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EdPolicyWorks

# The View from Here:

## State-level Descriptive Analyses of the 2019 Virginia School Climate and Working Conditions Surveys

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# The State-level View

- Provided divisions and schools with reports that:
  - Summarized responses to individual items
  - Facilitated comparisons across schools within a division and to average responses in division, region, and state
- We can extract much more value from these data
  - How do students' perceptions of school climate vary among different groups of students?
  - How do teachers' perceptions of working conditions vary among different groups of teachers?
    - How are teachers' perceptions of working conditions associated with their job satisfaction and intentions to remain at their current school?

# Access to Respondent-level Data

- Divisions may request respondent-level data from their schools in order to explore these and other relationships
  - Email Dr. Jennifer Piver-Renna, Director, Office of Research, VDOE
    - [Jennifer.Piver-Renna@doe.virginia.gov](mailto:Jennifer.Piver-Renna@doe.virginia.gov)

# School Climate Surveys: Participation & Response Rates

## Elementary (Grades 4-5)

- 696 schools participated, 62%
  - 73 divisions had 100% participate
  - 24 divisions did not participate

- 96,320 students responded
  - 84% response rate among participating schools
    - 49% response rate among all schools
  - 8 divisions had 95% response rate or higher
  - 64 divisions had 80-95% response rate

## Secondary (Grades 9-12)

- 214 schools participated, 67%
  - 85 divisions had 100% participate
  - 27 divisions did not participate

- 140,675 students responded
  - 61% response rate among participating schools
    - 37% response rate among all schools
  - 1 divisions had 95% response rate or higher
  - 18 divisions had 80-95% response rate

# School Climate Surveys: Statewide Results

	Grades 4-5			Grades 9-12		
	Mean	SD	% Negative	Mean	SD	% Negative
<b>Engagement</b>						
Engagement Overall	3.34	0.50	5.8			
Emotional Engagement				2.78	0.68	23.8
Academic Engagement				3.07	0.56	9.5
<b>Relationships</b>						
Student with Students	3.15	0.58	9.5	2.94	0.60	14.0
Student with Adults	3.38	0.52	4.8	2.93	0.61	16.3
Social-Emotional Learning	3.09	0.59	14.8	3.05	0.55	12.5
Cultural & Linguistic Competence				2.98	0.63	17.2
<b>Expectations</b>						
Academic Expectations	3.20	0.50	5.9	2.92	0.56	17.2
Behavioral Expectations	3.42	0.51	3.2	2.84	0.61	25.8
<b>Safety</b>						
Feel Safe	3.38	0.70	6.9	2.96	0.69	13.1
Prevalence of Bullying *	2.77	0.88	32.1	2.57	0.76	43.8

