CLEVELAND METROPOLITAN SCHOOL DISTRICT

CMSD Calendar Evaluation

February 25, 2025

Roadmap

- Context
- Research questions
- Findings
- Conclusion

Context

- The district currently operates schools on multiple calendars, with varying amounts of additional days and minutes for students and teachers.
- We lack an understanding of how these different calendar types in CMSD effect student outcomes.
- Studying school calendars presents various methodological challenges to ensure that we are isolating what effects are due to differences in calendars versus what is due to other differences in schools or students.
- The Cleveland Alliance for Education Research (CAER) was tasked as a research partner to help CMSD design and execute a rigorous and impartial analysis of school calendars.

Cleveland Alliance for Education Research (CAER)

- CAER is a researcher-practitioner partnership (RPP) between the Cleveland Metropolitan School District (CMSD), Cleveland State University (CSU), and the American Institutes for Research (AIR).
- RPPs are long-term, mutually beneficial collaborations that promote the production and use of research. They are modeled on the work of the UChicago Consortium on School Research.
- CAER's mission is to improve outcomes for K-12 students in Cleveland, Ohio. To accomplish this, CAER conducts and shares high-quality research on behalf of CMSD to inform policy and practice.

Research questions

In collaboration with leadership in the CMSD Academics division, CAER developed a set of research questions (RQ) to guide our inquiry into school calendars. These questions were grouped into themes.

Theme	Research question(s)
Demographics	RQ 1: Do students enrolling in schools with additional time differ from students enrolling in schools without additional time?
Achievement	RQ 2: How do students with additional school time perform on state tests compared to similar students without additional school time?
Engagement	RQ 3: Does engagement differ between students/staff at schools with additional time and students/staff at schools without additional time?
Culture	RQ 4: How does the climate at schools with additional time compare to those without additional time? RQ 5: What do parents, staff, and students think of different school calendars?
Cost	RQ 6: What is the cost of any potential benefits found for student outcomes (achievement, culture, engagement)?

Calendar types

- There were five different calendar types studied.
  - Extended Year - 195 days (EY 195): 6 K8 schools, 4 high schools
  - Extended Year - 205 days (EY 205): 2 high schools*
  - Extended Year - New Tech (EY New Tech): 3 high schools
  - Year round (YR): 6 high schools
  - Traditional: 59 K8 schools, 14 HS schools**
- Some schools within these calendar types also have additional minutes in the school day, which was another factor studied in the research.

*The School of One and Downtown Education Center also have an EY 205 calendar but are excluded from this analysis due to the unique nature of their programs.

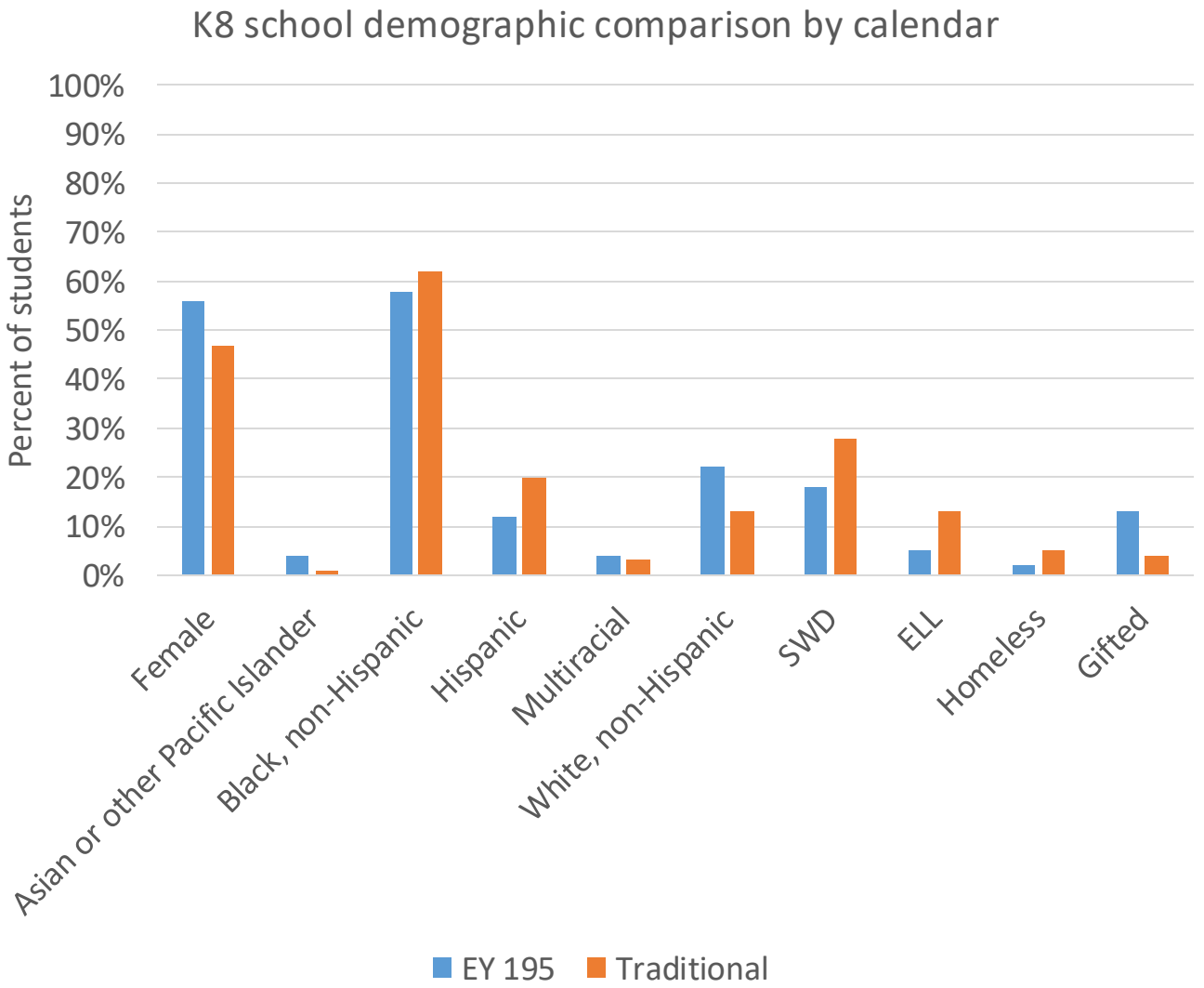
**For purposes of this analysis, CMSD remote school is separated into a separate K8 and high school

Findings – Demographics

RQ 1: Do students enrolling in schools with additional time differ from students enrolling in schools without additional time?

K8 schools

- Students with non-traditional calendars are more likely to be gifted and White, non-Hispanic and less likely to be a students with disabilities, compared to students with traditional calendars.
- Schools with non-traditional calendars less likely to have SWDs and ELLs and more likely to have gifted students.

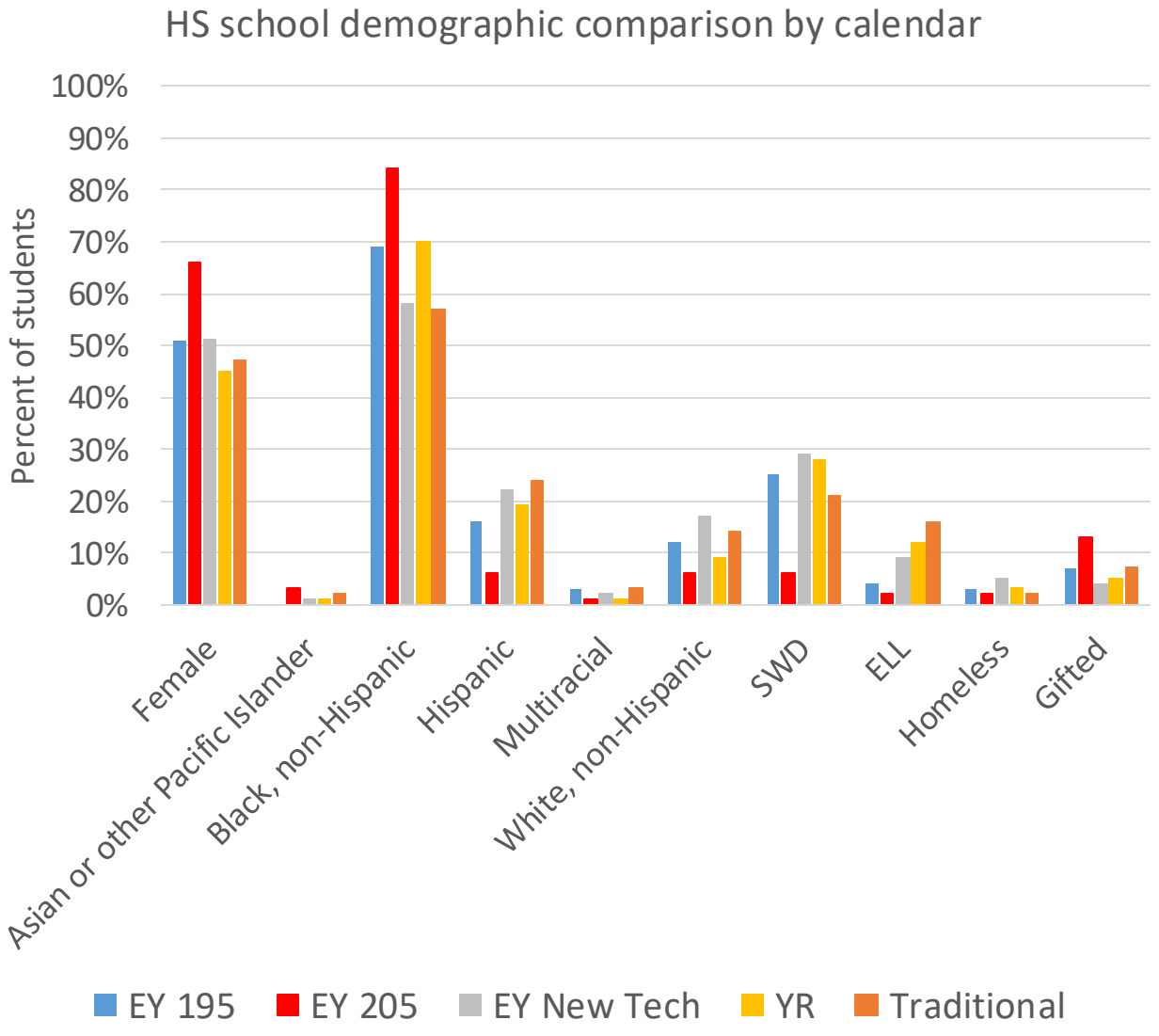


Findings – Demographics

RQ 1: Do students enrolling in schools with additional time differ from students enrolling in schools without additional time?

High schools

- Schools with non-traditional calendars similar to traditional calendar schools, with exception of EY 205 schools.
- Students with EY 205 calendars are more likely to be gifted and less likely to be a students with disabilities, compared to high school students with traditional calendars.
- Students with other non-traditional calendar types are more likely to be Black, non-Hispanic and less likely to be Hispanic compared to high school students with traditional calendars.

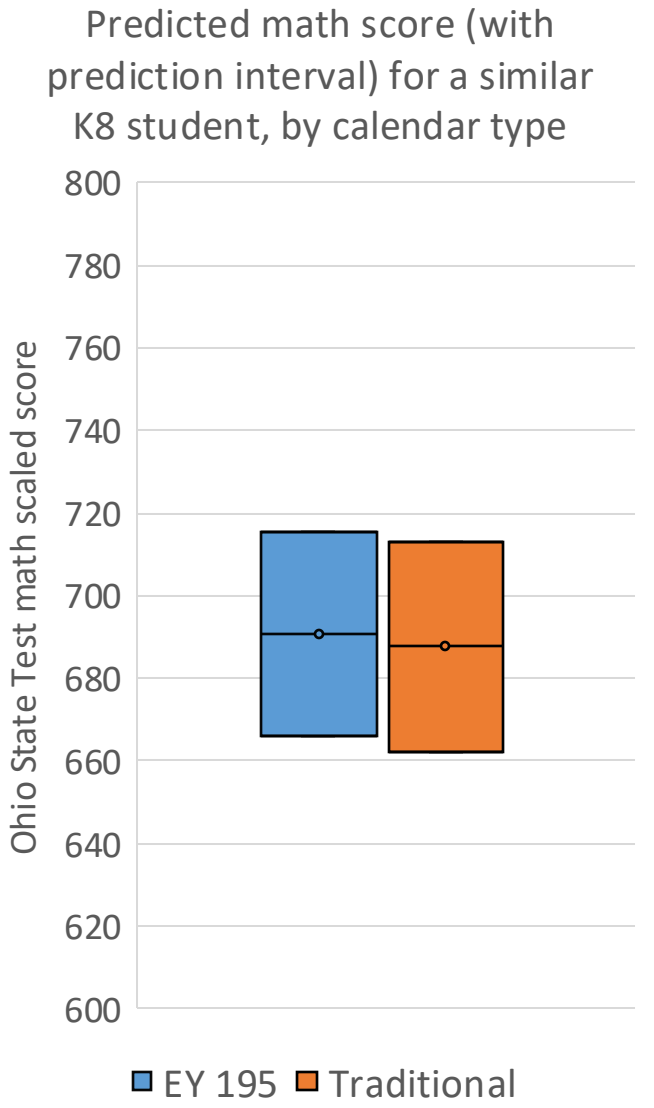


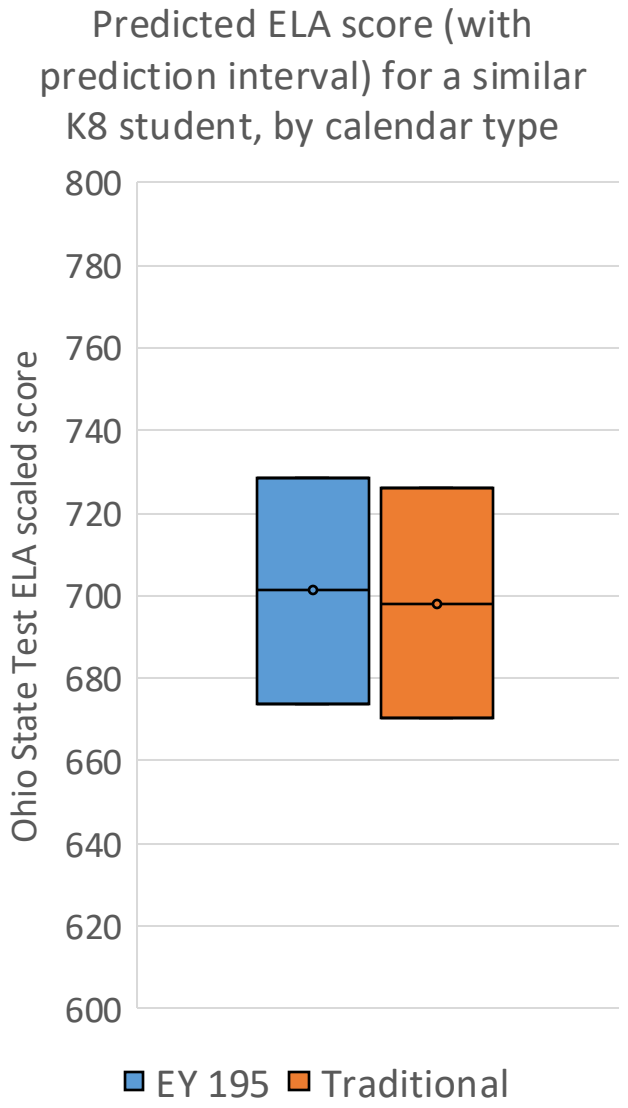
Findings – Achievement

RQ 2: How do students with additional school time perform on state tests compared to similar students without additional school time?

