternative educational setting (code = 400), out-of-school suspensions without service (code = 410), and in-school suspensions (code = 500). There was a slight difference in school districts utilizing the 4dsw schedule and school districts utilizing the 5dsw schedule for expulsions with and without services (Figure 5.1). Suspensions out-of-school, with or without services, were slightly higher in school districts utilizing the 5dsw schedule. The rate of student suspensions in-school was slightly higher in school districts utilizing the 4dsw schedule.

Figure 5.1

Frequency of Reported Disciplinary Actions for School Districts Utilizing the 4dsw and 5dsw Schedules

	Expulsion, placed in interim alternative educational setting	Expulsion, without services	Suspension, out-of-school, placed in interim alternative educational setting	Suspension, out-of-school, without services	Suspension, in-school
Schedule	250	260	400	410	500
5	0.02%	0.07%	0.68%	4.18%	1.94%
4	0.01%	0.05%	0.39%	1.99%	1.98%

Youth Risk Behavior Survey

Responses from the bi-annual Youth Risk Behavior Survey were tallied for all school districts which transitioned to utilizing the 4dsw schedule. These data included surveys within two years before and after school districts transitioned to utilizing the 4dsw schedule. It is important to note that this is student self-reported data. Given the confounding variables, there is little evidence that there is a difference in the risk behaviors of, physical fights, suicide, alcohol consumption, drug use, and sexual intercourse activities, between the 4dsw and 5dsw schedules. These data are not from a cohort of students. These data represent different groups of students (Figure 5.2).

Figure 5.2

Youth Risk Behavior Survey Specific Frequencies

	No Fights at School	No Alcohol Use	No Marijauna Use
5dsw	65.87%	72.04%	58.87%
4dsw	84.88%	69.73%	54.59%

Data informing answers to questions 6, 7, and 8 were derived from samples of the population. The samples were comprised of those individuals choosing to participate in the surveys. For this reason, inferential statistics were used to determine if the outcomes in the sample can be inferred to the population.

Research Question 6 - *Is there a difference in teacher recruitment between the four-day school week schedule and the five-day school week schedule?*

Question 6 Discussion

An electronic survey was sent to Montana Professional Education Preparation Program (EPP) completers for the academic years 2023 and 2024. Each EPP administrator was contacted and requested to send a standard invitation containing the survey electronic link to each completer from their institution for the two years under review. Not all EPPs distributed the survey to their completers even though it was anonymous for both the EPP and the participant. Therefore, there was an unacceptably low survey response and participation rate. Consequently, data collected were insufficient to draw conclusions. This research question will be addressed in an ongoing study.

Data Collected

The survey (Appendix G) was designed in two sections. The first section pertained to completers who have signed an employment contract for the 2024 - 2025 school year. The second section pertained to completers who had not signed an employment contract for the 2024 - 2025 school year. Each group of completers responded to multiple-choice questions concerning the 4dsw schedule and their employment decision.

Research Question 7 - *Is there a difference in the structure of daily schedules and yearly calendars between the four-day school week schedule and the five-day school week schedule?*

Research Question 8 - *Is there a difference in professional development and teacher planning between the four-day school week schedule and the five-day school week schedule?*

Question 7 and 8 Discussion

In addressing research questions 7 and 8, the data were obtained from a single survey. Thus, similar data is used to address both questions. Therefore, research questions 7 and 8 were addressed together in this section. The sample consisted of 63 school districts, comprised of 44

school districts utilizing the 5dsw schedule and 19 school districts utilizing the 4dsw schedule. Data were examined by school district size to ensure that one size was not overrepresented (Figure 7.2).

While the analysis indicated no statistically significant difference in planning time per week for elementary, middle school, and specialist teachers in school districts utilizing the 4dsw schedule compared to school districts utilizing the 5dsw schedule, there was a statistically significant difference in planning time at the high school level. Teachers in school districts utilizing the 5dsw schedule (M = 239.24 minutes per week, SD = 56.67) had more planning time than teachers in school districts utilizing the 4dsw schedule (M = 194.89 minutes per week, SD = 71.04). The mean difference in planning time was 44.35 minutes per week (p = .02). (See Figure 7.3)

Professional development opportunities were found to be varied throughout and within the 4dsw and 5dsw schedules (Figures 7.4 & 7.5). Some school districts (65%) utilizing the 4dsw schedule required teachers to work on the fifth day (Figure 7.6). This day was used for professional development (52.63%), professional learning communing (PLC) time (21.05%), Multi-Tier System of Support (MTSS) Coordination Meeting (21.05%), Lesson Planning and Classroom Preparation (21.05), and Student Enrichment (15.79%) (Figure 7.8).

Data Collected

The survey (Appendix I) was sent to superintendents in each school district in Montana through an email containing the link to the survey. The responses were obtained through the internet-based Qualtrics survey software. The content of this survey was revised and validated by the Department of Educational Leadership's Advisory Council, consisting of fourteen school leaders from across Montana.

Data Analysis

Survey Question 1: *Is your distinct currently operating on a 5dsw or a 4dsw schedule?*

Seventy-two participants who responded to the survey. Sixty-three (87.50%) participants answered Question 1. Forty-four (69.84%) participants were on a 5dsw schedule and nineteen (30.16%) were on a 4dsw schedule (Figure 7.1).

Figure 7.1

Frequency and Percentage of School Districts Utilizing the 4dsw Schedule and School Districts Utilizing the 5dsw Schedule

Schedule	Frequency	Percentage (%)
5dsw	44	69.84
4dsw	19	30.16
Total	63	

Survey Question 2: *Which of the following best describes your school district student population?*

Among 72 participants who responded to the survey, 63 (87.50%) participants answered Question 2. There were 11 (17.46%) participants whose school district had 150 or less student population. Twenty-seven (42.86%) participants whose school district had a population of 151-500 students. Twelve (19.05%) participants whose school district had a population of 501-1200 students and thirteen participants (20.63%) whose school district had 1,201 or more students (Figure 7.2).

