

Improving Classroom Engagement and Reducing Exclusionary Discipline: A Quasi-Experimental Study of the Inclusive Skill-building Learning Approach during COVID-19

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Abstract

This study examined the impact of a classroom-level component of The Inclusive Skill-building Learning Approach (ISLA), an instructional and restorative alternative to exclusionary discipline, on student behaviors and school discipline practices in middle schools. Intervention implementation, classroom observations, and all other data collection took place once schools resumed in-person instruction during the COVID-19 pandemic, thus the study design was modified to a quasi-experimental design that included a control sample. Findings showed that focusing on classroom-level prevention alone increased students' active engagement, decreased disruptive behaviors, and resulted in lower rates of exclusion from the learning environment for treatment schools.

Keywords: classroom, curriculum, disciplinary learning, equity, inclusion, learning, social emotional, teaching

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Supportive educational environments that weave social, emotional, and behavioral development into academics serve as the strongest protective factor against many negative student outcomes, including chronic stress, isolation from peers, academic failure, and school pushout (formerly school dropout) (Pace et al., 2019; Simonsen et al. 2021). In-school protective factors refer to supports provided in educational settings that allow students to succeed despite the presence of risk factors in their lives, such as poverty, racial discrimination, language barriers, parental substance misuse, and exposure to violence or crime (National Center on Safe Supportive Learning Environments, 2022). On the contrary, punitive educational practices such as exclusionary discipline (i.e., in-school and out-of-school suspensions) have been associated with numerous detrimental student outcomes including lower academic achievement, a greater likelihood of students being pushed out of their educational settings, and an increase in future criminal justice involvement (Lacoe & Steinberg, 2019; Wolf & Kupchik, 2017). The impact of the COVID-19 pandemic on student well-being was profound, with students reporting higher levels of anxiety and depression, lower life satisfaction, decreased attendance, and limited access to behavioral and mental health support services across the nation (Magson et al., 2021; Murphy et al., 2021). Students, however, also reported the desire for stronger school and classroom supports, including more supportive classroom environments, stronger student-teacher relationships, and more avenues for taking breaks and resetting (Allen et al., 2023; Chiu, 2021; O'Malley et al., 2023).

The Power of Supportive Environments

Schools have the organizational capacity to develop and sustain supportive systems where all students are set up for success (Bryan et al., 2020). By shifting from exclusionary disciplinary practices to alternatives that emphasize a welcoming and positive environment, schools can foster safe spaces for students, families, and their communities. In-school protective factors such as positive relationships with teachers, supportive classroom environments, and positive peer relationships are strongly associated with students' overall health and wellbeing as well as academic engagement and fewer disciplinary outcomes (Di Pietro, 2018; Gubbels et al. 2019). Roorda and colleagues (2011) found medium to large effects for both positive student-teacher relationships increasing school engagement, and negative relationships decreasing it. Positive student-teacher attachment has also been found to decrease the likelihood of emotional, behavioral, alcohol, and drug use (Yeung & Leadbeater, 2010). The impact of positive relationships is even more salient for students at higher risk for emotional and behavioral concerns and students from racially or ethnically minoritized backgrounds (Meehan et al. 2003; Skiba et al., 2011).

The Detrimental Impact of Exclusion

Different forms of exclusionary discipline are used to remove students from their instructional environment following a behavior incident. The most reported forms of exclusion are office discipline referrals (ODRs), in-school suspensions (ISS), out-of-school suspensions (OSS), and expulsions, while exclusionary practices that go underreported include students sent to sit in the hallway or in a buddy classrooms, and parents contacted to pick their kids up early from school (Power et al., 2020; Welsh & Little, 2018; Zinsser et al., 2022). The use of suspensions and expulsions have increasingly been the subject of scrutiny as research has documented adverse short and long-term outcomes, including increased disengagement from

school, lower academic achievement, reduction in feelings of belonging, lower rates of high school graduation, and higher rates of incarceration (American Academy of Pediatrics, 2013; Anyon et al., 2016).

Although exclusionary discipline has decreased in the past decade, the use of OSS is still common across the US, with disparities in the application of discipline for minoritized students (U.S. Department of Education Office for Civil Rights, 2023). Studies have demonstrated that members of underserved communities, particularly Black students, students living in poverty, students receiving special education services, and students who were held back a grade are suspended at higher rates compared to their peers (Curran, 2019; Losen, 2018). These disparities in exclusion have been shown to widen the *opportunity gap* and impose barriers for culturally and linguistically diverse students (Office for Civil Rights Data Collection, 2021). To clarify, the *opportunity gap* emphasizes that members of underserved communities have received fewer opportunities and resources to thrive in the context of schools, and thus any gaps in academic and social success between them and their peers are a result of systemic inequities, not intrinsic qualities (National Academies of Sciences, Engineering, and Medicine, 2023). Systemic issues in education include structural racism built into education policies (e.g. zero tolerance), a lack of teacher diversity and professional development around culturally responsive teaching, expectations of minoritized students to assimilate to white-middle class standards, insufficient collaboration with diverse families, and inadequate resources for students with higher needs, to name a few (Girvan, 2019; Gregory et al., 2016; White & Cordova-Cobo, 2022). Thus, while individual interventions may be necessary for some students, there is a need to refocus toward school-wide prevention models, which have been shown to be effective at reducing systemic barrier while boosting protective factors (Bradshaw et al., 2018; Kincade et al., 2020).

Eliminating the Need for Exclusion

The eradication of exclusionary discipline demands integrating relationship building and effective responses to unwanted behavior into existing multi-tiered systems of support (MTSS) (Gregory et al., 2021; Santiago-Rosario et al., 2022). MTSS generally deliver supports through three tiers: universal, optimize academic and social functioning and prevent challenges for all students; targeted, additional evidence-based practices for students who struggle; and intensive, individualized support for students with significant needs (Sugai et al., 2009; Tilly, 2008). The core principle of MTSS is to provide preventive support first, because prevention is efficient and effective, while reducing misidentification and avoiding the stigma of labeling (Fuchs et al. 2003; Walker et al., 1996).

Positive Behavioral Interventions and Supports (PBIS)

An example of an MTSS framework is PBIS. PBIS aims to transform the school environment through the establishment and explicit teaching of expectations across settings, creating and teaching routines that create predictability and safe spaces for learning, building relationships with students through positive and instructional feedback, and relying on reinforcement rather than punishments to promote contextually appropriate behaviors (Horner et al., 2010; Simonsen et al., 2020). The implementation of PBIS with fidelity has been shown to improve students' prosocial behavior, emotional regulation skills, school attendance, academic engagement, and academic achievement. It also reduces the use of exclusionary discipline in schools for all students, students with disabilities, and students across racial groups (Santiago-Rosario et al., 2023). Although both frameworks help reduce exclusionary discipline, the problem of exclusion persists in schools across the country. Nonetheless, they serve as the

foundation for a multi-component approach to reduce exclusionary discipline and enhance school-wide and classroom prevention.

