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  Evaluation of a Principal Training Program to Promote Safe and Civil Schools

- **PD/PI Name, Title and Contact Information (e-mail address and phone number):**
  Keith Herman, Ph.D., 573-884-2419, hermanke@missouri.edu

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  Curators of the University of Missouri, 310 Jesse Hall, Columbia, MO 65211

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Final Research Report:

Evaluation of a Principal Training Program to Promote Safe and Civil Schools

Grant #: 2016-CK-BX-0004

Summary of the project

Schools are expected to provide a safe and orderly environment for learning (Every Student Succeeds Act, 2015), yet many schools struggle to meet this mandate. For instance, over 1.3 million discipline incidents were documented in U.S. schools in 2013-14, and 65% of public schools reported one or more violent incidents in their building (National Center for Education Statistics, 2015).

Principals play a central role in creating a safe school environment; in fact, the "selection of an organizationally strong and visionary principal may be the single most important intervention that reduces the incidence of violence in a given school" (Astor, Benbenishty, & Estrada, 2009, p. 452). Consistent evidence points to school safety as the central organizational factor linking principal leadership to student outcomes (Sebastian & Allensworth, 2012, 2013; Sebastian, Allensworth, & Huang, 2014; Sebastian, Allensworth, & Stevens, 2014). Unfortunately, principals feel unprepared to implement practices that promote school safety and positive student behavior (Ricciardi & Petrosko, 2000). Leadership training programs and most PD training programs simply do not prioritize school safety and student behavior as critical leadership skills (Timmons, 2010). Enhancing school management practices holds promise as a strategy to reduce school crime and promote safety (Gottfredson et al., 2005).

This project addressed these challenges by evaluating a training program designed to equip school leaders with skills and strategies that promote safe and civil school environments. Safe & Civil School Leadership (SCSL) was developed over a decade ago and focuses specifically on developing leadership skills for promoting school safety and positive school climate. SCSL is a fully developed and widely disseminated leadership training program. Books, planning materials, and DVD's support implementation of this program in precise and repeatable ways. SCSL is the leadership component of the broader Safe & Civil Schools (SCS) series. Start on Time (START) is a companion program in the series designed to support principals in designing and implementing a unified approach to school-wide hallway management. START targets a valued school behavior (tardiness) through a step-by-step process involving all school staff. By quickly reducing tardiness with relatively simple staff behaviors, START helps principals build staff buy-in and commitment to other SCSL strategies for creating a safe, predictable, and nurturing school climate.

Major goals and objectives

The goal of this proposal is to evaluate the efficacy of SCSL plus START to improve school climate and safety by promoting effective school leadership skills and a unified approach to school-wide hallway management. The specific objectives of the proposed study are (1) To evaluate, utilizing a delayed treatment RCT design, whether the SCSL plus START program leads to improved leadership skills, school climate, and school safety as evidenced by reduced victimization and bullying/teasing and increased perceptions of safety in comparison to a business as usual (control) condition; and (2) To identify mediators

of observed effects on the primary outcome, school safety, based on our theory of change. These mediators include improved leadership skills, use of data, climate (disciplinary structure and support), aggressive attitudes, and student compliance.

Research questions

Research Question 1: Will SCSL plus START schools have higher levels of principal and teacher efficacy in promoting school safety and positive student behavior, higher perceptions of school safety, lower rates of disruptive behavior, and higher levels of academic engagement and performance than the Control schools.

Research Question 2: Will improvements in leadership skills, use of data, climate (structure and support), and aggressive attitudes, and student compliance mediate intervention effects on any observed improvements on primary outcomes.

Research design, methods, analytical and data analysis techniques

We used a group randomized design to answer our research question. Forty-three principals from schools throughout Oklahoma were randomly assigned to receive SCSL plus START or business as usual conditions. Data on primary outcomes and putative mechanisms were collected at baseline and 6 month, 1 year, and 2 year follow-up.

Description of the SCSL plus START Program

Principal Training Workshops. A certified trainer trained principals from all SCSL schools in two full day workshops offered in October and July. The SCSL model targets school leaders' use of effective schoolwide discipline practices by promoting positive relationships with all students and by strengthening the relevance and engagement instruction. The acronym STOIC summarizes the guiding principles for creating effective and orderly interactions in all school settings: Structure/organize all settings for success; Teach students how to behave responsibly; Observe student behavior; Interact positively with students; and Correct irresponsible behavior fluently. SCSL is firmly grounded in rigorous principles of data based decision making. It is based on a cyclical process of reviewing data from multiple sources, revising the Schoolwide Behavior Plan (SBP) based on the review, adopting revised policies and procedures, and implementating new polices and maintaining current policies. All of these steps are taken in a collaborative fashion by the school "Behavior Leadership Team" that includes the school principal and various subgroups of the school staff. The SCSL training program provides detailed examples and practices for each of the topics (see Table 3). SCSL includes a host of well-developed and user-friendly materials to support teacher implementation of the practices. These include the companion books, The School Administrator's Guide to Safety, Climate & Discipline (formerly titled, The Administrator's Desk Reference of Behavior Management), the Teacher's Encyclopedia of Behavior Management: 100 Problems/500 Plans; Meaningful Work, and the Making Every Second Count DVD series. Additionally, SCSL includes on online training materials with examples, practice exercises, and quizzes.