**Response Categories:**

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Agree
- 4 = Strongly Agree

Note. SD = Standard deviation; \* Reserve-coded

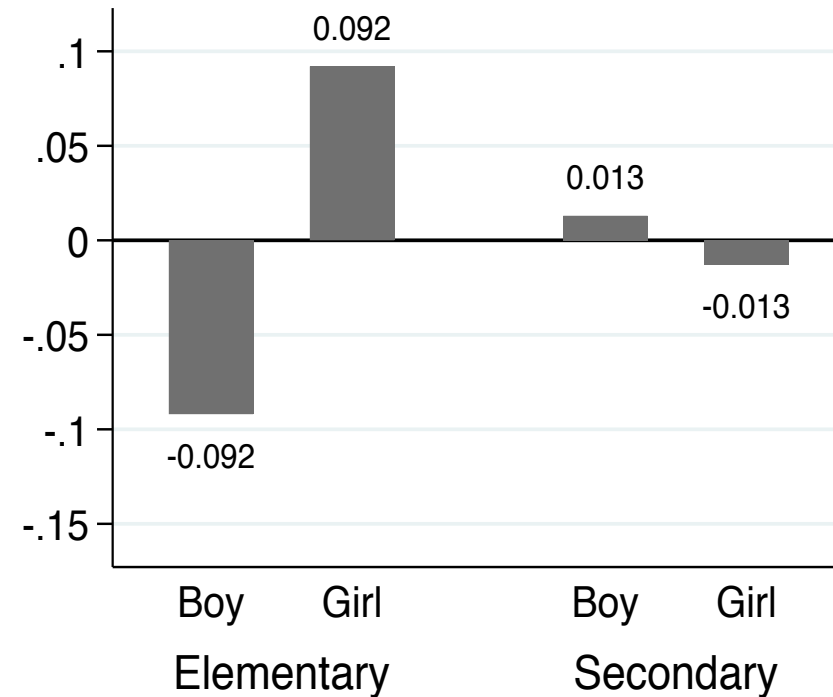
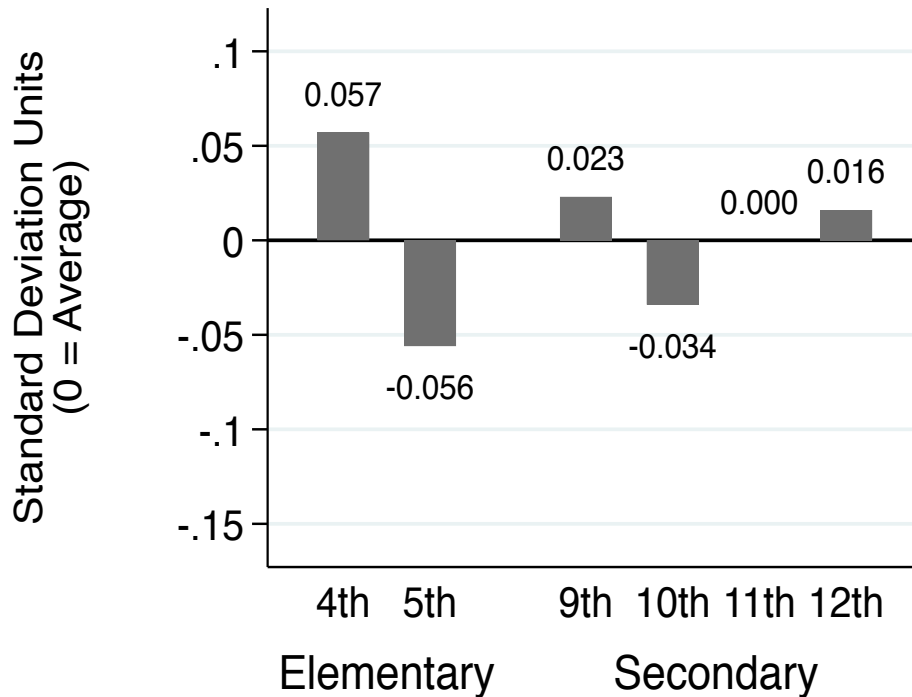
# Student Subgroups

- **Grade**
  - Elementary: 49% 4<sup>th</sup> Graders, 51% 5<sup>th</sup> Graders
  - Secondary: 29% 9<sup>th</sup> Graders, 26% 10<sup>th</sup> Graders, 24% 11<sup>th</sup> Graders, 21% 12<sup>th</sup> Graders
- **Gender**
  - Elementary: 50% girls, 50% boys
  - Secondary: 51% girls, 49% boys
- **Race**
  - Elementary: 17% Black, 18% Hispanic, 42% White, 12% Multi-Racial, 11% Other Race
  - Secondary: 16% Black, 17% Hispanic, 63% White, 10% Multi-Racial, 8% Other Race
- **Disability Status (secondary only)**
  - 12% with disability, 88% without disability
- **Post-Graduation Plans (secondary only)**
  - 62% Attend 4-year college, 11% Attend 2-year college, 9% Attend business/trade school/apprenticeship, 6% Join the military, 4% Enter the workforce, 8% No plans

# Our Analytic Strategy

- Create an aggregate measure of school climate (average of all but Prevalence of Bullying)
- Standardize all measures (mean = 0, SD = 1); thus group differences are in effect sizes
  - Large:  $\geq 0.8$ ; Moderate:  $\geq 0.5$ ; Small:  $\geq 0.2$
- Examine within-school differences
  - 86 to 98% of total variance is among students within the same school
  - Separately for elementary and secondary students