K8 schools

- We find no evidence that a non-traditional calendar or the minutes in the school day are associated with improved scores in ELA or Math.
- We find no strong evidence that a non-traditional calendar is associated with improved scores in ELA or math.



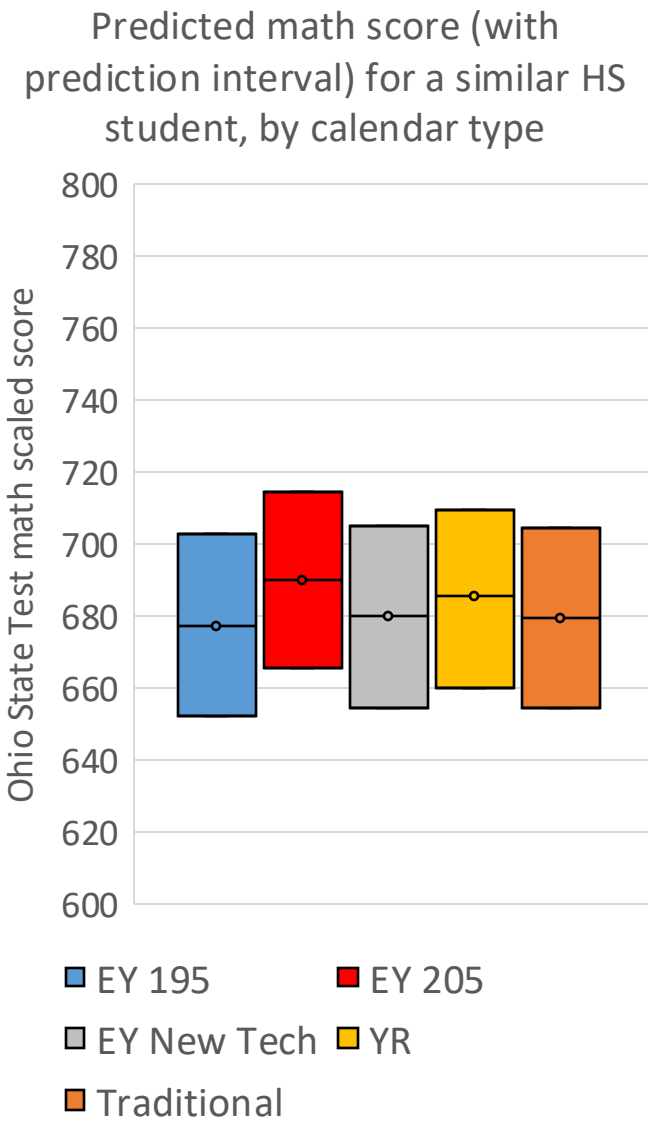


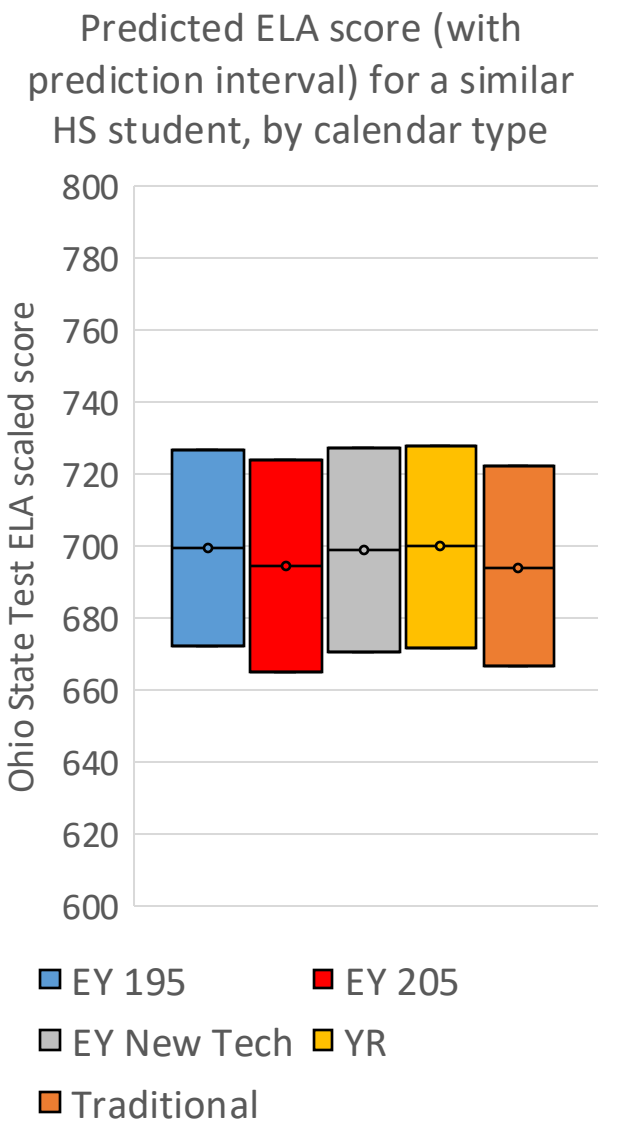
Findings – Achievement

RQ 2: How do students with additional school time perform on state tests compared to similar students without additional school time?

High schools

- We find no evidence that a non-traditional calendar or the minutes in the school day are associated with ELA or math instructional time.
- We find some evidence that, all else held equal, EY 205 high schools specifically have meaningfully higher math scores compared to traditional calendar high schools.





Findings – Engagement

RQ 3: Does engagement differ between students/staff at schools with additional time and students/staff at schools without additional time?

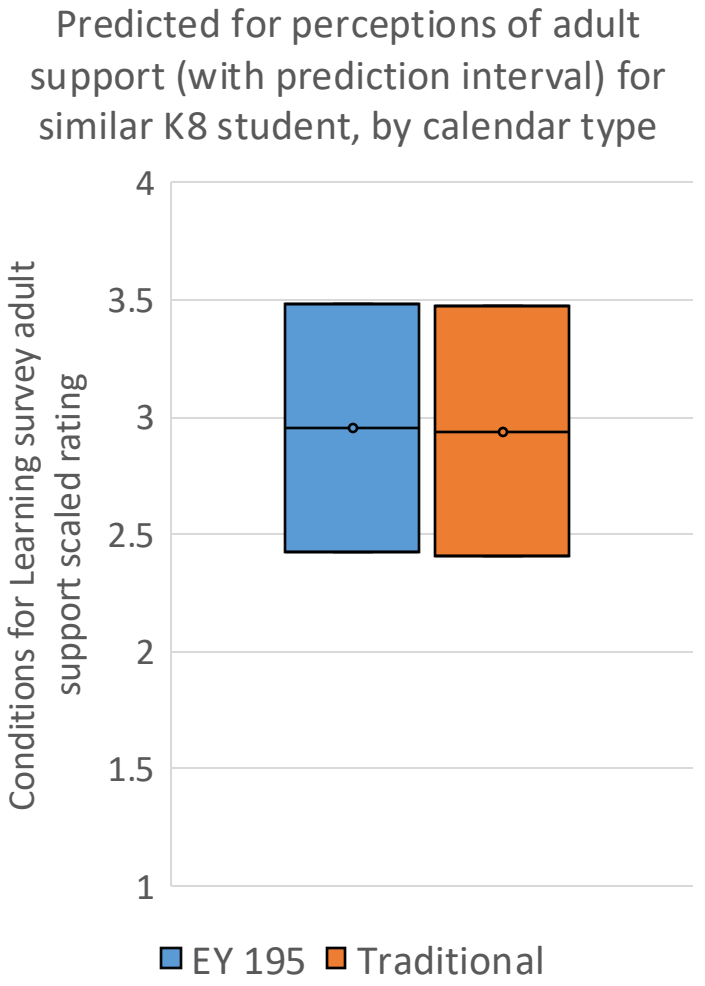
- We find no strong evidence that a non-traditional calendar or additional minutes in the school day are associated with student or staff attendance.
- We see some patterns of student attendance outside of the traditional calendars being lower compared to attendance during the traditional school year.

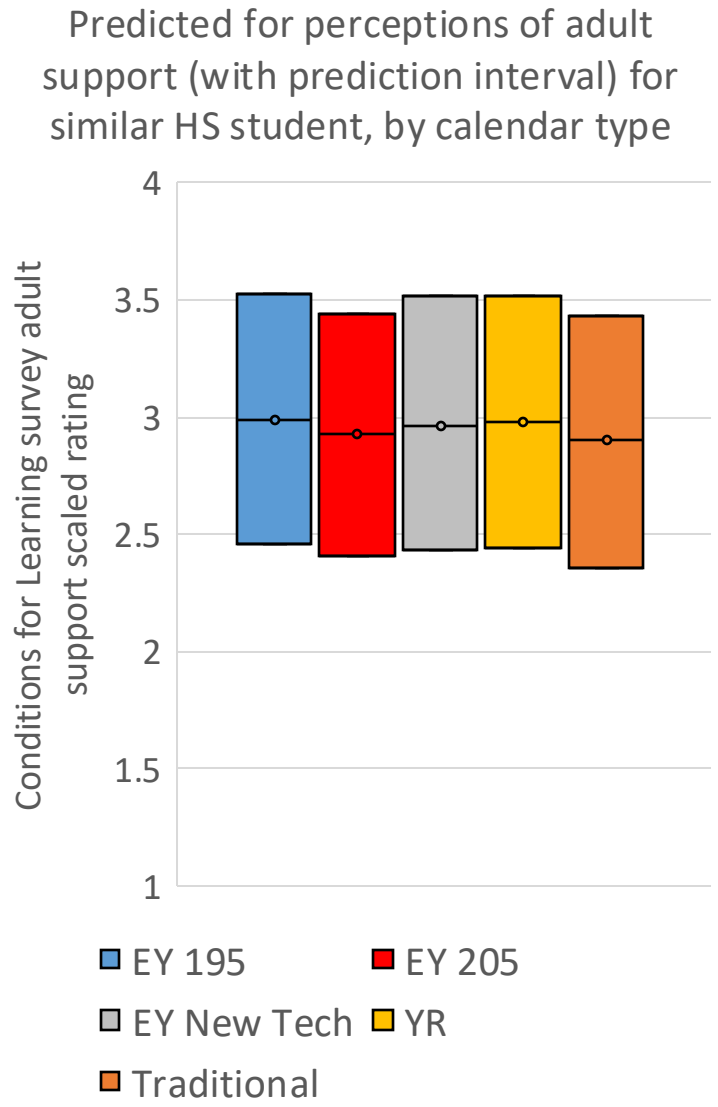
Calendar Type	Attendance rate before the traditional school year starts	Attendance rate during the traditional school year	Attendance rate after the traditional school year ends
K8 schools			
EY 195		91.2%	83.1%
High schools			
EY 195		74.9%	71.6%
EY 205	82.8%	83.1%	80.2%
YR	73.9%	76.1%	78.3%

Findings – Culture

RQ 4: How does the climate at schools with additional time compare to those without additional time?

- We find some evidence that a non-traditional calendar is associated with higher student perceptions of support from adults.
- While we see consistently higher predicted ratings of adult support among high school calendar types, differences are not meaningfully large.





Findings – Culture

RQ 4: How does the climate at schools with additional time compare to those without additional time?

- We find no strong evidence that a non-traditional calendar or additional minutes in the school day are associated with improved student perceptions related to:
  - safety,
  - academic challenge,
  - peer social emotional learning,
  - ability to stay focused, or
  - ability to regulate off-task behavior.
- We find no significant evidence that a non-traditional calendar or additional minutes in the school day are associated with student suspensions.

Findings – Culture survey results

RQ 5: What do parents, staff, and students think of different school calendars?

Parent/Guardian Survey

- The majority of parent/guardian respondents across all calendar types have sorted into schools with a day length and school year length that they want to stay the same.
- For parents/guardians, safety and academic ratings were consistently the most important factors determining school choices while the length of the school year was consistently the least important factor.

Staff Survey

- The majority of staff respondents across all calendar types have sorted into schools with a day length and school year length that they want to stay the same.
- Pay is one of the most important factors staff use when choosing a school to work in.
- Other top factors are continuing to have the same position/subject assignment and continuing to work at their current school.

Findings – Culture survey results

RQ 5: What do parents, staff, and students think of different school calendars?

Student Survey

- For students, there is a diversity of opinions about the length of the school day and school year by calendar type. Generally, we see students more in favor of keeping calendars as they are or shortening them.
- Safety, academic ratings, special course offerings and extracurricular activities were the most important factors for students when choosing a school.
- High school students valued having more time to work jobs outside of school.

Findings – Culture focus group themes

RQ 5: What do parents, staff, and students think of different school calendars?

Parents value being able to choose from unique school models.

Staff talked about student attendance outside the normal school year being a challenge.

Parents felt long school days could be taxing for students and valued being able to spend more time with their children.

Staff thought YR model helped limit summer slide and helped with behavioral routines.

Parents in non-traditional calendars liked the extra time for art/music.

Staff felt extra time in the school day or school year helped with school model specific programming.

Staff felt families struggled with having students in different calendar types.

Staff expressed concerns about compensation if calendars change.

Findings – Cost

RQ 6: What is the cost of any potential benefits found for student outcomes (achievement, culture, engagement)?

- We analyzed differences in adjusted per pupil instructional spending between calendar types.
- We find significant evidence that EY 195 is related to higher adjusted per pupil instructional spending.
- We find no evidence that EY 205, EY New Tech or YR calendars are related to higher adjusted per pupil instructional spending.
- Taking an identical school profile related to demographics, test scores, attendance, and school culture, we can put this profile in different calendar types to predict instructional spending costs.

Findings – Cost

RQ 6: What is the cost of any potential benefits found for student outcomes (achievement, culture, engagement)?