Online Training and Ongoing Coaching to Support High Implementation of SCSL in Schools. In addition to the SCSL Workshops, participants had access to online materials designed to supplement and

enhance skill development, and a certified SCSL coach provided onsite coaching to intervention schools. The online training was available for both years of the project, and the coach prompted principals to complete simple assignments on a monthly basis. The SCSL coach met with each leadership team at least twice each year to review the content from the workshop, assess areas of difficulty with implementation, and problem solve any implementation barriers. Performance feedback data from observation data collected on leaders' use of effective school safety and student behavior management practices was provided during coaching meetings. The activities of each coaching visit were documented by the coach.

Assuring Principal Intervention Implementation. The dynamic, interactive workshop formats stimulate discussions and sharing of ideas among participants. The use of collaborative training facilitates the leadership implementation skills. Implementation of the intervention was assured with the following: (a) detailed training manuals; (b) session-by-session protocols for leadership activities, with videos and role plays specified; (c) online training materials and resources that were monitored for use and activity by each participant; (d) onsite coaching by the SCSL trainer; (e) development of a SCSL Buddy System to help principals provide support to one another; and (g) independent site observations with performance feedback given to principals.

Assuring Integrity of the SCSL Workshops. The SCSL trainer was selected and supervised by Dr. Sprick. The trainer had conducted dozens of SCSL trainings prior to this trial. During each workshop the trainer used program agendas and checklists to ensure completion of required content. Dr. Sprick provided feedback to the trainer on his or her performance, providing suggestions for improvement and areas of strength. Dr. Sprick's role was limited specifically to supervising the workshops and SCSL coaching to ensure the model was conducted with high fidelity. He was not involved with recruitment or data collection, entry, or analysis.

Data Collection Procedures and Measures

Recruitment. We recruited 43 schools from Oklahoma. Only individuals with signed informed consent were included in the project.

Prevalence of Teasing and Bullying. The prevalence of teasing and bullying in a school was measured with a five-item scale. The scale asked about the extent of bullying and teasing observed at school as distinguished from personal victimization. Consistent with other measures of bullying (e.g., Juvonen, Nishina, & Graham, 2000; Olweus, 2007), item content was not limited to use of the term bullying, but included general forms of peer harassment associated with bullying.

Students completed a **Victimization index** based on Gottfredson's (1999) research. We excluded two relatively trivial forms of victimization (i.e., theft and damage of property worth less than $10) and relied on the remaining forms of student victimization, which ranged from theft of personal property worth to being physically attacked. Students answered "no", "one time", or "mre than once" for each form of victimization they had experienced in the past school year. This scale can be distinguished from the Prevalence of Teasing and Bullying scale because it asks students to report their own victimization experiences rather than how frequently they observed the victimization of others. Prior work has indicated a Cronbach's alpha

of .72. Totals were calculated for each participant based on how many forms of victimization he or she reported.

Authoritative School Climate (ASC) Survey. The ASC Survey was developed by the Youth Violence Project research team at the University of Virginia with the support of the by the Office of Juvenile Justice and Delinquency Prevention, Office of Justice Programs, U.S. Department of Justice (Grant #2012-JF-FX-0062). Student and teacher perceptions of disciplinary structure, academic expectations, and student support were the main constructs used in measuring authoritative school climate (Gregory et al., 2010). Student and teacher versions of the survey have been reviewed using both multilevel confirmatory and exploratory factor analyses using data from over 200,000 respondents in both middle and high schools in Virginia and have shown favorable fit to the data at the group (school) and the individual (student or teacher) level (F. Huang et al., 2015; Konold et al., 2014). In addition, additional ASC scales also measured the prevalence of teasing and bullying (PTB), bullying victimization, student engagement, and aggressive attitudes (F. L. Huang, Cornell, & Konold, 2014; Konold et al., 2014). The scales have shown good internal consistency (both at the individual and group level), test-retest reliability, and construct validity. Response options for the survey items in the student version of the scales used a four point Likert-scale (1 = strongly disagree, 2 = disagree, 3 = agree, 4= strongly agree).

Disciplinary Structure. The scale was composed of seven items selected to measure perceived fairness and strictness of school rules using items such as “The school rules are fair” and “The punishment for breaking school rules is the same for all students”. Items were derived from the Experience of School Rules scale from the School Crime Supplement to the National Crime Victimization Survey (NCES, 2005).

Academic Expectations. Five items asked student perceptions of how much teachers expected of students in their academic work. Items included “My teachers expect me to work hard” and “My teachers expect a lot from students.”

Student Support. An eight-item scale was used to measure perceived supportiveness of student-teacher relationships with items such as “Most teachers and other adults at this school care about all students” and “There are adults at this school I could talk with if I had a personal problem” (see Table 1). Items were derived from the Willingness to Seek Help scale (Bandyopadhyay, Cornell, & Konold, 2009) and the School Climate Module of the California Healthy Kids Survey (WestEd, 2013).