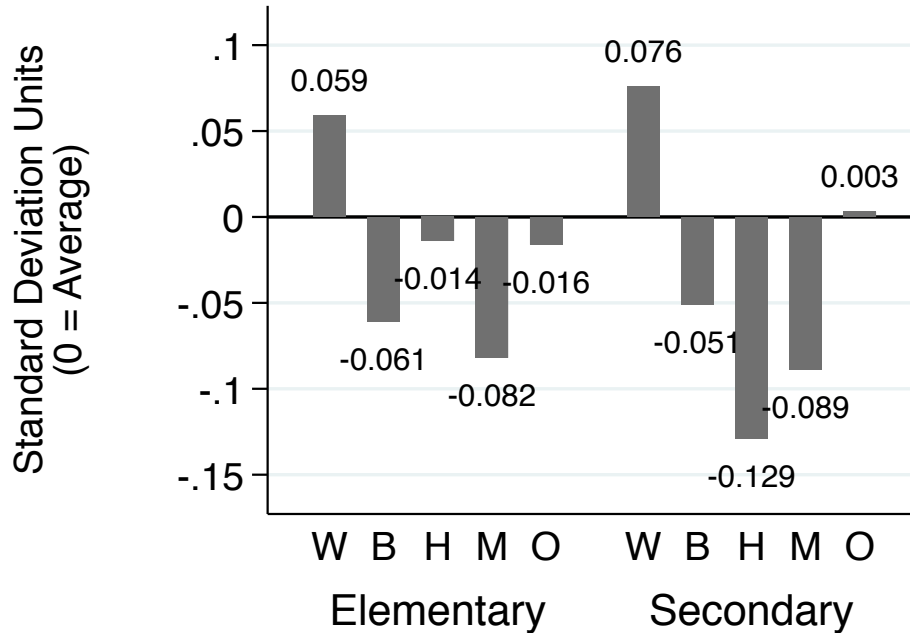
# Aggregate School Climate: Differences across Grade & Gender



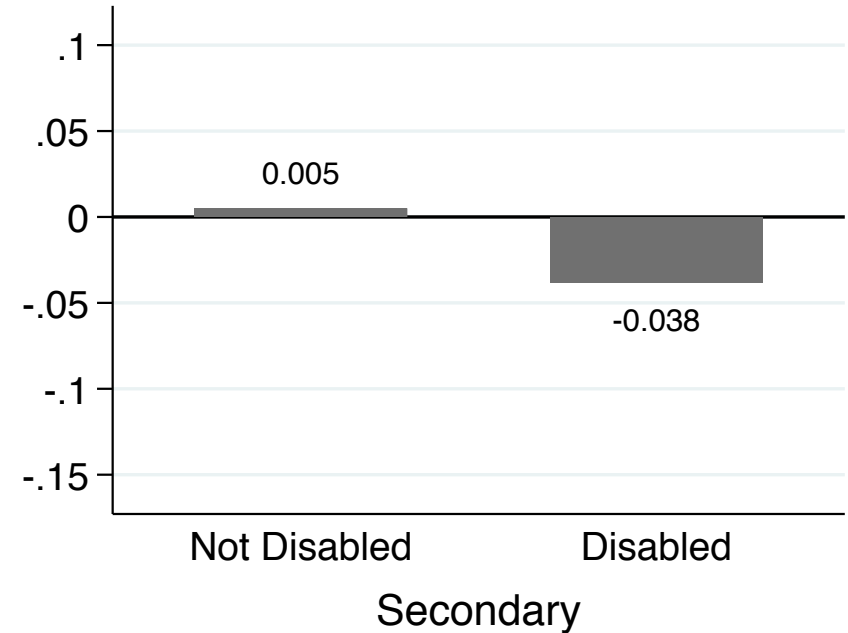
- **Grade:** 4<sup>th</sup> vs. 5<sup>th</sup> graders (ES = 0.113) twice as large as 9<sup>th</sup> vs. 10<sup>th</sup> (ES = 0.057)
- **Gender:** Elementary difference (ES = 0.184) is much larger than secondary (ES = 0.026)



