

*Technical Report*

# THE EFFECTS AND IMPLEMENTATION OF RESTORATIVE PRACTICES FOR DISCIPLINE IN NEW ORLEANS SCHOOLS

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*Published December 18, 2020*

**EducationResearchAllianceNOLA.org**

# *The Effects and Implementation of Restorative Practices for Discipline in New Orleans Schools*

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*Abstract:* Restorative practices are an emerging alternative to exclusionary discipline that focuses on repairing harm rather than on punishment. Forty-one percent of schools nationwide report some level of restorative practices use, but few studies rigorously measure its effects. We add to this growing literature using a quasi-experimental, doubly robust identification strategy to assess the effect of restorative practices on student discipline. Our results indicate suspensions did not decline for the overall student population in schools adopting restorative practices, but did decline in the second and third years of treatment for students who had been suspended at least once prior to treatment. We examine the effects at both high and low implementation schools. We find evidence that high implementation schools reduced suspensions primarily for violent behavior in the second and third year of intervention. Low implementation schools, on the other hand, reduced suspensions primarily for non-violent behavior in the first year. While there are some inherent difficulties in studying the effects of restorative practices, these results provide at least suggestive evidence that the approach has its intended effect of reducing exclusionary discipline and perhaps misbehavior.

*Acknowledgements:* This study was conducted at the Education Research Alliance for New Orleans at Tulane University. We wish to thank Lindsay Weixler, Lan Nguyen, Douglas Harris, Sharon Lurye, and Alica Gerry for their helpful comments. All errors are our own.

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## **I. Introduction.**

School discipline is one of the most intensely debated topics in K-12 education. In the United States, schools have traditionally relied on punitive discipline, including removing misbehaving students from the classroom (Smith, 2000). Rates of exclusionary discipline (suspensions and expulsions) have increased in recent decades with the rise of zero tolerance policies (American Psychological Association Zero Tolerance Task Force, 2008). On the one hand, school climate affects learning and outcomes of all students (Gage, Larson, Sugai, & Chafouleas, 2016) and discipline systems are supposed to both prevent and respond to behavioral infractions. Removing misbehaving students from the classroom may both prevent unwanted negative spillovers to classmates and discourage future misbehavior. On the other hand, school exclusion directly affects excluded students. Exclusionary discipline disproportionately falls on minority students (e.g. Balfanz, Byrnes, & Fox, 2014; Shollenberger, 2015; Togut, 2011; Barrett, McEachin, Mills, & Valant, 2019) and increases the likelihood of undesirable outcomes, like school drop out (Balfanz et al., 2014).

Because of growing concern about the effects of such practices on students, multiple states have passed laws emphasizing alternatives to exclusionary discipline, like restorative practices (Rafa, 2018). Growing out of practices in the judicial system (Evans & Vaandering, 2016), restorative practices emphasize the repair of harm done by an action rather than punishment for that action. Restorative circles, a common element of restorative practices, are conferences where the group of individuals involved in an incident come together to discuss what harm was done, how to repair the harm, and how to repair the relationships (Acosta, Chinman, Ebener, Malone, Phillips, & Wilks, 2016; Wearmouth & Berryman, 2012). Forty-one

percent of a nationally representative sample of schools in the United States reported using some level of restorative circles in 2017-2018 (Diliberti, Jackson, Correa, & Padgett, 2019).

Despite the number of schools implementing restorative practices – and the wealth of qualitative literature on the mechanisms of restorative practices – its quantitative effects are not well-studied. Many quantitative papers focus on only the pre-post experience of one group, with no comparison group (Fronius, Darling-Hammond, Persson, Guckenberg, Hurley, & Petrosino, 2019). However, the few papers using experimental or other causal methods have found restorative practices decrease student suspension (Augustine, Engberg, Grimm, Lee, Wang, Christianson, & Joseph, 2018; Davison, Penner, & Penner, 2019).

Even prior causal studies lack detailed data on circles and information on comparison schools' use of restorative practices. We expand the literature using detailed data from a nonprofit on school-level utilization of restorative practices. This intervention took place in New Orleans, which has an almost all charter sector where schools self-report certain characteristics, including discipline practices, to a local parent's guide. We examine effects up to three years post-treatment, allowing us to observe treatment effects over time, including delayed effects.<sup>1</sup> These detailed data in a setting where schools self-report discipline practices allow us to identify treatment and comparison schools and measure restorative practices implementation intensity. Finally, we provide qualitative evidence to better understand implementation and the pattern of estimated effects.

We use a doubly robust method with difference-in-differences and student-level matching to analyze the effect of restorative practices on student discipline outcomes. In each analysis, we

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<sup>1</sup> While looking at effects up to six years post-treatment is possible with our data, the vast majority of students only have data up to three years post-treatment by the last year that restorative practices data are available.

compare changes in student outcomes over time at schools that begin utilizing restorative practices with schools that do not. Prior to estimation, we identify a matched comparison group for treated students with matching based on demographics and the pre-trend of the outcome of interest.

Subgroup analysis is carried out for students with suspensions prior to treatment. These students are the most likely to be affected by restorative approaches as they are most likely to have potential future suspensions because past student suspension predicts future student suspension (Theriot, Craun, & Dupper, 2010).<sup>2</sup>

Our results suggest restorative practices had little impact on exclusionary discipline for the overall student population. We find mostly null results, although there is a marginally significant reduction of 0.07 suspensions per student per year in the third post-treatment year, a 22 percent reduction from baseline. However, for students with prior suspensions, half of the coefficients of interest are significant. For this subgroup, we see decreases in both the second and third year after implementation for number of suspensions (a decrease of 0.2) and days of suspension per student per year (a decrease of 0.5). These represent decreases of 24 percent and 18 percent from baseline, respectively. We bring in evidence from qualitative work in our setting to illuminate why the effects may be mostly seen in the second and third years.

To further explore the effect of treatment, we report results for high implementing schools with many circles and low implementing schools with few circles. The effects at high implementing schools are concentrated in the second and third year, similar to the main results.

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<sup>2</sup> Students with repeat suspensions may have unaddressed needs that lead to behavioral problems, past suspensions may lead to less attachment to schooling and thus repeat suspensions, or students with repeat suspensions may be more closely watched by teachers (Mendez, 2003).

For low implementing schools, there are statistically significant effects in the first year of implementation for both all students and previously suspended students but no significant effects in later years, unlike the main results and the results for high implementing schools. These differences may be due to the length of time that the schools were partnered with the nonprofit.

The results we find are promising, but not definitive. While we have detailed data on restorative practices circles facilitated by the nonprofit organization, we have no data on circles convened without the nonprofit. Moreover, as is common in discipline data, we only observe infractions that receive documented, exclusionary punishments. We address this issue by distinguishing between violent and non-violent infractions: violent infractions are reported with more fidelity and the appropriateness of exclusionary discipline is more straightforward than for non-violent infractions. Our results show reductions in suspensions for *violent* infractions, suggesting a change in student behavior itself.

This study makes several contributions to the existing literature. First, we provide one of the few quasi-experimental studies of restorative practices with causal estimates under real-world program implementation. Second, we have more detailed data than prior studies on how restorative approaches are implemented, including quantitative and qualitative evidence than in other studies. This allows us to both describe the intervention in more detail than usual and to more accurately assign schools to treatment and comparison conditions. In addition, we have another data source where schools self-report their discipline practices, allowing us to filter non-compliers out of the comparison group. Finally, we present results for previously suspended students, an under-studied population likely to be affected by changing discipline policies.

## II. Background.

This section follows with (i) a brief history of exclusionary discipline and its evolution in the modern United States, (ii) a summation of the criticisms of exclusionary discipline, and (iii) a brief history of restorative practices in the United States.

### *History of exclusionary discipline.*

Historically, school discipline in the United States has relied predominantly on punitive disciplinary practices. Corporal punishment<sup>3</sup> was the first system of school discipline in the United States. In the 1960s and early 1970s corporal punishment began to fall out of favor as its effectiveness and appropriateness faced increasing scrutiny.<sup>4</sup> During the second half of the 20<sup>th</sup> century, schools began to turn to exclusionary practices such as suspension and expulsion to exercise control and maintain order (Adams, 2000). Exclusionary discipline systems respond to misbehavior by removing the involved student, in order to punish that student, maintain a peaceful school climate for other students and to deter future misbehavior (Black, 2016; Hoxby, 2002; American Psychological Association Zero Tolerance Task Force, 2008).

Exclusionary discipline became more frequent when, in 1994, the Guns Free School Act required secondary schools to adopt a zero tolerance policy on weapons in order to receive federal funding (Mongan & Walker, 2012). Zero tolerance policies establish severe, predetermined consequences for behavioral infractions. Originally, such policies created mandatory punishment for *major* discipline violations. However, zero tolerance policies were soon expanded to minor infractions through the application of the “broken windows” theory of policing to schools. This theory of policing, proposed by Kelling and Wilson (1982), held that

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<sup>3</sup> Physical punishment such as caning or spanking.

