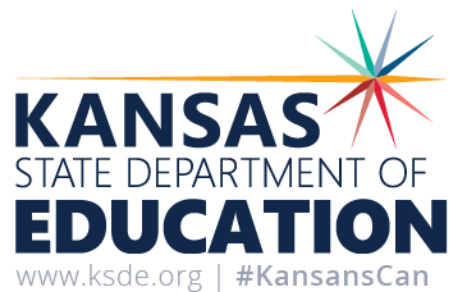




Four-day School Week



Description and comparison of schools using a 4-day and 5-day week

Kansas leads the world in the success of each student.



Kansas leads the **world** in
the success of each student



History of hours and days of school

Year	Days	Hours
1992	180 6 hour days	No Option
1993	181 6 hour days	1086 hours
1994	183 6 hour days	1098 hours
1995	186 6 hour days	1116 hours



Question: Is learning best acquired in mass or distributed practice?

Evidence

- Number of meta-analyses: 5
- Number of studies: 510
- Number of students: 167,763
- Number of effects: 1,115
- Weighted mean effect size: 0.65



Question: Is learning best acquired in mass or distributed practice?

“A number of such desirable difficulties have been identified, but one of the oldest and most reliable surrounds the distributed practice effect which was first reported by the "father" of memory research, Hermann Ebbinghaus (1885/1964). In short, distributing exposure to information benefits learning.” – John Hattie



Question: Does more learning time lead to improve student success?

Both research and practice indicate that adding time to the school year can have a meaningfully positive impact on student proficiency and, indeed, upon a child's entire educational experience. - David A. Farbman, Ph.D



4-day buildings

- Total **93** buildings have used a 4-day week schedule
 - Some returned to 5-day
 - Some went back-and-forth
- Includes:
 - Public and Private districts
 - Building types 2, 3, 4, 7, 8 and 9

School Year	Total Count of Buildings
2011	40
2012	43
2013	42
2014	44
2015	41
2016	43
2017	51
2018	50
2019	53
2020	59
2021	57
2022	62
2023	60
2024	77
Total	722

Start Year	New Buildings	Proportion of Total
2011*	40	43.01
2012	5	5.38
2013	1	1.08
2014	2	2.15
2015	1	1.08
2016	2	2.15
2017	9	9.68
2018	0	0.00
2019	2	2.15
2020	6	6.45
2021	0	0.00
2022	5	5.38
2023	4	4.30
2024	16	17.20
Total	93	100.00



Current state of 4-day week buildings

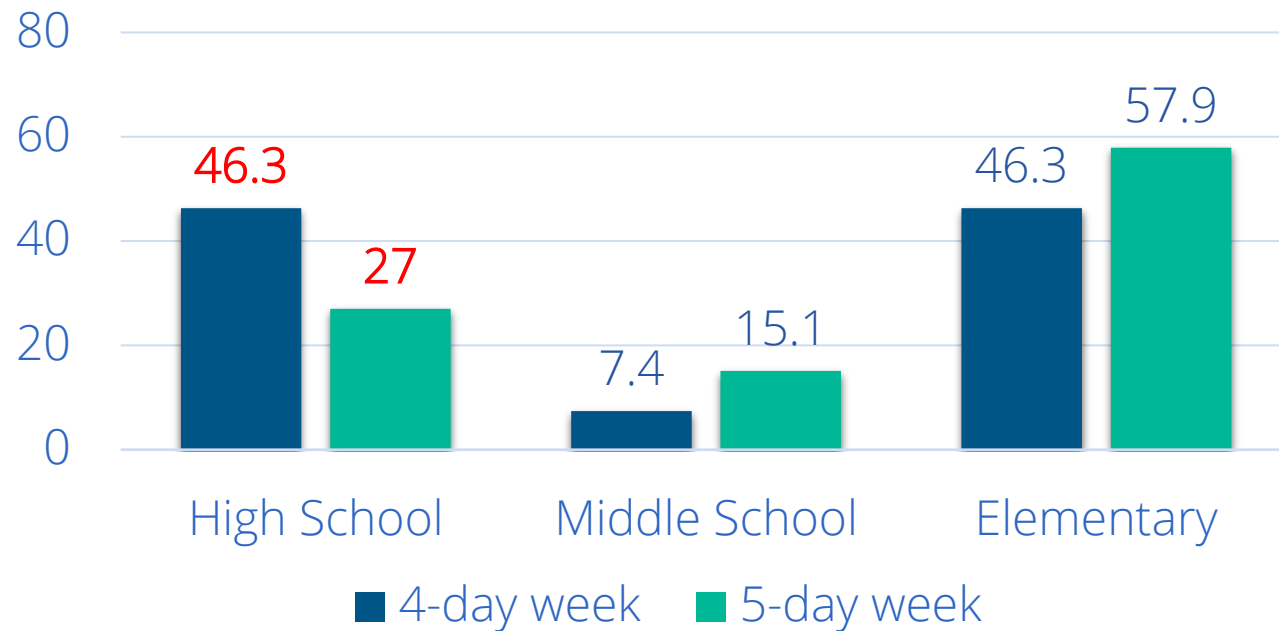
- School year 2022-2023 primary population for analysis
- Requirements for analysis
 - Building level: Elementary, middle, junior high or high school only
 - Public or private school district only
 - Must have students enrolled
 - Must have state assessment data