Student Perceptions of School Safety. Eight items were taken from the U.S. Department of Education (2016) School Climate Survey (EDSCLS) and included items such as “I feel safe at this school” and “students at this school damage or destroy other students’ property.” As the Department of Education is conducting a national benchmarking study using this scale in 2017, schools in our study will also be able to compare scores with national benchmarking data when available.

Aggressive Attitudes. The aggressive attitudes scale (F. L. Huang et al., 2014) is a 6-item scale (see Table 1) that measured the prevalence of aggressive attitudes among students related to hitting, bullying, and fighting (i.e., “If someone threatens you, it is okay to hit that person”). Studies have shown that the scale is predictive of students willingness to report threats of violence (Millspaugh, Cornell, Huang, & Datta,

2015), suspensions, bullying, aggressive infractions, teacher safety, and gang activity (F. L. Huang et al., 2014)

We also use items from the **Trends Climate Survey** (Sprick et al., 1998; 2015) which was developed specifically as an online data tool for the SCSL intervention. Although Trends and ASC have a great deal of overlap, some items were unique to trends. In particular, we added Trend items regarding student report of specific areas of school were problematic interactions happen and safety in common areas. Principals in SCSL use data collected from the climate survey to inform school practices.

Use of Data. Use of the climate survey data helped serve as an indicator of data use within SCSL schools. In addition, all principals were asked to complete a 4 item scale about how often and effectively they use data to inform school practices and their perceptions of efficacy and importance in using data.

Measures of Fidelity and Comparison Group Practices.

Fidelity of SCSL Workshops conducted by SCSL Trainer. During each workshop the SCSL Trainer used program agendas and session checklists to ensure completion of required content. Detailed session-by-session protocols have been developed to keep careful records of training content covered and intervention activities. **Quality of Training.** Principals receiving the intervention completed a SCSL Workshop Evaluation form immediately following each SCSL Workshop. Principals rated the quality of the training, including the skill of the group leader, the appropriateness and usefulness of the video clips, role plays, and discussion, as well as usefulness of any written materials provided.

Fidelity of SCSL Coaching conducted by SCSL Trainer. During each coaching visit the SCSL Coach used session checklists to ensure completion of required content. **Fidelity of SCSL Online Activity**. Each participant's use of the online training material was documented on a monthly basis including duration of use, activities completed, and scores on quizzes. **Fidelity of SCSL Implementation**. Completed ongoing fidelity of implementation ratings of each school during each school visit.

Analysis Plan.

We assumed that schools would be balanced on both observed and unobserved characteristics due to the randomization of schools to the treatment and control conditions allowing the differences in the outcomes to be attributable to the treatment assignment. To assess group equivalency, a series of t-tests and chi-square tests will be conducted to check covariate balance. Differences on the covariates will be controlled for as well in the analytic models. Missing data will be handled using the appropriate multiple imputation procedures using the PROC MI function in SAS.

Aim 1: Primary Outcomes. The current project will use a two-level hierarchical linear model (Raudenbush & Bryk, 2002) to assess the impact of the treatment assigned at the school level. We will model the intervention effect on bullying, victimization, and school climate and safety measures based on a random intercept model using SAS 9.4 or R software which will account for the clustering effect as indicated by the intraclass correlation coefficient (ICC; Huang, 2016).

The hierarchical linear model can be expressed as:

At level 1 (student level): Yij = B0j + B1j(Xij) + rij where Yij is the outcome measure of interest for student i in school j, Xij represents a vector of student demographic variables (e.g., gender, race/ethnicity, socioeconomic status), and rij is the random effect indicting the difference between student ij's score and the predicted mean score for school j.

At level 2 (school level): B0j = G00 + G01(TREATj) + G02(Wj) + uoj and B1j = G10, where TREATj is the dummy-coded indicator whether the school was in the treatment (1) or the control (0) group, Wj is a vector of school demographic characteristics (e.g., school size, percent eligible for free or reduced price lunch, percent minority enrollment), and uoj is the deviation of school j's mean from the grand mean, conditional on covariates. A statistically significant G01 coefficient will indicate an associated change in the outcome measure as a result of the assignment to the treatment condition.

Expected applicability of the research

The current project attempted to directly address one of the primary mechanism for fostering school safety by training school principals in effective leadership practices that help create safe and civil environments. The SCSL/START program could be integrated into any leadership training program. The program focuses on a much needed area for leadership development using data and effective practices to improve school safety and climate.