<sup>4</sup> A number of states continue to allow corporal punishment by law (Font & Gershoff, 2017).

targeting minor offenses would act as a deterrent to major offenses. Through a series of court rulings, due process protections for expulsion were weakened and schools began to more broadly apply the zero tolerance of the Guns Free School Act to more minor, discretionary<sup>5</sup> discipline offenses (Black, 2015).

These changes led to the increasing prevalence of exclusionary discipline practices. In 1993, 15.2 percent of students in grades six through twelve had ever been suspended, while 1.5 percent had ever been expelled. In 2012, 19.6 percent of students in these grades had ever been suspended, while 2.2 percent had ever been expelled (U.S. Department of Education, 2016).

*Consequences of exclusionary discipline.*

Schools may exclude students out in an attempt to foster safer, less disrupted classrooms. If exclusionary discipline discourages student misbehavior, then such discipline practices might be beneficial to the overall student population. Negative spillovers on student achievement and behavior from disruptive peers are well-documented (Hoxby, 2000; Carrell & Hoekstra, 2010; Fletcher, 2010; Gottfried, 2013). Recent research even suggests that exposure to a disruptive peer in a single year may lower classmates' combined future earnings by \$80,000 (Carrell, Hoekstra, & Kuka, 2018). Exclusionary discipline may decrease the number of disruptive peers and therefore limit these negative spillovers.

However, the American Psychological Association Zero Tolerance Task Force (2008) found little evidence to support the claim that zero tolerance curbed student misbehavior and advocated for schools to move away from zero tolerance and reliance on exclusionary discipline. Moreover, the Task Force emphasized that exclusionary discipline decreases days of student

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<sup>5</sup> A discretionary discipline offense is an offense that is subject to the teacher's own interpretation, such as "willful disobedience" or "disrespectful behavior".



learning, may lead to negative outcomes, and disproportionately falls on certain populations of students. This is not surprising: students who are suspended miss school. These students may fall behind academically and thus become more likely to act out. Thus, exclusionary discipline could create a cycle where suspension results in misbehavior, which then results in further suspension (Kline, 2016). This cycle culminates in student exclusion, misbehavior, and lost days of learning for the suspended student.

Exclusionary discipline is correlated with decreased student achievement, although it is difficult to parse out whether this is a causal relationship. Schools with high rates of suspension tend to have lower test scores, even adjusting for demographic differences (Skiba & Rausch, 2004). Just one suspension in the 9<sup>th</sup> grade is associated with a two-fold risk of dropout (Balfanz et al., 2014). Lifetime costs in lost wages for a single cohort of students who dropped out in Texas were estimated to be between \$5 billion and \$9 billion – a significant impact on the state and nation’s economy (Marchbanks, Blake, Booth, Carmichale, Seibert, & Fabelo, 2015; Rumberger & Losen, 2016).

Moreover, non-White students and students with disabilities are suspended disproportionate to their percentage of the school population (e.g. Balfanz et al., 2014; Shollenberger, 2015; Togut, 2011; Barrett, McEachin, Mills, & Valant, 2019). Nationwide, Black students are almost four times more likely to be suspended from school than their White peers, and students with disabilities are twice as likely to be suspended as students without disabilities (U.S. Department of Education Office for Civil Rights, 2019). These student groups are also overrepresented in student law enforcement referrals and arrests, with students with disabilities and Black students both being more than twice as likely to be arrested as their peers (U.S. Department of Education Office for Civil Rights, 2019).

*Restorative practices as an alternative to exclusionary discipline.*

The growing evidence of the negative consequences of exclusionary discipline has created interest in alternatives like restorative practices. Just as zero tolerance policies grew out of an application of broken windows policing, restorative practices in school grew out of restorative justice in judicial settings. Within the judicial system, Kurki (1999) explains that

Most advocates of restorative justice agree that ... crime consists of more than violation of the criminal law and defiance of government authority. Crime involves disruptions in a three-dimensional relationship of victim, community, and offender. Because crime harms the victim and the community, the primary goals should be to repair the harm and heal the victim and the community. (p. 2)

Restorative practices have a long history in indigenous cultures such as the Maori culture in New Zealand and the Navajo culture in the southwestern United States (Kehoe, Bourke-Taylor, & Broderick, 2018). They first gained attention as a potential alternative to the criminal judicial system in Canada in 1974, when a probation officer arranged for two teenagers to meet with the victims of their vandalism to discuss reparation (Zehr, 2015a). In the United States, the Minnesota Restitution Center was founded two years earlier with the same concept, although it used the terminology “restitution” (Hudson, 2012). In contrast to retributive justice, which takes a punitive course of action to address wrongs done (Standing et al., 2012), restorative practices focuses on a goal of strengthening relationships and community support to reduce the likelihood of recidivism. Over the past few decades these practices have gained popularity in New Zealand, Australia, the United Kingdom, Canada, and the United States as a means of diversion, sentence reduction, and victim reparations (Zehr, 2015b).

In the 1990s, experts began to look to restorative practices<sup>6</sup> as a viable alternative to exclusionary discipline in schools (Evans & Vaandering, 2016). The goal of restorative practices is to help students learn socio-emotional skills, strengthen relationships within a school, and include the student voice in the discipline process (Guckenberg, Hurley, Persson, Fronius & Petrosino, 2015). There is less agreement on *how* this should be achieved (Guckenberg et al., 2015). In education, restorative practices can refer to a wide range of approaches, including the daily use of affective language – language that aims to elicit feelings about the impact of behaviors on a person by using “I feel” statements – to formal discipline-related circles (Acosta et al., 2016).

A restorative circle is a key component of restorative practices. During a restorative circle, participants discuss the incident and then, ideally, create an agreed-upon contract with specific steps to take to restore the relationship. The circle facilitator writes out the contract and follows up with the participants regarding the completion of these steps in an agreed-upon timeline (Lieberman & Katz, 2017).

Discipline-related circles can be coupled with exclusionary discipline or used in lieu of exclusionary discipline. Some schools may emphasize restorative practices as an active part of the culture, such as incorporating affective language into the classroom, while some schools only use circles and only divert certain students to a circle rather than a suspension (Fronius et al., 2016; Guckenberg et al., 2015).

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<sup>6</sup> There is some debate over the use of the term “restorative practices” versus “restorative justice” in educational settings. The term restorative justice has come to be more closely associated with the criminal justice system, and it refers to specific practices such as victim-offender conferences (Kehoe et al., 2018). In addition, not all parties who participate in restorative practices may believe that “justice” was the end result.

A nationally representative stratified randomized sample of 4,803 public schools in the U.S. found that 41.6 percent of these schools reported using restorative circles in 2017-2018 – up from 33.5 percent in 2015-2016 (Diliberti et al., 2019; Diliberti, Jackson, & Kemp, 2017). In 2017-2018, half of the schools with more than 50 percent non-White enrollment reported using restorative circles; schools with greater non-White enrollment were more likely to report restorative circle use (Diliberti et al., 2019).

### **III. Literature Review.**

Restorative practices offer an opportunity for the student to be accepted back into the school community via accepting and communicating responsibility for harm caused, while explicitly avoiding shaming (Braithwaite, 1993). Additionally, strong implementation relies on administrator support and teacher buy-in (Sandwick et al., 2019), parental support (Ingraham et al., 2016), student feelings of ownership (Sandwick et al., 2019), student empowerment (Lustick et al., 2020), and belonging (Haney et al., 2011).

Qualitative studies on restorative practices have captured student, faculty, administrator, and parent perspectives on both the value and the challenges of the approaches. Perhaps the most common findings are that when implemented competently and consistently as a whole school, restorative practices improve relationships (e.g. Knight & Wadhwa, 2014; Short et al., 2018), increase student feelings of safety and belonging (e.g. Sandwick et al., 2019) and increase use of socio-emotional skills including empathy and respect for others (e.g. Kehoe et al., 2018).

The bulk of the quantitative evidence on restorative practices is correlational. Since we are interested in the causal effects of restorative practices, we focus below on papers that at least

use a comparison group.<sup>7</sup> First we discuss two randomized control trials, a quasi-experimental paper with similar data and background to the current study, and then explore common issues with restorative practices quantitative research.

The best evidence on restorative practices comes from a randomized control trial in the Pittsburgh Public Schools district where forty-four schools were randomly assigned to either be treated with a restorative practices intervention (Augustine et al., 2018).<sup>8</sup> The authors find treatment caused student suspensions to fall 11 percent from baseline and the number of days suspended to fall 16 percent from baseline, primarily for non-violent offenses and in elementary and high school grades. There is no evidence the program reduced student arrests, absences, or school transfers for the overall student population. The studies' authors emphasize that it is unclear whether restorative practices changed student behavior, or whether disciplinary reaction to student behavior changed (i.e., students were diverted away from suspension and toward restorative practices). Restorative practices decreased student academic achievement in middle school and had no effect on achievement in elementary or high school. Changes in academic achievement are not surprising since one aim of exclusionary discipline is to remove students who are disrupting instruction from the classroom. Restorative practices provide an alternative approach where such students may remain in the classroom, and thus could lower student achievement.