- Holding everything equal aside from calendar type and minutes in a school day, we find that non-traditional calendars are all predicted to have higher instructional costs.
- We see a meaningful difference in per pupil instructional spending between EY 195 and traditional calendars.

K8 calendar types	Adj per pupil instructional spending
EY 195	$9,302.84
Traditional	$8,286.80

High school calendar types	Adj per pupil instructional spending
EY 195	$8,898.68
EY 205	$8,055.67
EY New Tech	$8,576.10
YR	$8,589.63
Traditional	$7,924.88

Conclusions

Final synthesis – Student outcome and spending data

- In *most* cases we find limited evidence that non-traditional calendar types or additional minutes in a school day relate to improved student outcomes based on our student outcome data.
- In *all* cases we find non-traditional calendars have higher adjusted per pupil instructional costs based on predicted student spending.
- EY 205 high schools have substantively better math scores, compared to traditional calendars, holding all else equal.

Final synthesis – Family, staff, and student surveys

- We find that most parents and staff have sorted into a calendar that they would prefer to stay the same.
- We see that the length of the school year or school day were not the most important considerations for parents, staff, and students in choosing a school.
- There is a diversity of student opinions on calendar types, with generally higher rates of students wanting to decrease the length of the school year particularly.

CLEVELAND METROPOLITAN SCHOOL DISTRICT

Thank you.

Appendix I: Methodological details

Statistical methods

Creating appropriate comparison groups

- The differences in the demographics of the student populations across calendars presents a challenge to understanding what differences in student outcomes are due to a difference in calendar type versus a difference in the underlying students themselves.

- To help isolate the specific effect of school calendars on outcomes of interest, we implemented a matching algorithm to find students that otherwise look similar to each other but vary in whether they are in a traditional versus non-traditional CMSD calendar.

Creating appropriate comparison groups

- We used the following factors to estimate a student's probability to be in a non-traditional calendar.
  - Gender
  - Race / ethnicity
  - Disability status
  - English language learner status
  - Homeless status
  - Gifted status
  - Percentile scores on the NWEA Fall ELA and Math assessments
  - Prior year attendance rate
  - Median family income of the zip code the student lives in
  - Whether the student made an active school choice in the current or previous year

Creating appropriate comparison groups

- These probabilities were used to find similar students that only varied in the calendar type of the school they attended.
- Tables below summarize demographics in the matched groups.

Calendar type	Female	Black, non-Hispanic	Hispanic	White, non-Hispanic	Asian
Non-traditional	53%	60%	16%	17%	3%
Traditional	53%	60%	18%	16%	2%

Calendar type	SWD	ELL	Homeless	Gifted
Non-traditional	21%	7%	2%	13%
Traditional	22%	8%	1%	9%

Calendar type	NWEA Math Percentile	NWEA ELA Percentile	Median family income	Attendance Rate 2023 SY	School chooser
Non-traditional	35	41	$53,215	89%	18%
Traditional	33	41	$53,597	88%	19%

Estimating the effects of non-traditional CMSD calendars

- Theoretically, student outcomes will be a result of a combination of student level characteristics embedded within a larger school level context.
- The nested nature of our data (students within varied school contexts) calls for a particular statistical modeling strategy: hierarchical linear modeling.
- We will estimate effects for various student characteristics while also allowing for variance due to the school context students are nested in.
- This strategy should allow us to capture variation in outcomes due to the differences in schools that is otherwise not directly observed via the factors explicitly identified in our model.
- In two cases (staff attendance and per pupil spending) outcomes are situated at a school level and we estimate simple linear models instead.

Estimating the effects of non-traditional CMSD calendars

- In each of our models, there are two elements we will be looking for as an indicator that having a non-traditional CMSD calendar is associated with the outcomes of interest.

- Do we see significant evidence that being in a non-traditional calendar or having more minutes in the school day are related to the outcome?
  - This would be the most powerful direct evidence. It would indicate that holding all other things equal, non-traditional calendars or schools with longer days have a direct relationship with the outcomes.

Estimating the effects of non-traditional CMSD calendars

- In each of our models, there are two elements we will be looking for as an indicator that having a non-traditional CMSD calendar is associated with the outcomes of interest.

- Do we see significant evidence that other time related factors (minutes scheduled in ELA or Math, minutes, minutes attended of ELA or math, total minutes attended in a school year) are related to the outcome?
  - This might be evidence that non-traditional calendars with longer school days and longer school years have a relationship with the outcome.
  - It would depend on the amount of time non-traditional schools schedule students overall and in subjects specifically.

Estimating the effects of non-traditional CMSD calendars

- Our models will allow us to generalize what outcomes would look like, given a common set of inputs.

- This allows us to simulate what an otherwise identical student, aside from factors related to school calendars, would look like on our outcomes of interest.

- In the cases of school level linear models, we compare an identical school profile, aside from factors related to school calendars.

- These simulated outcomes can be compared across calendar types to identify whether there are substantively meaningful differences between the specific calendar types on different outcomes of interest.

Describing statistical significance in models

- When evaluating whether a predictor has a statistically significant relationship to an outcome, we rely on academic conventions for p-values.
  - P-value <= 0.05: In these cases, we describe relationships as having as *strong or significant evidence*.
  - P-value >0.05 and P-value <= 0.10: In these cases, we describe relationships as having as *weak or some evidence*.
  - P-value > 0.10: In these cases, we describe relationships as having *no evidence*.
- The use of these conventions (and what the proper conventions are) have been debated among statisticians and scientists. We use them with the full caution advised by the American Statistical Association.
- In particular, p-values alone "do not measure the size of an effect or the importance of a result." We might be very certain that differences exist, but those differences may not be meaningful or important.
- We must also assess substantive significance.

Describing substantive significance in models

- When evaluating whether a predictor has a substantive effect, we examine prediction intervals for out of sample estimates and/or how many standard deviations are represented by a difference in estimates.
- Examining the overlap of a prediction interval between different calendar types allows us assess just how likely estimates for different calendar types will fall within each other's intervals.
- John Hattie's meta-analyses of effect sizes for 150 different influences on learning outcomes found the average effect size (Cohen's d) to be 0.40.
- Be dividing the difference in estimated values by the standard deviation, we can assess whether the observed differences are meaningfully large. Hattie's work also provides a guide for us to look for interventions with an effect size of at least 0.40.
- In cases where we see less overlap in prediction intervals and large effect sizes, we describe results as *meaningfully different*.

Outcomes of interest

- The outcomes we were interested in are below.
- Achievement outcomes
  - Scores on state English Language Arts and Mathematics assessments
  - The amount of instructional time a student receives in English Language Arts and Mathematics
- Engagement outcomes
  - Student and staff attendance rates
- Culture outcomes
  - Out of school suspensions
  - Conditions for Learning Survey perceptions (Safety, Support from Adults, Academic Challenge, Social Emotional Learning, Self-Regulation: Attentional Control, and Self-Regulation: Inhibitory Control)
- Cost outcomes
  - Adjusted per pupil instructional spending

Inputs used to predict outcomes of interest

- Our statistical models include a set of inputs common across all models plus some inputs specific to certain outcomes.
- Common input across all models was whether a student was in a non-traditional calendar plus the factors listed below:

Demographic variables

- Gender
- Race/Ethnicity
- Disability status
- English Language Learner status
- Homeless status
- Gifted status

Academic characteristics

- 2024 SY NWEA ELA Fall percentile
- 2024 SY NWEA Math Fall percentile
- 2023 SY attendance rate

Other characteristics

- Median family income of the student's zip code
- Active school choice in the 2023 or 2024 SY
- Student grade level

Inputs used to predict outcomes of interest

- Other factors we looked at, depending on the model, included:

Instructional time characteristics

- Amount of scheduled instructional time in ELA / Math
- Amount of attended instructional time in ELA / Math
- Total school minutes per day
- Total student minutes attended

CFL characteristics

- CFL – Safety
- CFL – Adult Support
- CFL – Social Emotional Learning
- Self-Regulation: Attentional Control
- Self-Regulation: Inhibitory Control

Other characteristics

- Staff attendance rate
- Instructional spending per pupil (adjusted)

Predicting outcomes for an average student by calendar type

- Using the models developed, we can make predictions for what an average student's outcomes would look like across different schools.
- We develop an average student by setting all numerical input variables to their average and all binary/categorical variables to the most commonly occurring category.
- For instructional time in ELA and Math, we set these to the school specific average.
- This allows us to make a prediction for how an otherwise identical student would perform in different calendar types, accounting for the specific context of the school and the differing amounts of instructional time (which can be related to calendar type).
- We make predictions by school and grade level. These predictions are then averaged across calendar types.

Codebook

Description and statistical summaries of matched variables included in models

Variable	Short name	Description	Min.	Median	Mean	Max
American Indian or Alaskan Native	amind_alant	A binary indicator of whether a student identifies as American Indian or Alaskan Native.	0	0	0.001	1
Asian or Pacific Islander	asian_pac	A binary indicator of whether a student identifies as Asian or Pacific Islander	0	0	0.02	1
Minutes of school attended	attend_minutes_24	The total number of attended instructional minutes during the 2023-2024 SY.	10,011	61,877	60,097	194,175
Attendance rate 2022-2023 SY	attendance_rate_23	A student's attendance rate (the total number of attended minutes divided by the total number of membership minutes multiplied by 100) for the 2022-2023 SY.	0	91.43	88.50	100
Attendance rate 2023-2024 SY	attendance_rate_24	A student's attendance rate (the total number of attended minutes divided by the total number of membership minutes multiplied by 100) for the 2023-2024 SY.	17.59	91.51	88.33	100
Black, non-Hispanic	black	A binary indicator of whether a student identifies as Black, non-Hispanic	0	1	0.60	1
Conditions for Learning: Challenge	challenge_mean	Measures how much students believe adults in their school encourage them to think, work hard, do their best, and connect learning to life outside school.	1.14	2.93	2.95	4.0
Active school choice in the 2023 or 2024 SYs	chooser2024	Whether the student made an active choice in the school choice portal in the 2023 or 2024 SYs.	0	0	0.19	1

Description and statistical summaries of matched variables included in models

Variable	Short name	Description	Min.	Median	Mean	Max
OST ELA scaled score	ela_ss_24	The scaled score achieved on the Ohio State Test ELA or ELA II assessment	570	695	697	848
English language learner	ell	A binary indicator of whether the student is a current English language learner.	0	0	0.08	1
Gender	female	A binary indicator of whether a student is female (0) or male (1).	0	1	0.53	1
Gifted	gifted	A binary indicator of whether a student has been identified as gifted.	0	0	0.12	1
Hispanic	hisp	A binary indicator of whether a student identifies as Hispanic.	0	0	0.17	1
Homeless	homeless	A binary indicator of whether the student was homeless.	0	0	0.02	1
OST mathematics scaled score	math_ss_24	The scaled score achieved on the Ohio State Test in Math, Alg. I, or Geo. assessment.	590	682	686	835
Median Family Income of Zip code	median_family income	The median family income of the zip code a student lives in.	20,744	49,488	53,378	158,681
Minutes of ELA instruction attended	minutes_attend_ela	The total number of minutes in math a student was present for in the 2023-24 SY.	95	13,785	13,033	39,822
Minutes of math instruction attended	minutes_attend_math	The total number of minutes in ELA a student was present for in the 2023-2024 SY.	90	10,320	10,821	23,520
Instructional minutes per day	minutes_per_day	The number of minutes in a school day.	390	420	416	535

Description and statistical summaries of matched variables included in models

Variable	Short name	Description	Min.	Median	Mean	Max
# of minutes of scheduled ELA instruction	minutes_scheduled_ELA	The total number of minutes in ELA a student was scheduled for in the 2023-2024 SY.	95	15,486	14,486	41,429
# of minutes of scheduled math instruction	minutes_scheduled_MATH	The total number of minutes in math a student was scheduled for in the 2023-24 SY.	90	11,565	12,132	27,754
Multiracial	multiracial	A binary indicator of whether a student identifies as Multiracial.	0	0	0.03	1
NWEA MAP fall national percentile in ELA 2023-2024 SY	nwea_percentile_fall_ela_24	The national percentile a students scored on on the NWEA MAP Fall ELA assessment at the start of the 2023-2024 SY.	1	40.0	41.66	99.0
NWEA MAP fall national percentile in ELA 2023-2024 SY	nwea_percentile_fall_ela_24	The national percentile a students scored in on the NWEA MAP Fall Math assessment at the start of the 2023-2024 SY.	1	30.0	34.5	99.0
Number of out of school suspensions	oss_n	The number of out of school suspensions received by a student.	0	0	0.22	12.0
Conditions for Learning: Safe and Respectful Climate	safety_mean	Measures how physically safe students feel and how emotionally safe students feel.	1.0	2.6	2.59	4.0
Conditions for Learning: Social Emotional Learning	sel_mean	Measures students' perception of their peers' social and problem-solving skills.	1.0	2.40	2.41	4.0
Instructional spending per equivalent pupil	spend_per_adj_pupil	The amount of instruction spending per equivalent pupil, with SWDs and ELLs enrollment weighted.	6,404	8,301	8,909	13,162
Conditions for Learning: Self-regulation Attentional behavior	sr_attentional_mean	Measures a student's ability to focus and sustain attention on a task.	1.0	3.00	2.93	4.0

Description and statistical summaries of matched variables included in models

Variable	Short name	Description	Min.	Median	Mean	Max
Conditions for Learning: Self-regulation Inhibitory behavior	sr_inhibitory_mean	Measures a student's ability to control their impulses and ignore distractions.	1.0	2.38	2.37	4.0
Staff attendance rate 2023-2024 SY	staff_attendance_rate_24	The attendance rate for staff in the 2023-2024 SY.	84.92	90.69	90.52	95.70
Conditions for Learning: Student Support	support_mean	Measures how much students feel listened to, cared about, and helped by adults in their school.	1.0	2.86	2.87	4.0
Non-traditional calendar treatment	treatment	A binary indicator of whether a student had a non-traditional (1) or traditional (0) calendar.	0	1.0	0.57	1.0
Student with disabilities	swd	A binary indicator of whether the student has an identified disability.	0	0	0.21	1
White, non-Hispanic	white	A binary indicator of whether a student identifies as White, non-Hispanic.	0	0	0.17	1

Survey methods

Family Survey and Focus Group Descriptives

- A survey on CMSD calendars was available to families from October 23, 2024 to November 18, 2024.
- A survey link was sent via district communications and fliers with QR codes were made available during parent teacher conferences.
- 1,655 surveys were completed. Respondents represented 2,157 CMSD students.
- Given an enrollment snapshot of approximately 33,500 students in that timeframe, 6.4% of students had a family member respond.