# Aggregate School Climate: Differences across Race & Disability Status

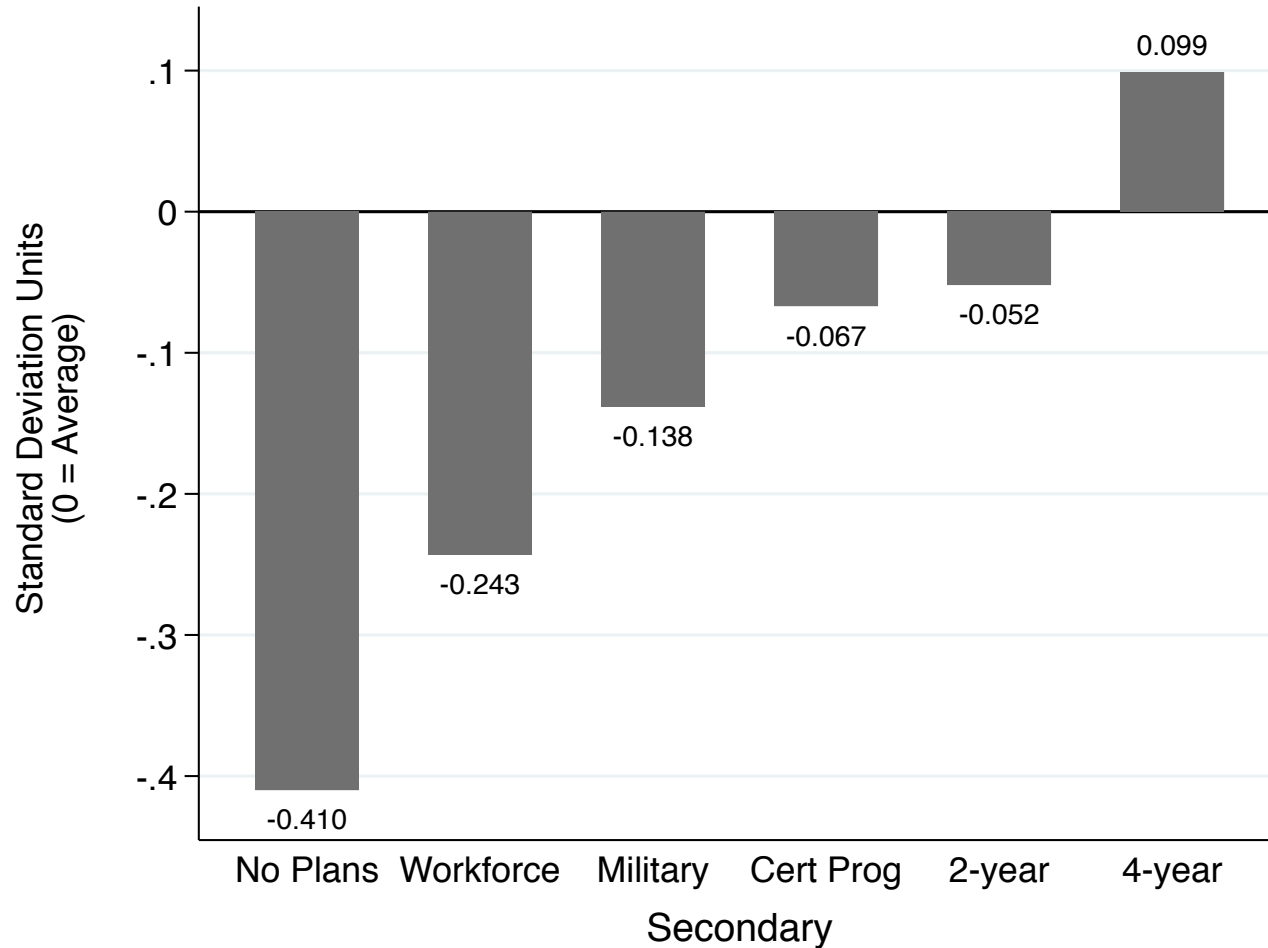


W = White; B = Black; H = Hispanic; M = Multi-Racial; O = Other Race



- **White v. Black:** similar differences among elementary and secondary students (ES = 0.120 & 0.127)
- **White v. Hispanic:** much larger differences among secondary (ES = 0.205) than elementary students (ES = 0.073)
- **White v. Multi-Racial:** similar differences (ES = 0.141 & 0.165)

# Aggregate School Climate: Differences across Post-Graduation Plans



- **Moderate Differences:**

- Attend 4-year College v. No Plan:  
ES = 0.509

- **Small Differences:**

- Attend 4-year College v. Enter Workforce:  
ES = 0.342
- Attend 4-year College v. Join Military:  
ES = 0.237
- Attend 2-year College vs. No Plans:  
ES = 0.358

# Other Notable Differences

- **Relationships with Other Students** (reporting about themselves)
  - Elementary White more than Black (0.203)
  - Secondary White more than Hispanic (0.257)
- **Social-Emotional Learning** (reporting about themselves)
  - Elementary girls more than boys (0.290)
  - 12<sup>th</sup> graders more than 9<sup>th</sup> graders (0.219)
  - Secondary non-disabled more than disabled (0.209)
  - Elementary White more than Black (0.244) and Secondary White more than Black (0.214)
  - Secondary White more than Hispanic (0.315)
- **Cultural and Linguistic Competence** (reporting about all students at the school)
  - Secondary White more than Black (0.214), more than Hispanic (0.330), more than Multi-Racial (0.223)
- **Feeling Safe** (reporting about themselves)
  - Secondary White more than Hispanic (0.226), more than Multi-Racial (0.200)