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<sup>7</sup> See Darling-Hammond, Fronius, Sutherland, Guckenbug, Petrosino, and Hurley (2020) for a thorough review of the quantitative literature.

<sup>8</sup> This curriculum emphasizes whole school change and identifies 11 essential elements: affective statements, restorative questions, small impromptu conferences, proactive circles, responsive circles, restorative conferences, fair process, reintegrative management of shame, restorative staff community, restorative approach with families, and fundamental hypothesis understandings.

Acosta et al. (2019), another randomized control trial, examines survey responses between students who attended schools that were or were not assigned to use restorative practices. The authors surveyed students on multiple dimensions of school climate pre- and post-treatment. They found no difference in perception of school climate between students at treated and control schools (i.e., intent-to-treat). However, students who reported *experiencing* restorative practices reported more positive school climate, connectedness, and peer relationships post-treatment (i.e., treatment-on-the-treated). The difference between the findings for the intent-to-treat and the treatment-on-the-treated was caused by some treatment schools not implementing the program consistently and some control schools beginning similar programs (i.e., non-compliers).

Davison, Penner, & Penner (2019) study the effect of school partnerships with a restorative practices nonprofit using quasi-experimental methods to deal with non-random treatment. They found treated schools significantly decreased their suspension rate, although racial disparities in discipline remained (Davison, Penner, & Penner, 2019). Other, less rigorous studies focusing on single groups pre- and post-treatment, with no comparison group, also find significant drops in suspensions when restorative practices are implemented (Armour, 2015; Baker, 2008; Sumner, Silverman, & Frampton, 2010).

Acosta et al. (2019) highlights one of the key internal validity issues with studying restorative practices: compliance in both treatment and control groups. It can be difficult to measure implementation intensity and therefore to accurately assign schools to treatment and comparison groups. Additionally, effects may take time to materialize (Darling-Hammond et al., 2020), but programs may not last long enough for these effects to emerge (Guckenberger et al., 2016), it can be difficult to track outcomes (Ortega et al., 2016), and staff turnover may lead to

uneven implementation (Guckenberger et al., 2016). We have the data to address the above concerns, which we detail in the next section.

#### **IV. The Intervention.**

We examine discipline-related circles run by a local nonprofit in New Orleans. This nonprofit partners with schools to provide staff training and support, as well as the ability to refer students directly to the nonprofit for a circle. These discipline-related circles can be classified as either prevention (taking place prior to a suspendable offense)<sup>9</sup> or intervention (taking place after a suspendable offense). Most circles in the data (61 percent) are classified as intervention.

After a referral is submitted, there are multiple possible outcomes, depending on which step a referral reaches (Figure 1). These steps include (1) the nonprofit determining whether the referral is appropriate, (2) participants agreeing to the circle, (3) the circle resulting in a contract, and (4) participants completing the actions in the contract. For example, suppose Student A is referred for vandalizing Student B's locker. Assuming the nonprofit and participants agree to a circle, participants might decide Student A will work with Student B to repair the locker. The contract is fulfilled when the students work together to repair the locker. The emphasis is thus placed not on punishment and isolation from the community (through suspension) but on directly repairing what damage has happened (through fixing the locker) and restoring the sense of community (through the students working together).

We use school partnerships with the nonprofit to answer three questions about restorative practices. Did the use of restorative practices at a school reduce the average student's number of

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<sup>9</sup> Prevention circles are formed in response to some type of behavioral infraction (albeit one that does not qualify for suspension).

suspensions or days suspended? Did this effect vary depending on whether a student had been previously suspended? Did this effect vary based on schools' level of implementation?

## **V. Data.**

Data on circles conducted by the nonprofit were provided for the 2009-2010 school year through the 2015-2016 school year. The data include information on the dates of behavioral infraction, referral, and circle (if a circle was convened), as well as the number of participants in each circle, and the circle type (prevention or intervention). In addition, we observe how far along each referral progressed in the process. However, the data do not include student identifiers, so circle-level data are aggregated up to the school-year level. Section VII looks at implementation in-depth.

The Louisiana Department of Education provided student- and school-level data. We limit our analysis to the years 2007-2008 through 2015-2016, from two years prior to the first school partnering with the nonprofit until the end of the circle-level data. We do not include later years because we cannot observe treatment status or implementation in these years. Additionally, other nonprofits began partnering with schools to implement restorative practices in New Orleans in 2016-2017, making it difficult to establish a non-treated comparison group (T. Mogabgab, personal communication, Aug. 18, 2020).

Student-level data include information on enrollments, demographics, discipline, and achievement. The discipline data include type of infraction, date of infraction, resulting discipline (in-school, out-of-school, or alternative site suspension or expulsion), and number of days suspended or expelled. Discipline records include all infractions resulting in exclusionary discipline for any student; a student not observed in the discipline data in a year is assumed to



not have experienced exclusionary discipline that year. Because the discipline records include only infractions that result in exclusionary discipline (suspension or expulsion), infractions that result in more informal (or less exclusionary) discipline are not observed. As in the other studies on the topic we reviewed above, we therefore focus on suspension (a consequence of student misbehavior) rather than student misbehavior itself, which cannot be observed in the data.

We divide behavioral infractions into various categories: violent and non-violent infractions<sup>10</sup> and specific and non-specific. These divisions are useful because changes in discipline policy can affect both the policy of exclusion (i.e., the probability of suspension for a given offense) and the behaviors themselves. We expect policies to remain more consistent for violent and specific offenses compared with non-violent and non-specific offenses that are more subjective and discretionary.

In addition to the student-level discipline data, the student-level enrollment data contain information on students' grade level, school of attendance, and dates of transfer; demographic data contains information on student gender, race, free- and reduced-lunch status, special needs status, and English Language Learner status.

Along with this quantitative data, we also have evidence from qualitative work done in the same setting. After discussing our results, we connect our findings to this and other qualitative work.

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<sup>10</sup> Violent infractions include physically injuring others, having a weapon, arson, bullying, and sexual harassment/assault. Non-violent infractions are all infractions not classified as violent (for example, willful disobedience, the use of profane language, gambling, and forgery are all non-violent offenses).

### *Setting and Sample of Schools.*

The combination of student-level data and circle-level data allows us to study 41 schools who partnered with the nonprofit; of these, 33 are in Orleans Parish and eight are in neighboring Jefferson Parish. We omit the schools from Jefferson Parish because it has a districtwide policy of using restorative practices (Williams, 2015).

This focus on Orleans Parish leads to an additional methodological challenge: schools in New Orleans are more likely to close in a given year than in the average school district. After Hurricane Katrina, New Orleans experienced a large-scale school reform, where almost all traditional public schools were taken over by the state, attendance zones were largely eliminated, and families were allowed to choose from a variety of schools across the city. New Orleans is now a uniquely market-driven, high-accountability school system where almost all schools are publicly funded, privately run charter schools. Families primarily choose among schools using a centralized enrollment system. Schools failing to meet test-based standards are frequently closed or taken over (see Bross, Harris, & Liu, 2016). This environment results in more school churn than a traditional public school district, with some schools entering the market and some schools exiting each year. This has implications for the balance of our panel, as within our panel schools both enter and exit the market.

In addition to this imbalanced panel, not all treated schools began partnering with the nonprofit in the same year. To address these challenges, we align the panel using the first year that a school partners with the nonprofit, designated as year  $t$ . The year prior to the first year of partnership is  $t-1$ , and the year after the first year of partnership  $t+1$ . Information on the number of schools with data available for each treatment period ( $t-2$  through  $t+2$ ) is shown in Table 2A (for treatment schools) and Table 2B (for comparison schools). Data is not available for all

schools for all periods: for example, four treatment schools partner with the nonprofit in their first year of opening, so data are available for year  $t$  through  $t+2$  but not any year prior to the partnership. Because school-level data is not always available, we use student-level data in the matching process, detailed in the next section, and use the student-level data to formally test the parallel trends assumption.

In addition to schools entering and exiting the market, this market-driven setting was also actively changing during its first decade. A centralized enrollment system was implemented in 2012-2013 (Harris, Valant, & Gross, 2015). A centralized expulsion system was implemented in the same year as a result of a 2010 Southern Poverty Law Center lawsuit arguing schools were not meeting special education students' needs and were ignoring federal law concerning the discipline of students with disabilities (Hernández, 2019). This lawsuit arose after public pushback on schools' use of exclusionary discipline (Charpentier, 2008; Carr, 2012). Prior work has indicated that exclusionary discipline rates in New Orleans rose up until 2010 (the year the SPLC lawsuit was filed) and then fell, eventually reaching their pre-reform level by 2012 (Hernández, 2019). Thus, the lawsuit probably led schools to seek ways to decrease the rate of exclusionary discipline.