	Total buildings	Proportion of buildings
4-day schedule	54	3.89
5-day schedule	1335	96.11
Total	1389	100.00



Group comparison: Building type

Proportion of buildings by schedule



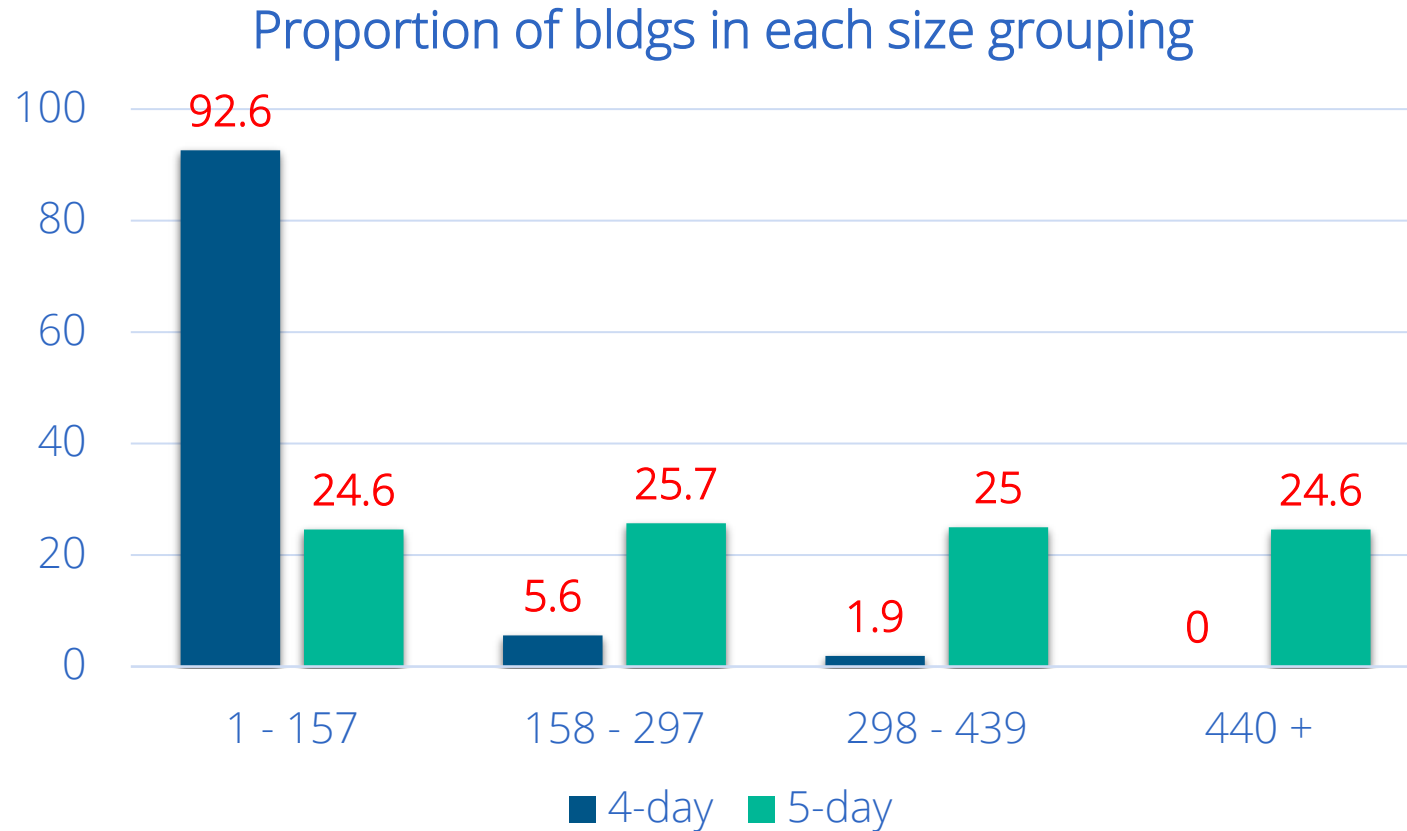
The proportion of high school, middle school and elementary buildings for 4-day and 5-day schedules.