Figure 7.2

Frequency and Percentage of School District Student Populations

School District Size	Frequency	Percentage (%)
150 or Less	11	17.46
151-500	27	42.86
501-1200	12	19.05
1201 or more	13	20.63
Total	63	100.00

Survey Question 3: *How many minutes of planning time are provided for teachers per week?*

For elementary school teachers, 43 participants were in school districts utilizing the 5dsw schedule (M = 201.12, SD = 84.38) and 18 were in school districts utilizing a 4dsw schedule (M = 201.83, SD = 76.14). The mean value of 4dsw schedule was a little bit higher than that of 5dsw schedule, and the mean difference (MD) was .72. An independent t-test was performed to explore whether there was a statistically significant difference between 4dsw and 5dsw schedules elementary school teachers. The results of the independent t-test indicated there was no statistically significant difference between elementary school teachers in school districts utilizing the 5dsw schedule and school districts utilizing the 4dsw schedule (t = -.03, p = .98).

For middle school teachers, 41 participants were in school districts utilizing 5dsw schedule (M = 212.15, SD = 76.34) and 18 were in school districts utilizing the 4dsw schedule (M = 199.78, SD = 69.19). The mean value of 4dsw schedule was less than that of 5dsw schedule, and the mean difference (MD) was 12.37. An independent t-test was performed and the result indicated that there was no statistically significant difference between middle school teachers in school districts utilizing the 5dsw schedule and middle school teachers in school districts utilizing the 4dsw schedule (t = .59, p = .56).

For high school teachers, 29 participants were in school districts utilizing the 5dsw schedule (M = 239.24, SD = 56.67) and 18 were in school districts utilizing the 4dsw schedule (M = 194.89, SD = 71.04). The mean value of 4dsw schedule was much less than that of 5dsw schedule, and the mean difference (MD) was 44.35. An independent t-test was performed and the result indicated that there was a statistically significant difference between 5dsw schedule high school teachers and 4dsw schedule counterparts (t = 2.37, p = .02). The magnitude of the

difference in the means between these two groups (*MD* = 44.35) was medium (Cohen *d* = .71). The effect size was interpreted based on Cohen's (1988) rule of thumb: a value of 0.2 represents a small effect size; a value of 0.5 represents a medium effect size, and a value of 0.8 represents a large effect size.

For specialists, 36 participants were in school districts utilizing the 5dsw schedule (*M* = 194.00, *SD* = 79.86) and 16 were in school districts utilizing the 4dsw schedule (*M* = 197.88, *SD* = 62.61). The mean value of the 4dsw schedule was a little bit higher than that of the 5dsw schedule, and the mean difference (*MD*) was 3.88. An independent *t*-test was performed and the analysis indicated that there was no statistically significant difference between 5dsw schedule middle school teachers and 4dsw schedule counterparts (*t* = -.17, *p* = .86). (See Figure 7.3)

Figure 7.3

Independent t-Tests of Differences in Teacher Planning Time per Week Between School Districts Utilizing the 5dsw Schedule and School Districts Utilizing the 4dsw Schedule

										95% Confidence Interval	
		n	Mean	*SD*	MD	*t*	*df*	*p*	Cohen's *d*	Lower	Upper
Elementary Teachers	**5dsw**	43	201.12	84.38	-.72	-.03	59	.98	.01	-46.83	45.40
	4dsw	18	201.83	76.14							
Middle School Teachers	**5dsw**	41	212.15	76.34	12.37	.59	57	.56	.17	-29.69	54.43
	4dsw	18	199.78	69.19							
High School Teachers	**5dsw**	29	239.24	56.67	44.35	2.37	45	.02	.71	6.59	82.12
	4dsw	18	194.89	71.04							
Specialists	**5dsw**	36	194.00	79.86	-3.88	-.17	50	.86	.05	-49.20	41.45
	4dsw	16	197.88	62.61							

Survey Question 4: *Check all that apply to your school district's professional development schedule*.

The professional development schedules of school districts were evaluated. It was found that 60 (100.00%) participants (No response from 12 participants) indicated their professional development involved a beginning of year Pupil Instruction Related (PIR) day(s). There were 35 (58.33%) participants who indicated they allocated time for Early Out for professional development [Professional Learning Community (PLC), Multi-Tier System of Supports (MTSS), Professional Development, etc.] each month, including 30 (50.00%) participants utilizing the 5dsw schedule and 5 (8.33%) participants utilizing the 4dsw schedule. There were 40 (66.67%) participants who indicated that they scheduled non-instructional days for professional development each month, including 28 (46.67%) participants utilizing the 5dsw schedule and 12 (20.00%) participants utilizing the 4dsw schedule. There were 24 (40.00%) participants who indicated they scheduled their professional development during the work day, not early out, including 19 (31.67%) participants utilizing the 5dsw schedule and 5 (8.33%) participants utilizing the 4dsw schedule (Figure 7.4).

Figure 7.4

Frequency and Percentage of School District Professional Development (PD) Schedule

		Frequency	Percentage (%)
Beginning of Year PIR Days	Both 5dsw and 4dsw	60 (n = 72) (12 Responses Missing)	
Early Out for PD	5dsw	30 (n = 44)	68.18
	4dsw	5 (n = 19)	26.32
Non-Instructional Days for PD	5dsw	28 (n = 44)	63.64
	4dsw	12 (n = 19)	63.16
PD during Work Day, not Early Out	5dsw	19 (n = 44)	43.18
	4dsw	5 (n = 19)	26.32

Survey Question 5: *If professional development is conducted during the workday, when are these opportunities typically scheduled? Check all that apply.*

If professional development is conducted during the workday, 4 participants (5.56%) stated that professional development was scheduled before school hours, 3 participants (4.17%) stated it was scheduled during lunch break, 7 (9.72%) stated it was scheduled during planning periods, 17 (23.61%) stated it was scheduled after school hours, 8 (11.11%) stated rotating schedule to accommodate different teacher availability, and 9 (12.50%) stated it was scheduled by a combination of before/after school and during planning periods (Figure 7.5).