Likely because of this, some schools likely engaged in restorative practices without the nonprofit. *The New Orleans Parents' Guide to Public Schools*, an educational resource for parents, began providing information on schools' self-reported discipline practices in the 2014-2015 school year. We exclude any school from the sample that did not partner with the nonprofit but did report restorative practices use to the *Parents' Guide*.

## VI. Methodology.

### *Difference-in-Differences.*

We employ a dynamic difference-in-difference model with two-stage matching to estimate the effect of treatment on student-level disciplinary outcomes. Formally, the difference-in-difference model is given by

$$(1) Y_{ist} = \alpha_0 + \delta_0 R_i + \gamma_t d_t + \sum_{r=-m}^q \beta_r (R_i \cdot d_{t+r}) + \sigma X_{it} + \theta_s + \varepsilon_{it}$$

Where  $Y_{ist}$  is the outcome of interest for student  $i$  at school  $s$  at time  $t$ . We include one- and two-year lags of the outcome of interest. The vector  $d_{t+r}$  contains indicators for the number of time periods from the year a treated school began submitting referrals to the nonprofit (from  $m$  years prior to the first year and to  $q$  years after); we assume this is the first year a school began utilizing restorative practices. (If a school is in the comparison group, the vector  $d_{t+r}$  contains indicators for the distance from the year the comparison student's matched treated student's school first recorded restorative practice usage.)  $R_i$  indicates whether a student attended a school in the first year of restorative practices adoption (i.e., it is a fixed effect controlling for time invariant differences between comparison and treated students). School-level fixed effects are represented by  $\theta_s$ ; we also control for school-level performance scores.<sup>11</sup> Vector  $X_{it}$  controls for student-level characteristics: gender, grade, race, special needs status, English language learner status, and free- and reduced-price lunch status. We cluster standard errors at the school-level.

Difference-in-difference analyses rely on the assumption of parallel trends: absent treatment, the treated and comparison groups would have had the same trajectory. To ascertain

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<sup>11</sup> Louisiana uses a five-tier School Performance Score (SPS) based on grade letters (A-F). SPS is calculated primarily using student achievement data, although different formulae are used to assess elementary, middle, and high school grade levels. SPS formulae change over the period of analysis, which is one reason we limit comparison schools to similar schools in the same year.

whether this assumption is violated, we present effect estimates for treated and comparison group pre- and post-treatment.

A dynamic difference-in-difference model is preferable to a standard two-period model here because a two-period model assumes treatment effects are constant, with no change in the effect of treatment over time (Wolfers, 2006). Dynamic difference-in-difference models include leads and lags of treatment periods, whereas standard two-period models divide periods into two categories: pre- and post-treatment. Allowing for dynamic treatment effects is especially important in our context, as school discipline practices and student behavior may take multiple years to change (Guckenberger et al., 2016).

#### *Matching.*

Systematic differences between groups that opted into a program and groups that did not opt in are a key threat to validity for any program evaluation. We use a two-stage matching process to address this concern. First, we identify comparison schools for each treated school. We then construct propensity scores for a student's likelihood of attending a school implementing restorative practices using observable characteristics to match treated students to similar peers. In order for matching to approximate causal estimates, matches should be both local and focal (Lauen, Barrett, Fuller, & Janda, 2017; Bifulco, 2012). Two ways to maximize similarity are to pull the comparison and treatment groups from the same environment (local) and match based on key covariates, including lagged outcomes of interest (focal).

We identify comparison schools for each treated school as schools in the same year which (1) serve the same grade range as the treated school, (2) operate in Orleans Parish, (3) have similar letter grades of school performance<sup>12</sup> to the treated school, (4) never partnered with the

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<sup>12</sup> We match schools with the same letter grade, although we group A and B schools together due to the small number of them.

restorative practices nonprofit, and (5) never self-reported the use of restorative practices to the *Parents' Guide*. Each treated school can be matched to multiple comparison schools.

We use propensity scores to match treated students to similar students in the comparison schools. Students are placed based on the school they attended the year prior to treatment. Students are matched using the outcome of interest's pre-trend (the difference between the one-year lag and two-year lag of the outcome of interest) and demographic information. We calculate the propensity score as

$$(2) R_{ist} = f_0 + f_1(C_{i,t-1} - C_{i,t-2}) + f_3\mathbf{X}_{i,t}$$

where  $R_{ist}$  identifies the likelihood student  $i$  will be treated in year  $t$  (that is, they will be attending a school using restorative practices through the nonprofit). The variables  $C_{i,t-1}$  and  $C_{i,t-2}$  contain a student's outcome of interest one year prior and two years prior to  $t$ , respectively. The vector  $\mathbf{X}_{i,t}$  contains student demographic information.<sup>13</sup> We use nearest neighbor matching without replacement.

We examine the effect of this matching process on the similarity of baseline covariates between the treated and comparison groups in Table 1.A and Table 1.B.<sup>14</sup> We present averages for the overall student population and students suspended prior to treatment for both groups and statistically significant differences. Demographically, treated schools have a larger percentage of Black students, a smaller percentage of students who identify as other race, and a larger percentage of students who receive free- and reduced-price lunch than comparison students prior to matching.

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<sup>13</sup> Demographic information includes student gender, race, free- and reduced-lunch status, and English Language Learner status.

<sup>14</sup> Table A1 displays differences between treatment schools and comparison schools pre-treatment.

The treatment and comparison group are more similar after matching, though some differences between the two groups on the primary outcomes of interest (number of suspensions and days of suspensions) remain significant. This is likely because suspensions are not the main factors predicting student attendance at a school that adopts restorative practices.<sup>15</sup> Although the outcome of interest remains statistically different between the two groups, the magnitude of the difference is modest (22 percent of the restorative practices baseline for total suspensions and 17 percent of the restorative practices baseline for days of suspensions), and we include lags of the outcome of interest in all analyses.

## **VII. Implementation.**

One contribution of this study is providing a more detailed description of the implementation of restorative approaches. Even though all treated schools partner with the nonprofit, the number of circles per year at each school varies substantially.<sup>16</sup> Figure 2 shows that most schools conduct few circles. Half of schools have six or fewer circles a year, and 70 percent conduct 16 or fewer circles a year. The average number of circles at a school while partnered with the nonprofit is 14.

We place schools into implementation quartiles based on a school's average number of circles in each year. Schools in the top quartile are “high implementers,” schools in the second and third quartiles are “mid implementers,” and schools in the bottom quartile are “low implementers.” Figure 3 presents the number of circles in a year for high, mid, and low implementing schools. The number of schools partnering with the nonprofit increases over the

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<sup>15</sup> In Table A5, we present the regression results for the propensity score matching, which show that the main factors predicting student attendance are race, ELL status, and FRPL status. In addition, when we compare models in which the propensity score is estimated with and without lagged discipline outcomes, the fit between the two models is similar: suspensions do not reliably predict or help explain the propensity to attend a school using restorative practices.

<sup>16</sup> We can only observe implementation through the non-profit – we cannot observe school-driven restorative practices.

treatment period, but the share of schools that are high and low implementers remains relatively stable.

High implementing schools typically have upwards of twenty circles a year; low implementing schools have one circle a year. Additionally, all low implementing schools partner with the nonprofit for only one year, suggesting that these schools experimented with restorative practices briefly and then moved to another discipline process. On the other hand, schools that are high implementers have a large number of circles not only in the average year but also *each* year. We conclude from this that the way we categorize schools into high and low implementers does reflect consistent behavior among schools.

Another way to measure implementation is the number of circles at a school that result in agreed-upon contracts. Figure 4 shows the percent of contracts in a year where a contract was reached, by school implementation (high, mid, and low). Because low implementing schools have only one circle a year, all or none of the circles at these schools result an agreed-upon contract. At mid- and high implementing schools, between 20 and 80 percent of circles create contracts, and this percent increases over time. We place schools into quartiles based on the number of circles that create a contract in the average year, defining “high resolution” schools as those in the top quartile, with at least 10 circles that result in a contract in the average year. Because these high resolution schools do not perfectly align with the other measure of implementation intensity, we conclude that both measures capture different facets of implementation intensity. We examine the effects for both types of implementation intensity in the next section.



## VIII. Average Treatment Effects.

The average treatment effects of restorative practices on discipline outcomes are given by the coefficients on  $RP * Treatment Year$  in Table 3. We provide all analyses for both the full sample of matched students and the subsample of students ever suspended prior to treatment.  $RP Student$  is an indicator for students who ever attend a restorative practices school. We have eighteen coefficients of interest for each panel because we look at three different discipline infraction types (all, violent, and non-violent), two different discipline outcomes (number and days of suspension), and three years of post-treatment data.