Restorative Practices

Restorative Practices is an intervention often implemented within an MTSS framework, that focuses on creating, repairing, and sustaining relationships across school community members and preventing discipline incidents (Gregory et al., 2020). In the face of conflict, the focus of restorative practices is on identifying the needs of those affected by harm and those who bring harm. According to this approach, exclusionary discipline increases indifference and destructive behavior in students; thus, restorative practices emphasize intentional practices to create community and engage in reintegration activities (e.g., engaging with students in conversation, checking in as a classroom community; mediating conflicts; Thorsborne & Blood, 2013). The use of restorative practices has been found to improve school climate, conflict management, students' social, emotional, and behavioral competencies, relationships among students with peers and teachers, as well as decreases exclusionary discipline rates (Lodi et al., 2022).

The Inclusive Skill-building Learning Approach (ISLA)

ISLA is a multi-component, instructional and restorative alternative to exclusionary discipline that begins with universal prevention grounded in positive, preventative classroom strategies for all students, and layers on additional supports for students in need (Nese et al., 2020). With its roots in social learning theory, ISLA emphasizes that behavior is learned through modeling and teaching, and that environmental factors and the quality of teaching practices influence when and how a behavior is likely to occur (Patterson, 2005). Therefore, new prosocial behaviors can be taught and reinforced while unwanted behaviors are minimized through a

systematic plan of teaching and reinforcement, with additional environmental changes to improve educators' skills while making the educational environment more welcoming, supportive, and inclusive. These environmental changes are made through the three components of the ISLA Model: School-wide & Classroom Components, Restorative & Instructional Components, and Team & Data Decision Making Components (see Figure 1, originally published in Nese et al., 2022). The aims of ISLA are to promote positive student-teacher relationships, improve student behavior and educator responses, and minimize instructional time lost due to exclusionary discipline. It includes both school-wide systems, in-class preventative practices, and out-of-class instructional and restorative supports (Nese et al., 2020).

Preliminary results indicate that ISLA holds promise as an effective intervention for reducing the use of exclusionary discipline (mean $ES = |0.14|$) and the minutes of instruction that students lose when excluded from the learning environment (over 90% decrease, Nese et al., 2020). Further, a recent study of the impact of ISLA on discipline disproportionality found that the suspension risk index for students of color and male students declined after ISLA implementation (Pimentel-Mannan et al., 2023). A two-year study of the collaborative process used to refine ISLA found that fidelity and acceptability of ISLA improved when community members were involved in the iterative intervention development process (Furjanic et al., 2021). Additionally, student input informed the addition of training and coaching for educators on preventive classroom supports in the ISLA Model and underscored the importance of positive student-teacher relationships (Nese et al., 2022). The current study was conducted after iterations to the ISLA Model were complete.

Study Purpose

The purpose of this study was to assess the impact of a classroom-level component of ISLA on student behaviors and school discipline practices. The following two research questions were examined:

1. How does teachers' implementation of a classroom-level component of ISLA affect students' active engagement and disruptive behaviors in the classroom?
2. How does teachers' implementation of a classroom-level component of ISLA affect school-wide office discipline referrals, and in-school and out-of-school suspension rates?

Method

This study took place during the first two years of the COVID-19 pandemic. We believe it is a service to the field to describe how the pandemic affected this study, why the study design changed from an underpowered randomized controlled trial to a quasi-experimental design that included a control sample, and how we proceeded with this study in extraordinary times. We prioritized what was in the best interest of our school communities above the needs of the study, however we acknowledge that others may have made different decisions.

Pre-COVID Study Design

The initial intervention was planned for the 2020-21 school year with 10 schools, five randomly assigned to treatment. Thus, the original study design was an underpowered randomized controlled trial, and we began collecting baseline data in all 10 schools at the start of the 2019-20 school year. However, the COVID-19 pandemic shut down all in-person schooling in March 2020, so baseline data collection halted. Participating schools did not reopen for in-person instruction until September 2021.

Design and Implementation Adaptations Due to COVID

In the summer of 2020, after schools were informed that they would remain online for the 2020-21 school year, we met with the five original treatment school administrators to decide how they wanted to move forward. We felt an obligation to serve our schools, so we gave them the option of halting study participation until schools reopened or partnering with us to implement ISLA materials that were modified for the online classroom settings. All schools wanted support during the online schooling year and welcomed the opportunity to bring ISLA into the online classroom setting, particularly elements related to building and sustaining relationships with students and families during such difficult times. In the interest of supporting our partnering schools, we promised the five original control schools that they would receive ISLA when schools returned to in-person learning for the 2021-22 school year. We could not in good conscience deny intervention for another entire school year to these schools given the myriad of challenges all schools were facing (e.g., COVID regulations, staffing, community health, attendance, mental health), and one school decided to withdraw from participation. Thus, the study design changed from an underpowered randomized controlled trial (to be conducted across 2019-20 and 2020-21) to a quasi-experimental design that included four treatment schools and four matched control schools, and the study was conducted during the 2021-22 school year.

Participants and Settings

Schools. The four control schools from the original pre-COVID study served as the treatment schools in the current study. To find matched control schools for the four ISLA schools, the research team engaged in state-wide recruitment efforts that included presenting ISLA and the study opportunities at local and state virtual conferences, reaching out to districts leadership across the state and sending them recruitment flyers to share with their middle school administrators. The inclusion criteria for this study were that schools needed to be public middle

schools, serving students in grades 6 through 8, that utilize a school-wide data system to track disciplinary referrals and actions. Participating schools were $N = 8$ public middle schools from four school districts in the Pacific Northwest region of the U.S. serving students in Grades 6 through 8, that used the School-wide Information System (SWIS) to track behavior referral data (see SWIS under Measures for further information). Matched sampling was based on school enrollment and racial demographics; however, the control school pool was limited and matches were approximate, and other variables not included in the matching may have been relevant confounds (e.g., economic status, readiness to implement a prevention program).

Table 1 provides information on the enrollment, racial and ethnic distribution of students, and reported services. The average demographics for ISLA schools were 50% female, 50% male, and less than 1% non-binary/transgender/other; 64% White, 2% Black, 20% Latino/a/e/x, 1% Indigenous, less than 1% Pacific Islander, 3% Asian, and 10% Multiracial; 13% students with disabilities; and 4% English learners. The average demographics for control schools were 50% female, 50% male, and 1% non-binary/transgender/other; 60% White, 1% Black, 31% Latino/a/e/x, 1% Indigenous, <1% Pacific Islander, 1% Asian, and 6% Multiracial; 14% students with disabilities; and 10% English learners.