Participants and other collaborating organizations

Forty-three schools across Oklahoma participated in the project. In these school, 43,540 students completed anonymous surveys about climate. Student characteristics are summarized below:

- Free-reduced price lunch status: 56.46% yes, 43.54% no
- IEP status: 11.95% yes, 28.50% no, 49.32% I don't know
- Gender: 48.26% male, 51.74% female
- Race: 49.22% White, 5.30% Black or African American, 10.99% American Indian or Alaska Native, 2.22% Asian, 0.83% Native Hawaiian or Pacific Islander, 31.44% 2 or more races
- Parent education level: 12.58% did not graduate from high school, 34.66% graduated from high school, 15.43% two-year college or technical school, 20.92% graduated from a four-year college, 16.42% completed post-graduate studies.
- How many parents at home: 2.80% 0, 26.34% 1, 70.87% 2.
- Intervention: 54.94% control group, 45.06% treatment group

School characteristics are summarized below:

- Intervention information: 23 schools in the treatment group and 20 schools in the control group
- School level: 25 middle schools, 11 high schools, and 7 multiple levels (ES+HS or MS+HS)
- School location: 29 rural, 9 suburban, and 5 urban

Further information on the Treatment vs. Control Schools to establish baseline equivalence:

Stratified by intervention				
	Control	%	Treatment	%
Total n	18,053		14,808	
Female	9,385	52.0%	7,618	51.4%
Race				
American Indian or Alaska Native	1,831	10.1%	1,781	12.0%
Asian	419	2.3%	312	2.1%
Black or African American	662	3.7%	1,079	7.3%
Native Hawaiian or Pacific Islander	135	0.7%	137	0.9%
White	9,454	52.4%	6,720	45.4%
2 or more races	5,552	30.8%	4,779	32.3%
Free lunch status = yes	8,908	49.3%	9,645	65.1%
IEP status				
yes	2,144	13.1%	1,783	13.5%
no	5,253	32.2%	4,111	31.2%
I don't know	8,920	54.7%	7,288	55.3%
Parent education status				
did not graduate from high school	2,391	13.2%	1,742	11.8%
graduated from high school	5,922	32.8%	5,467	36.9%
two-year college or technical school	2,747	15.2%	2,323	15.7%
graduated from a four-year college	3,859	21.4%	3,015	20.4%
completed post-graduate studies	3,134	17.4%	2,261	15.3%
Parents at home				
0	467	2.6%	452	3.1%
1	4,410	24.4%	4,244	28.7%
2	13,176	73.0%	10,112	68.3%
Grade				
5	1,393	7.7%	834	5.6%

6	4,107	22.7%	3,345	22.6%
7	3,357	18.6%	3,893	26.3%
8	3,486	19.3%	2,942	19.9%
9	1,711	9.5%	1,790	12.1%
10	1,626	9.0%	836	5.6%
11	1,347	7.5%	679	4.6%
12	1,026	5.7%	489	3.3%

Changes in approach from original design and reason for change, if applicable

We had originally proposed to conduct the study in Washington state, but our state partner there was unable to recruit any schools. We sought permission from NIJ to move the project to Oklahoma during the first quarter of the project. This request was approved.

Outcomes

The program and training was well-received by all schools. We provided the training and coaching to Control schools after they completed their two years in the project.

Activities/accomplishments

We met all project benchmarks as planned including providing training and coaching supports to all schools. We collected anonymous survey data from teachers and surveys to assess school climate and safety over time. We also collected surveys from administrators. Leadership teams attended training and coaching sessions as well as 10 webinars offered over a two year period to support their implementation of the program. We also collected ongoing fidelity data to ensure high quality trainings and coaching as well as to assess how well each school implemented the program.

Results and findings

Study Methods

Participants

Principal (including assistant principals), teacher, and student datasets were used to analyze the effects of the intervention on school climate measures among fifth to twelfth grade from 43 public schools in Oklahoma. The schools were surveyed from 2017 to 2022. For each school, data was collected across four time points, using an online, anonymous Qualtrics survey, through two years by the research team. The intervention was a school-level variable as the randomization was done at the cluster (i.e., school)

level. See the allocation between treatment and control schools in Table 1. After deleting invalid responses (e.g., students who had responded too quickly or had indicated that they were not telling the truth), we had a total of 265 principal and assistant principal responses, 4,141 teacher responses, and 32,861 student responses from 43 schools.

Table 1. Data collection information.

	Number of schools			Collection time			
	Treatment	Control	Total	Time 1	Time 2	Time 3	Time 4
Cohort 1	5	5	10	2017 S	2017 F	2018 S	2018 F
Cohort 2	2	2	4	2018 S	2018 F	2019 S	2019 F
Cohort 3	5	4	9	2019 S	2019 F	2020 S	2020 F
Cohort 4	5	4	9	2020 S	2020 F	2021 S	2021 F
Cohort 5	6	5	11	2021 S	2021 F	2022 S	2022 F
Total	23	20	43				

Note. S = Spring; F = Fall.

School Sample

A total of 43 schools participated in the survey from five time cohorts. Among 43 schools, 23 (53.3%) schools were in the intervention group and 20 (53.5%) schools were in the control group. Eleven (25.6%) high schools, 25 (58.1%) middle schools, and 7 (16.3%) schools with multiple school levels were located in urban (11.6%), suburban (20.9%), and rural (67.4%) regions in Oklahoma (see Table 2).

Table 2. School demographic information stratified by intervention condition.

	Control	%	Treatment	%
n	20	46.5	23	53.5
Setting				
rural	16	80.0	13	56.5
suburban	3	15.0	6	26.1
urban	1	5.0	4	17.4
School level				
high	4	20.0	7	30.4
middle	13	65.0	12	52.5
multiple	3	15.0	4	17.4

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Administrator (Principal and Assistant Principal) Sample

There were 265 valid principal and assistant principal responses from four time periods. The valid response rate was 99.3% (265/267) after checking a response time indicator (response time > 4 minutes) and an attention indicator (I am reading this survey carefully = Somewhat Agree, Agree, or Strongly Agree). Table 3 shows the numbers of responses by school cohort and time.