Table 3 Panel A presents results for all treated students. Only a handful of the coefficients of interest are marginally significant, all after the first year of implementation. In the third year of implementation, the average student at a restorative practices school has 0.07 fewer suspensions per year than their peers, a 22 percent decline from baseline. Most of this decline is attributable to a reduction in non-violent suspensions.

Figure 3 shows these results graphically. Our estimate sizes are comparable, but slightly larger, than those found by other studies. Similar to our study, Davison, Penner, & Penner (2019) find no effect during the first or second year of treatment, but do find a reduction of 0.04 suspensions for the average student in the third year of suspension.<sup>17</sup> Augustine et al. (2018) found students at restorative practices schools had 0.04 fewer suspensions than students at control schools, a 13 percent reduction from baseline, and their effects are also concentrated on non-violent suspensions.<sup>18</sup> However, we do not see a significant decrease in *days* of suspension

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<sup>17</sup> Davison, Penner, & Penner (2019) do not provide baseline statistics for restorative practices schools prior to treatment.

<sup>18</sup> Augustine et al. (2018) only looks at the effect during the second year of implementation, not the first or third year.

for the overall population, whereas Augustine et al. (2018) sees a 16 percent reduction in days of suspension in the second year of restorative practices.

Table 3 Panel B presents results for the previously suspended subgroup. Overall, we see a clear pattern that restorative practices reduced suspensions for these students in later years of implementation. (Of the eighteen coefficients of interest, eight are significant.) We see 0.2 fewer suspensions per student per year for the average previously suspended students in both the third and second year of implementation, a 24 percent reduction from baseline. Days of suspension are reduced in both the second and third year by 0.5 days per student per year, an 18 percent reduction from baseline. Because we cannot link the circle-level and student-level data, it is unclear if these reductions are an effect of circles acting as substitutes for suspension or are lowering rates of student misbehavior, both of which could plausibly lower suspensions per student. However, the concentration of effects among violent offenses provides suggestive evidence that restorative approaches affects student behavior, not just policies about suspensions. We further explore the question of why effects might be delayed using quotations from interviews in the same setting in Section IX.

For all analyses in both Panel A (all students) and Panel B (the previously suspended subgroup), *RP\*1 Year Prior* is insignificant, meaning that all analyses pass the parallel trends test. However, many schools were likely seeking to suppress suspensions due to the SPLC lawsuit brought in 2010; the reductions in Figure 5 Panel B for *both* restorative practices students and comparison students support this possibility.

### *Implementation Measures.*

We look at effects for schools that are in the top and bottom of circle implementation (“high implementers” and “low implementers” as defined in the previous section). If the above effects are caused by the restorative practices intervention, we would expect more intensive implementation would lead to further reductions in suspension, and less intensive implementation would lead to fewer reductions.

Looking at the overall student population at high implementing schools, in Panel A of Table 4, we see there are no significant effects on any outcome or infraction type. For previously suspended students, shown in Panel B of Table 4, we see a pattern of results similar to the main results, with effects primarily on violent offenses in the second and third years. These effect sizes tend to be larger than the main results for students with prior suspensions in high implementing schools, although results are less precisely estimated due to the smaller sample size.

Table 5 shows low implementing schools. For *both* the overall and previously suspended student populations, we see reductions in the first year but no reductions in the second and third year. These significant coefficients are slightly larger than the coefficients for the sample of all schools. For the overall student population at low implementing schools, there is a reduction in the first treatment year of 0.6 days of suspensions, a 67 percent reduction from baseline, driven by reductions in non-violent suspensions. For previously suspended students, we see reductions in both number of suspensions and days of suspensions in the first treatment year. Seeing only effects on non-violent suspensions is suggestive that schools are altering their responses to more discretionary discipline infractions, in contrast to the main results. All but one analyses passes the parallel trends test (low implementing schools’ days of suspension for non-violent

infractions) and the coefficient for the pre-trend is about half the size of the coefficient of the significant effect in the first year.

While we do not find that more intense implementation leads to larger reductions in suspensions, we do find a differential pattern of *timing* of suspension reduction. This pattern can be partially explained by how long the schools partnered with the nonprofit. All low-implementing schools worked with the nonprofit for only one year and had only one restorative circle. These low implementers saw reduced suspensions while the partnership was ongoing, but no effect on suspensions when it ended. High implementing schools worked with the nonprofit for one to three years, and had an average of 11 circles per year. These schools did not see immediate reductions in suspensions but did see reductions in later years, particularly for violent behaviors, suggesting that longer implementation of restorative practices may influence the culture of a school more and change student behavior itself rather than just reporting practices.

As an alternative definition of high implementation, Table A4 shows results with a large number of circles that result in a contract (high resolution schools, as defined in the Implementation section). These results are similar to the high implementation results (in Table 4) than the results for all schools (in Table 3), with delayed effects only for suspensions caused by violent behavior. All analyses pass the parallel trends test.

#### *Additional Effect Estimates.*

Throughout this paper, we have defined the treatment group as students who attended a school in its first year of restorative practices use. Table A2 limits the treatment and comparison groups to students who stayed at the same school for the three years post-treatment. The majority of the analyses do not pass the parallel trends test, which could be caused by the nature of the subgroup

examined. Students who remain at a restorative practices school throughout the entire treatment may differ from students who remain at a school using exclusionary discipline school. However, if we ignore the pre-trends, results are qualitatively similar to the main results, although they should be interpreted with more caution.

We also limit the treatment group to schools that *both* partner with the nonprofit *and* self-report the use of restorative practices to *The New Orleans' Parents' Guide*. This analysis, displayed in Table A1, shows a similar pattern and effect sizes to the main results, although fewer coefficients are significant. All analyses pass the parallel trends test.

#### *Specific and Non-Specific Infractions.*

Following Hernández (2019), we assume specific incidents, like possessing a firearm, are more likely to be reported consistently than ambiguous, non-specific offenses, such as willful disobedience. One reason to look at this in addition to violent infractions is that specific and violent offenses may overlap (“fights while under school supervision”) but some violent offenses are non-specific (“misappropriate with violence”) and some specific offenses are non-violent (“leaves school or classroom without permission”). However, like violent offenses, specific offenses are expected to be reported with greater fidelity. Looking at this margin of infractions gives us another way to parse if reporting behavior or student behavior has changed.

Table A3 presents results using these outcomes. The first two columns of results are the same as in the main results. The most striking results we see are reductions in *specific* offenses for both the overall population and the subsample of students previously suspended. Similar to the findings for violent infractions, changes in suspensions for specific infractions are suggestive

of changes in student behavior, rather than changes in reporting behavior. All analyses pass the parallel trends test.

#### *Academic Outcomes.*

Most of this study focuses on the effect of restorative practices on discipline outcomes. However, this intervention could also affect academic outcomes. We might expect that restorative practices would increase the achievement of students who would have been suspended because these students do not miss days of learning. On the other hand, it is possible that restorative practices might create spillover effects through more disrupted classroom environments, lowering the achievement of classmates. Other research consistently finds negative spillovers on peers from disruptive students on a variety of academic and behavioral outcomes (Hoxby, 2000; Carrell & Hoekstra, 2010; Gottfried, 2013; Fletcher, 2010).

Table A5 presents results for academic achievement for both the overall sample and previously suspended subsample. Overall, there is no clear pattern of effects on academic achievement and there are only three significant effects, some of which are negative and some of which are positive. Student science test scores increased for the overall population in the second year, an increase of 11.2 percent of a standard deviation. However, there is a decrease in ELA test scores for both the overall sample and previously suspended subsample in the third year of treatment, decreases of seven percent and 13 percent, respectively. All analyses pass the parallel trends test.

The point estimates are a plausible size given past research on the effects of classroom disruption, reinforcing the validity of our identification strategy. Moreover, the point estimates and mixed results are consistent with the pattern of effects found by Augustine et al. (2018).

## **IX. Exploring the Delay in Effects with Qualitative Evidence.**

We use local anecdotal information combined with prior qualitative research to explore why we see the largest effects in the second and third year of the intervention. In prior research, Augustine et al. (2018) found that teacher confidence in using restorative practices, perceived impact on handling conflict, and the use of impromptu circle elements all increased from the first year of implementation to the second. Guckenberger et al. (2016) reported that over half of practitioners surveyed indicated “lack of staff buy-in” was a barrier to successful implementation. Thus, the time it takes staff to become comfortable with restorative practices could impact restorative practices’ effectiveness.

In our setting, we conducted 31 one-on-one semi-structured interviews with adults and students who have experienced both zero-tolerance and restorative approaches in school environments. Through purposive stratified sampling, we interviewed two administrators, eight support staff members, five teachers, and sixteen students from four New Orleans area schools. Several of the support staff members interviewed also taught in classrooms. Of these interviews, the two administrators, six support staff members, three teachers, and thirteen students were associated with schools included in the quantitative analysis. Interviews were recorded and then transcribed by the interviewer with the assistance of Otter.ai voice recognition software. Qualitative analysis using Atlas.ti is ongoing. Following are some excerpts from these interviews, which represent quotations rather than summary statements.