Teachers. After receiving institutional review board (IRB) approval, completing a memorandum of understanding with the school districts, and obtaining written consent from all school principals, five classroom teachers from each school were identified by the school administrators and invited to participate by the research team who provided them with an online consent form. A sample of 40 classroom teachers (i.e., 25 language arts, 15 math; control with 12 language arts and 8 math teachers, and treatment with 13 language arts and 7 math teachers)

representing Grades 6 through 8 were observed for this study. Class sizes ranged from 7 to 36 students, with an average of 21 students ($SD = 6.4$).

Intervention: All-staff training on WOW

After pre-intervention data were collected, all school personnel in the four treatment schools attended a 1-hr training on one classroom-level component of ISLA, the WOW strategy. WOW consists of three concrete steps, rooted in behavioral science, that educators can take each day to create positive classroom environments: Welcoming students at the door, Owning your classroom environment, and Wrapping up class with intention (Nese et al., 2022).

Welcoming students at the door is a powerful yet simple strategy for establishing trusting and positive relationships with students. Cook and colleagues (2018) found that when teachers welcomed students by name at the door, engagement increased by 20% and disruptive behavior decreased by 9%. *Owning your classroom environment* means teaching, modeling, and acknowledging the behaviors expected from students. Research has shown that classrooms with consistent routines for expectations that are taught, modeled, and reinforced are more engaged in academic activities and disrupt instruction less, resulting in improved progress in school throughout the year (Oliver et al., 2011). *Wrapping up class with intention* aims to improve the sometimes-chaotic nature of transition times, which lead to unwanted behaviors. Ending class with a routine is a proactive approach which can support students by providing a practice opportunity to self-regulate their emotions and behaviors. It supports maintaining strong relationships between teachers and students, builds community, provides a predictable routine, and provides a mechanism for teachers to assess skill mastery in a quick, efficient way (Verschueren & Koomon, 2012).

Training consisted of reviewing the benefits of and research behind each step, examples and non-examples of each step, brainstorming of strategies for implementing WOW in each classroom, and action planning for school-wide and classroom implementation. Following the 1-hr training, grade level teams met for 30-minutes to review their classroom-level action plans for implementing WOW with other teachers in their grade.

Data Collection

Data for this study were collected pre-intervention (before school personnel received training on the WOW strategy) and post-intervention (after training was complete). Data were collected via direct observations in classrooms of teacher behaviors (WOW) and student behaviors (BOSS), and through a school-wide behavior referral data system (SWIS).

Observational data. Pre-intervention observational data were collected between September 27 and October 21, 2021, prior to school personnel receiving training on WOW. Pre-intervention observational data consisted of trained observers, who were masked to the conditions of this study, observing each participating classroom twice, on two consecutive days of the week. The same two observers scored the same teacher/classroom on the two consecutive observation days to get multiple observations of a classroom and increase reliability.

Each classroom observation was 60-min in duration. For the first 15-min of each observation, teacher behaviors were observed. Use of preventative classroom management and relationship building strategies were assessed via the WOW Classroom Observation Tool (see WOW under Measures for further information). For the next 15-min, observers switched their focus to student behaviors. Active engagement and disruptive behaviors were assessed via the Behavioral Observation of Students in Schools tool (see BOSS under Measures for further information). All students were observed using 10-second partial interval data collection, where

observers rotated observing each student until the 15-min were complete. For the remaining 30-min of class, observers returned their attention to assessing teachers' behaviors via the WOW.

Post-intervention observational data were collected between Nov. 16 and Dec. 14, 2021, after school personnel received WOW training. Post-intervention observations occurred identical to pre-intervention observations, where each classroom was observed twice on two consecutive days of the week by the same two trained observers for a 60-min observation period.

Exclusionary discipline data. Exclusionary discipline data were collected via the SWIS (see SWIS under Measures for further information) and included ODRs, ISS, and OSS (May et al., 2013). Event counts as well as the number of days of missed instruction due to exclusion were collected. Like observational data, exclusionary discipline data were collected pre-intervention (i.e., Sep. 9 through Nov. 11, 2021) and post-intervention (i.e., Nov. 15 through Dec. 17, 2021).

Measures

WOW Classroom Observation Tool (WOW). Teacher behavior and fidelity of implementation data were collected using the ISLA WOW Classroom Observation Tool. The WOW Classroom Observation Tool is a five-item measure with individual item scores ranging from 0 to 2. Each item is an operationally defined behavior based on the elements of the WOW strategy that teachers are trained on, and explicit examples and non-examples of each behavior are provided on the tool. The tool measures teachers' implementation of the WOW strategy during the entirety of a classroom period, thus is not a time sampled measure. A score of 0 is recorded when the teacher does not engage in the item's observable behavior (i.e., greeting no students), 1 is recorded when the teacher partially engages in the behavior (i.e., greeting some students but not all), and 2 is recorded when the teacher engaged in all behaviors related to the

strategy's key ingredient (i.e., greeting all students, individually or as a whole group). If a behavior was not observed due to logistical interruptions, observers scored that item as "n/a". The items on the WOW were: (1) The teacher welcomes students verbally OR with a physical gesture as they enter the classroom. (2) The teacher explicitly teaches, reviews, or pre-corrects (using verbal/visual/non-verbal cues) classroom behavior and/or academic expectations. (3) The teacher explicitly models behavior and/or academic expectations. (4) The teacher provides positive acknowledgement for following behavior and/or academic expectations. (5) The teacher uses a predictable routine (verbal/non-verbal cues) at the end of class that fosters academic and/or behavioral community building and/or social emotional learning.

Behavioral Observation of Students in Schools (BOSS). The BOSS is a validated direct observation tool that measures individual student behavior in the classroom setting (Shapiro, 2004). Behaviors were recorded as one of two categories: Active Engaged Time (AET) and Disruptive Behavior (DB). AET involved any time when a student was actively or passively attending to the assigned work in class. Examples of AET includes writing, reading assigned material aloud or silently, raising a hand, talking to the teacher about the assigned material, talking to a peer about the assigned material, listening to a lecture, looking at an academic worksheet, looking at the blackboard during teacher instruction, listening to a peer respond to a question. DB can be described as behaviors not pertinent to the assigned task that cause disruption to the learning environment. Examples of DB include speaking out of turn, leaving one's seat, distracting or disrupting peers, and using objects inappropriately (Cook et. al, 2018). If the observed student exhibited AET or DB one or more times during the 10 sec intervals, the observer recorded an "x".

School-Wide Information Systems (SWIS). The schools in this study use the School-Wide Information Systems (SWIS), a web-based behavior tracking platform, to enter and review behavior incidents and actions taken by school personnel including ODRs, ISS, and OSS (May et al., 2013). When operationally defined, ODRs can be reliable and valid indicators of behavior incidents in schools (Irvin et al., 2004). ISS generally involves removing students from the classroom but keeping them on school grounds and separated from their classmates and teachers, and typically ranges from a half day to three days of exclusion. OSS generally involves removing students from the school building for a specified duration of days, entirely excluding them from the learning community and facility.