The proportion of high schools is significantly different between the 4- and 5-day schedules.

There is a significantly higher proportion of high school buildings using a 4-day week schedule than a 5-day schedule.



Group comparison: Building size



Building size is based on enrollment count; split into 5-day building quantiles

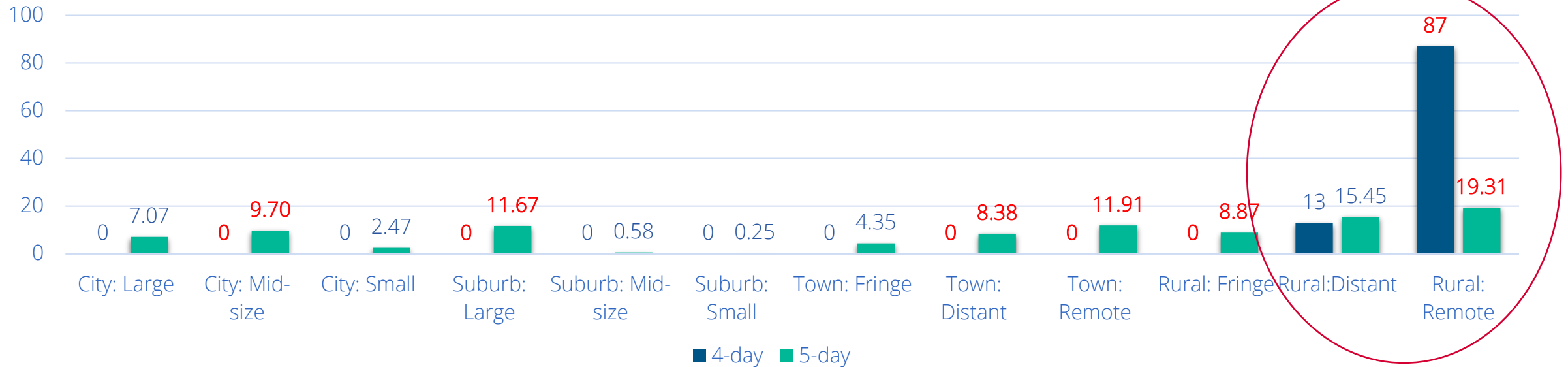
There are significant differences in the size of the buildings using 4- and 5-day schedules.

Most of the 4-day schedule buildings (50) have < 158 students enrolled.



Group comparison: NCES Locale

Proportion of buildings in each locale by schedule



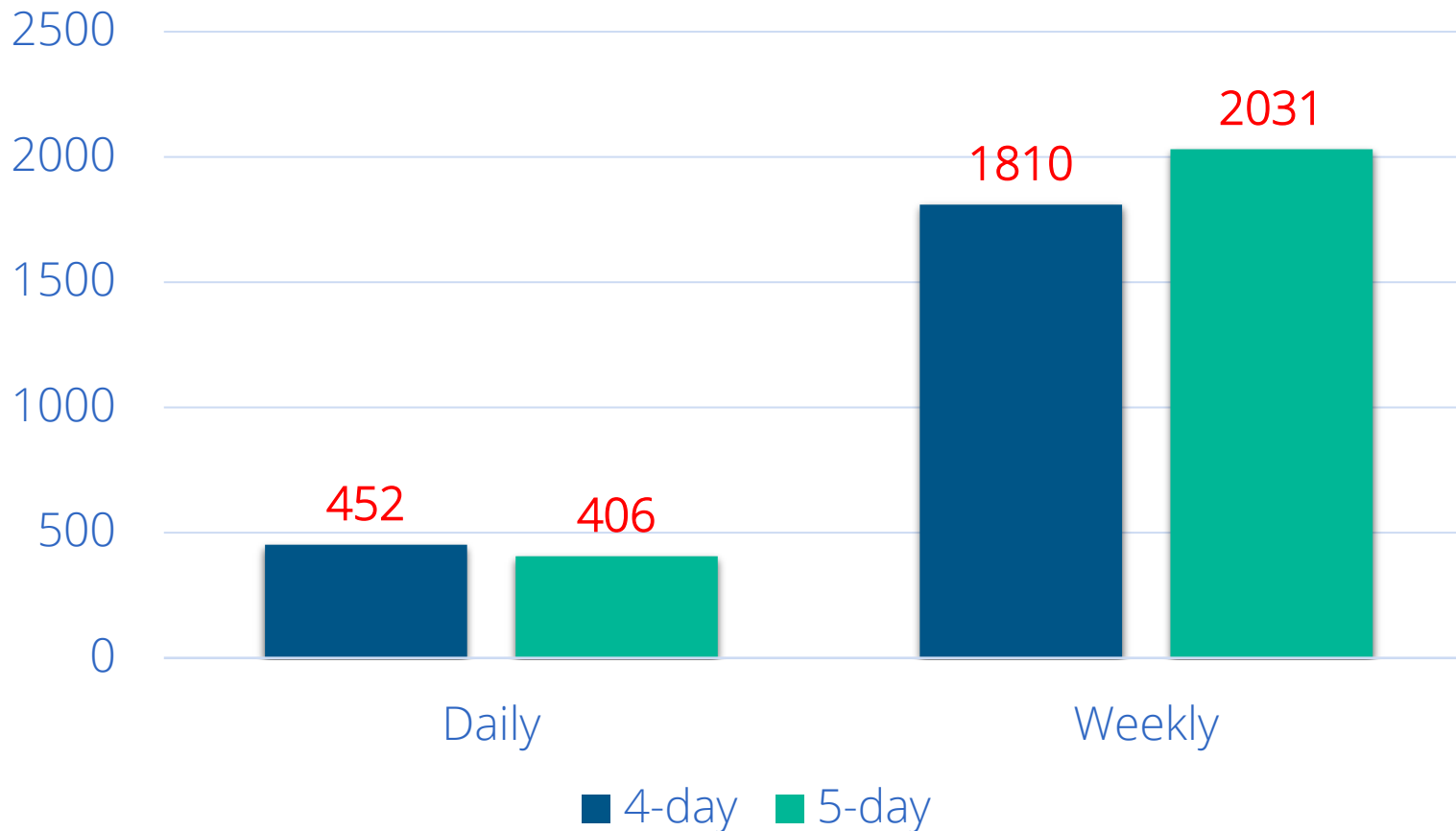
We see some statistically significant differences in the proportion of buildings in certain locales, particularly the rural remote locale.