In these interviews, adults and students both mentioned it took time for individuals to become comfortable with restorative practices. Administrators mentioned that, “there’s definitely kids where it’s taken, like, two or three years to be able to actually, like, go through the full

process.” Moreover, students were not the only ones who had difficulty adjusting to a new discipline policy; one administrator noted that

“... in the short term, restorative practices, I would say are harder for adults. They take more time, they take a lot of finesse, they take a lot of practice to get really good at the questioning, to get really good at balancing being open and vulnerable but also managing your own emotions ...”

Schools actively implementing restorative practices could see results in the medium-term, rather than the short-term, due to the time it takes for practitioners and students to acclimate to a new discipline system.

## **X. Conclusion.**

The frequent use of exclusionary school discipline in the United States is a source of considerable debate, with many believing traditional school discipline is failing students. Alternative discipline systems that can replace or be combined with exclusionary discipline are one way to reduce suspension rates. Restorative practices represent one alternative that aims to work with students to restore relationships when harm has been done, rather than punish students.

Prior research has found that the use of restorative practices results in fewer student suspensions, but there are few quantitative studies that use rigorous methodology. We add to this body of work by considering the effect of restorative practices on student suspensions using an innovative design and unique data set. We observe multiple measures of restorative practices use (including school self-reporting and implementation level). Moreover, we are the first to look at



effect heterogeneity by previous suspensions. Looking at both the overall student population and students with prior suspensions also allows us to parse out any spillover effects.

Looking at the entire population of students, we see very little effect of restorative practices on discipline outcomes or academic outcomes. However, we find restorative practices reduces suspensions for students with prior suspensions. The largest impacts are for suspensions for violent behavior, which is more likely to be reported with fidelity than suspensions for non-violent behavior. Effects are most frequently seen in the second and third year of implementation, implying that it takes time for a school community to benefit from an alternative discipline policy. Delayed effects of restorative practices on student discipline outcomes are also present in other work (Davison et al., 2019), and our results are of a similar magnitude to effects seen in rigorous randomized control trials (Augustine, et al., 2018). Prior qualitative work and excerpts from a qualitative work in the same setting also point to effects taking time to be seen.

While this study builds upon prior work on restorative practices because it can address implementation issues, it has one large limitation. The implementation measures used only address circles facilitated by the nonprofit – school-run circles are not observed. Future work would benefit greatly from discipline data that includes the consequences of all behavioral infractions, be it referral, exclusionary discipline, or a school- or nonprofit-facilitated circle.

Taken with the other emerging research, this paper suggests that restorative practices could be a worthwhile alternative to exclusionary discipline, especially considering the negative consequences of suspension.

## References.

- Acosta, J., Chinman, M., Ebener, P., Malone, P., Phillips, A., & Wilks, A. (2019). Evaluation of a whole-school change intervention: Findings from a two-year cluster-randomized trial of the restorative practices intervention. *Journal of Youth and Adolescence*, *48*(5), 876–890. <https://doi.org/10.1007/s10964-019-01013-2>
- Acosta, J. D., Chinman, M., Ebener, P., Phillips, A., Xenakis, L., & Malone, P. S. (2016). A cluster-randomized trial of restorative practices: An illustration to spur high-quality research and evaluation. *Journal of Educational and Psychological Consultation*, *26*(4), 413-430.
- American Psychological Association Zero Tolerance Task Force. (2008). Are zero-tolerance policies effective in the schools? An evidentiary review and recommendations. *American Psychologist*, *63*(9), 852–862.
- Anyon, Yolanda, Jenson, J. M., Altschul, I., Farrar, J., Mcqueen, J., Greer, E., Downing, B., & Simmons, J. (2014). The persistent effect of race and the promise of alternatives to suspension in school discipline outcomes. *Children and Youth Services Review*, *44*, 379–386. <https://doi.org/10.1016/j.childyouth.2014.06.025>
- Anyon, Y., Nicotera, N., & Veeh, C. A. (2016). Contextual influences on the implementation of a schoolwide intervention to promote students' social, emotional, and academic learning. *Children & School*, *38*(2), 81–88.
- Augustine, C. H., Engberg, J., Grimm, G. E., Lee, E., Wang, E. L., Christianson, K., & Joseph, A. A. (2018). Restorative practices help reduce student suspensions. RAND.

- Balfanz, R., Byrnes, V., & Fox, J. (2014). Sent home and put off-track: The antecedents, disproportionalities, and consequences of being suspended in the ninth grade. *Journal of Applied Research on Children: Informing Policy for Children at Risk*, 5(2).
- Barrett, N., McEachin, A., Mills, J. N., & Valant, J. (2019). Disparities and discrimination in student discipline by race and family income. *Journal of Human Resources*, 0118-9267R2.
- Bifulco, R. (2012). Can nonexperimental estimates replicate estimates based on random assignment in evaluations of school choice? A within-study comparison. *Journal of Policy Analysis and Management*, 31(3), 729-751.
- Black, D. W. (2016). Reforming school discipline. *Northwestern University Law Review*, 111(1).
- Bottiani, J., Bradshaw, C., & Mendelson, T. (2016). Inequality in Black and White high school students' perceptions of school support: An examination of race in context. *Journal of Youth and Adolescence*, 45(6), 1176–1191. <https://doi.org/10.1007/s10964-015-0411-0>
- Braithwaite, J. (1993). Shame and modernity. (United Kingdom). *British Journal of Criminology*, 33(1), 1–18. <https://doi.org/10.1093/oxfordjournals.bjc.a048257>
- Brantley, S. (2017). Restorative justice in the classroom: A pipeline to nowhere for all. *George Mason University Civil Rights Law Journal*, 28(1), 69–95.
- Bross, W., Harris, D., & Liu, L. (2016). *The effects of performance-based school closure and charter takeover on student performance*. Education Research Alliance for New Orleans. Retrieved from <https://educationresearchalliancena.org/files/publications/Bross-Harris-Liu-The-Effects-of-Performance-Based-School-Closure-and-Charter-Takeover-on-Student-Performance.pdf>

- Burd-Sharps, S., & Lewis, K. (2015). *Zeroing in on place and race: Youth disconnection in America's cities*. Social Science Research Council.
- Burke, M. A., & Sass, T. R. (2013). Classroom peer effects and student achievement. *Journal of Labor Economics, 31*(1).
- Carr, S. (2012). Recovery School District grapples with discipline policies. The Times Picayune. Retrieved from [https://www.nola.com/news/education/article\\_0bc9b5bc-ce1f-5f02-b0cb-77b46c67b7d5.html](https://www.nola.com/news/education/article_0bc9b5bc-ce1f-5f02-b0cb-77b46c67b7d5.html).
- Carrell, S. E., & Hoekstra, M. L. (2010). Externalities in the classroom: How children exposed to domestic violence affect everyone's kids. *American Economic Journal: Applied Economics, 2*(1), 211-28.
- Carrell, S. E., Hoekstra, M., & Kuka, E. (2018). The long-run effects of disruptive peers. *American Economic Review, 108*(11), 3377-3415.
- Charpentier, C. (2008). Parent blasts New Orleans charter school's expulsion process. The Times-Picayune. Retrieved from [http://www.nola.com/news/index.ssf/2008/12/parent\\_blasts\\_new\\_orleans\\_char.html](http://www.nola.com/news/index.ssf/2008/12/parent_blasts_new_orleans_char.html)
- Darling-Hammond, S., Fronius, T. A., Sutherland, H., Guckenburg, S., Petrosino, A., & Hurley, N. (2020). Effectiveness of restorative justice in US K-12 schools: A review of quantitative research. *Contemporary School Psychology, 24*, 295-308.
- Davison, M., Penner, A. M., & Penner, E. K. (2019). Restorative for all? Racial disproportionality and school discipline under restorative justice. *EdWorkingPaper No. 19-75*. <https://edworkingpapers.com/sites/default/files/ai19-75.pdf>

- Diliberti, M., Jackson, M., Correa, S., & Padgett, Z. (2019). *Crime, Violence, Discipline, and Safety in US Public Schools: Findings from the School Survey on Crime and Safety: 2017-18. First Look. NCES 2019-061*. National Center for Education Statistics.
- Diliberti, M., Jackson, M., & Kemp, J. (2017). *Crime, Violence, Discipline, and Safety in US Public Schools: Findings from the School Survey on Crime and Safety: 2015-16. First Look. NCES 2017-122*. National Center for Education Statistics.
- Eden, M. (2017). *School discipline reform and disorder: Evidence from New York City Public Schools, 2012-16*. Manhattan Institute.
- Evans, K., & Vaandering, D. (2016). *The Little Book of Restorative Justice in Education: Fostering Responsibility, Healing, and Hope in Schools*. Simon and Schuster.
- Fletcher, J. (2010). Spillover effects of inclusion of classmates with emotional problems on test scores in early elementary school. *Journal of Policy Analysis and Management*, 29(1), 69-83.
- Fronius, T., Darling-Hammond, S., Persson, H., Guckenburger, S., Hurley, N., & Petrosino, A. (2019). Restorative Justice in US Schools: An Updated Research Review. *WestEd*.
- Gage, N. A., Larson, A., Sugai, G., & Chafouleas, S. M. (2016). Student perceptions of school climate as predictors of office discipline referrals. *American Educational Research Journal*, 53(3), 492–515. <https://doi.org/10.3102/0002831216637349>
- Gottfried, M. A. (2013). The spillover effects of grade-retained classmates: Evidence from urban elementary schools. *American Journal of Education*, 119(3), 405-444.
- Guckenburger, S., Hurley, N., Persson, H., Fronius, T., & Petrosino, A. (2015). Restorative justice in U.S. schools: Summary findings from interviews with experts. *WestEd*.