Figure 7.5

Frequency of Professional Development Conducted During the Workday

	Frequency (n = 72)	Percentage (%)
Before School Hours	4	5.56
During Lunch Break	3	4.17
During Planning Periods	7	9.72
After School Hours	17	23.61
Rotating Schedule to Accommodate Different Teacher Availability	8	11.11
Combination of Before/After School and During Planning Periods	9	12.50

Survey Question 6: *If you are on a four-day school week, are teachers ever required to work on the fifth day?*

For participants in school districts utilizing a 4dsw schedule, 13 (65.00%) indicated that teachers were required to work on the fifth day. Seven participants (35.00%) indicated that teachers were not required to work on the fifth day (Figure 7.6).

Figure 7.6

Frequency of Teachers Required to Work on the 5th Day of a 4dsw Schedule

Fifth Day Use	Frequency	Percentage (%)
Teacher Are Required to Work on the Fifth Day	13	65.00
Teachers Are Not Required to Work on the Fifth Day	7	35.00
Total	20	

Survey Question 7: *If teachers are required to work on the fifth day of a four-day school week, how many total workdays per month are they required to attend?*

There were 9 participants (12.50%) who indicated that teachers were required to work on the fifth day of a four-day school week schedule. The mean value of total workdays per month that teachers were required to attend was .89, rounded up to one workday per month (Figure 7.7).

Figure 7.7

Total Workdays per Month for School Districts Utilizing the 4dsw Schedule and Requiring Teachers to Work on the Fifth Day

	n	Days
Total Workdays per Month	9	1.0

Survey Question 8: *If you are on a four-day school week and teachers are required to work on the fifth day, for what purpose? Check all that apply.*

For school districts utilizing a 4dsw schedule where teachers are required to work on the fifth day, 10 participants (52.63%) provided Professional Development in their school district, 4 participants (21.05%) utilized the time for Professional Learning Communities (PLC), 4 (21.05%) provided time for Multi-Tier System of Supports (MTSS) Coordination Meetings, 4 (21.05%) allowed time for Lesson Planning and Classroom Preparation, 3 (15.79%) provided Student Enrichment, and 5 (26.32%) chose Other (Figure 7.8).

Figure 7.8

Frequency and Percentage by Purpose for Teachers in School Districts Utilizing the 4dsw Schedule in Which Teachers are Required to Work on the Fifth Day

n = 19	Frequency	Percentage (%)
Professional Development (PD)	10	52.63%
Professional Learning Community (PLC) Time	4	21.05%
Multi-Tier System of Support (MTSS) Coordination Meeting	4	21.05%
Lesson Planning and Classroom Preparation	4	21.05%
Student Enrichment	3	15.79%
Other	5	26.32%

CONCLUSIONS AND RECOMMENDATIONS

Policymakers have questioned whether the 4dsw schedule provides the same level of educational quality as a 5dsw schedule (Irving, 2023). As more and more Montana school districts transition to the 4dsw schedule, policymakers at the local and state level need to understand the implications for educational quality. Policy decisions regarding school scheduling need to be based on empirical evidence guided by the eight research questions in this study. Data often contradicts intuition and that can be the case with the 4dsw schedule. For example, school districts utilizing the 4dsw schedule spent more per ANB than districts utilizing the 5dsw schedule. In general, academic achievement was lower and attendance rates were also lower for students attending school districts utilizing the 4dsw schedule. This longitudinal analysis from 2008-2023 demonstrates a disturbing trend for education in Montana.

Local districts need to thoroughly evaluate their district's specific data when considering the 4dsw schedule. This report can be used as a template for undertaking this evaluation. The report provides information for analysis in the areas of finance, academic achievement, attendance, graduation rates, students behaviors, recruitment, and scheduling.

Data revealed that the 4dsw schedule has not been beneficial to most students in the state of Montana. The problems reside at the local level, but the solution will require state level action. The authors of this study recommend the revision of 20-1-301 MCA to mandate 180 school days.

REFERENCES

Anderson, D. M., & Walker, M. B. (2015) Does shortening the school week impact student performance? Evidence from the four-day school week. *Education finance and policy*. 10(3) 314-349.

Cannady, R. L., & Rettig, M. D. (1995). The power of innovative scheduling. *ASCD.* 53(3).

Heyward, G. (2018). What do we actually know about the four-day school week. *Center on Reinventing Public Education.* https://crpe.org/wp-content/uploads/crpe-what-do-we-know-about-four-day- week.pdf

Irving, D. (2023). A four-day school week? Here are the costs and benefits. *Rand Objective Analysis. Effective Solutions.* https://www.rand.org/pubs/articles/2023/a-four-day-school-week- here-are-the-costs-and-benefits.html#:~:text=One%20study%20found%20that%20the,no%20effect%20in%20rural%20districts.

Lovenheim, M., & Turner, S. (2018). *Economics of education*. Worth.

Montana Code Annotated, 20-1-301. (2023). *https://www.google.com/search?q=montana+code+annotated+&sca*

Montana Constitution, Article X, Section 1. Educational Goals and Duties.

Morton, E. (2021) Effects of four-day school weeks on adolescents: examining impacts of the schedule on academic achievement, attendance, and behavior in high school. *Stanford Center for Education Policy Analysis*. CEPA Working Paper 21(05). https://cepa.stanford.edu/sites/default/files/wp21-05-v052021.pdf

Morton, E., Thompson, P., & Kuhfeld, M., (2023). A multi-state, student-level analysis of the effects of the four-day school week on student achievement and growth. *Annenberg Brown University EdWorking papers 22-630.* https://edworkingpapers.com/ai22-630

National Education Commission on Time and Learning. (1994). Prisoners of time. *The Education Commission of the States Education Reform Reprint Series*. https://files.eric.ed.gov/fulltext/ED489343.pdf

OPI. (2011) *Four-Day School Week Report in Montana Public Schools*. The Montana Office of Public Instruction.

Sack-Min, J. (2018). Elements of successful schools. National School Boards Association. https://www.nsba.org/ASBJ/Past-Issues/april/elements-successful-schools

Tharp, T. W. (2014). *A comparison of student achievement in rural schools with four and five day weeks* (Publication No. 3628963) [Doctoral dissertation, University of Montana]. ProQuest Dissertation and Theses Global.