All buildings with a 4-day school week fall into the categories of 'Rural distant' and 'Rural remote'.



Group comparison: Instruction Time

Instruction Time: Class Minutes



In average, the **daily** instruction time of 4-day buildings (452) is significantly longer (46 minutes) than that of 5-day buildings (406 minutes).

However, the **weekly** instruction time of 4-day buildings (1810 minutes) is significantly shorter (221 minutes) than that of 5-day buildings (2031 minutes)



Characteristics of 4-day schedule bldgs

- When comparing the 4-day and 5-day building characteristics we see that 4-day buildings have statistically significant higher proportions of:
 - High school buildings
 - Small size schools, enrolling under 200 students in tested grade levels
 - Rural, remote buildings
- There are also significant differences in the total daily and weekly minutes of instruction



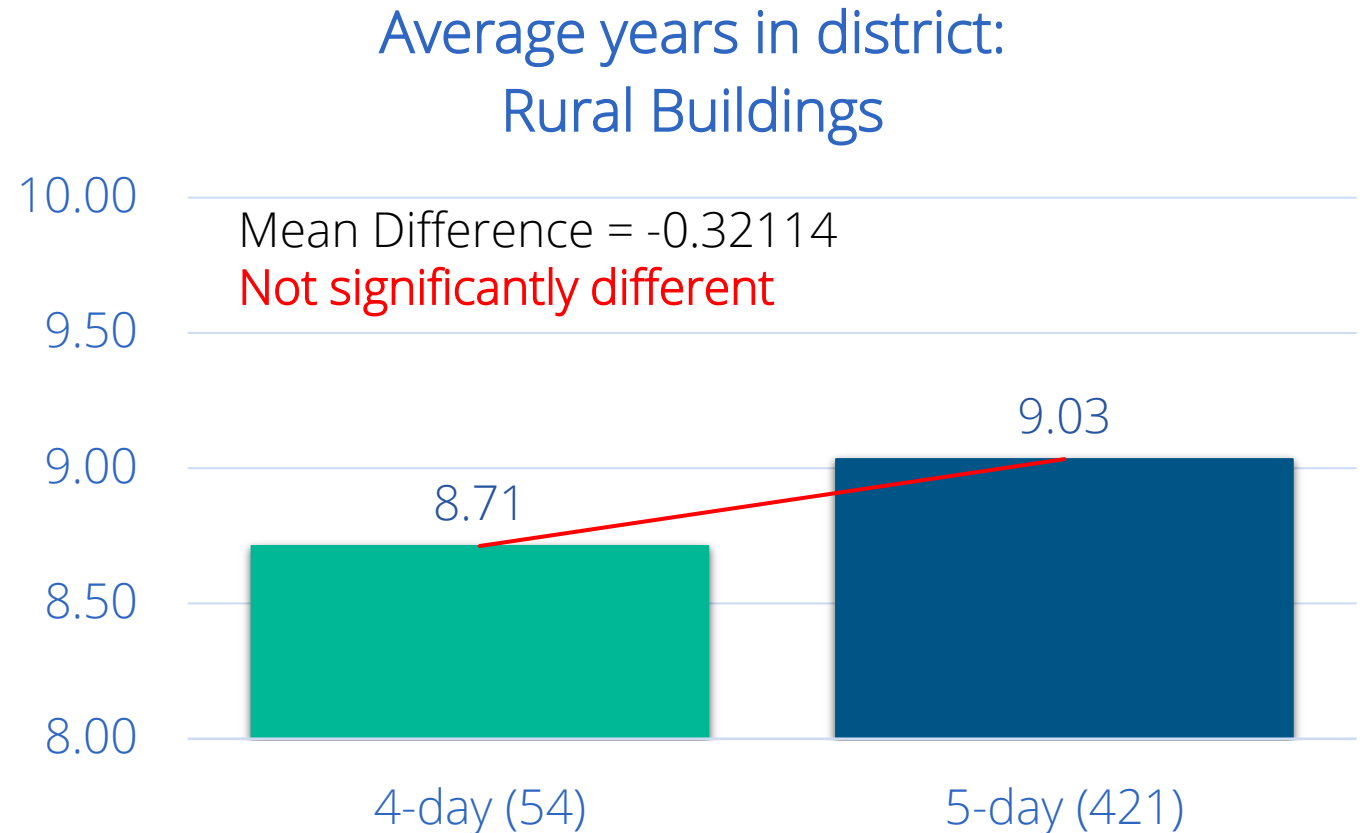