Family Survey and Focus Group Descriptives

- Among respondents interested in participating in focus groups, 80 respondents were invited to participate.
- Participants were randomly selected within calendar types and opinions about how to change the length of the school day and year.
- The goal was to hear a diversity of opinions to flesh out the quantitative survey results.
- 16 of the 80 invited respondents signed up for a focus group time. 3 of those 16 actually attended a focus group.

Staff Survey and Focus Group Descriptives

- A survey on CMSD calendars was available to staff from November 22, 2024 to December 15, 2024.
- A survey link was sent to email addresses of 4,404 school-based staff.
- 1,619 surveys were completed (37% response rate).

Staff Survey and Focus Group Descriptives

- Among respondents interested in participating in focus groups, 80 respondents were invited to participate.
- Participants were randomly selected within calendar types and opinions about how to change the length of the school day and year.
- The goal was to hear a diversity of opinions to flesh out the quantitative survey results.
- 40 (7 admin and 33 non-admin) of the 80 invited respondents signed up for a focus group time.
- 25 (20 non-admin and 5 admin) of the participants signed up for a focus group attended.

Student Survey Descriptives

- From Jan. 23rd to Jan. 30, a survey on CMSD calendars was available 6-12th graders in a subset of CMSD schools that were representative of district demographics, geography (East side and West side schools) and calendar types.
- Personalized survey links were provided to school administrators to distribute to students. Survey links also emailed directly to student CMSD email addresses.
- 469 responses out of 4,263 students invited to respond (11% response rate).

Survey analysis

- Survey results were analyzed both with and without weighting of responses by school.
- Results did not shift with weighting applied so un-weighted data was reported to ease understanding of percentages and results.

Appendix II: Statistical results

Table 1: Variable correlation matrix

	female	amind_alanat	asian_pac	black	hisp	multiracial	white	swd	ell	homeless	gifted	nwea percentile fall ela 24	nwea percentile fall math 24	Attendance rate 23	Median family income	Chooser 2024
female	1	0.0009	0.0071	0.0069	-0.0108	0.0051	-0.0027	-0.129	-0.0124	0.0067	0.0043	0.0664	-0.0322	0.0078	-0.0123	0.014
amind_alanat	0.0009	1	-0.0051	-0.0467	-0.0187	-0.0066	-0.0154	-0.0143	-0.0148	-0.0071	0.0216	0.0076	0.0068	0.0011	-0.0016	0.0009
asian_pac	0.0071	-0.0051	1	-0.1708	-0.0682	-0.0242	-0.0562	-0.0574	0.1369	-0.0237	0.0217	0.0413	0.0658	0.0449	0.0738	-0.0069
black	0.0069	-0.0467	-0.1708	1	-0.6193	-0.2201	-0.5099	0.0127	-0.3686	0.0575	-0.1133	-0.0853	-0.174	-0.0643	-0.1556	-0.0252
hisp	-0.0108	-0.0187	-0.0682	-0.6193	1	-0.0879	-0.2037	0.0037	0.4508	-0.0427	0.0332	-0.0255	0.0379	0.0473	0.0614	0.0298
multiracial	0.0051	-0.0066	-0.0242	-0.2201	-0.0879	1	-0.0724	-0.0125	-0.0648	-0.0002	0.0098	0.0418	0.0484	-0.0214	0.0274	-0.0061
white	-0.0027	-0.0154	-0.0562	-0.5099	-0.2037	-0.0724	1	0.0079	-0.0185	-0.0216	0.1047	0.1107	0.1494	0.0289	0.1052	0.0067
swd	-0.129	-0.0143	-0.0574	0.0127	0.0037	-0.0125	0.0079	1	-0.0065	0.0366	-0.0981	-0.3582	-0.3135	-0.0268	-0.003	-0.0138
ell	-0.0124	-0.0148	0.1369	-0.3686	0.4508	-0.0648	-0.0185	-0.0065	1	-0.0463	-0.0722	-0.2258	-0.1405	0.066	0.0306	0.0032
homeless	0.0067	-0.0071	-0.0237	0.0575	-0.0427	-0.0002	-0.0216	0.0366	-0.0463	1	-0.0286	-0.0535	-0.0577	-0.0918	0.0062	-0.0094
gifted	0.0043	0.0216	0.0217	-0.1133	0.0332	0.0098	0.1047	-0.0981	-0.0722	-0.0286	1	0.3179	0.3374	0.0728	0.042	0.0293
nwea percentile fall ela 24	0.0664	0.0076	0.0413	-0.0853	-0.0255	0.0418	0.1107	-0.3582	-0.2258	-0.0535	0.3179	1	0.7098	0.1141	0.0692	0.0683
nwea percentile fall math 24	-0.0322	0.0068	0.0658	-0.174	0.0379	0.0484	0.1494	-0.3135	-0.1405	-0.0577	0.3374	0.7098	1	0.1739	0.0877	0.0172
Attendance rate 23	0.0078	0.0011	0.0449	-0.0643	0.0473	-0.0214	0.0289	-0.0268	0.066	-0.0918	0.0728	0.1141	0.1739	1	0.0399	0.0269
Median family income	-0.0123	-0.0016	0.0738	-0.1556	0.0614	0.0274	0.1052	-0.003	0.0306	0.0062	0.042	0.0692	0.0877	0.0399	1	0.032
Chooser 2024	0.014	0.0009	-0.0069	-0.0252	0.0298	-0.0061	0.0067	-0.0138	0.0032	-0.0094	0.0293	0.0683	0.0172	0.0269	0.032	1

Table 2: Propensity score matching balance

Variable	Type	Diff.Adj
distance	Distance	0.0007
female	Binary	0.0203
amind_alanat	Binary	0.0008
asian_pac	Binary	0.0035
black	Binary	0.0142
hisp	Binary	-0.0265
multiracial	Binary	0.0023
white	Binary	0.0058
swd	Binary	-0.0008
ell	Binary	-0.0188
homeless	Binary	0.0073
gifted	Binary	0.0269
nwea_percentile_fall_ela_24	Contin.	0.0199
nwea_percentile_fall_math_24	Contin.	0.066
attendance_rate_23	Contin.	0.0882
median_family_income	Contin.	-0.0264
chooser2024	Binary	-0.0445
grade_level_true_13	Binary	0
grade_level_true_12	Binary	0
grade_level_true_11	Binary	0
grade_level_true_10	Binary	0
grade_level_true_9	Binary	0
grade_level_true_1	Binary	0
grade_level_true_2	Binary	0
grade_level_true_3	Binary	0
grade_level_true_4	Binary	0
grade_level_true_5	Binary	0
grade_level_true_6	Binary	0
grade_level_true_7	Binary	0
grade_level_true_8	Binary	0

Figure 1: Propensity score distributions before matching

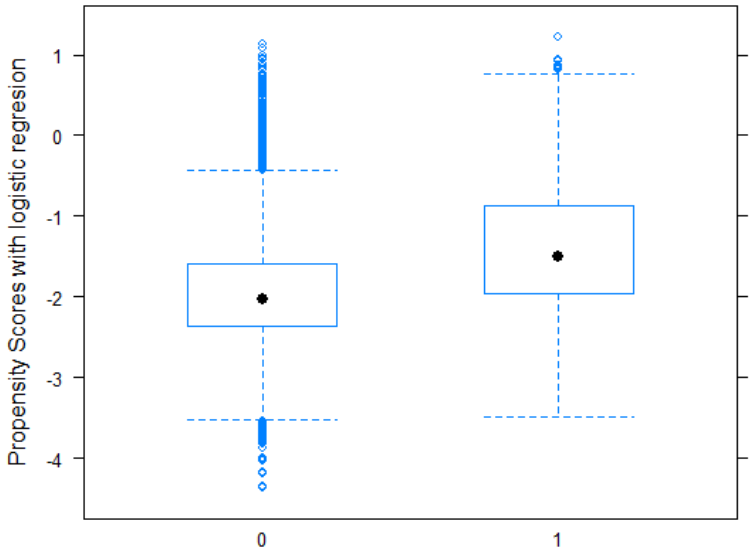


Figure 2: Propensity score distributions after matching

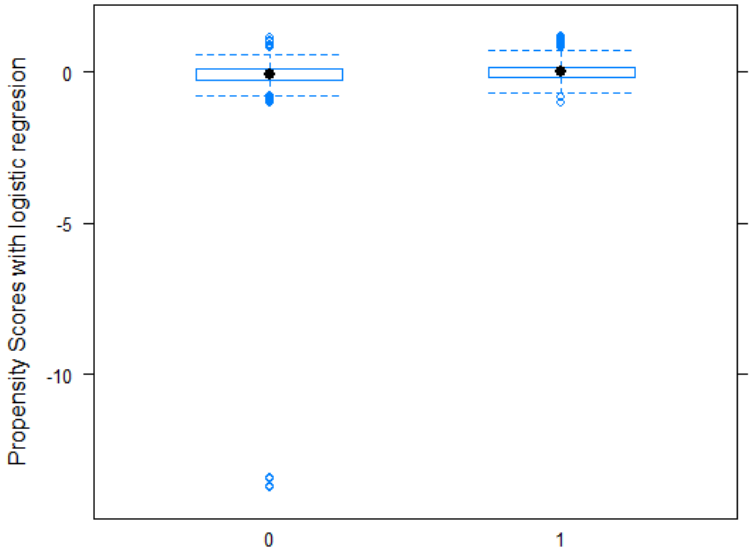


Table 3: Post-matching summary statistics for variables of interest between traditional (treatment = 0) and non-traditional (treatment = 1) calendar types

Treatment	Variable	min	mean	median	max	sd
0 (traditional)	female	0.000	0.531	1.000	1.000	0.499
0 (traditional)	amind_alanat	0.000	0.001	0.000	1.000	0.032
0 (traditional)	asian_pac	0.000	0.022	0.000	1.000	0.146
0 (traditional)	black	0.000	0.599	1.000	1.000	0.490
0 (traditional)	hisp	0.000	0.185	0.000	1.000	0.388
0 (traditional)	multiracial	0.000	0.029	0.000	1.000	0.167
0 (traditional)	white	0.000	0.165	0.000	1.000	0.371
0 (traditional)	swd	0.000	0.217	0.000	1.000	0.412
0 (traditional)	ell	0.000	0.088	0.000	1.000	0.283
0 (traditional)	homeless	0.000	0.015	0.000	1.000	0.122
0 (traditional)	Gifted	0.000	0.099	0.000	1.000	0.299
0 (traditional)	nwea percentile fall ela 24	1.000	41.215	41.000	99.000	27.246
0 (traditional)	nwea percentile fall math 24	1.000	33.452	29.000	99.000	25.681
0 (traditional)	Attendance rate 23	0.000	88.099	90.821	100.000	10.376
0 (traditional)	Median family income	20744.000	53597.980	49488.000	158681.000	16819.877
0 (traditional)	Chooser2024	0.000	0.194	0.000	1.000	0.396
1 (non-traditional)	female	0.000	0.538	1.000	1.000	0.499
1 (non-traditional)	amind_alanat	0.000	0.002	0.000	1.000	0.044
1 (non-traditional)	asian_pac	0.000	0.027	0.000	1.000	0.163
1 (non-traditional)	black	0.000	0.606	1.000	1.000	0.489
1 (non-traditional)	hisp	0.000	0.159	0.000	1.000	0.366
1 (non-traditional)	multiracial	0.000	0.032	0.000	1.000	0.176
1 (non-traditional)	white	0.000	0.174	0.000	1.000	0.379
1 (non-traditional)	swd	0.000	0.212	0.000	1.000	0.409
1 (non-traditional)	ell	0.000	0.068	0.000	1.000	0.252
1 (non-traditional)	homeless	0.000	0.023	0.000	1.000	0.149
1 (non-traditional)	gifted	0.000	0.127	0.000	1.000	0.333
1 (non-traditional)	nwea percentile fall ela 24	1.000	41.983	40.000	99.000	26.980
1 (non-traditional)	nwea percentile fall math 24	1.000	35.307	30.000	99.000	27.058
1 (non-traditional)	Attendance rate 23	0.000	88.797	91.863	100.000	10.693
1 (non-traditional)	Median family income	20744.000	53215.266	49488.000	158681.000	17213.841
1 (non-traditional)	Chooser2024	0.000	0.183	0.000	1.000	0.387

Table 4.1: Hierarchical linear model results with Ohio State Test math scaled scores as dependent variable

Variable	Estimate	Estimate (Std)	Std. Error	Df	T value	Pr(>|t|)
(Intercept)	598.3984	0.9989	47.3803	110.4124	12.6297	0
female	-1.0149	-0.0312	0.818	3003.78	-1.2407	0.2148
amind_alanat	-6.2525	-0.1923	9.9904	2921.4377	-0.6258	0.5315
asian_pac	6.4656	0.1989	2.6552	2953.4753	2.4351	0.0149
black	-4.8936	-0.1505	1.0998	2980.1948	-4.4494	0
hisp	-1.9402	-0.0597	1.2989	2989.2888	-1.4937	0.1354
multiracial	-2.8571	-0.0879	2.2285	2935.1858	-1.2821	0.1999
swd	-2.9565	-0.0909	1.037	2973.7308	-2.851	0.0044
ell	2.1268	0.0654	1.6818	2999.2734	1.2646	0.2061
homeless	-2.3622	-0.0727	2.9656	2946.4449	-0.7965	0.4258
gifted	7.17	0.2205	1.2083	2960.1547	5.934	0
nwea_percentile_fall_ela_24	0.2201	0.1764	0.0215	2971.0568	10.2517	0
nwea_percentile_fall_math_24	0.6834	0.5015	0.0227	2978.8146	30.1235	0
attendance_rate_23	0.0442	0.022	0.0447	2890.5993	0.9887	0.3229
median_family_income	0	-0.0002	0	3003.8837	-0.0154	0.9877
chooser2024	-0.0846	-0.0026	1.2765	2972.2346	-0.0662	0.9472
treatment	2.3351	0.0718	2.7474	58.5048	0.85	0.3988
grade_level_true11	-45.3795	-1.3958	20.4005	2947.4861	-2.2244	0.0262
grade_level_true10	-35.0983	-1.0795	20.1404	2951.1005	-1.7427	0.0815
grade_level_true9	-30.0985	-0.9258	20.162	2951.6877	-1.4928	0.1356
grade_level_true3	-29.3529	-0.9028	20.3617	2998.6257	-1.4416	0.1495
grade_level_true4	-26.2441	-0.8072	20.3804	2998.6999	-1.2877	0.1979
grade_level_true5	-38.7531	-1.192	20.3726	2998.9005	-1.9022	0.0572
grade_level_true6	-45.5351	-1.4006	20.339	2998.7232	-2.2388	0.0252
grade_level_true7	-40.1943	-1.2363	20.3409	2998.6648	-1.976	0.0482
grade_level_true8	-37.2503	-1.1457	20.338	2998.5948	-1.8316	0.0671
safety_mean	0.7668	0.013	1.0551	2992.1486	0.7268	0.4674
support_mean	0.5253	0.0088	0.8612	2967.0807	0.6099	0.542
sel_mean	-0.5345	-0.0087	1.0142	2981.4891	-0.527	0.5983
sr_attentional_mean	1.274	0.0218	0.8582	2975.3638	1.4845	0.1378
sr_inhibitory_mean	2.4376	0.0473	0.6718	2970.907	3.6285	0.0003
attend_minutes_24	0	-0.0135	0.0001	623.906	-0.5021	0.6158
spend_per_adj_pupil	-0.0007	-0.0305	0.0008	73.5939	-0.9445	0.348
staff_attendance_rate_24	0.7356	0.0494	0.4458	72.5625	1.6502	0.1032
minutes_per_day	0.0196	0.0006	0.0367	74.892	0.5344	0.5947
minutes_attend_math	0.0011	0.1394	0.0002	2794.9891	6.317	0