Tharp, T. W., Matt, J., & O'Reilly, F. L. (2016). Is the four-day school week detrimental to student success. *Journal of Education and Straining Studies*. 4(3). http://jets.redfame.com.

Thompson, P. N., & Ward, J. (2022). Only a matter of time? The role of time in school on four-day school week achievement impacts. *Economics of Education Review.* 102198(86). https://www.sciencedirect.com/science/article/pii/S0272775721001138

U.S. Department of Education. (2021). Raise the bar: Boldly improve learning conditions. *Ed.gov.* https://www.ed.gov/raisethebar/improve-learning-conditions

Appendix A

Expenditures per ANB in Instruction, Maintenance, Transportation, and Food Services

		Instruction				Maintenenace				Transportation		Food Services	
		GF	perANB	All	perANB	GF	perANB	All	perANB	10	perANB	12	perANB
2006	5	**$ 1,153.17**	$ 3,789.07	**$ 1,724.74**	$ 5,556.95	**$ 343.05**	$ 999.51	**$ 571.66**	$ 1,280.01	**$ 279.22**	$ 533.95	**$ (77.33)**	$ 250.32
2006	4		$ 2,635.90		$ 3,832.21		$ 656.46		$ 708.36		$ 254.73		$ 327.64
2007	5	**$ 1,258.97**	$ 4,071.11	**$ 1,926.59**	$ 5,941.68	**$ 314.82**	$ 1,042.81	**$ 511.25**	$ 1,384.53	**$ 314.75**	$ 574.22	**$ 44.95**	$ 260.22
2007	4		$ 2,812.13		$ 4,015.09		$ 727.99		$ 873.28		$ 259.47		$ 215.27
2008	5	**$ (125.32)**	$ 4,244.64	**$ (451.24)**	$ 6,101.42	**$ (125.91)**	$ 1,112.02	**$ 12.30**	$ 1,606.80	**$ 81.97**	$ 610.24	**$ 106.05**	$ 269.50
2008	4		$ 4,369.97		$ 6,552.66		$ 1,237.93		$ 1,594.50		$ 528.26		$ 163.44
2009	5	**$ (684.55)**	$ 4,409.17	**$ (1,852.12)**	$ 6,339.28	**$ (224.05)**	$ 1,110.75	**$ (704.68)**	$ 1,705.88	**$ (103.73)**	$ 649.69	**$ 136.66**	$ 282.87
2009	4		$ 5,093.72		$ 8,191.41		$ 1,334.80		$ 2,410.56		$ 753.42		$ 146.22
2010	5	**$ (563.10)**	$ 4,491.74	**$ (1,531.78)**	$ 6,618.06	**$ (177.89)**	$ 1,103.26	**$ (227.07)**	$ 1,715.96	**$ (113.14)**	$ 668.54	**$ 146.55**	$ 304.34
2010	4		$ 5,054.84		$ 8,149.84		$ 1,281.15		$ 1,943.03		$ 781.68		$ 157.79
2011	5	**$ (622.34)**	$ 4,626.31	**$ (1,937.75)**	$ 6,784.93	**$ (235.58)**	$ 1,154.69	**$ (496.49)**	$ 1,643.74	**$ (87.06)**	$ 688.92	**$ 158.65**	$ 325.89
2011	4		$ 5,248.65		$ 8,722.68		$ 1,390.27		$ 2,140.23		$ 775.98		$ 167.24
2012	5	**$ (387.02)**	$ 4,637.32	**$ (889.24)**	$ 6,757.95	**$ (239.70)**	$ 1,132.27	**$ (345.29)**	$ 1,577.77	**$ (44.89)**	$ 687.44	**$ 116.10**	$ 339.71
2012	4		$ 5,024.34		$ 7,647.18		$ 1,371.97		$ 1,923.06		$ 732.33		$ 223.62
2013	5	**$ (475.18)**	$ 4,693.90	**$ (922.02)**	$ 6,940.93	**$ (363.42)**	$ 1,142.12	**$ (403.85)**	$ 1,603.07	**$ (186.97)**	$ 681.88	**$ 107.06**	$ 361.18
2013	4		$ 5,169.08		$ 7,862.95		$ 1,505.54		$ 2,006.92		$ 868.85		$ 254.12
2014	5	**$ (394.84)**	$ 4,925.06	**$ (550.26)**	$ 7,472.93	**$ (332.69)**	$ 1,261.92	**$ (163.90)**	$ 1,846.43	**$ (219.13)**	$ 688.67	**$ 89.49**	$ 361.69
2014	4		$ 5,319.90		$ 8,023.19		$ 1,594.62		$ 2,010.33		$ 907.80		$ 272.20
2015	5	**$ (585.77)**	$ 4,992.69	**$ (1,097.49)**	$ 7,192.79	**$ (413.95)**	$ 1,273.21	**$ (422.45)**	$ 1,902.95	**$ (122.90)**	$ 680.17	**$ 126.55**	$ 383.22
2015	4		$ 5,578.45		$ 8,290.28		$ 1,687.16		$ 2,325.39		$ 803.07		$ 256.66
2016	5	**$ (473.09)**	$ 5,308.77	**$ (799.22)**	$ 7,600.48	**$ (345.52)**	$ 1,295.75	**$ (335.43)**	$ 1,881.08	**$ (220.28)**	$ 656.03	**$ 103.99**	$ 393.97
2016	4		$ 5,781.86		$ 8,399.70		$ 1,641.28		$ 2,216.51		$ 876.30		$ 289.98
2017	5	**$ (625.53)**	$ 5,315.80	**$ (949.13)**	$ 7,653.07	**$ (245.33)**	$ 1,308.89	**$ (354.35)**	$ 1,936.75	**$ (122.83)**	$ 724.98	**$ 133.98**	$ 418.15
2017	4		$ 5,941.33		$ 8,602.19		$ 1,554.22		$ 2,291.10		$ 847.81		$ 284.16
2018	5	**$ (882.29)**	$ 5,322.52	**$ (1,476.06)**	$ 7,730.14	**$ (200.99)**	$ 1,386.15	**$ (176.80)**	$ 1,967.47	**$ (208.69)**	$ 705.66	**$ 133.50**	$ 417.42
2018	4		$ 6,204.82		$ 9,206.20		$ 1,587.14		$ 2,144.27		$ 914.35		$ 283.92
2019	5	**$ (880.64)**	$ 5,481.40	**$ (1,173.48)**	$ 8,251.07	**$ (272.19)**	$ 1,397.88	**$ (181.98)**	$ 2,062.00	**$ (173.72)**	$ 721.85	**$ 101.34**	$ 414.25
2019	4		$ 6,362.05		$ 9,424.55		$ 1,670.07		$ 2,243.97		$ 895.57		$ 312.91
2020	5	**$ (902.79)**	$ 5,502.11	**$ (1,167.36)**	$ 8,127.23	**$ (369.29)**	$ 1,378.86	**$ (352.18)**	$ 2,141.25	**$ (181.08)**	$ 692.73	**$ 148.85**	$ 428.08
2020	4		$ 6,404.90		$ 9,294.59		$ 1,748.15		$ 2,493.43		$ 873.80		$ 279.23
2021	5	**$ (1,146.38)**	$ 5,528.05	**$ (1,781.66)**	$ 8,682.81	**$ (401.60)**	$ 1,324.20	**$ (1,034.85)**	$ 2,155.43	**$ (293.51)**	$ 673.77	**$ 177.63**	$ 516.13
2021	4		$ 6,674.43		$ 10,464.47		$ 1,725.79		$ 3,190.28		$ 967.27		$ 338.50
2022	5	**$ (1,034.71)**	$ 5,574.94	**$ (1,963.00)**	$ 8,903.77	**$ (384.37)**	$ 1,356.51	**$ (698.09)**	$ 2,267.52	**$ (250.59)**	$ 729.10	**$ 204.05**	$ 632.99
2022	4		$ 6,609.65		$ 10,866.77		$ 1,740.89		$ 2,965.62		$ 979.69		$ 428.94
2023	5	**$ (1,290.25)**	$ 5,445.98	**$ (1,891.50)**	$ 9,003.98	**$ (590.05)**	$ 1,379.49	**$ (1,350.18)**	$ 2,339.21	**$ (305.08)**	$ 744.07	**$ 108.69**	$ 596.42
2023	4		$ 6,736.23		$ 10,895.48		$ 1,969.54		$ 3,689.38		$ 1,049.15		$ 487.73
		5	$ 4,908.92		$ 7,314.41		$ 1,231.13		$ 1,834.33		$ 672.88		$ 386.46
		4	$ 5,390.13		$ 8,246.75		$ 1,468.05		$ 2,176.12		$ 781.64		$ 271.64
			$ (481.20)		$ (932.33)		$ (236.93)		$ (341.80)		$ (108.76)		$ 114.82