Advanced analysis

- Recall that all 4-day buildings are considered *Rural* based on the NCES locale codes
- To examine more comparable groups, we continued the analysis by looking closely at all *rural* (distant and remote) buildings and districts
- Comparing *rural* districts and buildings using the 4-day and 5-day school week schedule to ask:
 - Are there significant differences in the average years of teaching experience?
 - Are there significant differences in the percent of novice teachers?
 - Are there significant differences in student performance on state assessments and ACT?



Teacher years of experience

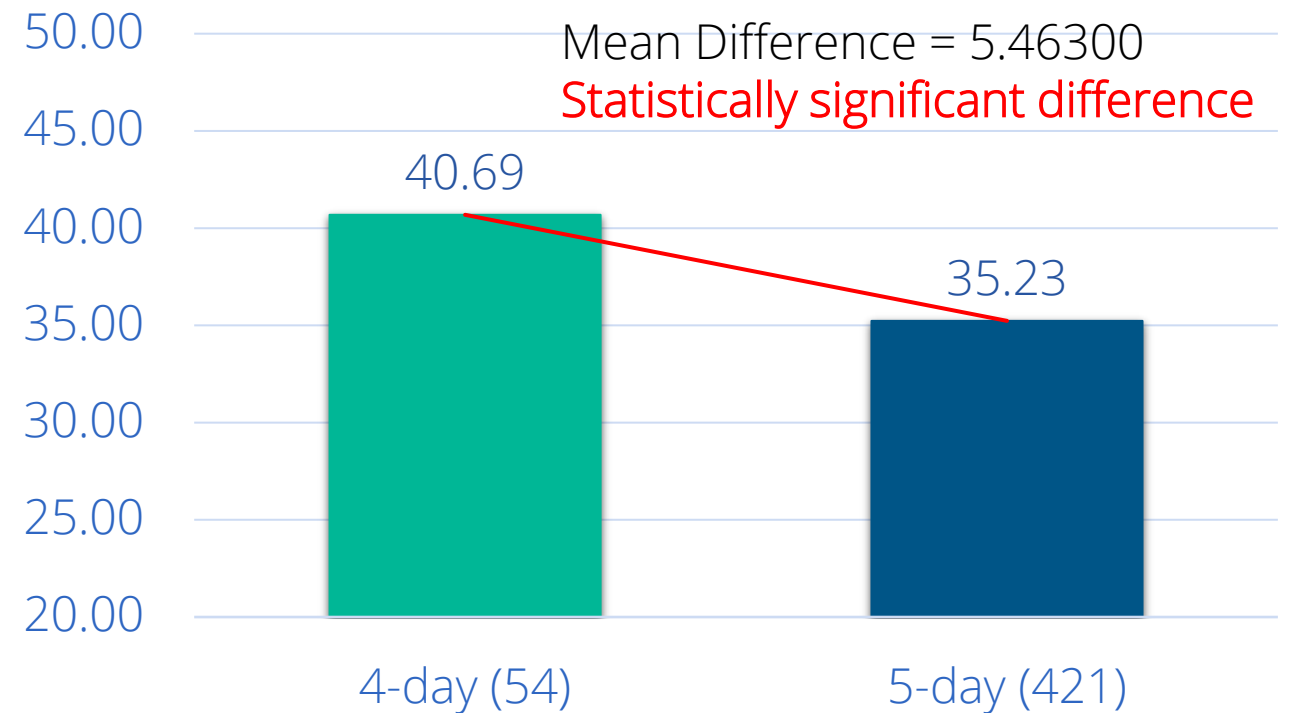
- For 2022-2023 school year, the average number of years of experience for current teachers
 - On average, 5-day buildings have teachers with more years (0.32) working in the district
 - This difference is not statistically significant