Observer Training and IOA

Training for data collectors happened before all classroom observations. Didactic training involved data collectors attending two 2-hr training sessions on the student observation tool (BOSS) as well as the teacher observation tool (WOW). During training, data collectors reviewed operational definitions with examples and non-examples, scored teacher classroom practices and student behaviors caught on video clips, and discussed unclear circumstances in which initial consensus was not met. Data collectors reached an average interobserver agreement (IOA) of 95% for WOW classroom practices and 97% for student behaviors by the end of the second round of training. Additionally, one week ahead of post-intervention observations, a 1-hr booster training session was offered to all data collectors. Booster training involved the same process as initial training, just abbreviated in time. Data collectors scored an average IOA of 96% for WOW classroom practices and 98% for student behaviors during the booster training. IOA was computed using point-by-point agreement of event counts, which allows for a more exact method of recording observed behaviors (Kazdin, 2011).

Once the study began, all classroom observations were conducted by 10 observers: five held graduate degrees in education, four were graduate students, and one was an undergraduate student. All observers were masked to whether they were observing treatment or control classroom. Interobserver agreement (IOA) was obtained for 34 of the 160 observation sessions, exceeding the expected sessions of IOA data collection set forth by the What Works Clearinghouse (2022). In all 34 sessions, the same two observers scored the same teacher/classroom on the two consecutive observation days. For WOW, the average IOA was 66% (range = 0% to 100%). On average, data collectors had an IOA of 56% ($SD = 50.4$) for *teachers welcoming students to their classrooms*, 76% ($SD = 43.1$) for *teaching behavioral or academic expectations*, 74% ($SD = 44.8$) for *modeling classroom expectations*, 53% ($SD = 50.7$) for *acknowledging students engaging in expected behaviors*, and 71% ($SD = 46.2$) for *wrapping classroom instruction with intention*. For the BOSS, the average IOA was 83% (range = 61% to 94%). IOA for students' AET was 76% ($SD = 10.5$) and for DB was 90% ($SD = 9.8$).

Data Analyses

Descriptive statistics and visualizations were examined for all outcomes by condition group (treatment and control) and time (pre-intervention and post-intervention). Statistical modeling depended on the research question and the level at which observations were obtained, as described below.

BOSS. Behavioral observation data were analyzed at the classroom/teacher level. As BOSS data were recorded at the student level, AET and DB scores were summed for a classroom score for each occasion. All behavioral observation data (AET, DB, and WOW) were averaged across the two observations per data collection (pre and post). A linear mixed-effect model was applied separately for the post-intervention score of each BOSS outcome (AET and DB), treating

school as a random effect, and the following as fixed effects: pre-treatment BOSS score (grand-mean centered), WOW pre-treatment score (grand-mean centered), condition, the number of students in the class (grand-mean centered), and interactions between condition and both pre-treatment BOSS and WOW scores.

Level 1 – Teacher

$$score_{post_i} \sim N(\alpha_{j[i]} + \beta_1(score_{pre}) + \beta_2(WOW_{pre}) + \beta_3(students), \sigma^2)$$

Level 2 – School

$$\begin{aligned} \alpha_j \sim N(\gamma_0^\alpha + \gamma_1^\alpha(ISLA) + \gamma_2^\alpha(ISLA \times WOW_{pre}) \\ + \gamma_3^\alpha(ISLA \times score_{pre}), \sigma_{\alpha_j}^2, \text{ for school } j = 1, \dots, J \end{aligned}$$

ISLA is a school-wide intervention, and thus the school is the unit of analysis in these models. The small number of schools ($N = 8$) limits the statistical power to detect statistically significant effects, affecting the precision of the fixed effects but not the magnitude. Therefore, the linear mixed-effect models were complemented with effect size estimates. Specifically, standardized mean difference effect sizes were calculated to estimate the effect of ISLA on each outcome (AET, DB), controlling for initial differences between condition groups by subtracting the control group change in pre/post means scores from the treatment group change in pre/post mean scores and dividing by the standard deviation of pretest scores for all groups (Morris, 2008).

$$ES = \frac{(Mean_{post,ISLA} - Mean_{pre,ISLA}) - (Mean_{post,control} - Mean_{pre,control})}{SD_{pre}}$$

SWIS. To examine whether the intervention was associated with a reduction in (a) ODRs and (b) exclusionary (ISS and OSS) outcomes (events, students, days), a linear model was applied for each outcome, regressing the frequency of the outcome during intervention on the

frequency of the same measure during pre-intervention (grand-mean centered), treatment condition, and their interaction.

$exclusion_{intervention}$

$$= \alpha + \beta_1(ISLA) + \beta_2(exclusion_{baseline}) + \beta_3(ISLA \times exclusion_{baseline}) + \epsilon$$

Standardized mean difference effect sizes were also estimated (see *ES* equation above), computing the rates of ODRs and exclusions per 100 students per month during intervention and pre-intervention for each comparison group.

Analyses were conducted and figures were created in the R programming environment (R Core Team 2021) with the following packages: broom.mixed (Bolker & Robinson 2021), corr (Kuhn, Jackson, & Cimentada 2020), equatiomatic (Anderson, Heiss, & Sumners 2021), flextable (Gohel 2021), lme4 (Bates et al., 2015), and tidyverse (Wickham et al., 2019).

Results

Descriptive results of pre/post WOW scores (total and item) for ISLA and control groups are reported, followed by results corresponding with each research question: first, BOSS scores for AET and DB and linear mixed-effect inferential findings, and second, ODRs and suspension rates and linear model inferential findings, reporting effect size estimates throughout.

WOW

Observational data of teacher behaviors targeted by the WOW strategy showed the mean pre-intervention WOW score for control teachers ($M = 5.25$, $SD = 1.48$) was lower than for ISLA teachers ($M = 6.42$, $SD = 1.52$). And where control teachers showed a moderate average post-intervention decrease in WOW strategy ($M = 4.75$, $SD = 1.81$), ISLA teachers showed a modest average increase ($M = 6.7$, $SD = 0.98$). The standardized mean difference effect size associated

with these change scores was 0.49, meaning ISLA teachers increased total WOW scores by about half a standard deviation compared to control teachers. Across condition and time, there were moderately strong correlations between WOW scores and AET ($r = .36$) and DB ($r = -.36$) indicating a relation between WOW and increased active engagement and decreased disruptive behaviors. There was a small negative correlation between WOW scores and class size (-0.15).

BOSS

There was a moderate negative correlation at pre-intervention between classroom AET and DB ($r = -.36$), a large negative correlation post-intervention ($r = -0.81$), and a large negative correlation between pre-post AET change and pre-post DB change ($r = -.71$). Table 2 shows the results of the linear mixed-effect models.