# Working Conditions Surveys: Participation & Response Rates

## Teachers

- 1,678 schools participated, 93%
  - 79 divisions had 100% participate
  - 17 divisions had less than 75% participate
- 54,207 teachers responded
  - 62% response rate among all schools
    - 67% response rate among participating schools
  - 15 divisions had 80% response rate or higher
  - 25 divisions had 70-79% response rate
  - 37 divisions had 60-69% response rate
  - 24 divisions had 50-59% response rate
  - 31 divisions had less than 50% response rate

## Staff

- 1,639 schools participated, 91%
  - 68 divisions had 100% participate
  - 19 divisions had less than 75% participate
- 19,588 staff responded
  - Unable to calculate response rate
    - Total number of staff is unknown

# Working Conditions: Statewide Results

Measure	Teacher			Staff		
	Mean	S.D.	% Negative	Mean	S.D.	% Negative
Teacher Leadership & Autonomy	4.31	0.99	18.6			
Staff Collegiality				4.92	0.91	7.4
Rigorous Instruction	4.88	0.75	3.6			
Instructional / Workplace Environment	4.75	0.98	10.8	4.99	0.89	6.0
School Leadership	4.67	1.07	13.9	4.98	0.95	7.7
Managing Student Behavior	4.10	1.20	26.5			
Professional Growth	4.16	1.06	22.3	4.69	0.98	11.1
Engaged Students & Engaging Families	4.29	0.86	15.7			
Engaged Students				4.51	0.86	11.1
Engaging Families				4.88	0.85	5.0
Feeling Safe	4.68	1.15	12.0	4.94	1.06	7.7
Prevalence of Bullying *	4.31	1.05	22.7	4.57	1.03	15.9

Response Categories:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Somewhat Disagree
- 4 = Somewhat Agree
- 5 = Agree
- 6 = Strongly Agree

Notes: S.D. = Standard Deviation; \* Reserve-coded

# Our Analytic Strategy

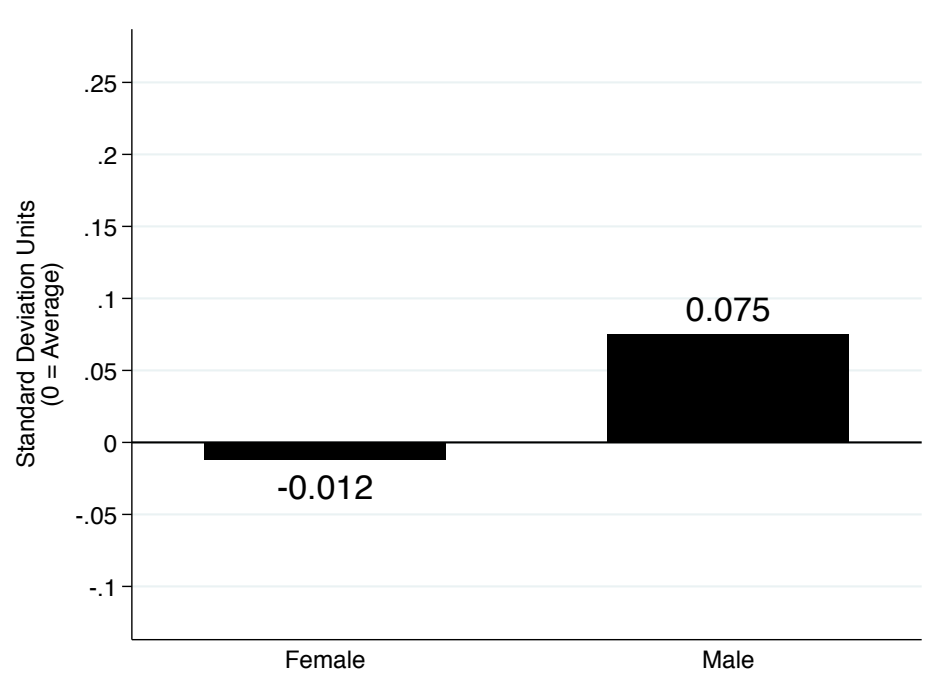
- Create an aggregate measure of working conditions (average of all but Prevalence of Bullying)
- Standardize all measures (mean = 0, SD = 1); thus group differences are in effect sizes
  - Large:  $\geq 0.8$ ; Moderate:  $\geq 0.5$ ; Small:  $\geq 0.2$
- Examine within-school differences
  - 74 to 89% of total variance is among teachers within the same school