Percent of Novice Teachers

- For 2022-2023 school year, the average percent of novice teachers in the district
 - Teachers with ≤ 3 years of experience within district
 - On average, 4-day buildings have a higher percentage (5.46%) of novice teachers
- This difference is highly significant

Average percent of novice teachers:
Rural Buildings



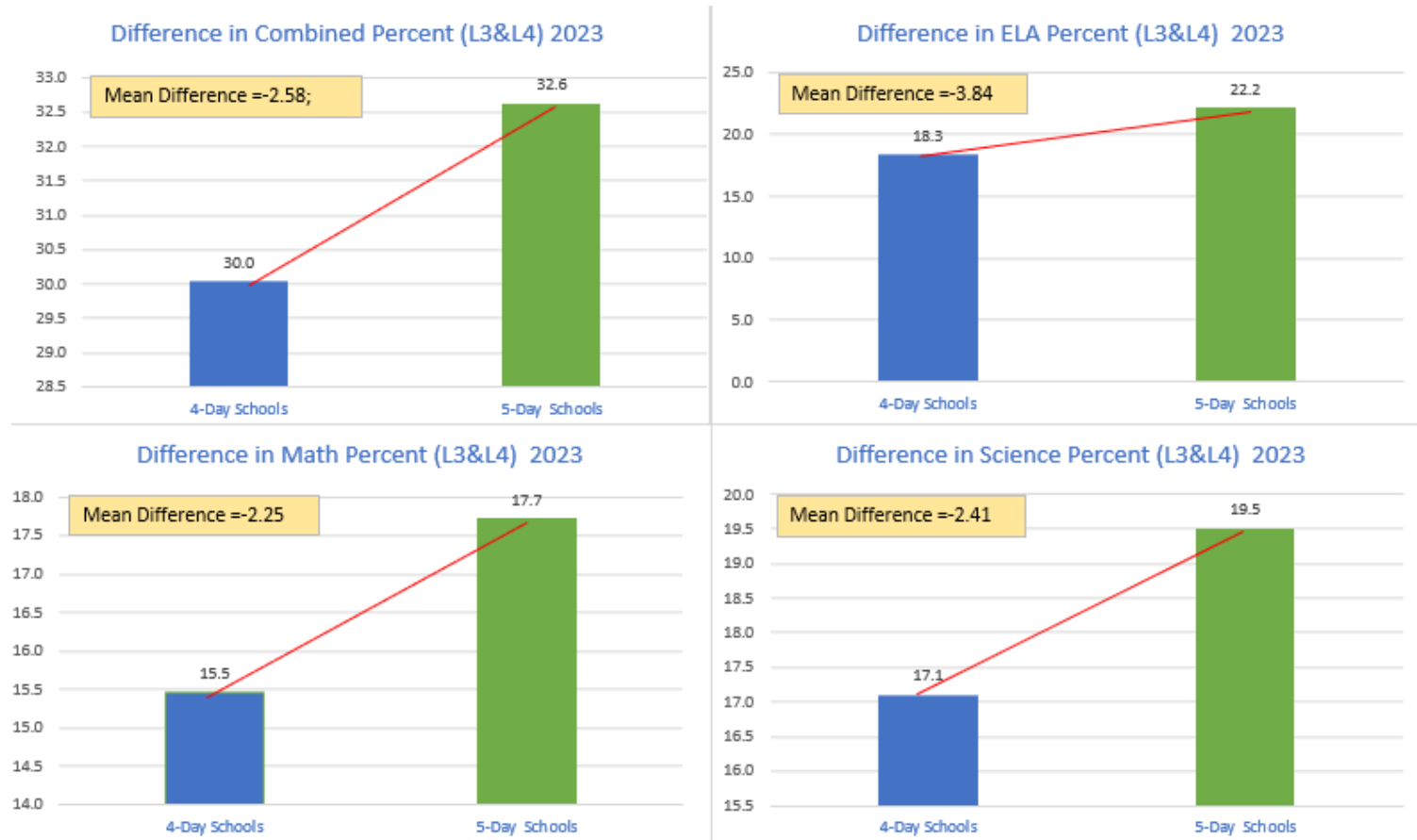
Question: Is the academic performance of students in 4-day and 5-day buildings significantly different?