AET. The results of the linear mixed-effect model for active engagement (Table 2) showed that all else constant, ISLA schools scored 7.24 points higher than control schools on post-intervention AET scores ($\beta = 7.24$, $SE = 5.48$, $p = 0.215$), but this parameter was not statistically significant. Pre-treatment WOW scores was the only covariate statistically significant at $p < 0.05$ ($\beta = 4.09$, $SE = 1.77$), such that for every point increase the above average pre-intervention WOW score, post-intervention AET scores increased by 4.09 points. The intra-class correlation (ICC) showed 25% of the variance in classroom AET scores at the school level.

Figure 2 shows the pre/post-intervention means for each of the control and ISLA teachers as well as group means. The ISLA group had a lower pre-intervention mean AET score ($M = 68.92$, $SD = 9.84$) than the control group ($M = 73.12$, $SD = 12.78$); that is, on average, the ISLA group had less engaged behaviors. Post-intervention, the ISLA group had a higher mean AET score ($M = 76.8$, $SD = 7.66$) than the control group ($M = 67.62$, $SD = 17.3$); that is, on average, the ISLA group had more engaged behaviors. The average pre/post AET change for control

schools was -5.5 and the average pre/post AET change for ISLA schools was 7.9. The *ES* associated with AET change (i.e., difference in differences) was $d = 1.17$ (Cohen 1988), indicating that the mean change in active engagement for ISLA schools was more than one standard deviation larger than the mean AET change for control schools.

DB. The results of the linear mixed-effect model for disruptive behavior (Table 2) showed that all else constant, ISLA schools scored about 1.5 points lower than control schools on post-intervention DB scores ($\beta = -1.53$, $SE = 3.91$, $p = 0.707$) but this parameter was not statistically significant. Indeed, no parameter showed statistical significance at $p < 0.05$. The intra-class correlation (ICC) showed 33% of the variance in classroom DB scores at the school level.

The ISLA group had a higher pre-intervention mean DB score ($M = 8.60$, $SD = 6.83$) than the control group ($M = 6.55$, $SD = 6.06$); that is, on average, the ISLA group had more disruptive behaviors. Post-intervention, the ISLA group had a lower mean DB score ($M = 6.32$, $SD = 7.49$) than the control group ($M = 9.05$, $SD = 10.02$); that is, the ISLA group had less disruptive behaviors. The average pre/post AET change for the control group was 2.5 and the average pre/post AET change for the ISLA group was -2.3. The *ES* associated with AET change (i.e., difference in differences) was $d = -0.74$ (Cohen, 1988), indicating that the mean change in disruptive behaviors for the ISLA group was three quarters of a standard deviation larger than the mean DB change for the control group.

SWIS

ODR. The results of the linear model for ODRs (Table 3) showed that all else constant, the only statistically significant coefficient was association between pre-intervention period and

post-intervention period ODRs ($\beta = 0.42$, $SE = 0.13$, $p = 0.037$). The ISLA treatment parameter was not statistically significant ($\beta = 13.00$, $SE = 5.89$, $p = 0.092$).

Control schools (Pre-intervention $M = 3.97$, $SD = 2.99$; Post-intervention $M = 4.41$, $SD = 2.32$) and ISLA schools (Pre-intervention $M = 6.61$, $SD = 3.83$; Post-intervention $M = 6.79$, $SD = 3.70$) showed an increase in ODR rates from pre-intervention to post-intervention (Figure 3); however, the average change in ODR rates was smaller for ISLA schools ($M = 0.18$, $SD = 1.36$) than for control schools ($M = 0.44$, $SD = 1.29$). The *ES* associated with this difference was $d = -0.07$ (Cohen 1988), indicating that ODR rates from pre-intervention to post-intervention was 0.07 standard deviations less for ISLA schools than for control schools.

Exclusions. Table 4 shows the results of the linear models for exclusion. The results showed that in general and all else constant, no model parameter was statistically significant at $p < 0.05$ (apart from the pre-intervention parameter for the ISS student model). Although the ISLA parameters were negative in direction for all models indicating that all else constant ISLA schools had lower average exclusions than control schools, these were not statistically significant.

Figure 4 shows the rates of exclusion (ISS and OSS) outcomes (events, days, and students) per 100 students per month during pre-intervention and post-intervention periods for each school, as well as the group means for the control and ISLA schools. Compared to control, the ISLA group had greater mean rates of exclusion during the pre-intervention period across all six comparisons, and also higher mean rates of exclusion during the post-intervention period except for ISS events and students.

For ISS, ISLA schools had average decreases in exclusion compared to the control group's average increases for the number of ISS events (-0.17 vs. 0.33), students involved (-0.03

vs. 0.42), and days excluded from school (-0.11 vs. 0.07). The *ESs* (Cohen 1988) associated with the mean ISS difference in differences were large favoring ISLA schools for ISS events ($d = -0.44$), students involved ($d = -0.44$), and moderate for days excluded ($d = -0.16$), indicating that ISLA was generally associated with a strong effect on reducing ISS exclusion.

For OSS, ISLA had lesser mean increases compared to the control group for the number of OSS events (0.10 vs. 0.49), days excluded from school (0.21 vs. 0.53), and students involved (0.11 vs. 0.41). Although both groups showed increases in exclusion rates from pre- to post-intervention, the *ESs* were large favoring ISLA schools for OSS exclusion events ($d = -0.54$), students involved ($d = -0.55$), and days excluded ($d = -0.29$). Thus, compared to the control group, ISLA was associated with a strong effect on decreasing OSS exclusion.

Discussion

Results showed that ISLA's WOW strategy had meaningful practical effects on students' active engagement and disruptive behaviors, and in-school and out-of-school exclusionary discipline. Although model results did not yield statistically significant results (which is unsurprising given the small sample size of schools and low power to detect effects), the WOW strategy implemented in ISLA schools was associated with a very large increase in students' active engagement ($ES = 1.17$), and a large decrease in students' disruptive behaviors ($ES = -0.74$), compared to students in control schools. Schools receiving the ISLA intervention administered fewer ODRs compared to control schools ($ES = -0.07$) and showed substantial decreases in ISS and OSS events ($ES = -0.44$; -0.54), students involved in disciplinary action ($ES = -0.44$; -0.55), and meaningful decreases in days excluded from school ($d = -0.16$; -0.29). There was only a small decrease in ODRs, and large decreases in suspensions, suggesting a smaller change in teacher practices and a larger change in administrator practices. The ISLA training

positions ODRs as a tool for documenting behavior concerns, not as a discipline tool, so while disruptive classroom behaviors only showed a modest decrease in ISLA schools compared to control schools, the exclusionary practices typically associated with those behaviors showed a substantial practical decrease, which is the primary goal of ISLA.

The interpretation and implications of the effect size results of the WOW strategy must be tempered by the unreliability of the WOW data (discussed more below) as well as the limitations of a quasi-experimental design. That said, the findings are strengthened by their consistency across measures. Furthermore, the magnitude and aggregate of the effects offer a promising foundation for ISLA to scale. It is important to note that all observed schools experienced online learning for a year and a half prior to the start of this study. If this had been a typical school year or a different sample from across the United States, the results may look different. Nationally, schools varied in online, hybrid, and in-person instruction. The type of instruction and connection between school staff and students may change the outcomes of ISLA, and thus urge researchers to further inquire about the potential impact the intervention has on academic and social outcomes in a variety of school settings.