Appendix B

Reading and Math Student Achievement in the 4dsw and 5dsw Schedules by Year

Reading Achievement in the 4dsw and 5dsw Schedules by Year

		1	2	3	4	sum	%	
2008	4	26	52	158	147	383	79.63%	**-1.21%**
2008	5	4817	8077	25745	28684	67323	80.85%	
2009	4	45	67	180	206	498	77.51%	**-4.44%**
2009	5	3990	7990	24998	29408	66386	81.95%	
2010	4	55	115	330	409	909	81.30%	**-2.40%**
2010	5	3541	7240	22964	32384	66129	83.70%	
2011	4	73	107	355	413	948	81.01%	**-3.26%**
2011	5	3798	6646	22518	33432	66394	84.27%	
2012	4	111	276	715	645	1747	77.85%	**-8.21%**
2012	5	2834	6393	23778	33159	66164	86.05%	
2013	4	226	431	1067	1107	2831	76.79%	**-6.55%**
2013	5	4035	6899	23667	31051	65652	83.35%	
2016	4	992	865	945	456	3258	43.00%	**-6.31%**
2016	5	16810	16091	20482	11529	64912	49.31%	
2017	4	1110	785	871	360	3126	39.38%	**-8.86%**
2017	5	18029	16577	20602	11650	66858	48.24%	
2018	4	974	861	868	407	3110	41.00%	**-8.48%**
2018	5	17745	16369	21034	12377	67525	49.48%	
2019	4	996	857	889	432	3174	41.62%	**-7.57%**
2019	5	18009	16343	20687	12565	67604	49.19%	
2021	4	1237	1177	1207	583	4204	42.58%	**-3.05%**
2021	5	17816	15149	17595	10070	60630	45.63%	
2022	4	1427	1291	1294	644	4656	41.62%	**-3.80%**
2022	5	19289	16056	18598	10823	64766	45.43%	
2023	4	1740	1490	1456	694	5380	39.96%	**-4.54%**
2023	5	19492	15525	17619	10465	63101	44.51%	

Note. Color denotes MontCas (Pink) and SBAC (Yellow) data. Column 1 indicates the number of students who are Below Basic (MontCas) and Novice (SBAC); Column 2 indicates the number of students who are Basic (MontCas) and Nearing Proficient (SBAC); Column 3 indicates the number of students who are Proficient (MontCas & SBAC); Column 4 indicates the number of students who are Advanced (MontCas & SBAC). The *Sum* column denotes the total number of students assessed. The *percent* column is the percent of students who were proficient or advanced. The final column is the difference between the students in the 4dsw schedule and the students in the 5dsw schedule.