# Teacher Subgroups

- Gender
  - 83% Females, 17% Males
- Race
  - 80% White, 8% Black, 4% Hispanic, 4% Other
- Subject Taught
  - 45% Elementary, 8% ELA, 8% Math, 5% Science, 6% Social Studies/History
  - 21% also teach students with disabilities
  - 11% also teach English Learners
- Years at Current School
  - 36% 1-3 years, 32% 4-10 years, 22% 11-20 years, 8% more than 20 years

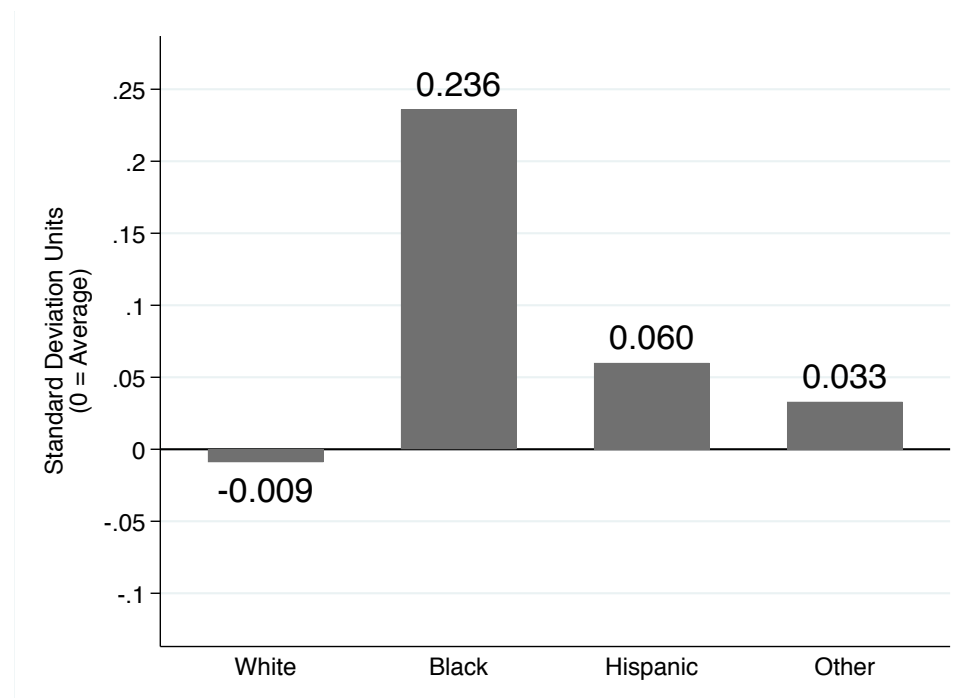
# Aggregate Working Conditions: Differences across Gender & Race

## Gender



- Male teachers feel more positively than female teachers (0.087)