- Gregory, A., Clawson, K., Davis, A., & Gerewitz, J. (2016). The promise of restorative practices to transform teacher-student relationships and achieve equality in school discipline. *Journal of Educational and Psychological Consultation*, 26(4), 325–353.  
<https://doi.org/10.1080/10474412.2014.929950>
- Haney, K., Thomas, J., & Vaughn, C. (2011). Identity border crossings within school communities, precursors to restorative conferencing: A symbolic interactionist study. *School Community Journal*, 21(2), 55–80.
- Hashim, A. K., Strunk, K. O., & Dhaliwal, T. K. (2018). Justice for all? Suspension bans and restorative justice programs in the Los Angeles Unified School District. *Peabody Journal of Education*, 93(2), 0–0. <https://doi.org/10.1080/0161956X.2018.1435040>
- Hernández, M. (2019). Is There No Excuse? The Effects of the New Orleans School Reforms on School Discipline. Education Research Alliance. Retrieved from <https://educationresearchalliancena.org/files/publications/03192019-Hernandez-Is-There-No-Excuse-The-Effects-of-the-New-Orleans-School-Reforms-on-Exclusionary-Discipline-Practices.pdf>.
- Hoxby, C. M. (2002). The power of peers: how does the makeup of a classroom influence achievement?. *Education Next*, 2(2), 57-64.
- Ingraham, C. L., Hokoda, A., Moehlenbruck, D., Karafin, M., Manzo, C., & Ramirez, D. (2016). Consultation and collaboration to develop and implement restorative practices in a culturally and linguistically diverse elementary school. *Journal of Educational and Psychological Consultation: Restorative Justice*, 26(4), 354–384.  
<https://doi.org/10.1080/10474412.2015.1124782>

- Kehoe, M., Bourke-Taylor, H., & Broderick, D. (2018). Developing student social skills using restorative practices: A new framework called HEART. *Social Psychology of Education, 21*(1), 189-207.
- Kelling, G. L., & Wilson, J. Q. (1982). Broken windows. *Atlantic Monthly, 249*(3), 29-38.
- Kline, D. M. S. (2016). Can restorative practices help to reduce disparities in school discipline data? A review of the literature. *Multicultural Perspectives, 18*(2), 97–102.  
<https://doi.org/10.1080/15210960.2016.1159099>
- Knight, D., & Wadhwa, A. (2014). Expanding opportunity through critical restorative justice. *Schools, 11*(1), 11–33. <https://doi.org/10.1086/675745>
- Kurki, L. (1999). Incorporating restorative and community justice into American sentencing and corrections. *Sentencing & Corrections: Issues for the 21<sup>st</sup> Century*. U.S. Department of Justice. Retrieved from <https://www.ncjrs.gov/pdffiles1/nij/175723.pdf>.
- Lauen, D. L., Fuller, S., Barrett, N., & Janda, L. (2017). Early colleges at scale: Impacts on secondary and postsecondary outcomes. *American Journal of Education, 123*(4), 523-551.
- Liberman, A., Katz, M., The Urban Institute, & United States of America. (2017). *Implementing restorative justice in Rhode Island schools: First-year implementation of case conferencing*. Urban Institute.
- Loveless, T. (2017). *The 2017 Brown Center report on American education: How well are American students learning?* The Brown Center on Education Policy, The Brookings Institution.

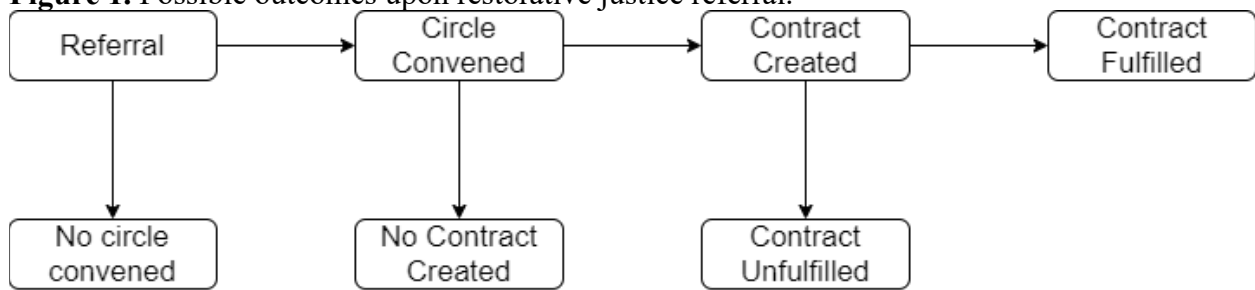
- Lustick, H., Norton, C., Lopez, S. R., & Greene-Rooks, J. H. (2020). Restorative practices for empowerment: A social work lens. *Children & Schools, 42*(2), 89–98.  
<https://doi.org/10.1093/cs/cdaa006>
- Marchbanks, M. P., Blake, J. J., Booth, E. A., Carmichael, D., Seibert, A. L., & Fabelo, T. (2015). The economic effects of exclusionary discipline on grade retention in high school dropout. In D. J. Losen (Ed.), *Closing the School Discipline Gap: Equitable Remedies for Excessive Exclusion*. Teachers College Press.
- Mongan, P., & Walker, R. (2012). “The road to hell Is paved with good intentions”: A historical, theoretical, and legal analysis of zero-tolerance weapons policies in American schools. *Preventing School Failure, 56*(4), 232–240.  
<https://doi.org/10.1080/1045988X.2011.654366>
- Okonofua, J. A., Paunesku, D., & Walton, G. M. (2016). Brief intervention to encourage empathic discipline cuts suspension rates in half among adolescents. *Proceedings of the National Academy of Sciences, 113*(19), 5221–5226.
- Ortega, L., Lyubansky, M., Nettles, S., & Espelage, D. L. (2016). Outcomes of a restorative circles program in a high school setting. *Psychology of Violence, 6*(3), 459–468.  
<https://doi.org/10.1037/vio0000048>
- Rafa, A. (2019). The status of school discipline in state policy. *Education Commission of the States*. Retrieved May, 22, 2019.
- Shollenberger, T. L. (2015). Racial disparities in school suspension and subsequent outcomes: Evidence from the National Longitudinal Survey of Youth. In D. J. Losen (Ed.), *Closing the School Discipline Gap: Equitable Remedies for Excessive Exclusion*. Teachers College Press.



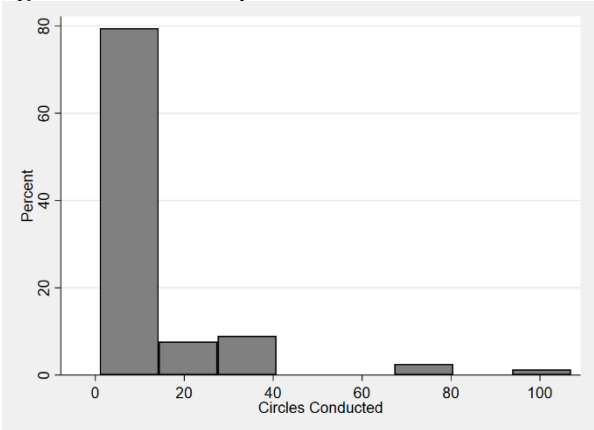
- Sandwick, T., Hahn, J. W., & Ayoub, L. H. (2019). Fostering community, sharing power: Lessons for building restorative justice school cultures. *Education Policy Analysis Archives*, 27(145). <https://doi.org/10.14507/epaa.27.4296>
- Short, R., Case, G., & McKenzie, K. (2018). The long-term impact of a whole school approach of restorative practice: The views of secondary school teachers. *Pastoral Care in Education*, 36(4), 313–324. <https://doi.org/10.1080/02643944.2018.1528625>
- Theriot, M. T., Craun, S. W., & Dupper, D. R. (2010). Multilevel evaluation of factors predicting school exclusion among middle and high school students. *Children and Youth Services Review*, 32(1), 13-19.
- Togut, T. D. (2011). The gestalt of the school-to- prison pipeline: The duality of overrepresentation of minorities in special education and racial disparity in school discipline on minorities. *American University Journal of Gender, Social Policy, and the Law*, 20(1), 163–181.
- U.S. Department of Education Office for Civil Rights. (2014). *Data snapshot: School discipline*.
- U.S. Department of Education. (2016). Digest of Education Statistics 2012. Table 233.20. Institute of Education Sciences, National Center for Education Statistics. Retrieved from [https://nces.ed.gov/programs/digest/d16/tables/dt16\\_233.20.asp](https://nces.ed.gov/programs/digest/d16/tables/dt16_233.20.asp).
- Wearmouth, J., & Berryman, M. (2012). Viewing restorative approaches to addressing challenging behaviour of minority ethnic students through a community of practice lens. *Cambridge Journal of Education*, 42(2), 253-268.
- Wolfers, J. (2006). Did unilateral divorce laws raise divorce rates? A reconciliation and new results. *American Economic Review*, 96(5), 1802-1820.
- Zehr, H. (2015a). *Little book of restorative justice*. Good Books.