Math Achievement in the 4dsw and 5dsw Schedules by Year

		1	2	3	4	sum	%	
2008	4	69	81	145	88	383	60.84%	**-2.23%**
2008	5	11018	13845	25229	17231	67323	63.07%	
2009	4	108	112	179	99	498	55.82%	**-8.27%**
2009	5	11192	12642	23294	19258	66386	64.10%	
2010	4	165	206	341	197	909	59.19%	**-7.98%**
2010	5	9777	11938	24337	20077	66129	67.16%	
2011	4	170	212	353	213	948	59.70%	**-7.90%**
2011	5	9570	11936	24258	20630	66394	67.61%	
2012	4	434	370	587	356	1747	53.98%	**-14.03%**
2012	5	10078	11088	23247	21751	66164	68.01%	
2013	4	642	583	1008	598	2831	56.73%	**-9.69%**
2013	5	10728	11320	23252	20352	65652	66.42%	
2016	4	1052	1120	730	343	3245	33.07%	**-7.44%**
2016	5	17811	20714	16283	9952	64760	40.51%	
2017	4	1100	1053	654	321	3128	31.17%	**-9.19%**
2017	5	19126	20678	16351	10587	66742	40.36%	
2018	4	1072	980	666	324	3042	32.54%	**-8.06%**
2018	5	19660	20425	16268	11139	67492	40.61%	
2019	4	1105	1056	648	348	3157	31.55%	**-9.56%**
2019	5	19449	20322	16186	11571	67528	41.10%	
2021	4	1331	1253	853	400	3837	32.66%	**-2.04%**
2021	5	20750	18536	12945	7924	60155	34.69%	
2022	4	1654	1476	994	500	4624	32.31%	**-3.22%**
2022	5	21911	16101	11976	8975	58963	35.53%	
2023	4	1838	1719	1154	632	5343	33.43%	**-3.27%**
2023	5	21370	15550	11967	9435	58322	36.70%	

Note. Color denotes MontCas (Green) and SBAC (Blue) data. Column 1 indicates the number of students who are Below Basic (MontCas) and Novice (SBAC); Column 2 indicates the number of students who are Basic (MontCas) and Nearing Proficient (SBAC); Column 3 indicates the number of students who are Proficient (MontCas & SBAC); Column 4 indicates the number of students who are Advanced (MontCas & SBAC). The *Sum* column denotes the total number of students assessed. The *percent* column is the percent of students who were proficient or advanced. The final column is the difference between the students in the 4dsw schedule and the students in the 5dsw schedule.

Appendix C

Average ACT Scores for 4dsw Students From the First Year Through the Twelfth Year

	English	Math	Reading	Science	Comp
1	18.4	19.9	21.1	19.9	19.9
2	17.9	19.8	20.4	20.1	19.6
3	17.3	19.0	19.3	18.9	18.8
4	17.5	18.9	19.6	19.4	19.0
5	17.3	18.7	19.4	18.7	18.7
6	16.7	18.4	19.0	18.8	18.3
7	17.4	19.0	19.3	18.9	18.8
8	17.7	18.9	19.3	19.5	19.0
9	17.4	19.2	19.4	19.3	18.9
10	16.4	18.2	18.2	18.4	17.9
11	16.8	18.4	18.5	18.2	18.1
12	16.0	17.7	18.2	17.9	17.6
Difference	-2.5	-2.2	-2.8	-2.0	-2.3

Appendix D

Percentage of Students Scoring Basic (MontCas) or Novice (SBAC) by Grade Level and School Year in Reading

Schedule	Total													
4	59													
5	19		3rd Grade					4th Grade					5th Grade	
	2008	4	4.62%	**-0.39%**		2008	4	7.27%	**1.23%**		2008	4	5.97%	**-2.01%**
	2008	5	5.01%			2008	5	6.04%			2008	5	7.98%	
	2009	4	7.14%	**3.38%**		2009	4	12.63%	**7.20%**		2009	4	5.13%	**0.06%**
	2009	5	3.76%			2009	5	5.43%			2009	5	5.07%	
	2010	4	3.87%	**0.61%**		2010	4	4.76%	**-0.59%**		2010	4	6.59%	**2.26%**
Basic	2010	5	3.26%			2010	5	5.35%			2010	5	4.33%	
	2011	4	6.79%	**2.04%**		2011	4	5.52%	**0.28%**		2011	4	4.35%	**-0.66%**
	2011	5	4.75%			2011	5	5.24%			2011	5	5.00%	
	2012	4	5.61%	**1.43%**		2012	4	7.44%	**3.13%**		2012	4	5.71%	**1.74%**
	2012	5	4.19%			2012	5	4.31%			2012	5	3.98%	
	2013	4	7.72%	**3.15%**		2013	4	7.00%	**-0.24%**		2013	4	8.23%	**2.24%**
	2013	5	4.57%			2013	5	7.24%			2013	5	5.99%	
	2016	4	30.82%	**4.65%**		2016	4	36.90%	**6.74%**		2016	4	34.15%	**4.37%**
	2016	5	26.17%			2016	5	30.15%			2016	5	29.78%	
	2017	4	36.24%	**7.34%**		2017	4	40.03%	**8.78%**		2017	4	37.11%	**8.75%**
	2017	5	28.90%			2017	5	31.26%			2017	5	28.36%	
	2018	4	30.30%	**4.53%**		2018	4	38.71%	**8.09%**		2018	4	32.40%	**5.80%**
	2018	5	25.77%			2018	5	30.62%			2018	5	26.61%	
	2019	4	34.14%	**7.28%**		2019	4	34.48%	**1.90%**		2019	4	33.70%	**7.21%**
Novice	2019	5	26.86%			2019	5	32.58%			2019	5	26.48%	
	2021	4	30.63%	**-0.40%**		2021	4	33.38%	**-1.07%**		2021	4	33.03%	**1.80%**
	2021	5	31.03%			2021	5	34.45%			2021	5	31.23%	
	2022	4	31.77%	**0.74%**		2022	4	38.11%	**5.18%**		2022	4	31.13%	**-0.08%**
	2022	5	31.03%			2022	5	32.92%			2022	5	31.20%	
	2023	4	33.23%	**0.67%**		2023	4	33.26%	**0.32%**		2023	4	37.14%	**3.90%**
	2023	5	32.56%			2023	5	32.94%			2023	5	33.24%	
			4	11				4	10				4	10
			5	2				5	3				5	3
			6th Grade					7th Grade					8th Grade	
	2008	4	3.08%	**-3.14%**		2008	4	11.11%	**3.24%**		2008	4	9.09%	**-0.60%**
	2008	5	6.22%			2008	5	7.87%			2008	5	9.69%	
	2009	4	13.10%	**6.11%**		2009	4	6.41%	**0.38%**		2009	4	8.86%	**0.15%**
	2009	5	6.99%			2009	5	6.03%			2009	5	8.71%	
	2010	4	4.93%	**-0.74%**		2010	4	8.39%	**1.97%**		2010	4	7.74%	**0.66%**
Basic	2010	5	5.67%			2010	5	6.42%			2010	5	7.08%	
	2011	4	5.63%	**0.58%**		2011	4	15.29%	**9.08%**		2011	4	8.97%	**0.88%**
	2011	5	5.04%			2011	5	6.21%			2011	5	8.09%	
	2012	4	5.84%	**1.73%**		2012	4	3.76%	**-0.06%**		2012	4	10.27%	**4.98%**
	2012	5	4.11%			2012	5	3.82%			2012	5	5.29%	
	2013	4	4.82%	**-0.31%**		2013	4	10.44%	**3.81%**		2013	4	9.68%	**2.33%**
	2013	5	5.13%			2013	5	6.63%			2013	5	7.35%	
	2016	4	26.03%	**3.47%**		2016	4	34.07%	**11.41%**		2016	4	20.74%	**-2.90%**
	2016	5	22.56%			2016	5	22.66%			2016	5	23.64%	
	2017	4	27.07%	**3.41%**		2017	4	35.71%	**11.71%**		2017	4	35.77%	**10.71%**
	2017	5	23.65%			2017	5	24.00%			2017	5	25.07%	
	2018	4	27.55%	**3.52%**		2018	4	26.72%	**1.85%**		2018	4	31.62%	**6.10%**
	2018	5	24.02%			2018	5	24.87%			2018	5	25.52%	
	2019	4	25.39%	**2.03%**		2019	4	31.59%	**7.67%**		2019	4	29.25%	**2.64%**
Novice	2019	5	23.37%			2019	5	23.92%			2019	5	26.61%	
	2021	4	25.17%	**-1.37%**		2021	4	27.96%	**0.22%**		2021	4	26.76%	**1.36%**
	2021	5	26.54%			2021	5	27.75%			2021	5	25.40%	
	2022	4	25.70%	**-1.68%**		2022	4	28.63%	**0.78%**		2022	4	27.90%	**-0.51%**
	2022	5	27.38%			2022	5	27.85%			2022	5	28.41%	
	2023	4	28.40%	**-0.01%**		2023	4	36.05%	**6.05%**		2023	4	26.37%	**-1.84%**
	2023	5	28.41%			2023	5	30.01%			2023	5	28.21%	
			4	7				4	12				4	9
			5	6				5	1				5	4