Implications for Practice

Pre/post scores for the WOW strategy showed that there was a greater mean score for the ISLA schools over the control schools. This suggests that the WOW strategy was effective in changing teacher behaviors and administrator responses, and improved students' overall engagement and classroom behaviors, all of which are positive indicators of how changes in teacher behaviors can result in changes in student behaviors and outcomes.

The WOW strategy can be seen as boosters to the wealth and depth of teachers' skills. These strategies are often being used in classrooms, though inconsistently across and within

classrooms. Thus, the training on WOW offered educators the opportunity to strategically plan for systematic implementation within the school day and across the school building. Findings from the control schools also illuminated a prevalent concern: When teachers are not provided training on ways to intervene early, often, and consistently on student behaviors, they can decrease or lose their use of preventative practices, resulting in schools increasing their use of exclusionary discipline. The WOW strategy and the overall ISLA framework allows for schools to take a proactive approach to promote inclusive practices for all students.

Limitations and Directions for Future Research

Although the results are promising, they are not generalizable to larger populations. One limitation of this study was the small sample size of schools and the lack of randomization due to the adaptations made because of the COVID-19 pandemic. Eight total schools were observed in treatment and control, and though the schools were spread out across numerous school districts, they were all in the same geographical region limiting the generalization of the findings to other settings. Additionally, the demographic breakdown of the sample is not representative of national samples. Future research should observe schools in diverse geographical settings to support the current findings, and to examine how unique factors of communities affect the use of the WOW strategy and adoption of ISLA. Further analyses are needed to examine the interaction of student race, ethnicity, or disability status on the outcomes of ISLA implementation in schools.

Though the findings of IOA for the BOSS outcomes were consistent and relatively robust (overall $M = 83\%$, AET $M = 76\%$, and DB $M = 90\%$), there was wider variability and lower reliability for WOW IOA fidelity ($M = 66\%$). This level of reliability means the effects may be attenuated by error variance and thus renders significant findings less likely to be obtained in future studies. However, the fact that the same two observers scored the same teacher/classroom

on the two consecutive observation days potentially ameliorates some concern over the lower WOW IOA. The WOW Classroom Observation Tool is not a standardized measure and has scoring criteria with a limited number of items and range of scores, which could have affected the reliability of IOA scores due to the nuances of each observer and classroom. Future research should focus on refining the tool, intended to measure fidelity as quality of implementation, and/or the improve observer rater training to improve data fidelity.

This study examined only the impact of WOW and not the entire ISLA Model. A component analysis of the full ISLA Model is warranted to understand what parts of the intervention are the most effective at changing behaviors, promoting fidelity, and creating positive environments. Future research should include input from community members in all parts of implementation. The findings showcase the immediate effect of WOW coaching on educator behaviors and student outcomes; however, data collected for a short period of time do not allow for the assessment of long-term effects or sustainability of practices in schools. Follow-up measures to analyze sustainability and feasibility of ISLA, at the individual and systems level, should be explored in future research. Finally, this study took place during an extraordinary time. The impact of ISLA on students and teachers should be further explored to better understand the new realities of instruction, learning, and community healing that are needed as a result of the global pandemic.

Summary

Despite an extensive body of research documenting the harmful effects of exclusionary discipline on student outcomes, these practices continue to be widely used. ISLA is a school-wide intervention with a strong foundation in prevention and includes a continuum of supports for students and educators with the specific intent of keeping students in the classroom,

supported, and thriving. Findings from this study showed that focusing on the WOW strategy alone increased students' active engagement, decreased disruptive behaviors, and resulted in lower rates of exclusion from the learning environment. Although these findings must be interpreted within the context of the COVID-19 pandemic and the numerous ways it has impacted schools and community members, the WOW component of ISLA shows promise as an effective tool for improving relationships between students and teachers, and thus, enhancing the positive climate within classrooms.

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Table 1*Student Demographic Information by School*

Characteristics	Treatment (ISLA)							
	School A		School B		School C		School D	
	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)
Gender								
Female	207	(48)	271	(47)	185	(48)	339	(56)
Male	222	(52)	298	(52)	202	(52)	264	(43)
Non-binary / Transgender / Other Gender	0	(0)	3	(1)	0	(0)	5	(1)
Race/Ethnicity								
White	226	(53)	403	(70)	294	(76)	358	(59)
Black	3	(1)	8	(1)	10	(3)	10	(2)
Latino/a/e	129	(30)	52	(9)	31	(8)	193	(32)
Indigenous	7	(2)	8	(1)	2	(1)	7	(1)
Pacific Islander	3	(1)	0	(0)	0	(0)	3	(0)
Asian	7	(2)	34	(6)	10	(3)	2	(0)
Multiracial	54	(13)	71	(12)	32	(8)	35	(6)
IEP	50	(12)	51	(9)	61	(16)	106	(17)
EL	21	(5)	8	(1)	2	(1)	57	(9)
Title I	Yes		No		No		Yes	

Characteristics	Control							
	School E		School F		School G		School H	
	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)
Gender								
Female	342	(51)	349	(50)	240	(50)	163	(47)
Male	318	(47)	346	(50)	238	(50)	182	(52)
Non-binary / Transgender / Other Gender	3	(0)	4	(1)	2	(0)	2	(1)
Race/Ethnicity								
White	452	(67)	528	(76)	322	(67)	102	(29)
Black	5	(1)	5	(1)	7	(1)	3	(1)
Latino/a/e	149	(22)	78	(11)	122	(25)	225	(65)
Indigenous	4	(1)	3	(0)	6	(1)	5	(1)
Pacific Islander	3	(0)	4	(1)	0	(0)	0	(0)
Asian	12	(2)	12	(2)	3	(1)	1	(0)
Multiracial	47	(7)	64	(9)	20	(4)	11	(3)
IEP	100	(15)	117	(17)	49	(10)	51	(15)
EL	55	(8)	22	(3)	30	(6)	81	(23)
Title I	No		No		No		Yes	

Table 2

Results of the Linear Mixed-Effects Models for Active Engaged Time (AET) and Disruptive Behavior (DB)

	AET			DB		
Fixed Effects	Estimate	SE	p-value	Estimate	SE	p-value
Intercept	69.59**	3.83	< 0.001	7.95*	2.78	0.023
Pre Score	-0.13	0.21	0.535	-0.17	0.32	0.594
Pre WOW Score	4.09*	1.77	0.026	-2.50	1.24	0.051
ISLA	7.24	5.48	0.215	-1.53	3.91	0.707
Students	-0.48	0.29	0.109	0.37	0.20	0.082
Pre WOW × ISLA	-2.96	2.35	0.215	1.16	1.60	0.473
Pre Score × ISLA	0.12	0.33	0.715	0.32	0.41	0.440
Random Effects	Variance		ICC	Variance		ICC
School	31.62		0.25	18.98		0.33
Residual	96.57		0.75	39.31		0.67

* $p < 0.05$.