Table 3. Principal responses by cohort and time.

	Time 1	**Time 2**	**Time 3**	**Time 4**	**Total**
Cohort 1	16	17	18	19	70
Cohort 2	5	6	5	5	21
Cohort 3	16	14	13	15	58
Cohort 4	15	11	14	11	51
Cohort 5	18	17	15	15	65
Total	70	65	65	65	265

Basic demographic information from principals and assistant principals were as follows:

- **Gender**: Male: 53.6%; Female: 45.7%; NA: 0.7%
- **Race/Ethnicity**: American Indian or Alaska Native: 7.6%; Black or African American: 4.2%; Hispanic or Latino: 0.7%; Two or more races: 5.7%; White: 81.1%; NA: 0.7%
- **Experience**: 1-2 years: 24.5%; 3-5 years: 28.3%; 6-10 years: 20.0%; more than 10 years: 26.4%; NA: 0.8%

Table 4 shows the principal demographic information (including assistant principals) by control and intervention group. There were 47.5% of responses in the control group and 52.5% of responses in the treatment group.

Table 4. Principal demographic information stratified by intervention condition.

	Control	%	Treatment	%
n	126		139	
Gender				
Male	53	42.1	89	64.0
Female	73	57.9	48	34.5
NA	0	0.0	2	1.4
Race/Ethnicity				
American Indian or Alaska Native	11	8.7	9	6.5
Black or African American	5	4.0	6	4.3
Hispanic or Latino	0	0.0	2	1.4
Two or more races	10	7.9	5	3.6
White	100	79.4	115	82.7
NA	0	0.0	2	1.4
Experience				
1-2 years	16	12.7	49	35.3
3-5 years	36	28.6	39	28.1
6-10 years	35	27.8	18	12.9
More than 10 years	39	31.0	31	22.3
NA	0	0.0	2	1.4

Teacher Sample

There were 4,141 valid teacher responses from four time periods. The valid response rate was 81.9% (4,141/5,058) after checking a response time indicator (response time > 4 minutes) and an attention indicator (I am reading this survey carefully = Agree or Strongly Agree). Table 5 shows the numbers of responses by school cohort and time.

Table 5. Teacher responses by cohort and time.

	Time 1	Time 2	Time 3	Time 4	Total
Cohort 1	379	373	387	344	1,483
Cohort 2	53	65	66	67	251
Cohort 3	226	195	170	164	755
Cohort 4	172	152	177	128	629
Cohort 5	339	260	215	209	1,023
Total	1,169	1,045	1,015	912	4,141

Basic demographic information from teacher responses:

- **Gender**: Male: 26.4%; Female: 69.0%; NA: 4.6%
- **Race/Ethnicity**: American Indian or Alaska Native: 7.3%; Asian or Native Hawaiian or Pacific Islander: 0.5%; Black or African American: 2.7%; Hispanic: 2.8%; Two or more races: 6.4%; White: 75.7%; NA: 4.7%

- **Experience**: 1-2 years: 11.2%; 3-5 years: 14.3%; 6-10 years: 17.1%; more than 10 years: 52.8%; NA: 4.7%
- **Position**: Teacher (General): 74.7%; Teacher (Special Education): 9.0%; Other: 16.3%
- **Teach School Level**: Middle: 39.2%; High: 24.2%; Other: 36.6%

Table 6 shows the teacher demographic information by control and intervention group. There were 52.1% of responses in the control group and 47.9% of responses in the treatment group.

Table 6. Teacher demographic information by intervention condition.

	Control	%	Treatment	%
n	2,157		1,984	
Gender				
Male	538	24.9	555	28.0
Female	1,521	70.5	1,335	67.3
NA	98	4.5	94	4.7
Race/Ethnicity				
American Indian or Alaska Native	181	8.4	120	6
Asian or Hawaiian or Pacific Islander	15	0.7	4	0.2
Black or African American	49	2.3	62	3.1
Hispanic or Latino	60	2.8	57	2.9
Two or more races	141	6.5	123	6.2
White	1,611	74.7	1,523	76.8
NA	100	4.6	95	4.8
Position				
Teacher (General)	1,586	73.5	1,508	76.0
Teacher (Special Education)	188	8.7	184	9.3
Other	383	17.8	292	14.7
Experience				
1-2 years	275	12.7	187	9.4
3-5 years	293	13.6	301	15.2
6-10 years	386	17.9	320	16.1
More than 10 years	1,101	51.0	1,084	54.6
NA	102	4.7	92	4.6
Grade Level				
Middle	631	29.3	994	50.1
High	590	27.4	410	20.7
Other	936	43.4	580	29.2

Student Sample

There were 32,861 valid student responses from four time periods. The valid response rate was 75.5% (32,861/43,540) after checking a finished survey indicator (35,711 finished) and passing six validity checks (e.g., I am telling the truth on this survey). Table 7 shows the numbers of valid responses by cohort and time.