Table 4.2: Random effects

grp	var1	vcov	sdcor
School	Intercept	62.4867	7.9049
Residual		390.3288	19.7567

Table 4.3: Fit statistics

AIC	AICc	BIC	R2_cond
26955.9606	26956.9483	27184.7059	0.6719
R2_marg	**ICC**	**RMSE**	**Sigma**
0.6193	0.138	19.4391	19.7567

Table 5.1: Hierarchical linear model results with Ohio State Test math scaled scores as dependent variable (ELL, SWD, gifted students excluded)

Variable	Estimate	Std. Error	Df	T value	Pr(>|t|)
(Intercept)	524.5919	47.5023	69.2805	11.0435	0
female	-0.7982	1.0031	1871.9097	-0.7957	0.4263
amind_alanat	-14.152	19.266	1803.3726	-0.7346	0.4627
asian_pac	10.9198	3.336	1817.7552	3.2733	0.0011
black	-3.7927	1.3642	1870.5094	-2.7802	0.0055
hisp	-0.1486	1.6519	1845.1659	-0.0899	0.9284
multiracial	-2.7118	2.7321	1812.4491	-0.9926	0.321
homeless	-3.6458	3.7895	1826.9066	-0.9621	0.3361
nwea_percentile_fall_ela_24	0.1936	0.0254	1843.7329	7.6271	0
nwea_percentile_fall_math_24	0.6458	0.0263	1851.3365	24.5538	0
attendance_rate_23	0.0204	0.0511	1848.6126	0.3982	0.6905
median_family_income	0	0	1870.0261	0.7903	0.4295
chooser2024	-0.5321	1.5666	1843.7336	-0.3396	0.7342
treatment	2.204	2.9538	51.774	0.7462	0.4589
grade_level_true10	14.0075	4.7378	1853.7152	2.9566	0.0032
grade_level_true9	18.226	4.846	1849.7451	3.761	0.0002
grade_level_true3	18.4684	5.6328	825.0645	3.2787	0.0011
grade_level_true4	22.479	5.6628	834.6379	3.9696	0.0001
grade_level_true5	9.2516	5.5944	814.9679	1.6537	0.0986
grade_level_true6	4.1365	5.5367	794.3445	0.7471	0.4552
grade_level_true7	11.077	5.6041	822.6859	1.9766	0.0484
grade_level_true8	13.7477	5.565	802.9501	2.4704	0.0137
safety_mean	0.011	1.2905	1854.8727	0.0085	0.9932
support_mean	0.9162	1.0467	1837.9883	0.8754	0.3815
sel_mean	-0.8677	1.2539	1847.7143	-0.692	0.489
sr_attentional_mean	2.1373	1.0831	1836.199	1.9733	0.0486
sr_inhibitory_mean	2.8908	0.8306	1833.3432	3.4805	0.0005
attend_minutes_24	0	0.0001	386.5722	-0.6781	0.4981
spend_per_adj_pupil	-0.0003	0.0008	66.2188	-0.3303	0.7422
staff_attendance_rate_24	1.0239	0.4925	67.6491	2.0789	0.0414
minutes_per_day	0.0048	0.0401	68.6332	0.1204	0.9045
minutes_attend_math	0.0013	0.0002	1752.9449	6.1989	0

Table 5.2: Random effects

grp	var1	vcov	sdcor
School	Intercept	62.4867	7.9049
Residual		390.3288	19.7567

Table 5.3: Fit statistics

AIC	AICc	BIC	R2_cond
16770.0116	16771.285	16958.7698	0.602
R2_marg	**ICC**	**RMSE**	**Sigma**
0.5257	0.1609	18.4996	18.937

Table 6.1: Hierarchical linear model results with Ohio State Test ELA scaled scores as dependent variable

Variable	Estimate	Estimate (Std)	Std. Error	Df	T value	Pr(>|t|)
(Intercept)	561.873	0.8586	40.1079	116.1917	14.009	0
female	5.1502	0.129	1.0261	2062.8574	5.0192	0
amind_alanat	-13.2489	-0.3319	12.7036	2258.2905	-1.0429	0.2971
asian_pac	3.9111	0.098	3.0782	2301.1584	1.2706	0.204
black	-4.2092	-0.1055	1.3434	1975.5114	-3.1333	0.0018
hisp	0.114	0.0029	1.6314	2288.4888	0.0699	0.9443
multiracial	3.4385	0.0861	2.7787	2260.1753	1.2374	0.2161
swd	-7.2523	-0.1817	1.2976	2306.605	-5.5888	0
ell	-1.4803	-0.0371	2.3023	2286.8341	-0.643	0.5203
homeless	-2.191	-0.0549	3.7228	2288.123	-0.5885	0.5562
gifted	7.1298	0.1786	1.5053	2304.0604	4.7366	0
nwea_percentile_fall_ela_24	0.8282	0.5406	0.0267	2296.5985	31.0524	0
nwea_percentile_fall_math_24	0.259	0.1548	0.0289	2301.9037	8.9666	0
attendance_rate_23	0.2162	0.0876	0.0625	2020.6924	3.4591	0.0006
median_family_income	0	0.0085	0	2255.8864	0.6937	0.4879
chooser2024	2.2291	0.0558	2.0335	2302.0461	1.0962	0.2731
treatment	2.2182	0.0556	2.0209	33.423	1.0976	0.2802
grade_level_true11	-34.8529	-0.8732	23.7167	2306.6618	-1.4696	0.1418
grade_level_true10	-22.383	-0.5607	22.1937	2306.5052	-1.0085	0.3133
grade_level_true9	-33.8703	-0.8485	24.4333	2306.8452	-1.3862	0.1658
grade_level_true3	-18.1538	-0.4548	22.388	2304.9145	-0.8109	0.4175
grade_level_true4	-19.7811	-0.4956	22.3513	2305.0164	-0.885	0.3762
grade_level_true5	-17.3713	-0.4352	22.3437	2304.9136	-0.7775	0.437
grade_level_true6	-36.2738	-0.9087	22.2948	2304.8721	-1.627	0.1039
grade_level_true7	-23.5133	-0.5891	22.3086	2304.9709	-1.054	0.292
grade_level_true8	-37.1121	-0.9297	22.3183	2304.8528	-1.6629	0.0965
safety_mean	2.4509	0.0338	1.329	2301.6571	1.8442	0.0653
support_mean	0.2326	0.0032	1.0881	2302.1237	0.2138	0.8307
sel_mean	-2.5727	-0.034	1.2699	2306.8042	-2.0258	0.0429
sr_attentional_mean	2.1252	0.0296	1.0927	2305.9962	1.9448	0.0519
sr_inhibitory_mean	2.4251	0.0384	0.8628	2305.1385	2.8107	0.005
attend_minutes_24	-0.0001	-0.0244	0.0001	328.2677	-1.0695	0.2856
spend_per_adj_pupil	0.0009	0.0299	0.0006	52.1944	1.458	0.1508
staff_attendance_rate_24	0.919	0.0503	0.3428	51.3263	2.6804	0.0099
minutes_per_day	-0.0186	-0.0005	0.0282	54.8877	-0.6589	0.5127
minutes_attend_ela	0.0001	0.0084	0.0002	1691.1722	0.4661	0.6412

Table 6.2: Random effects

grp	var1	vcov	sdcor
School	Intercept	20.6585	4.5452
Residual		473.0487	21.7497

Table 6.3: Fit statistics

AIC	AICc	BIC	R2_cond
21173.3062	21174.5927	21392.1554	0.7017
R2_marg	**ICC**	**RMSE**	**Sigma**
0.6887	0.0418	21.4274	21.7497

Table 7.1: Hierarchical linear model results with Ohio State Test ELA scaled scores as dependent variable (ELL, SWD, gifted students excluded)

Variable	Estimate	Std. Error	Df	T value	Pr(>|t|)
(Intercept)	561.6766	40.583	55.6472	13.8402	0
female	5.6221	1.2587	1244.8034	4.4665	0
amind_alanat	-3.0733	21.4262	1430.8586	-0.1434	0.886
asian_pac	2.5949	3.879	1421.6556	0.669	0.5036
black	-5.2818	1.6894	1296.3696	-3.1265	0.0018
hisp	0.201	2.1066	1429.1929	0.0954	0.924
multiracial	0.5899	3.4619	1392.6978	0.1704	0.8647
homeless	-6.2987	4.5289	1419.9487	-1.3908	0.1645
nwea_percentile_fall_ela_24	0.7672	0.0317	1424.1589	24.2093	0
nwea_percentile_fall_math_24	0.2537	0.034	1428.9624	7.4725	0
attendance_rate_23	0.1552	0.0749	1313.4087	2.073	0.0384
median_family_income	0	0	1409.7845	1.1197	0.263
chooser2024	3.5112	2.4902	1430.9974	1.41	0.1588
treatment	4.1688	2.2912	26.728	1.8195	0.0801
grade_level_true10	6.8517	12.3852	1430.9323	0.5532	0.5802
grade_level_true9	-12.5311	17.7675	1428.7382	-0.7053	0.4808
grade_level_true3	9.8365	12.7228	1396.7072	0.7731	0.4396
grade_level_true4	12.8801	12.6441	1397.9188	1.0187	0.3085
grade_level_true5	14.0116	12.6156	1397.573	1.1107	0.2669
grade_level_true6	-3.9786	12.5695	1398.7087	-0.3165	0.7516
grade_level_true7	10.169	12.6038	1400.4023	0.8068	0.4199
grade_level_true8	-5.6452	12.6115	1398.0224	-0.4476	0.6545
safety_mean	2.8872	1.6086	1430.2521	1.7949	0.0729
support_mean	-0.0481	1.3132	1424.8973	-0.0366	0.9708
sel_mean	-3.7333	1.5586	1430.7566	-2.3953	0.0167
sr_attentional_mean	2.0139	1.3821	1423.6986	1.4571	0.1453
sr_inhibitory_mean	3.3005	1.0635	1428.9277	3.1034	0.002
attend_minutes_24	-0.0001	0.0001	199.7955	-1.1811	0.239
spend_per_adj_pupil	0.0013	0.0007	40.6848	1.8179	0.0764
staff_attendance_rate_24	0.6501	0.4002	42.2221	1.6246	0.1117
minutes_per_day	-0.0232	0.0324	46.4016	-0.7149	0.4782
minutes_attend_ela	0.0002	0.0002	1112.3108	0.9324	0.3513

Table 7.2: Random effects

grp	var1	vcov	sdcor
School	Intercept	24.0817	4.9073
Residual		438.7859	20.9472

Table 7.3: Fit statistics

AIC	AICc	BIC	R2_cond
13135.3668	13137.0335	13315.1671	0.5874
R2_marg	**ICC**	**RMSE**	**Sigma**
0.5648	0.052	20.514	20.9472

Table 8.1: Hierarchical linear model results with scheduled math instructional time as dependent variable

Variable	Estimate	Estimate (Std)	Std. Error	Df	T value	Pr(>|t|)
(Intercept)	-5501.6826	-3.4733	7621.171	97.8303	-0.7219	0.4721
female	-140.5884	-0.0334	90.5944	3382.2664	-1.5518	0.1208
amind_alanat	1329.3372	0.3155	1169.7925	3326.3624	1.1364	0.2559
asian_pac	-296.0361	-0.0703	279.5519	3356.848	-1.059	0.2897
black	-145.9404	-0.0346	121.8085	3408.2633	-1.1981	0.231
hisp	-51.6793	-0.0123	144.1891	3363.9372	-0.3584	0.7201
multiracial	-172.9886	-0.0411	241.4152	3335.8015	-0.7166	0.4737
swd	125.0048	0.0297	113.4061	3357.4566	1.1023	0.2704
ell	76.5554	0.0182	182.4993	3395.6774	0.4195	0.6749
homeless	-368.5083	-0.0875	324.1522	3343.4178	-1.1368	0.2557
gifted	-195.0915	-0.0463	133.6721	3346.4746	-1.4595	0.1445
nwea_percentile_fall_ela_24	4.3624	0.027	2.3074	3360.1196	1.8906	0.0588
nwea_percentile_fall_math_24	-0.9873	-0.0056	2.4756	3358.2182	-0.3988	0.6901
attendance_rate_23	-1.6344	-0.0063	5.0884	3344.0369	-0.3212	0.7481
median_family_income	0.0013	0.0053	0.0025	3390.1105	0.5056	0.6132
chooser2024	-5.0258	-0.0012	143.4626	3359.3188	-0.035	0.9721
treatment	-435.8025	-0.1034	484.8566	71.1905	-0.8988	0.3718
grade_level_true11	8014.4598	1.9021	2383.8609	3337.0347	3.362	0.0008
grade_level_true10	7588.686	1.801	2356.2361	3338.3907	3.2207	0.0013
grade_level_true9	8071.1007	1.9155	2357.807	3338.4226	3.4231	0.0006
grade_level_true2	15015.2158	3.5635	2389.9745	3410.5437	6.2826	0
grade_level_true3	14515.0955	3.4448	2391.2645	3410.6013	6.0701	0
grade_level_true4	15880.5302	3.7689	2391.033	3410.5791	6.6417	0
grade_level_true5	15974.281	3.7911	2389.6942	3410.5315	6.6847	0
grade_level_true6	13746.9062	3.2625	2390.1775	3410.4806	5.7514	0
grade_level_true7	13671.2517	3.2446	2390.5604	3410.5834	5.7188	0
grade_level_true8	13252.3735	3.1452	2390.7836	3410.557	5.5431	0
safety_mean	176.7278	0.0231	116.7316	3374.029	1.514	0.1301
support_mean	76.5489	0.0099	97.8482	3354.1588	0.7823	0.4341
sel_mean	9.089	0.0011	112.3976	3361.5863	0.0809	0.9356
sr_attentional_mean	142.1475	0.0187	95.9686	3353.9417	1.4812	0.1387
sr_inhibitory_mean	-112.3892	-0.0168	75.2864	3352.8632	-1.4928	0.1356
attend_minutes_24	0.017	0.0609	0.0069	1497.7344	2.4515	0.0143
spend_per_adj_pupil	0.131	0.0429	0.1286	79.0059	1.0186	0.3115
staff_attendance_rate_24	16.9493	0.0088	75.7207	78.6944	0.2238	0.8235
minutes_per_day	4.1254	0.001	6.1723	79.2361	0.6684	0.5058