- 4 performance areas on the State Assessments are included in the analysis:
 - Combined percent of level 3 and level 4 students on ELA, math and science
 - ELA percent of level 3 and level 4 students
 - Math percent of level 3 and level 4 students
 - Science percent of level 3 and level 4 students
- 5 performance areas on the ACT are included in the analysis:
 - Combined composite score
 - English score
 - Reading score
 - Math score
 - Science score
- Mark on statistically significant levels
 - * $p \leq 0.05$ (significant); ** $p \leq 0.01$ (very significant); *** $p \leq 0.001$ (highly significant);



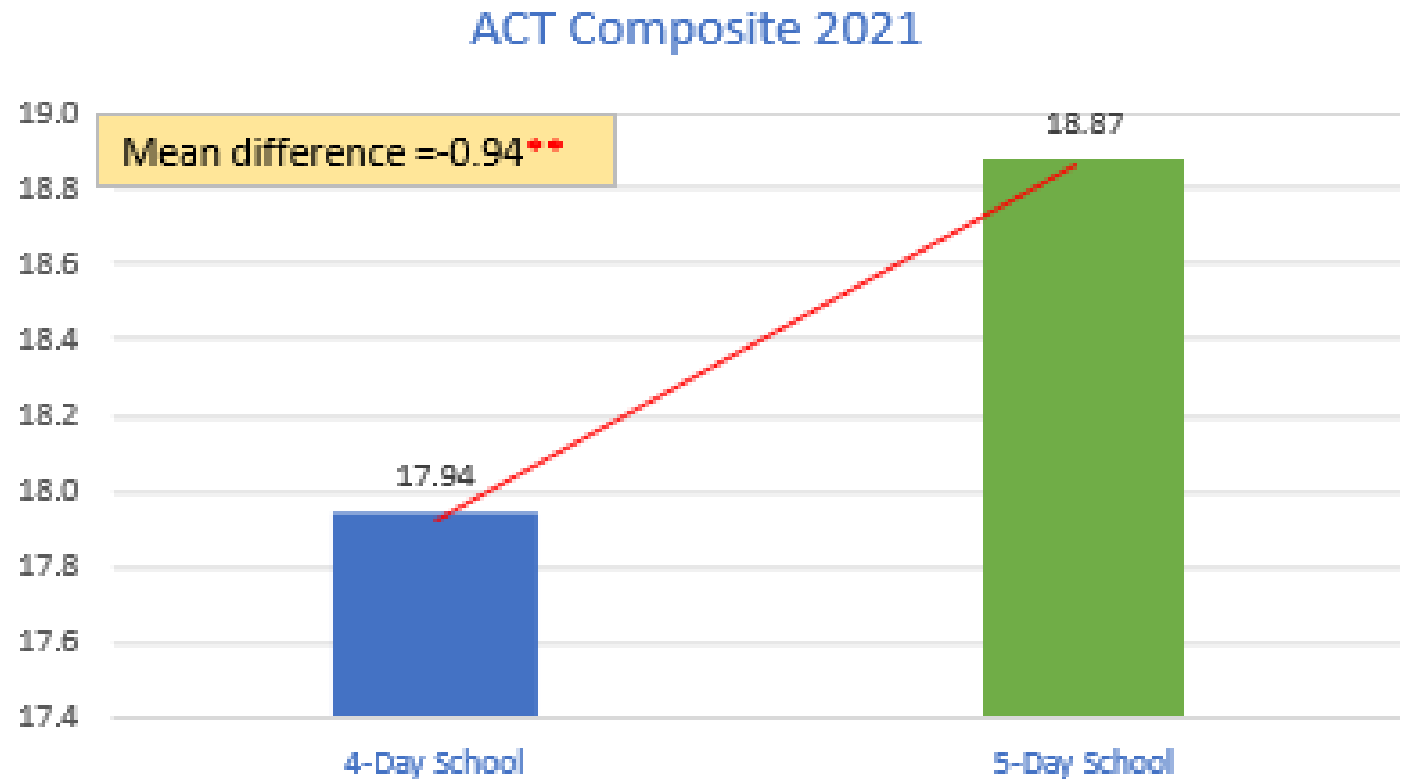
Performance on State Assessments

- For 2022-2023 school year, the average percent of students proficient on state assessments is compared between 4-day and 5-day schools (54 vs. 421) in similar rural communities.
- 5-day schools are performing slightly better (2.25-3.84 on average) than 4-day schools.
- These mean differences are not significant statistically due to the small N size of 4-day schools.