Table 7. Student responses by cohort and time.

	Time 1	Time 2	Time 3	Time 4	Total
Cohort 1	3,266	3,204	3,466	3,770	13,706
Cohort 2	729	753	779	781	3,042
Cohort 3	1,963	1,771	168	1,266	5,168
Cohort 4	692	1,515	1,346	1,131	4,584
Cohort 5	2,138	1,601	1,385	1,137	6,261
Total	8,788	8,844	7,144	8,085	32,861

Basic demographic information from student responses:

- **Gender**: Male: 48.3%; Female: 51.7%
- **Race/Ethnicity**: American Indian or Alaska Native: 9.3%; Asian or Native Hawaiian or Pacific Islander: 2.4%; Black or African American: 4.7%; Hispanic: 23.5%; Two or more races: 15.6%; White: 44.5%
- **Free-reduced price lunch status**: Yes: 56.5%; No: 43.5%
- **Disability status**: Yes: 13.8%; Other (No or I don't know): 86.2%
- **Parent education level**: Did not graduate from high school: 12.6%; Graduated from high school 34.7%; Two-year college or technical school: 15.4%, Graduated from a four-year college: 20.9%; Completed post-graduate studies: 16.4%
- **How many parents at home**: None: 2.8%; One parent: 26.3%; Two parents: 70.9%
- **Grade (5 - 12)**: 6.8%, 22.7%, 22.1%, 19.6%, 10.7%, 7.5%, 6.2%, 4.6%

A noticeable difference in the student responses by cohort are the lower responses from Cohort 3, Time 3 (n = 168) and Cohort 4, Time 1 (n = 692). This time period specifically was spring 2020 where schools shut down around the country and moved to virtual learning platforms due to the Covid-19 pandemic. As a result, most students did not fill out the surveys provided at that time. Cohorts 1 and 2 were pre-Covid, cohorts 4 and 5 were during Covid, and cohort 3 had half of the responses recorded pre-Covid and half of the responses were during Covid.

Table 8 shows the student demographic information by control and intervention group. There were 54.9% of responses in the control group and 45.1% of responses in the treatment group.

Table 8. Student demographic information by intervention condition.

	Control	%	Treatment	%
n	18,053		14,808	
Gender				
Male	8,668	48.0	7,190	48.6
Female	9,385	52.0	7,618	51.4
Race/Ethnicity				
American Indian or Alaska Native	1,536	8.5	1,520	10.3
Asian or Hawaiian or Pacific Islander	440	2.4	362	2.4
Black or African American	559	3.1	978	6.6
Hispanic or Latino	4,636	25.7	3,077	20.8
Two or more races	2,505	13.9	2,623	17.7
White	8,377	46.4	6,248	42.2
Free-reduced price lunch status: Yes	8,908	49.3	9,645	65.1
Disability status: Yes	2,466	13.7	2,062	13.9
Parent educational status				
Did not graduate from high school	2,391	13.2	1,742	11.8
Graduated from high school	5,922	32.8	5,467	36.9
Two-year college or technical school	2,747	15.2	2,323	15.7
Graduated from a four-year college	3,859	21.4	3,015	20.4
Completed post-graduate studies	3,134	17.4	2,261	15.3
How many parents at home				
0	467	2.6	452	3.1
1	4,410	24.4	4,244	28.7
2	13,176	73.0	10,112	68.3
Grade				
5	1,393	7.7	834	5.6
6	4,107	22.7	3,345	22.6
7	3,357	18.6	3,893	26.3
8	3,486	19.3	2,942	19.9
9	1,711	9.5	1,790	12.1
10	1,626	9.0	836	5.6
11	1,347	7.5	679	4.6
12	1,026	5.7	489	3.3

Statistical Analysis

As a result of the nested data structure (e.g., students within schools), random intercept, multilevel models (MLMs) were used. Analysis was done using R with the lmer package using restricted maximum likelihood. Three regression models were modeled separately for three time points

controlling the baseline measure at the first spring (aggregated at school level). The general formula can be shown as:

$$y = x_{treatment}\beta + \boldsymbol{w\gamma} + \tau + \varepsilon,$$

where y is the standardized outcome measure at a specific time point (time 2, 3, or 4); $x_{treatment}$ is a binary indictor of treatment with 1 = treatment group and 0 = control group; $\boldsymbol{w}$ is a set of covariates controlled in the model, such as baseline measure (school-level measure of *y* at Time 1), individual demographic variables (e.g., race/ethnicity, gender), school characteristics (school location and school level), and cohort dummies (for cohort effects). τ represents the random effects across schools and ε is the error term. As the outcome is standardized (i.e., *M* = 0, *SD* = 1), the treatment effect coefficients can be interpreted as effect sizes as well.

Results

Administrator (Principal and Assistant Principal) Results

Results from administrator responses are shown in Table P1. After controlling for potential confounding variables, statistically significant intervention effects were shown in school disciplinary structure measures at the second (fall) and third (spring) time period. However, no statistically significant effects were shown in perceptions of school safety, academic expectations, and school problems. A negative treatment effect was shown at the fourth (fall) time period on the student support measure.