Table 8.2: Random effects

grp	var1	vcov	sdcor
School	Intercept	2191487.58	1480.3674
Residual		5363657.34	2315.9571

Table 8.3: Fit statistics

AIC	AICc	BIC	R2_cond
63192.8626	63193.731	63426.4375	0.7228
R2_marg	**ICC**	**RMSE**	**Sigma**
0.6095	0.2901	2278.2822	2315.9571

Table 9.1: Hierarchical linear model results with scheduled ELA instructional time as dependent variable

Variable	Estimate	Estimate (Std)	Std. Error	Df	T value	Pr(>|t|)
(Intercept)	-7656.0166	-3.7064	8476.4453	109.5982	-0.9032	0.3684
female	-106.099	-0.0255	125.6983	2707.8678	-0.8441	0.3987
amind_alanat	-2058.2939	-0.4955	1653.6868	2653.5761	-1.2447	0.2134
asian_pac	148.537	0.0358	362.7306	2680.852	0.4095	0.6822
black	298.3269	0.0718	165.9377	2726.1223	1.7978	0.0723
hisp	410.1763	0.0987	199.2782	2693.8295	2.0583	0.0397
multiracial	92.6645	0.0223	327.6568	2660.7997	0.2828	0.7773
swd	-10.3614	-0.0025	155.8732	2693.8592	-0.0665	0.947
ell	200.572	0.0483	266.3039	2724.6438	0.7532	0.4514
homeless	365.3887	0.088	445.4003	2675.9127	0.8204	0.4121
gifted	92.3449	0.0222	183.4411	2676.2675	0.5034	0.6147
nwea_percentile_fall_ela_24	-2.0878	-0.0131	3.1478	2680.572	-0.6633	0.5072
nwea_percentile_fall_math_24	2.5099	0.0144	3.4504	2691.6167	0.7274	0.467
attendance_rate_23	-3.4494	-0.0134	7.9655	2481.1717	-0.433	0.665
median_family_income	-0.0049	-0.0207	0.0034	2714.0949	-1.4649	0.1431
chooser2024	-170.3111	-0.041	243.9868	2696.6494	-0.698	0.4852
treatment	-31.7933	-0.0077	537.047	76.4799	-0.0592	0.9529
grade_level_true11	7639.9134	1.8393	3043.5328	2687.063	2.5102	0.0121
grade_level_true10	7309.3027	1.7597	2912.4582	2686.0627	2.5097	0.0121
grade_level_true9	5791.0676	1.3942	3019.1091	2722.2017	1.9181	0.0552
grade_level_true2	16648.5453	4.0081	2945.612	2726.1005	5.652	0
grade_level_true3	17658.3961	4.2512	2947.138	2726.1404	5.9917	0
grade_level_true4	15509.5826	3.7339	2947.0282	2726.1651	5.2628	0
grade_level_true5	15994.2482	3.8506	2944.9794	2726.1319	5.431	0
grade_level_true6	12507.4665	3.0111	2945.5616	2726.0986	4.2462	0
grade_level_true7	13039.7046	3.1393	2946.0652	2726.1578	4.4261	0
grade_level_true8	13765.7941	3.3141	2946.3003	2726.1145	4.6722	0
safety_mean	21.2051	0.0028	161.6249	2700.5265	0.1312	0.8956
support_mean	43.5617	0.0057	135.97	2683.1092	0.3204	0.7487
sel_mean	94.3524	0.012	155.2318	2689.4782	0.6078	0.5434
sr_attentional_mean	101.2816	0.0136	133.2715	2682.5483	0.76	0.4473
sr_inhibitory_mean	95.7459	0.0146	105.6654	2680.9855	0.9061	0.365
attend_minutes_24	0.0112	0.0408	0.0096	754.5267	1.1715	0.2418
spend_per_adj_pupil	-0.0356	-0.0118	0.1413	86.2591	-0.2518	0.8018
staff_attendance_rate_24	77.1405	0.0406	83.1639	83.6081	0.9276	0.3563
minutes_per_day	2.4777	0.0006	6.7258	84.503	0.3684	0.7135

Table 9.2: Random effects

grp	var1	vcov	sdcor
School	Intercept	2432863.7	1559.764
Residual		7996867.96	2827.8734

Table 9.3: Fit statistics

AIC	AICc	BIC	R2_cond
51599.3344	51600.4225	51824.4492	0.6722
R2_marg	**ICC**	**RMSE**	**Sigma**
0.5724	0.2333	2773.5373	2827.8734

Table 10.1: Hierarchical linear model results with attendance rate as dependent variable

Variable	Estimate	Estimate (Std)	Std. Error	Df	T value	Pr(>|t|)
(Intercept)	43.1436	0.3797	10.1505	96.2443	4.2504	0
female	0.1747	0.0104	0.2455	3514.8668	0.7116	0.4768
amind_alanat	0.9033	0.0536	2.9639	3530.4794	0.3048	0.7606
asian_pac	1.1224	0.0666	0.7635	3574.6337	1.4701	0.1416
black	0.1801	0.0107	0.3297	3405.1157	0.5464	0.5848
hisp	0.2496	0.0148	0.3938	3590.9584	0.6337	0.5263
multiracial	-0.5551	-0.0329	0.6724	3551.5699	-0.8256	0.4091
swd	0.3312	0.0196	0.309	3582.614	1.0719	0.2839
ell	0.7606	0.0451	0.4906	3514.0745	1.5503	0.1212
homeless	-2.4961	-0.148	0.8195	3567.5289	-3.0458	0.0023
gifted	-0.1833	-0.0109	0.3713	3571.7368	-0.4936	0.6216
nwea_percentile_fall_ela_24	0.0229	0.0354	0.0063	3581.4523	3.6208	0.0003
nwea_percentile_fall_math_24	0.0085	0.012	0.0067	3588.531	1.2583	0.2084
attendance_rate_23	0.4955	0.4754	0.0122	3590.9849	40.6814	0
median_family_income	0	0.0071	0	3576.2627	1.004	0.3155
chooser2024	0.3707	0.022	0.3935	3587.8918	0.942	0.3463
treatment	0.2569	0.0152	0.6145	61.247	0.4181	0.6774
grade_level_true11	-5.5378	-0.3285	2.1385	3529.9573	-2.5896	0.0096
grade_level_true10	-3.6773	-0.2181	2.0633	3567.3906	-1.7823	0.0748
grade_level_true9	-2.8784	-0.1707	2.0849	3571.1502	-1.3806	0.1675
grade_level_true2	0.4389	0.026	2.1442	3188.4412	0.2047	0.8378
grade_level_true3	0.2822	0.0167	2.1551	3195.2355	0.131	0.8958
grade_level_true4	-0.247	-0.0146	2.153	3187.4894	-0.1147	0.9087
grade_level_true5	-0.1601	-0.0095	2.144	3195.4356	-0.0747	0.9405
grade_level_true6	0.0496	0.0029	2.1495	3190.5504	0.0231	0.9816
grade_level_true7	-0.6833	-0.0405	2.1511	3197.5172	-0.3177	0.7508
grade_level_true8	0.1864	0.0111	2.1532	3196.3752	0.0866	0.931
safety_mean	0.1721	0.0056	0.3175	3590.9826	0.5423	0.5877
support_mean	0.3943	0.0128	0.267	3582.2433	1.4767	0.1398
sel_mean	-0.7032	-0.022	0.3075	3589.1443	-2.2868	0.0223
sr_attentional_mean	0.0497	0.0016	0.2609	3576.3388	0.1905	0.849
sr_inhibitory_mean	0.7014	0.0263	0.2047	3578.1457	3.4268	0.0006
spend_per_adj_pupil	-0.0002	-0.0129	0.0002	81.0175	-0.9043	0.3685
staff_attendance_rate_24	0.0503	0.0065	0.1029	85.0388	0.4886	0.6264
minutes_per_day	-0.0086	-0.0005	0.0084	83.309	-1.025	0.3083

Table 10.2: Random effects

grp	var1	vcov	sdcor
School	Intercept	2.7108	1.6464
Residual		43.0415	6.5606

Table 10.3: Fit statistics

AIC	AICc	BIC	R2_cond
24129.9	24130.6838	24359.1478	0.451
R2_marg	**ICC**	**RMSE**	**Sigma**
0.4165	0.0592	6.4841	6.5606

Table 11: Linear model results with staff attendance rate as dependent variable

Variable	Estimate	Std. Error	T value	Pr(>|t|)
(Intercept)	25.7224	27.8876	0.9224	0.3594
treatment	0.3248	0.7672	0.4234	0.6733
gifted	-1.2994	11.0533	-0.1176	0.9067
minutes_attend_ela	-0.001	0.0011	-0.9166	0.3624
minutes_attend_math	0.001	0.0014	0.7276	0.4692
minutes_scheduled_ELA	0.001	0.001	1.0421	0.3009
minutes_scheduled_MATH	-0.0009	0.0012	-0.7437	0.4595
attend_minutes_24	0	0	-1.5112	0.1351
attendance_rate_24	0.0425	0.0943	0.4506	0.6537
ela_ss_24	0.0195	0.0531	0.3671	0.7146
math_ss_24	0.0862	0.0508	1.6979	0.0938
nwea_percentile_fall_ela_24	0.0209	0.1047	0.1997	0.8423
nwea_percentile_fall_math_24	-0.0726	0.1046	-0.6945	0.4896
safety_mean	3.3703	4.8638	0.6929	0.4906
challenge_mean	-2.5547	3.6391	-0.702	0.4849
support_mean	-3.0204	5.0928	-0.5931	0.555
sel_mean	-0.0723	5.575	-0.013	0.9897
sr_attention_mean	3.9027	4.5219	0.8631	0.391
sr_inhibitory_mean	-3.7168	3.5446	-1.0486	0.2979
median_family_income	-0.0001	0	-1.9347	0.057
spend_per_adj_pupil	-0.0001	0.0002	-0.507	0.6137

Table 12.1: Hierarchical linear model results with CFL Safety as dependent variable

Variable	Estimate	Estimate (Std)	Std. Error	Df	T value	Pr(>|t|)
(Intercept)	0.0324	0.4343	0.5399	73.8095	0.06	0.9523
female	-0.0432	-0.0785	0.0129	3501.906	-3.3506	0.0008
amind_alanat	0.1531	0.2783	0.1557	3512.1496	0.9833	0.3255
asian_pac	-0.0508	-0.0924	0.0401	3569.0412	-1.2671	0.2052
black	-0.0551	-0.1001	0.0173	3355.0536	-3.1809	0.0015
hisp	-0.0005	-0.0009	0.0207	3590.8701	-0.023	0.9817
multiracial	0.0187	0.0341	0.0353	3539.7569	0.5303	0.596
swd	0.0028	0.0051	0.0162	3580.8029	0.1735	0.8623
ell	-0.0179	-0.0325	0.0258	3497.7678	-0.6926	0.4886
homeless	-0.0067	-0.0123	0.0431	3561.0185	-0.1564	0.8758
gifted	0.0163	0.0297	0.0195	3565.181	0.8368	0.4028
nwea_percentile_fall_ela_24	0.0008	0.0367	0.0003	3580.4629	2.3287	0.0199
nwea_percentile_fall_math_24	0.0011	0.0475	0.0004	3587.8747	3.0953	0.002
attendance_rate_23	-0.0003	-0.0096	0.0007	3352.2395	-0.4627	0.6436
median_family_income	0	0.0184	0	3572.6732	1.623	0.1047
chooser2024	0.0192	0.0349	0.0207	3586.5946	0.9294	0.3527
treatment	-0.0357	-0.0649	0.0327	47.7458	-1.0915	0.2805
grade_level_true11	-0.1652	-0.3002	0.1124	3512.6592	-1.4699	0.1417
grade_level_true10	-0.1748	-0.3176	0.1084	3558.9882	-1.6121	0.107
grade_level_true9	-0.1701	-0.3091	0.1095	3564.0979	-1.5526	0.1206
grade_level_true2	-0.4423	-0.8037	0.1126	3058.3985	-3.9266	0.0001
grade_level_true3	-0.4359	-0.7921	0.1132	3070.4163	-3.8501	0.0001
grade_level_true4	-0.3662	-0.6654	0.1132	3064.2215	-3.2355	0.0012
grade_level_true5	-0.248	-0.4507	0.1128	3072.3187	-2.1992	0.0279
grade_level_true6	-0.2637	-0.4792	0.1131	3066.0833	-2.3323	0.0197
grade_level_true7	-0.2381	-0.4326	0.1131	3076.2553	-2.1042	0.0354
grade_level_true8	-0.1714	-0.3114	0.1133	3072.5466	-1.5124	0.1305
support_mean	0.1785	0.1771	0.0137	3582.7119	13.0145	0
sel_mean	0.4919	0.4711	0.0139	3525.1109	35.3162	0
sr_attentional_mean	-0.0501	-0.0505	0.0137	3572.9	-3.6558	0.0003
sr_inhibitory_mean	0.1125	0.129	0.0106	3576.2405	10.6154	0
attend_minutes_24	0	0.0088	0	769.4173	0.388	0.6981
spend_per_adj_pupil	0	0.0581	0	62.5943	2.5033	0.0149
staff_attendance_rate_24	0.0075	0.0296	0.0055	65.4335	1.365	0.1769
minutes_per_day	0.0002	0.0004	0.0004	64.9736	0.4507	0.6537

Table 12.2: Random effects

grp	var1	vcov	sdcor
School	Intercept	0.0077	0.0878
Residual		0.1189	0.3448

Table 12.3: Fit statistics

AIC	AICc	BIC	R2_cond
2993.7037	2994.4874	3222.9514	0.5637
R2_marg	**ICC**	**RMSE**	**Sigma**
0.5354	0.0609	0.3408	0.3448

Table 13.1: Hierarchical linear model results with CFL Challenge as dependent variable