## Race

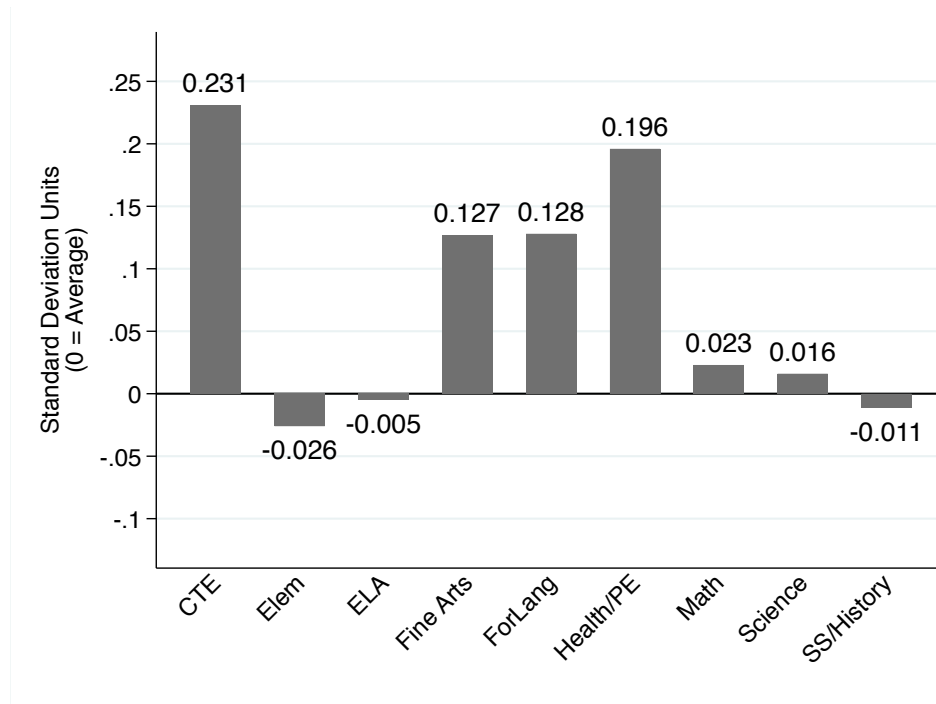


- **Black v. White:** Black teachers feel more positively than White teachers (0.245)
- **Black v. Hispanic:** Black teachers feel more positively than Hispanic (0.176)



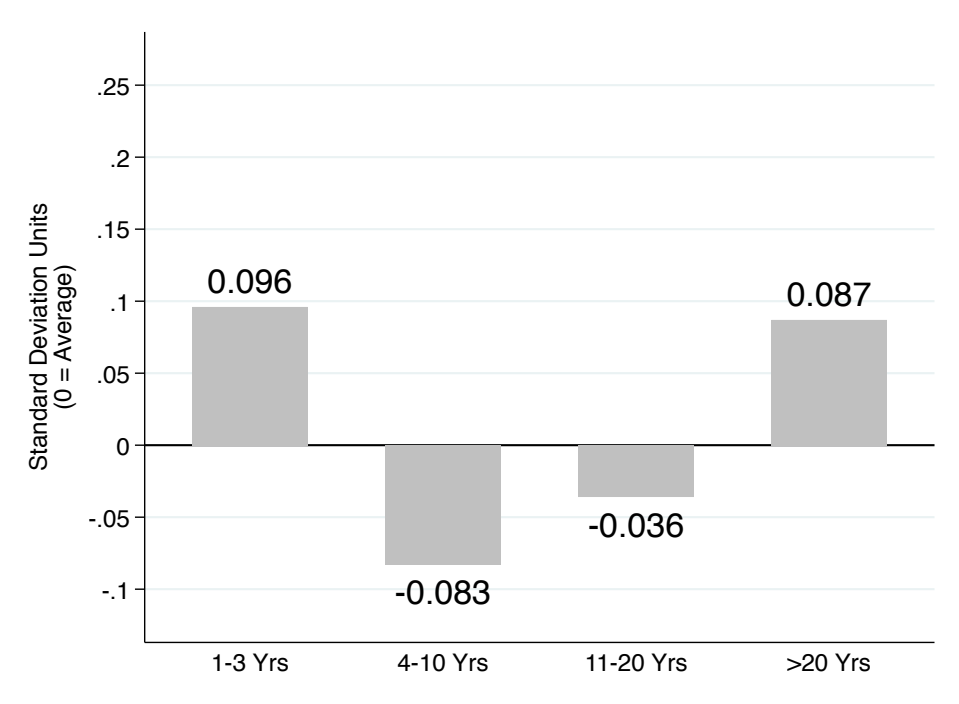
# Aggregate Working Conditions: Differences across Subject & School Experience

## Subject Taught



- **CTE:** CTE teachers feel more positively than ELA, SS/History, ELA, Science, and Math (0.257 to 0.208)
- **Health/PE, Foreign Language, and Fine Arts:** also feel more positively than others

## Years at Current School



- **1-3 v. 4-10 years:** Newest at school feel more positively than teachers with 4-10 years (0.179)
- **1-3 vs. >20 years:** Teachers with the least and the most experience at the school feel similarly

# Other Notable Differences

- **Black v. White** teacher differences driven by:
  - Engaged Students & Engaging Families (0.357)
  - Professional Growth (0.351)
  - Managing Student Behavior (0.298)
- **1-3 Years v. 4-10 Years** at School differences driven by:
  - Teacher Leadership & Autonomy (0.264)
  - School Leadership (0.249)
  - Professional Growth (0.236)
- Differences across **subjects** driven by:
  - Teacher Leadership & Autonomy → range (0.542) from Health/PE at 0.428 to Elementary at -0.114
  - Professional Growth → range (0.341) from Health/PE at 0.302 to Fine Arts at -0.039
  - Engaged Students & Engaging Families → range (0.314) from Health/PE at 0.240 to Math at -0.074

# Job Satisfaction and Career Plans

- **Job satisfaction:** “Overall, my school is a good place to work and learn.”
  - Mean = 4.79, SD = 1.25

Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
30%	41%	16%	5%	3%	4%

- **Career plans:** “Which of the following best describes your immediate professional plans?”