** $p < 0.01$.

Note. For the respective outcomes, the intercept represents the average post-intervention score for classrooms/teachers in the control group with average pre-intervention BOSS scores (AET or DB), average pre-intervention WOW scores, and average class size.

Table 3*Results of the Linear Models for Office Discipline Referrals (ODRs)*

Term	Estimate	<i>SE</i>	<i>p</i> -value
Intercept	25.50**	4.17	0.004
Baseline ODRs	0.42*	0.13	0.037
ISLA	13.00	5.89	0.092
Baseline ODRs × ISLA	0.03	0.16	0.849

* $p < 0.05$.** $p < 0.01$.

Note. The intercept represents the average ODRs per 100 students per month for schools in the control group with average baseline period ODRs.

Table 4

Results of the Linear Models for In-School (ISS) and Out-of-School (OSS) Suspension Outcomes (Events, Students involved, Days excluded from school)

Term	ISS			OSS		
	Estimate	SE	p-value	Estimate	SE	p-value
Events						
Intercept	8.74**	1.27	0.002	13.20*	4.03	0.031
Baseline	0.44	0.16	0.054	1.79	0.84	0.099
ISLA	-2.55	1.72	0.213	-7.46	4.77	0.193
Baseline × ISLA	-0.13	0.17	0.494	-1.66	0.87	0.127
Students						
Intercept	8.49**	1.04	0.001	9.82*	2.69	0.022
Baseline	0.66*	0.18	0.022	1.74	0.74	0.079
ISLA	-3.02	1.41	0.099	-5.20	3.31	0.192
Baseline × ISLA	-0.36	0.19	0.133	-1.69	0.77	0.093
Days						
Intercept	6.82*	1.52	0.011	12.41	5.33	0.080
Baseline	0.28	0.22	0.260	0.80	0.68	0.301
ISLA	-0.87	2.10	0.699	-4.06	6.78	0.581
Baseline × ISLA	0.05	0.23	0.853	-0.60	0.71	0.445

* $p < 0.05$.

** $p < 0.01$.

Note. For the respective outcomes, the intercept represents the average intervention period exclusion rate for schools in the control group with average baseline period exclusion rates.

Figure 1

Republished from Nese et al., 2022

Inclusive Skill-building Learning Approach (ISLA) Model

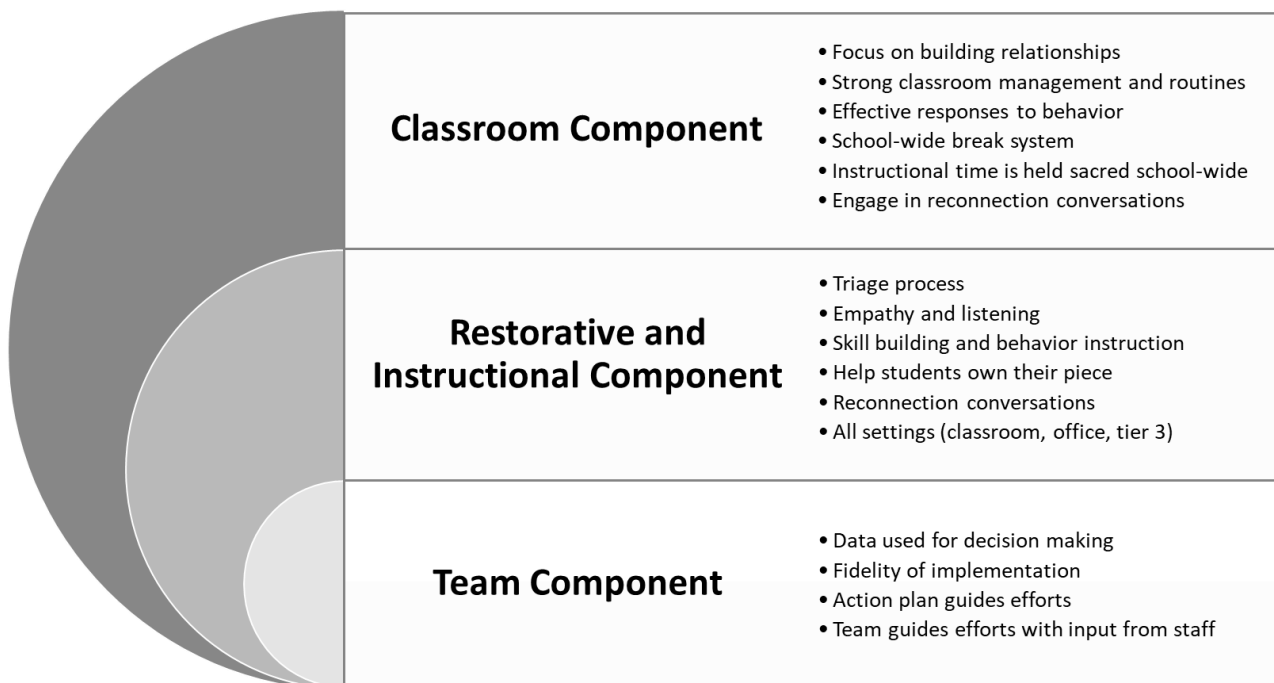


Figure 2

Pre- and Post-Intervention Mean Active Engaged Time (AET) and Mean Disruptive Behaviors (DB) for Each Control and ISLA Teacher and Group Means