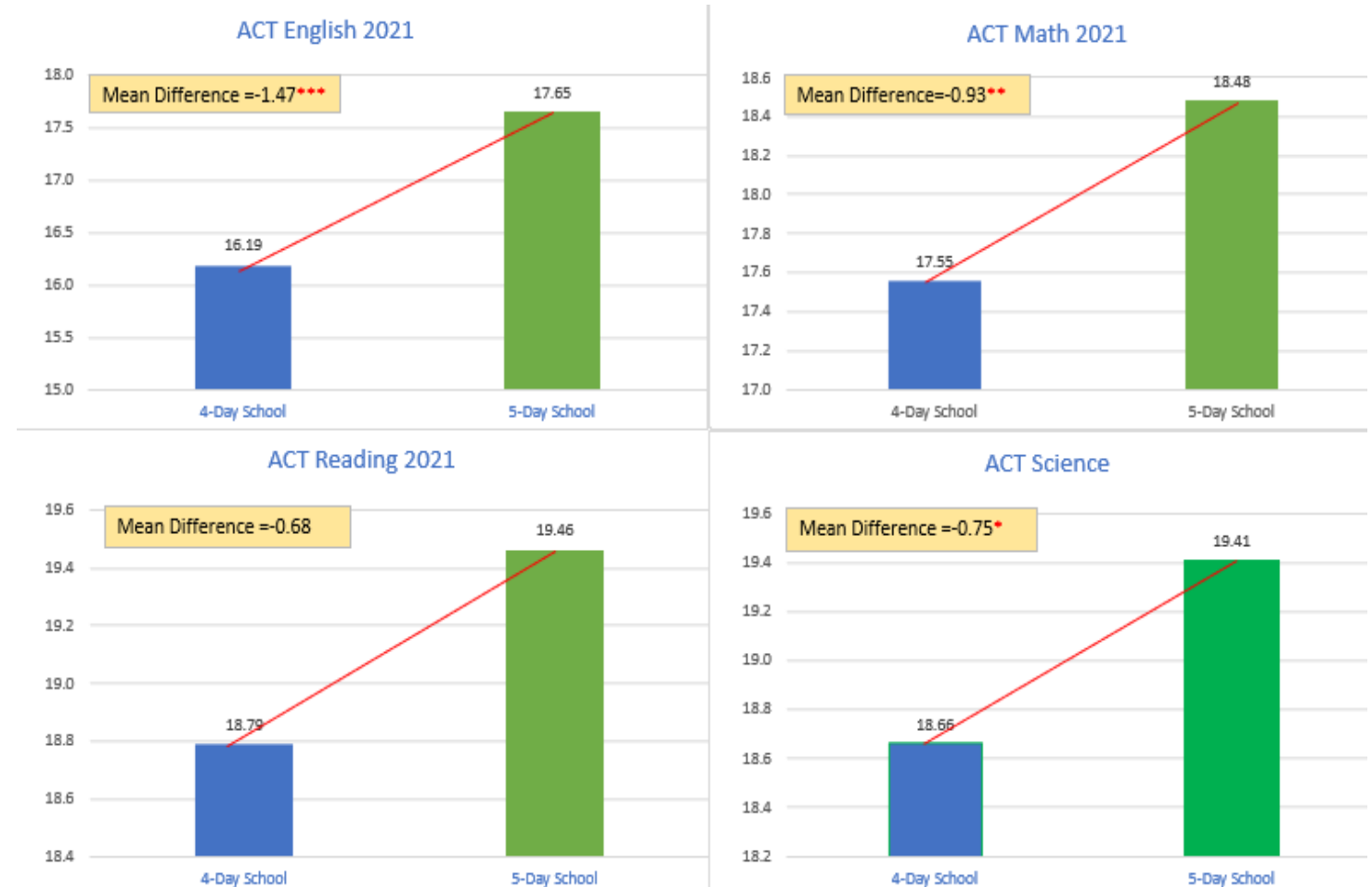
Performance on ACT: Composite

- 2021 ACT composite scores are compared between 4-day and 5-day schools (23 vs. 168) in the similar rural communities.
- 5-day schools are performing much better (0.94 in average) than 4-day schools.
- This mean difference is very significant statistically.



Performance on ACT: Subject Areas

- 2021 ACT subject area scores are compared between 4-day and 5-day schools (23 vs. 168) in the similar rural communities.
- On average, 5-day schools are performing better in English (1.47), Math (0.93) and Science (0.75) than 4-day schools.
- These mean differences are significant statistically.



Key Findings

- On average, rural 4-day buildings have *significantly* more novice teachers and teachers with fewer years of experience overall
- Academic performance
 - In general, rural 5-day schools are performing better than 4-day schools in all 4 performance areas on state assessments though the difference is not statistically significant
 - Rural 5-day schools are performing *significantly* better than 4-day schools in English, Math and Science subject areas and the composite on the ACT
- The mechanisms on how school schedules interact with school performance remains unclear-need to dig into it
 - Need to look at both what a 4-day schedule causes and what causes 4-day schedule





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