Table P1. Treatment effects on main outcomes for administrator responses.

	School Disciplinary Structure	Perceptions of School Safety	Academic Expectations	School Problems	Student Support
T2 Treatment	0.617*	-0.090	0.220	-0.342	-0.102
	(0.304)	(0.247)	(0.323)	(0.239)	(0.314)
Size (n)	64	64	64	64	64
T3 Treatment	0.599*	0.058	0.161	-0.363	-0.040
	(0.270)	(0.274)	(0.299)	(0.241)	(0.234)
Size (n)	65	65	65	65	65
T4 Treatment	-0.202	0.101	-0.273	-0.077	-0.543*
	(0.327)	(0.304)	(0.328)	(0.358)	(0.249)
Size (n)	65	65	65	65	65

*Note. * p< .05. Standard errors within parenthesis. Each model controls gender, race, year of experience, school level, school location, cohort effects, and baseline measure at spring 1.*

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We also analyzed secondary outcomes related to school climate (see Table P2). However, for four outcomes (i.e., concerns about safety and discipline, student aggression toward teacher, prevalence of teasing and bullying, and willingness to seek help), there were no statistically significant intervention effects during the data collection periods. For the outcome of respect for students, a decline in the intervention group was shown at the last time point.

Table P2. Treatment effects on secondary outcomes for administrator responses.

	Teacher/Staff Concerns about Safety and Discipline	Student Aggression Toward Teachers	Prevalence of Teasing and Bullying	Respect for Students	Willingness to Seek Help
T2 Treatment	0.418	-0.113	-0.018	-0.048	-0.096
	(0.323)	(0.242)	(0.242)	(0.321)	(0.316)
Size (n)	64	64	64	64	64
T3 Treatment	0.020	-0.133	-0.065	-0.103	-0.004
	(0.273)	(0.326)	(0.225)	(0.262)	(0.269)
Size (n)	65	65	65	65	65
T4 Treatment	-0.480	0.405	-0.287	-0.600*	-0.421
	(0.273)	(0.332)	(0.305)	(0.285)	(0.274)
Size (n)	65	65	65	65	65

*Note. *p < .05. Standard errors within parenthesis. Each model controls gender, race, year of experience, school level, school location, cohort effects, and baseline measure at spring 1.*

Teacher Results

For teachers' measures, the results are shown in Table T1 and Table T2. There were no significant treatment effects for the five main outcomes (including school disciplinary structure, perceptions of school safety, academic expectations, school problems, student support). There w two school discipline subscale measures for teachers (i.e., the justness and fairness subscales). However, for the two subscales, no statistically significant treatment effect was found. Table T2 indicates the results for secondary outcome measures related to school climate. None of them showed statistically significant treatment effects in all time periods after controlling for other variables.

Table T1. Treatment effects on main outcomes for teacher responses.

	School Disciplinary Structure	Perceptions of School Safety	Academic Expectations	School Problems	Student Support
T2 Treatment	0.034	-0.091	-0.009	0.010	-0.044
	(0.101)	(0.117)	(0.086)	(0.123)	(0.096)
Size (n)	993	993	993	993	993
T3 Treatment	0.001	-0.113	0.043	-0.036	-0.080
	(0.101)	(0.106)	(0.089)	(0.118)	(0.105)
Size (n)	974	974	974	974	974
T4 Treatment	-0.025	0.094	0.018	-0.210	-0.019
	(0.129)	(0.121)	(0.098)	(0.151)	(0.107)
Size (n)	868	868	868	868	868

Note. Standard errors within parenthesis. Each model controls gender, race, position, year of experience, teach school level, school location, year effects, and baseline measure at spring 1.

Table T2. Treatment effects on secondary outcomes for teacher responses.

	Teacher/Staff Concerns about Safety and Discipline	Student Aggression Toward Teachers	Prevalence of Teasing and Bullying	Respect for Students	Willingness to Seek Help
T2 Treatment	0.141	0.087	0.023	0.001	-0.069
	(0.109)	(0.084)	(0.105)	(0.087)	(0.096)
Size (n)	993	993	993	993	993
T3 Treatment	0.058	0.032	0.023	-0.033	-0.103
	(0.104)	(0.083)	(0.090)	(0.088)	(0.109)
Size (n)	974	974	974	974	974
T4 Treatment	-0.049	0.100	0.012	-0.031	0.001
	(0.136)	(0.087)	(0.098)	(0.102)	(0.104)
Size (n)	868	868	868	868	868

Note. Standard errors within parenthesis. Each model controls gender, race, position, year of experience, teach school level, school location, year effects, and baseline measure at spring 1.

Student Results

For student-level measures, the results are similar (Table S1). We saw no statistically significant treatment effects on perceptions of school safety, academic expectations, school problems, and aggressive attitude. However, the negative treatment effects were shown in school disciplinary structure and student support at the second spring when controlling for other variables.

Table S1. Treatment effects on main outcomes for student data.