Note. The red highlighted cells indicate instances where a greater percentage of students in the 4dsw schedule scored Basic/Novice than students in the 5dsw schedule in Reading.

Appendix E

Percentage of Students Scoring Basic (MontCas) or Novice (SBAC) by Grade Level and School Year in Math

Schedule	Total													
4	64													
5	14		3rd Grade					4th Grade					5th Grade	
Basic	2008	4	29.23%	**10.75%**		2008	4	14.55%	**-1.32%**		2008	4	14.93%	**0.14%**
	2008	5	18.48%			2008	5	15.86%			2008	5	14.79%	
	2009	4	23.81%	**6.07%**		2009	4	24.21%	**7.99%**		2009	4	21.79%	**6.00%**
	2009	5	17.74%			2009	5	16.22%			2009	5	15.80%	
	2010	4	20.65%	**4.94%**		2010	4	12.24%	**-2.76%**		2010	4	21.56%	**7.64%**
	2010	5	15.71%			2010	5	15.01%			2010	5	13.92%	
	2011	4	20.37%	**5.21%**		2011	4	15.95%	**1.36%**		2011	4	13.04%	**-0.30%**
	2011	5	15.16%			2011	5	14.59%			2011	5	13.35%	
	2012	4	25.26%	**8.60%**		2012	4	22.98%	**7.15%**		2012	4	21.79%	**8.33%**
	2012	5	16.66%			2012	5	15.83%			2012	5	13.45%	
	2013	4	29.50%	**11.57%**		2013	4	18.31%	**1.77%**		2013	4	20.88%	**5.61%**
	2013	5	17.94%			2013	5	16.54%			2013	5	15.27%	
Novice	2016	4	25.72%	**2.28%**		2016	4	28.93%	**7.31%**		2016	4	36.86%	**5.28%**
	2016	5	23.44%			2016	5	21.62%			2016	5	31.59%	
	2017	4	31.38%	**5.38%**		2017	4	27.13%	**5.11%**		2017	4	42.08%	**11.41%**
	2017	5	26.00%			2017	5	22.02%			2017	5	30.66%	
	2018	4	31.69%	**6.00%**		2018	4	29.17%	**6.42%**		2018	4	41.36%	**11.06%**
	2018	5	25.69%			2018	5	22.74%			2018	5	30.30%	
	2019	4	31.25%	**5.51%**		2019	4	27.14%	**4.84%**		2019	4	37.18%	**6.29%**
	2019	5	25.74%			2019	5	22.30%			2019	5	30.89%	
	2021	4	29.93%	**0.51%**		2021	4	26.47%	**-0.49%**		2021	4	43.45%	**4.57%**
	2021	5	29.42%			2021	5	26.95%			2021	5	38.88%	
	2022	4	31.27%	**1.96%**		2022	4	29.54%	**3.94%**		2022	4	37.39%	**-0.29%**
	2022	5	29.31%			2022	5	25.59%			2022	5	37.68%	
	2023	4	28.71%	**-0.35%**		2023	4	23.96%	**-0.54%**		2023	4	38.18%	**1.05%**
	2023	5	29.06%			2023	5	24.51%			2023	5	37.13%	
			4	12				4	9				4	11
			5	1				5	4				5	2
			6th Grade					7th Grade					8th Grade	
Basic	2008	4	15.38%	**-2.65%**		2008	4	14.81%	**-0.08%**		2008	4	18.18%	**2.03%**
	2008	5	18.04%			2008	5	14.89%			2008	5	16.15%	
	2009	4	27.38%	**9.43%**		2009	4	15.38%	**-0.95%**		2009	4	16.46%	**-0.65%**
	2009	5	17.95%			2009	5	16.33%			2009	5	17.11%	
	2010	4	22.54%	**7.68%**		2010	4	16.08%	**-1.48%**		2010	4	15.48%	**3.79%**
	2010	5	14.86%			2010	5	17.56%			2010	5	11.70%	
	2011	4	21.88%	**7.75%**		2011	4	19.75%	**4.14%**		2011	4	16.55%	**2.92%**
	2011	5	14.12%			2011	5	15.60%			2011	5	13.64%	
	2012	4	21.31%	**6.78%**		2012	4	28.53%	**13.47%**		2012	4	29.28%	**13.44%**
	2012	5	14.53%			2012	5	15.06%			2012	5	15.83%	
	2013	4	22.02%	**5.24%**		2013	4	19.95%	**4.26%**		2013	4	24.84%	**9.07%**
	2013	5	16.78%			2013	5	15.69%			2013	5	15.78%	
Novice	2016	4	32.40%	**4.04%**		2016	4	35.35%	**9.40%**		2016	4	36.38%	**1.60%**
	2016	5	28.36%			2016	5	25.95%			2016	5	34.78%	
	2017	4	33.20%	**3.20%**		2017	4	35.99%	**7.61%**		2017	4	42.17%	**6.63%**
	2017	5	30.00%			2017	5	28.39%			2017	5	35.54%	
	2018	4	34.35%	**5.10%**		2018	4	31.02%	**0.93%**		2018	4	43.74%	**6.29%**
	2018	5	29.24%			2018	5	30.09%			2018	5	37.45%	
	2019	4	36.54%	**6.62%**		2019	4	34.82%	**6.41%**		2019	4	43.82%	**8.00%**
	2019	5	29.92%			2019	5	28.40%			2019	5	35.82%	
	2021	4	31.33%	**-4.28%**		2021	4	36.90%	**1.81%**		2021	4	41.64%	**0.47%**
	2021	5	35.62%			2021	5	35.09%			2021	5	41.17%	
	2022	4	36.76%	**1.45%**		2022	4	35.89%	**1.28%**		2022	4	44.44%	**0.79%**
	2022	5	35.32%			2022	5	34.62%			2022	5	43.66%	
	2023	4	34.30%	**-0.96%**		2023	4	39.75%	**3.19%**		2023	4	42.28%	**0.73%**
	2023	5	35.26%			2023	5	36.57%			2023	5	41.54%	
			4	10				4	10				4	12
			5	3				5	3				5	1