<b>Stay</b>	82%	Continue teaching at my current school
	5%	Continue teaching in this division but leave this school
<b>Move</b>	3%	Continue teaching in this state but leave this division
	1%	Continue teaching in a state other than Virginia
<b>Exit</b>	3%	Continue working in education but pursue a non-teaching position
	2%	Leave education to retire
	2%	Leave education to work in a non-education field
	1%	Leave education for other reasons

**2016-17**  
 82% Stayed  
 7% Moved  
 11% Exited

# Working Conditions by Job Satisfaction and Career Plans

- Aggregate Working Conditions by Job Satisfaction

Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
0.593	0.009	-0.548	-0.942	-1.204	-0.277

- Aggregate Working Conditions by Career Plans

Stay	Move	Exit
0.099	-0.613	-0.312

# Bringing It All Together

- How are teachers' perceptions of working conditions associated with their job satisfaction and intentions to remain at their current school?
  - Control for differences in teacher and school characteristics
- “Common sense bias”
  - Teachers who are unsatisfied with their job may justify that by reporting perceptions of working conditions that are more negative than the truth
  - Teachers planning to remain at their job the following year may justify that by reporting perceptions of working conditions that are more positive than the truth
  - **Solution:** use the average of the teacher's school-level peers' responses

# Predicting Job Satisfaction: bringing it all together

- **Job Satisfaction:** OLS regression of standardized measure

$$Y_{is} = \beta + T_{is}\Phi + S_s\Theta + C_{is}\Pi + \varepsilon_{is}$$

Teacher Chars      School Chars      Working Conditions

- $T_{is}$  includes the teacher characteristics discussed earlier
- $S_s$  includes the following school characteristics
  - % Economically Disadvantaged
  - % Black, % Hispanic, % Other race
  - % English Learners
  - Enrollment
  - School Level
  - Rurality

# Predicting Job Satisfaction

- Aggregate Working Conditions measure:
  - 1 standard deviation (SD) higher → job satisfaction is **0.784 SD units higher** (i.e. effect size)
- Replace aggregate measure with full set of working condition measures:
  - **School Leadership** 1 SD higher → job satisfaction **0.345 SD higher**
  - **Engaged Students & Engaging Families** 1 SD higher → job satisfaction **0.186 SD higher**
  - **Teacher Leadership & Autonomy** 1 SD higher → job satisfaction **0.160 SD higher**
  - **Feeling Safe** 1 SD higher → job satisfaction **0.135 SD higher**
  - **Professional Growth** 1 SD higher → job satisfaction **0.141 SD lower**

All associations statistically significant at the 0.1% level.

# Predicting Career Plans: bringing it all together

- **Career Plans:** multinomial logit model of move vs. stay and exit vs. stay

$$Pr(P_{is} = k) = \exp(z_{is}) / (1 + \sum_{j=2}^K \exp(z_{is}))$$

where  $z_{is} = \beta_k + T_{is}\Phi_k + S_s\Theta_k + C_{is}\Pi_k$

Teacher Chars

School Chars

Working Conditions

- Produces two sets of results: (1) comparing Move vs. Stay and (2) comparing Exit vs. Stay
- Controlling for the teacher and school characteristics as before



# Predicting Career Plans

- Aggregate Working Conditions measure:
  - 1 standard deviation (SD) higher → 73.4% less likely to move, 46.1% less likely to exit
    - THUS: a teacher's probability of staying is 13.2 percentage points higher
- Replace aggregate measure with full set of working condition measures:
  - **Teacher Leadership & Autonomy** 1 SD higher → probability of staying **5.8 percentage points higher**
  - **School Leadership** 1 SD higher → probability of staying **4.4 percentage points higher**
  - **Feeling Safe** 1 SD higher → probability of staying **2.4 percentage points higher**
  - **Professional Growth** 1 SD higher → probability of staying **4.0 percentage points lower**

All associations statistically significant at the 1% level

# Plug for the future

- 2021 Virginia Working Conditions Survey
  - January-March 2021
  - Divisions will be able to add questions for their teachers and staff to answer
  - Quick turnaround feedback reports to schools and divisions
  
- SY 2021-2022: interviews with teachers, principals, and division officials
  - Factors enabling the provision of supportive teacher working conditions
  - Factors hindering the provision of supportive teacher working conditions
  - Local use of the survey data



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