	School Disciplinary Structure	Perceptions of School Safety	Academic Expectations	School Problems	Student Support	Aggressive Attitude
T2 Treatment	-0.057	-0.046	-0.026	0.020	-0.080	0.055
	(0.062)	(0.081)	(0.053)	(0.062)	(0.070)	(0.055)
Size (n)	7996	7996	7996	7679	7996	7996
T3 Treatment	-0.121*	-0.133	-0.084	0.043	-0.155*	0.053
	(0.057)	(0.099)	(0.045)	(0.080)	(0.064)	(0.061)
Size (n)	6446	6446	6446	6000	6446	6446
T4 Treatment	-0.034	-0.140	-0.045	0.118	-0.102	0.089
	(0.062)	(0.083)	(0.065)	(0.093)	(0.063)	(0.055)
Size (n)	7022	7022	6570	7022	7022	7022

*Note. *p < .05. Standard errors within parenthesis. Each model controls gender, race, free lunch status, disability status, number of parents at home, parent education degree, school level, school location, cohort effects, and baseline measure at spring 1.*

Overall, there were some statistically significant intervention effects of school disciplinary structure measure from principals, but not from teachers and students. For most school climate measures, we saw non-statistically significant intervention effects from three time periods (i.e., the first fall, the second spring, and the second fall) when controlling the baseline measure from the first spring. However, approximately half of data was collected during or after COVID-19 which may have affected results as well.

Limitations

A portion of the project occurred during the COVID-19 pandemic and thus some aspects were impacted by the challenges of that. In particular, cohort schools were largely shut down and operating through virtual learning in Spring 2020. We were still able to have student and teachers complete surveys during this period. We do not know yet how the impact of the pandemic and the change in learning circumstances may have affected school climate. Our methodologists will explore this question in subsequent analyses.

Artifacts

The primary artifacts are the publications, reports, and presentations that have and will result from this project.

List of products (e.g., publications, conference papers, technologies, websites, databases), including locations of these products on the Internet or in other archives or databases

We have published seven papers and have three others under review or in preparation. These papers have characterized the nature of effective school leadership in relation to teacher and student wellbeing. Additionally, we have examined variations in school climate and victimization experiences of students based on their racial, ethnic, and gender identities. Several papers have also explored the wellbeing of principals and teachers and factors related to it. An important paper, characterized on teachers were

impacted by COVID-19 and aspects of school climate and leadership that predicted better teacher outcomes.

Publications

1. Herman, K. C., Sebastian, J., Eddy, C. L., & Reinke, W. M. (in press; 2023). School leadership, climate, and professional isolation as predictors of special education teachers' stress and coping profiles. Journal of Emotional and Behavioral Disorders.
2. Huang, F., Reinke, W. M., & Herman, K. C. (in press; 2023). The seasonality of school climate. School Psychology Review.
3. Woods, S., Sebastian, J., Herman, K. C., Huang, F., Reinke, W., & Thompson, A. (in press; 2023). The relationship between teacher stress and job satisfaction as moderated by coping. Psychology in the Schools.
4. Chuang, D., Huang, F., & Herman, K. C. (in press). Examining racial differences in perceptions of school climate: A replication of the Authoritative School Climate measurement model. School Psychology Review.
5. Smith, T., Bauerband, L., McCall, C., Aguayo, D., Huang, F., Reinke, W. M., & Herman, K.C. (in press). Bullying victimization experiences and perceived bullying prevalence of gender minority youth. School Psychology Review.
6. Sebastian, J., Aguayo, D., Yang, W., Herman, K.C., Reinke, W.M. & Huang, F. (in press). Single-item principal stress and coping measures: Concurrent and predictive validity. School Psychology.
7. Herman, K.C., Sebastian, J., Huang, F. L., & Reinke, W.M. (2022). Individual and school predictors of teacher stress, coping, and wellness before and during the COVID-19 pandemic. School Psychology, 36, 483-493.
8. Sebastian, J., Aguayo, D., Yang, W., Herman, K.C., Reinke, W.M. & Huang, F. (2023). Profiles of principal stress and coping: Concurrent and prospective correlates. Manuscript under review.
9. Sebastian, J., Aguayo, D., Yang, W., Herman, K.C., Reinke, W.M. & Huang, F. (2023). Measuring principal leadership: Considering the source of information. Manuscript in preparation.

Data sets generated (broad descriptions will suffice)

We have deidentified and archived all data collected during the course of the study with the National Archive of Criminal Justice Data. Our team uploaded all codebooks and cleaned data to the NACJD. Additionally, these data can be readily accessed via a data request form the Missouri Prevention Science Institute (https://moprevention.org/).

Dissemination activities

Presentations

1. School leadership, climate, and professional isolation as predictors of special education teachers' stress and coping profiles. February, 2023. Paper presented as part of a symposium, Teacher

stress and wellbeing: Understanding the impact and intervening, at the National Association of School Psychologist Annual Convention, Denver, MA.

2. Predictors of special education teachers' stress and coping profiles. January, 2023. Paper presented as part of a symposium, Special Education, at the International Education Conference, Honolulu, HI.
3. The seasonality of school climate. April, 2022. Paper presented as part of a symposium, Student and educator school climate perceptions: Dynamics and correlates, at the American Education Research Association Annual Convention, San Diego, CA.