Variable	Estimate	Estimate (Std)	Std. Error	Df	T value	Pr(>|t|)
(Intercept)	1.192	0.2572	0.4895	62.045	2.4349	0.0178
female	0.0397	0.0911	0.0123	2541.9474	3.2236	0.0013
amind_alanat	-0.3112	-0.7141	0.144	2557.7141	-2.1615	0.0308
asian_pac	0.0177	0.0406	0.0403	2609.9761	0.4389	0.6608
black	0.0182	0.0418	0.017	2451.3461	1.0732	0.2833
hisp	0.0248	0.057	0.0198	2630.8912	1.2524	0.2105
multiracial	0.0073	0.0167	0.0352	2580.6511	0.2076	0.8356
swd	-0.0291	-0.0668	0.0157	2620.4231	-1.8607	0.0629
ell	-0.0166	-0.0381	0.0243	2542.9599	-0.6821	0.4952
homeless	0.0019	0.0043	0.042	2605.4376	0.0443	0.9646
gifted	-0.0042	-0.0096	0.019	2615.1101	-0.2194	0.8264
nwea_percentile_fall_ela_24	0.0006	0.0376	0.0003	2626.5397	1.8766	0.0607
nwea_percentile_fall_math_24	-0.0002	-0.012	0.0003	2626.9177	-0.6313	0.5279
attendance_rate_23	0.0006	0.0223	0.0006	2546.6574	0.9327	0.3511
median_family_income	0	-0.0275	0	2627.0176	-1.9529	0.0509
chooser2024	-0.0062	-0.0142	0.0186	2626.9299	-0.3325	0.7395
treatment	0.0141	0.0323	0.0284	38.2039	0.4957	0.623
grade_level_true11	-0.0506	-0.1161	0.0932	2554.6189	-0.5432	0.5871
grade_level_true10	-0.0489	-0.1122	0.0899	2591.8185	-0.5437	0.5867
grade_level_true9	-0.0453	-0.1039	0.091	2596.0983	-0.4975	0.6189
grade_level_true5	-0.0179	-0.041	0.0939	2276.0486	-0.1904	0.8491
grade_level_true6	-0.0121	-0.0277	0.0941	2263.0708	-0.1282	0.898
grade_level_true7	-0.0086	-0.0198	0.0941	2275.6933	-0.0917	0.9269
grade_level_true8	-0.0397	-0.091	0.0943	2268.7577	-0.4204	0.6742
safety_mean	-0.0413	-0.0521	0.0159	2630.9721	-2.5981	0.0094
support_mean	0.4832	0.6054	0.0125	2626.9071	38.7129	0
sel_mean	0.0684	0.0827	0.0153	2631.3016	4.4651	0
sr_attentional_mean	0.1612	0.2056	0.0127	2623.6223	12.712	0
sr_inhibitory_mean	-0.0357	-0.0517	0.0097	2616.8264	-3.667	0.0003
attend_minutes_24	0	-0.0213	0	792.1514	-0.8118	0.4171
spend_per_adj_pupil	0	-0.0299	0	49.778	-1.1503	0.2555
staff_attendance_rate_24	0.0014	0.0071	0.005	56.9342	0.2822	0.7788
minutes_per_day	-0.0005	-0.0011	0.0004	52.8202	-1.1278	0.2645

Table 13.2: Random effects

grp	var1	vcov	sdcor
School	Intercept	0.0054	0.0737
Residual		0.081	0.2845

Table 13.3: Fit statistics

AIC	AICc	BIC	R2_cond
1265.9027	1266.8613	1471.9813	0.5576
R2_marg	**ICC**	**RMSE**	**Sigma**
0.5279	0.0629	0.2805	0.2845

Table 14.1: Hierarchical linear model results with CFL Support as dependent variable

Variable	Estimate	Estimate (Std)	Std. Error	Df	T value	Pr(>|t|)
(Intercept)	0.8107	-0.1762	0.5098	74.1002	1.5903	0.116
female	-0.0226	-0.0414	0.0152	2996.1152	-1.488	0.1368
amind_alanat	-0.1481	-0.2712	0.1859	3535.1989	-0.7968	0.4256
asian_pac	0.0133	0.0244	0.0477	3590.2162	0.2788	0.7804
black	0.0138	0.0253	0.0203	2929.6574	0.6796	0.4968
hisp	0.0193	0.0354	0.0246	3568.1948	0.7867	0.4315
multiracial	-0.1054	-0.1931	0.0421	3560.6313	-2.5052	0.0123
swd	-0.0034	-0.0063	0.0193	3590.9004	-0.1772	0.8593
ell	0.0453	0.0829	0.0304	3227.5971	1.4902	0.1363
homeless	0.0649	0.1188	0.0513	3580.005	1.264	0.2063
gifted	0.0087	0.0159	0.0232	3586.5456	0.3748	0.7078
nwea_percentile_fall_ela_24	0.0006	0.0272	0.0004	3590.9864	1.4415	0.1495
nwea_percentile_fall_math_24	-0.0004	-0.0156	0.0004	3582.5547	-0.85	0.3954
attendance_rate_23	0	-0.0008	0.0008	3339.4403	-0.0336	0.9732
median_family_income	0	0.0133	0	3510.7452	0.9836	0.3254
chooser2024	0.0187	0.0343	0.0246	3588.4444	0.7615	0.4464
treatment	0.0512	0.0938	0.0288	38.995	1.7812	0.0827
grade_level_true11	0.1334	0.2443	0.1341	3531.5294	0.9944	0.3201
grade_level_true10	0.0925	0.1695	0.1291	3589.3157	0.7169	0.4735
grade_level_true9	0.0887	0.1625	0.1304	3590.6205	0.6805	0.4962
grade_level_true2	0.0409	0.0749	0.1325	3310.2335	0.3086	0.7576
grade_level_true3	0.0372	0.0681	0.1332	3314.7126	0.2792	0.7801
grade_level_true4	0.0029	0.0053	0.1331	3306.1898	0.0218	0.9826
grade_level_true5	0.1974	0.3615	0.1325	3323.4327	1.4893	0.1365
grade_level_true6	0.2078	0.3807	0.1328	3311.737	1.5648	0.1177
grade_level_true7	0.1909	0.3496	0.1329	3318.7437	1.4357	0.1512
grade_level_true8	0.1402	0.2568	0.1331	3318.0924	1.0536	0.2922
safety_mean	0.2538	0.2558	0.0193	3558.0042	13.1251	0
sel_mean	0.1506	0.1453	0.019	3583.238	7.9111	0
sr_attentional_mean	0.3287	0.3346	0.0154	3585.0142	21.3842	0
sr_inhibitory_mean	-0.0382	-0.0442	0.0128	3589.6215	-2.9879	0.0028
attend_minutes_24	0	0.021	0	814.9638	0.8292	0.4073
spend_per_adj_pupil	0	-0.0102	0	55.071	-0.4739	0.6374
staff_attendance_rate_24	0.0002	0.0009	0.0051	62.3483	0.0446	0.9646
minutes_per_day	0	-0.0001	0.0004	56.236	-0.0984	0.9219

Table 14.2: Random effects

grp	var1	vcov	sdcor
School	Intercept	0.0045	0.0669
Residual		0.1694	0.4116

Table 14.3: Fit statistics

AIC	AICc	BIC	R2_cond
4229.0824	4229.8662	4458.3302	0.405
R2_marg	**ICC**	**RMSE**	**Sigma**
0.3893	0.0258	0.4078	0.4116

Table 15.1: Hierarchical linear model results with CFL SEL as dependent variable

Variable	Estimate	Estimate (Std)	Std. Error	Df	T value	Pr(>|t|)
(Intercept)	0.5242	0.3474	0.507	76.105	1.034	0.3044
female	0.0069	0.0131	0.0133	3387.8328	0.5214	0.6021
amind_alanat	-0.0189	-0.0358	0.1611	3522.2169	-0.1173	0.9066
asian_pac	0.0647	0.1227	0.0414	3579.4831	1.5605	0.1187
black	0.0009	0.0017	0.0178	3230.8409	0.0492	0.9608
hisp	-0.0024	-0.0045	0.0214	3588.6676	-0.1103	0.9122
multiracial	-0.001	-0.0018	0.0365	3549.1841	-0.0267	0.9787
swd	0.0519	0.0985	0.0168	3586.8636	3.0991	0.002
ell	0.0338	0.0641	0.0265	3415.616	1.2723	0.2033
homeless	-0.0325	-0.0618	0.0445	3569.7817	-0.7306	0.465
gifted	-0.0168	-0.0319	0.0202	3575.0378	-0.8337	0.4045
nwea_percentile_fall_ela_24	-0.0024	-0.1174	0.0003	3587.4671	-6.9525	0
nwea_percentile_fall_math_24	-0.0005	-0.0239	0.0004	3590.9477	-1.4441	0.1488
attendance_rate_23	0.0006	0.0171	0.0007	3353.7605	0.7714	0.4405
median_family_income	0	-0.015	0	3554.9418	-1.2263	0.2202
chooser2024	-0.037	-0.0702	0.0213	3590.7301	-1.7342	0.083
treatment	0.0306	0.0581	0.0299	45.6692	1.0233	0.3115
grade_level_true11	-0.0655	-0.1243	0.1162	3521.4952	-0.5637	0.573
grade_level_true10	-0.1242	-0.2357	0.112	3574.1997	-1.1088	0.2676
grade_level_true9	-0.0762	-0.1447	0.1132	3578.155	-0.6736	0.5006
grade_level_true2	0.0951	0.1805	0.1159	3208.0009	0.8208	0.4118
grade_level_true3	0.0142	0.027	0.1165	3215.4034	0.1221	0.9028
grade_level_true4	-0.0996	-0.189	0.1164	3208.5932	-0.8559	0.3921
grade_level_true5	-0.025	-0.0475	0.1159	3220.7074	-0.2161	0.829
grade_level_true6	-0.0295	-0.0561	0.1162	3212.0115	-0.2544	0.7992
grade_level_true7	-0.0664	-0.1259	0.1162	3221.2847	-0.5709	0.5681
grade_level_true8	-0.0716	-0.1359	0.1164	3217.8572	-0.6156	0.5382
safety_mean	0.5275	0.5509	0.0148	3423.7009	35.6496	0
support_mean	0.1134	0.1175	0.0144	3587.1857	7.8904	0
sr_attentional_mean	0.0866	0.0913	0.0141	3578.1951	6.1411	0
sr_inhibitory_mean	0.0756	0.0905	0.011	3583.9174	6.8422	0
attend_minutes_24	0	-0.0251	0	791.9752	-1.0569	0.2909
spend_per_adj_pupil	0	0.0276	0	61.8128	1.2227	0.2261
staff_attendance_rate_24	0	0.0002	0.0051	66.1912	0.0097	0.9923
minutes_per_day	-0.0004	-0.0008	0.0004	63.8815	-0.9645	0.3384

Table 15.2: Random effects

grp	var1	vcov	sdcor
School	Intercept	0.0059	0.0768
Residual		0.1272	0.3566

Table 15.3: Fit statistics

AIC	AICc	BIC	R2_cond
3219.7723	3220.556	3449.0201	0.5213
R2_marg	**ICC**	**RMSE**	**Sigma**
0.499	0.0443	0.3527	0.3566

Table 16.1: Hierarchical linear model results with CFL Self-Regulation Attentional Behavior as dep. variable

Variable	Estimate	Estimate (Std)	Std. Error	Df	T value	Pr(>|t|)
(Intercept)	1.212	0.0238	0.4305	53.8889	2.815	0.0068
female	0.0737	0.1326	0.0152	1567.889	4.8506	0
amind_alanat	0.0589	0.106	0.1905	3553.4295	0.3092	0.7572
asian_pac	0.0133	0.024	0.0487	3535.9535	0.2733	0.7847
black	0.0362	0.0652	0.0204	2006.6971	1.7721	0.0765
hisp	0.036	0.0647	0.025	3456.7954	1.4385	0.1504
multiracial	-0.0278	-0.05	0.0431	3572.9045	-0.6444	0.5193
swd	-0.0418	-0.0752	0.0197	3556.6276	-2.1201	0.0341
ell	-0.0626	-0.1127	0.0307	2672.8452	-2.0413	0.0413
homeless	-0.0535	-0.0963	0.0525	3590.3623	-1.0197	0.3079
gifted	-0.0069	-0.0125	0.0237	3582.099	-0.2925	0.7699
nwea_percentile_fall_ela_24	0.0007	0.0324	0.0004	3574.7317	1.7094	0.0875
nwea_percentile_fall_math_24	0.0005	0.0212	0.0004	3485.7373	1.1533	0.2489
attendance_rate_23	0.0011	0.0312	0.0008	3219.5211	1.2761	0.202
median_family_income	0	-0.0153	0	3330.0673	-1.1272	0.2597
chooser2024	0.0267	0.048	0.0251	3564.2455	1.0633	0.2877
treatment	-0.0074	-0.0132	0.0222	21.807	-0.331	0.7438
grade_level_true11	-0.0239	-0.0431	0.1375	3538.3413	-0.1741	0.8618
grade_level_true10	0.0905	0.1628	0.1318	3550.5416	0.6865	0.4924
grade_level_true9	0.0568	0.1023	0.1331	3537.0832	0.427	0.6694
grade_level_true2	-0.2216	-0.3987	0.1344	3243.2016	-1.6491	0.0992
grade_level_true3	-0.2292	-0.4124	0.1351	3249.3313	-1.697	0.0898
grade_level_true4	-0.2761	-0.4969	0.1349	3232.4638	-2.0473	0.0407
grade_level_true5	0.1085	0.1951	0.1344	3257.9439	0.8067	0.4199
grade_level_true6	0.0759	0.1366	0.1347	3239.7187	0.5634	0.5732
grade_level_true7	0.0564	0.1015	0.1349	3238.0917	0.4181	0.6759
grade_level_true8	0.0706	0.127	0.135	3248.3691	0.5229	0.6011
safety_mean	-0.077	-0.0762	0.0201	3423.6292	-3.8258	0.0001
support_mean	0.343	0.3369	0.016	3568.3389	21.3724	0
sel_mean	0.1188	0.1126	0.0195	3518.6227	6.0998	0
sr_inhibitory_mean	0.2032	0.2308	0.0126	3562.806	16.0892	0
attend_minutes_24	0	0.0118	0	730.1761	0.4872	0.6263
spend_per_adj_pupil	0	0.0008	0	31.972	0.0468	0.9629
staff_attendance_rate_24	0.0004	0.0014	0.0042	42.6531	0.0835	0.9339
minutes_per_day	-0.0001	-0.0002	0.0003	32.4318	-0.3776	0.7082

Table 16.2: Random effects

grp	var1	vcov	sdcor
School	Intercept	0.0015	0.0386
Residual		0.1783	0.4223

Table 16.3: Fit statistics

AIC	AICc	BIC	R2_cond
4384.5233	4385.307	4613.7711	0.4015
R2_marg	**ICC**	**RMSE**	**Sigma**
0.3965	0.0083	0.4193	0.4223