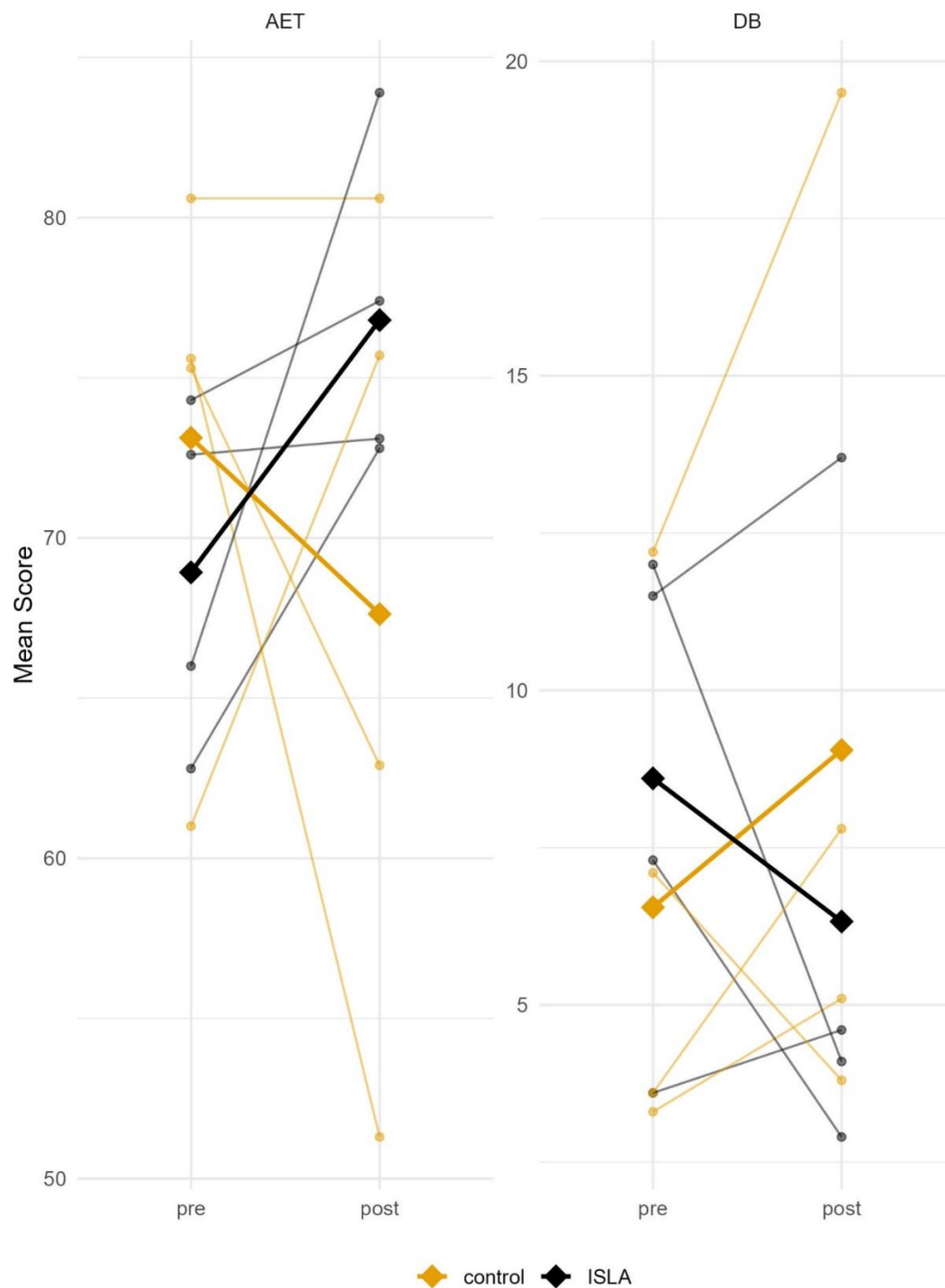


Figure 3

Office Discipline Referrals (ODRs) per 100 Students per Month for Baseline and Intervention Periods by Condition

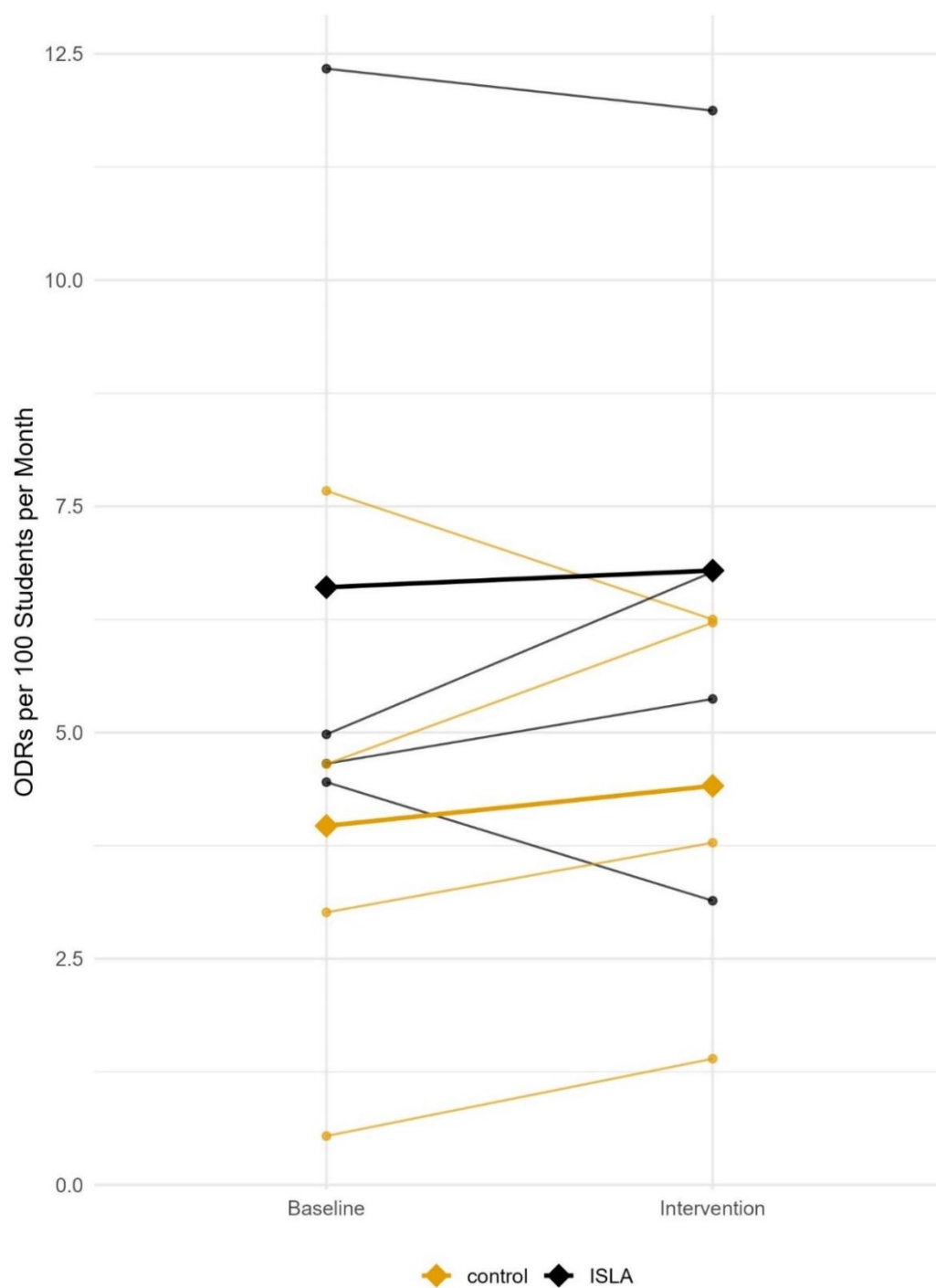


Figure 4

In-School (ISS) and Out-of-School (OSS) Suspensions per 100 Students per Month for Baseline and Intervention Periods by Condition