Note. The red highlighted cells indicate instances where a greater percentage of students in the 4dsw schedule scored Basic/Novice than students in the 5dsw schedule in Math.

Appendix F

Percentage Proficient for Students Receiving Special Education Services

Note. MontCas 2008-2013, SBAC 2016-2023, Combined 2008-2023

Appendix G
Teacher Preparation Program Completer Survey

Have you signed an employment contract for the 2024-2025 school year?

- ☐ Yes (if yes then answer 1, 2, & 3)
- ☐ No (if no then answer a & b)

1. Which statement best describes you?

☐ I accepted a teaching position in a school that has a 5-day school week.
☐ I accepted a teaching position in a school that has a 4-day school week.

2. Was the number of school days per week a factor in your decision to accept the position?

☐ Yes
☐ No

3. If you were offered a teaching contract from two districts with similar salaries, which statement would best describe your choice?
   I prefer a 5-day school week.
   I prefer a 4-day school week.

a. If you have not accepted a position, will the number of school days per week be a factor in your employment decision?
   Yes
   No

b. If you were offered a teaching contract from two districts with similar salaries, which statement would best describe your choice?
   I prefer a 5-day school week.
   I prefer a 4-day school week.

Appendix H

Survey for Research Questions 7 and 8

Survey Question 1. Is your school district currently operating on a five-day school week or a four-day school week schedule?

- Five-Day School Week
- Four-Day School Week
- Four-Day School Week (Modified or Hybrid)

Survey Question 2: *Which of the following best describes your school district student population?*

- 150 or Less
- 151-500
- 501-1200
- 1201 or more

Survey Question 3. How many minutes of planning/prep time are provided for teachers per week? **Please use the slider to record time.**

0 60 120 180 240 300

- Elementary Teachers
- Middle School Teachers
- High School Teachers
- Specialists

Survey Question 4. Check all that apply to your school district's professional development schedule:

- Beginning of year PIR Days. **(How many?)**
  - Open ended text
- Parent Teacher Conferences **(How many half-days do you typically allocate for parent-teacher conferences each semester?)**
  - Open ended text
- Early out for professional development (Professional Learning Community (PLC), Multi-Tier System of Support (MTSS), Professional Development, etc.) **Please list how many days per month:**
  - Open ended text

- Scheduled non instructional days used for professional development. **Please list how many days per month.**
  - Open ended text
- Professional development during the work day, not early out.
- End of year professional development or work days. **(How many?)**

Survey Question 5. If professional development is conducted during the workday, when are these opportunities typically scheduled? **(Check all that apply)**

- Before school hours
- During lunch breaks
- During planning periods
- After school hours
- Rotating schedule to accommodate different teacher availabilities
- Combination of before/after school and during planning periods

Survey Question 6. If you are on a four-day school week, are teachers ever required to work on the fifth day?

- Yes
- No

Survey Question 7: If teachers are required to work on the fifth day of a four-day school week, how many total workdays per month are they required to attend?

- Open ended text

Survey Question 8. If you are on a four-day school week and teachers are required to work on the fifth day, for what purpose? **(Check all that apply)**

- Professional Development
- Professional Learning Community (PLC) Time
- Multi-Tier System of Support (MTSS) Coordination Meeting
- Lesson Planning and Classroom Preparation
- Student Enrichment **(What Specific Activities)**
  - Open ended text
- Other
  - Open ended text