Table 17.1: Hierarchical linear model results with CFL Self-Regulation Inhibitory Behavior as dep. variable

Variable	Estimate	Estimate (Std)	Std. Error	Df	T value	Pr(>|t|)
(Intercept)	0.3579	-0.2221	0.6242	81.4656	0.5735	0.5679
female	-0.051	-0.0808	0.0197	2762.0162	-2.5896	0.0097
amind_alanat	-0.0019	-0.003	0.2425	3547.6688	-0.0079	0.9937
asian_pac	-0.0301	-0.0478	0.0622	3590.3016	-0.4844	0.6281
black	-0.0088	-0.0139	0.0264	2810.0883	-0.3318	0.7401
hisp	-0.0669	-0.106	0.032	3554.9674	-2.0928	0.0364
multiracial	-0.0264	-0.0417	0.0549	3568.6954	-0.4796	0.6315
swd	-0.0019	-0.0031	0.0252	3588.6697	-0.0772	0.9385
ell	0.1931	0.306	0.0393	3145.9893	4.9088	0
homeless	0.0437	0.0693	0.0669	3585.1753	0.6531	0.5137
gifted	-0.0386	-0.0611	0.0303	3590.0081	-1.2739	0.2028
nwea_percentile_fall_ela_24	0.0022	0.0901	0.0005	3590.5391	4.2412	0
nwea_percentile_fall_math_24	0.0019	0.0714	0.0005	3571.3932	3.4501	0.0006
attendance_rate_23	0	0.0004	0.0011	3355.2053	0.0163	0.987
median_family_income	0	-0.0042	0	3491.1835	-0.2748	0.7835
chooser2024	-0.0458	-0.0725	0.032	3583.9922	-1.4298	0.1528
treatment	0.0118	0.0187	0.0343	39.7445	0.3443	0.7324
grade_level_true11	0.2612	0.4138	0.175	3542.836	1.4928	0.1356
grade_level_true10	0.2672	0.4233	0.1682	3590.6984	1.5888	0.1122
grade_level_true9	0.2405	0.381	0.1699	3589.3989	1.4159	0.1569
grade_level_true2	0.1271	0.2013	0.1723	3353.5101	0.7375	0.4609
grade_level_true3	0.129	0.2044	0.1732	3357.034	0.745	0.4563
grade_level_true4	0.1944	0.308	0.173	3347.1311	1.124	0.2611
grade_level_true5	0.2114	0.3349	0.1723	3366.1409	1.2271	0.2199
grade_level_true6	0.1406	0.2228	0.1727	3354.9915	0.8142	0.4156
grade_level_true7	0.1124	0.1781	0.1729	3359.8635	0.6505	0.5154
grade_level_true8	0.1202	0.1904	0.1731	3361.0794	0.6945	0.4874
safety_mean	0.2722	0.2373	0.0254	3543.4515	10.7287	0
support_mean	-0.0647	-0.0559	0.0217	3589.9168	-2.9766	0.0029
sel_mean	0.1728	0.1442	0.0248	3571.3282	6.9552	0
sr_attentional_mean	0.3287	0.2894	0.0206	3590.8592	15.9887	0
attend_minutes_24	0	0.0472	0	907.0982	1.6762	0.094
spend_per_adj_pupil	0	-0.0433	0	56.9399	-1.923	0.0595
staff_attendance_rate_24	-0.0013	-0.0044	0.0062	67.1011	-0.2044	0.8387
minutes_per_day	-0.0001	-0.0001	0.0005	57.763	-0.1002	0.9205

Table 17.2: Random effects

grp	var1	vcov	sdcor
School	Intercept	0.0056	0.0747
Residual		0.2886	0.5372

Table 17.3: Fit statistics

AIC	AICc	BIC	R2_cond
6131.3909	6132.1747	6360.6387	0.2933
R2_marg	**ICC**	**RMSE**	**Sigma**
0.2797	0.019	0.5326	0.5372

Table 18.1: Hierarchical linear model results with number of out of school suspensions as dep. variable

Variable	Estimate	Estimate (Std)	Std. Error	Df	T value	Pr(>|t|)
(Intercept)	1.4617	0.3934	0.9884	81.3301	1.4789	0.143
female	-0.0227	-0.0227	0.0238	3506.5541	-0.9519	0.3412
amind_alanat	-0.0108	-0.0108	0.2873	3521.0402	-0.0376	0.97
asian_pac	-0.0314	-0.0314	0.074	3573.1248	-0.424	0.6716
black	0.0919	0.0919	0.032	3378.9763	2.8744	0.0041
hisp	-0.0382	-0.0382	0.0382	3592.91	-1.0005	0.3171
multiracial	0.002	0.002	0.0652	3545.9212	0.0313	0.9751
swd	0.0539	0.0539	0.0299	3582.7266	1.8006	0.0718
ell	-0.0935	-0.0935	0.0476	3504.8923	-1.9653	0.0495
homeless	0.1178	0.1178	0.0794	3564.8079	1.483	0.1382
gifted	-0.0012	-0.0012	0.036	3569.7611	-0.0334	0.9734
nwea_percentile_fall_ela_24	-0.0028	-0.0735	0.0006	3581.2801	-4.5991	0
nwea_percentile_fall_math_24	0.0005	0.0125	0.0007	3589.7409	0.8027	0.4222
attendance_rate_23	-0.0046	-0.0747	0.0012	3592.957	-3.9138	0.0001
median_family_income	0	-0.0004	0	3575.8115	-0.0357	0.9715
chooser2024	-0.0518	-0.0518	0.0381	3588.9986	-1.3587	0.1743
treatment	0.05	0.05	0.0599	51.8709	0.8343	0.4079
grade_level_true11	0.2868	0.2868	0.2073	3520.4548	1.3837	0.1665
grade_level_true10	0.2114	0.2114	0.2	3564.3956	1.0568	0.2907
grade_level_true9	0.3194	0.3194	0.2021	3568.8747	1.5803	0.1141
grade_level_true2	0.0483	0.0483	0.2079	3117.0957	0.2323	0.8163
grade_level_true3	0.0859	0.0859	0.209	3124.9802	0.4109	0.6812
grade_level_true4	0.1768	0.1768	0.2088	3116.1379	0.8469	0.3971
grade_level_true5	0.2722	0.2722	0.2079	3124.9955	1.3093	0.1905
grade_level_true6	0.3829	0.3829	0.2084	3119.5307	1.837	0.0663
grade_level_true7	0.3548	0.3548	0.2086	3127.5209	1.701	0.089
grade_level_true8	0.3197	0.3197	0.2088	3126.1849	1.5313	0.1258
safety_mean	0.031	0.017	0.0308	3593	1.0065	0.3143
support_mean	-0.0744	-0.0406	0.0259	3582.2619	-2.8757	0.0041
sel_mean	-0.011	-0.0058	0.0298	3590.5295	-0.3701	0.7113
sr_attentional_mean	-0.008	-0.0045	0.0253	3575.4219	-0.3182	0.7503
sr_inhibitory_mean	-0.1039	-0.0656	0.0198	3577.4576	-5.2422	0
spend_per_adj_pupil	0	-0.018	0	68.5764	-0.7667	0.4459
staff_attendance_rate_24	-0.0008	-0.0018	0.01	71.9	-0.082	0.9348
minutes_per_day	-0.001	-0.001	0.0008	70.5139	-1.1608	0.2496

Table 18.2: Random effects

grp	var1	vcov	sdcor
School	Intercept	0.0259	0.1608
Residual		0.4044	0.6359

Table 18.3: Fit statistics

AIC	AICc	BIC	R2_cond
7373.4419	7374.2252	7602.71	0.1206
R2_marg	**ICC**	**RMSE**	**Sigma**
0.0643	0.0601	0.6285	0.6359

Table 19: Linear model results with equivalent per pupil spending as dependent variable

Variable	Estimate	Std. Error	T value	Pr(>|t|)
(Intercept)	26572.7381	13682.5129	1.9421	0.0562
calendarEYS (195)	1032.3778	495.7916	2.0823	0.041
calendarEYS (New Tech)	651.8412	772.735	0.8436	0.4018
calendarYRS	721.0297	628.9349	1.1464	0.2555
calendarEYS (205)	169.6943	1037.5539	0.1636	0.8706
gifted	-5071.5746	6030.9569	-0.8409	0.4033
minutes_attend_ela	0.0752	0.0898	0.8378	0.405
minutes_attend_math	-0.0214	0.0761	-0.2808	0.7797
attend_minutes_24	-0.0044	0.0124	-0.3525	0.7255
attendance_rate_24	-68.4577	34.1439	-2.005	0.0488
ela_ss_24	-24.3957	28.4587	-0.8572	0.3942
math_ss_24	1.6452	28.4794	0.0578	0.9541
nwea_percentile_fall_ela_24	118.9085	55.1514	2.156	0.0345
nwea_percentile_fall_math_24	-1.5047	59.564	-0.0253	0.9799
safety_mean	1189.7715	2651.8643	0.4487	0.6551
challenge_mean	-459.7216	1999.6718	-0.2299	0.8188
support_mean	2815.2366	2781.9936	1.0119	0.315
sel_mean	-151.1622	3000.9695	-0.0504	0.96
sr_attention_mean	-621.2067	2467.4366	-0.2518	0.802
sr_inhibitory_mean	-1607.5286	1919.9008	-0.8373	0.4053
median_family_income	-0.0215	0.019	-1.1281	0.2631
staff_attendance_rate_24	-24.4824	63.7446	-0.3841	0.7021
enroll	-3.624	1.2663	-2.8619	0.0055

Table 20: Average of out of sample predictions for K8 calendar types, assuming an identical student/school profile, except for calendar type and instructional minutes

Outcome Measure	EY 195	Traditional	Standard deviation
ost_math_hat_ave	690.302	686.055	15.838
ost_math_no_sub_hat_ave	690.783	687.778	16.466
ost_ela_hat_ave	699.024	697.366	16.406
ost_ela_no_sub_hat_ave	701.211	698.195	16.11
math_time_hat_ave	14123.513	15425.472	1922.459
ela_time_hat_ave	16569.209	16307.999	1681.346
attend_hat_ave	91.685	90.658	3.748
oss_hat_ave	0.273	0.302	0.159
safety_hat_ave	2.268	2.272	0.28
challenge_hat_ave	2.991	2.962	0.16
support_hat_ave	2.961	2.94	0.172
sel_hat_ave	2.703	2.628	0.246
attention_hat_ave	2.824	2.829	0.122
inhibitory_hat_ave	2.39	2.36	0.196
spend_per_adj_pupil_hat_ave	9302.843	8286.804	1287.91

Table 21: Average of out of sample predictions for HS calendar types, assuming an identical student/school profile, except for calendar type and instructional minutes

Outcome Measure	EY 195	EY 205	EY New Tech	YR	Traditional	Standard deviation
ost_math_hat_ave	677.488	691.158	679.761	686.353	683.033	13.346
ost_math_no_sub_hat_ave	677.598	689.977	679.902	685.525	679.764	12.692
ost_ela_hat_ave	697.609	696.891	695.576	699.261	698.923	13.689
ost_ela_no_sub_hat_ave	699.874	694.64	699.182	700.18	694.263	10.984
math_time_hat_ave	9167.902	8479.787	7641.764	8375.963	8021.33	1399.485
ela_time_hat_ave	8861.515	7869.311	8660.239	8263.534	8099.156	1386.93
attend_hat_ave	86.373	89.259	86.336	86.913	87.408	9.015
oss_hat_ave	0.256	0.37	0.552	0.306	0.271	0.138
safety_hat_ave	2.343	2.448	2.371	2.407	2.441	0.205
challenge_hat_ave	2.905	2.993	2.913	2.917	2.94	0.098
support_hat_ave	2.983	2.928	2.96	2.971	2.898	0.122
sel_hat_ave	2.56	2.562	2.553	2.578	2.59	0.186
attention_hat_ave	2.934	2.933	2.924	2.929	2.947	0.088
inhibitory_hat_ave	2.473	2.479	2.459	2.428	2.448	0.138
spend_per_adj_pupil_hat_ave	8898.679	8055.674	8576.101	8589.63	7924.884	1740.677

Appendix III: Survey & focus group results

Survey dashboards

- Family/guardian survey results dashboard
- Staff survey results dashboard
- Student survey results dashboard

Family/guardian focus group themes

- Parents from non-traditional calendars expressed the value in extended days and extended school years, particularly in providing time for art and enrichment.
- Parents interested in a shorter school year was to provide students more ability to spend time with family and participate in summer activities that start before the end of non-traditional calendars.
- Parents talked about the value of having choices in the district, where they could find a school model that aligned with what they were looking for, while allowing others to find a model meeting their needs.

Staff focus group themes – maintaining calendars as they exist

- Year round staff
  - Highlighted the benefits of having shorter student breaks, particularly around a perception of less summer slide and break in classroom behavior routines.
  - Expressed concern that some unique programming that happens during student breaks would have to be eliminated.
- Extended year 195 staff
  - Expressed how extra minutes in the day enable schools to provide student courses/experiences that otherwise would not be possible (Algebra I, foreign languages, band).
  - Many staff shared that extra time at the end of the year was used for fun off site activities for students (trips to museums, field days, other field trips).
- Extended year 205 staff
  - Had similar views to EYS 195 staff.
  - Found significant value in a longer school day and extra days at the front end of the school year.

Staff focus group themes – decreasing year length / day length

- Year round staff
  - Shared that attendance, particularly at the start of the year is a struggle. Students wait to attend when the traditional school year starts.
  - Shared that families face challenges when older children are in a YRS and younger children are in a traditional calendar. Believe this influences family choices and affects attendance, when older siblings are watching younger siblings before the traditional calendar begins.
- Extended year 195 staff
  - Expressed difficulty in getting students to attend school during the extended period at the end of the year.
  - Prioritized the importance of the length of the school day over the length of the school year.
- Extended year 205 staff
  - Expressed that it is a challenge to be in a building with three schools but not all on the same calendar.
  - Did not see as much value in extra days at the end of the school year. Many of their students wanted to begin internships or other experiences that started around the end of the traditional school year.

Staff focus group themes – common themes

- Staff expressed concerns around changes to compensation that might occur due to changing calendars and the significant personal financial consequences that would result.
- Staff valued additional time provided for professional development outside of the normal school and when students are not in school.
- Some staff shared that this time helped on-board new teachers to unique calendars or was crucial time to help them prepare for the coming year or reflect on the year that just completed.
- Extra time allowed students more time to sit with robust academic content and was required for some programmatic elements (International Baccalaureate).