**Figures.**

**Figure 1.** Possible outcomes upon restorative justice referral.

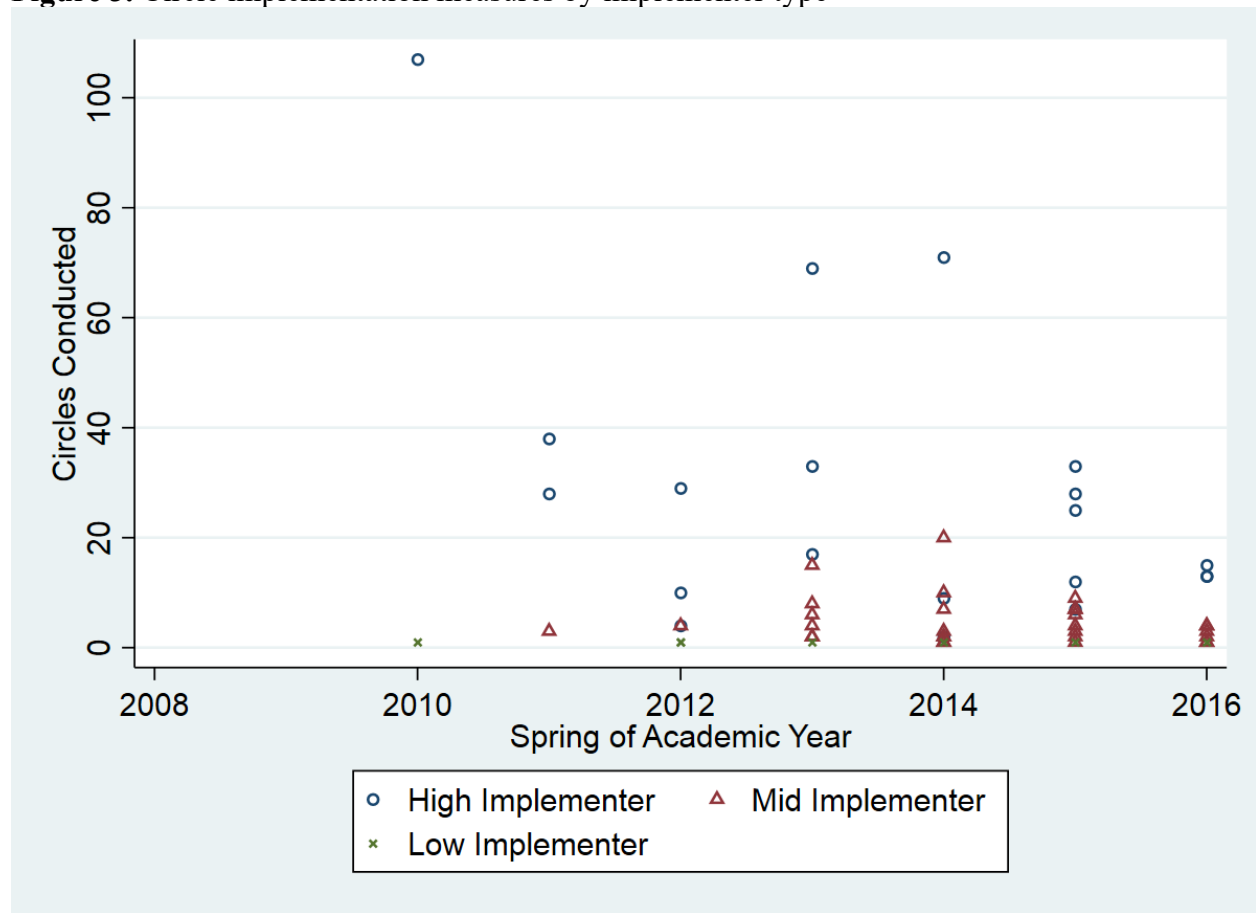


**Figure 2.** Circle implementation measures.



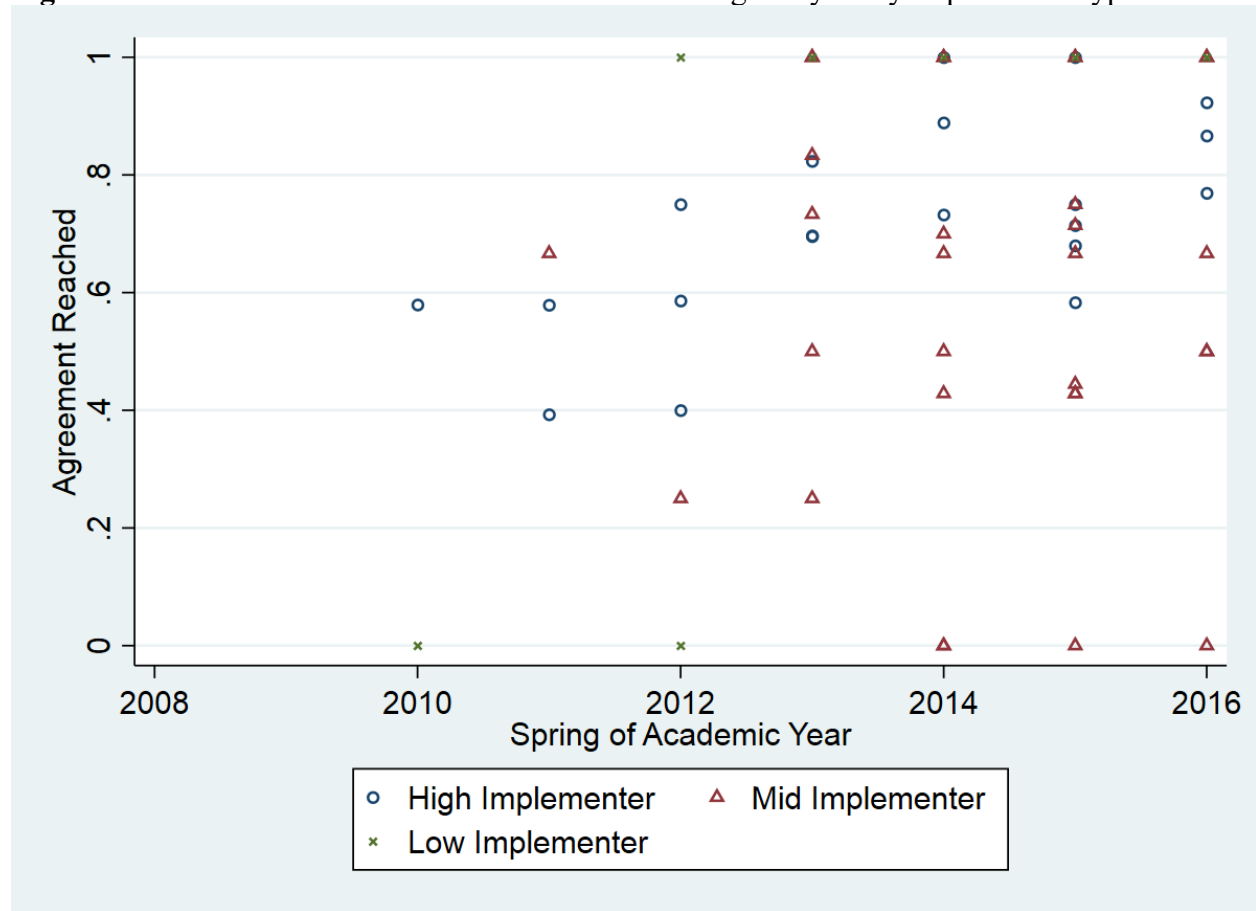
*Note:* Histograms use the number of circles conducted by school-year.

**Figure 3.** Circle implementation measures by implementer type



*Notes:* Each point represents a school in New Orleans partnered with the nonprofit during a given year. Schools represented are those in the analytical sample.

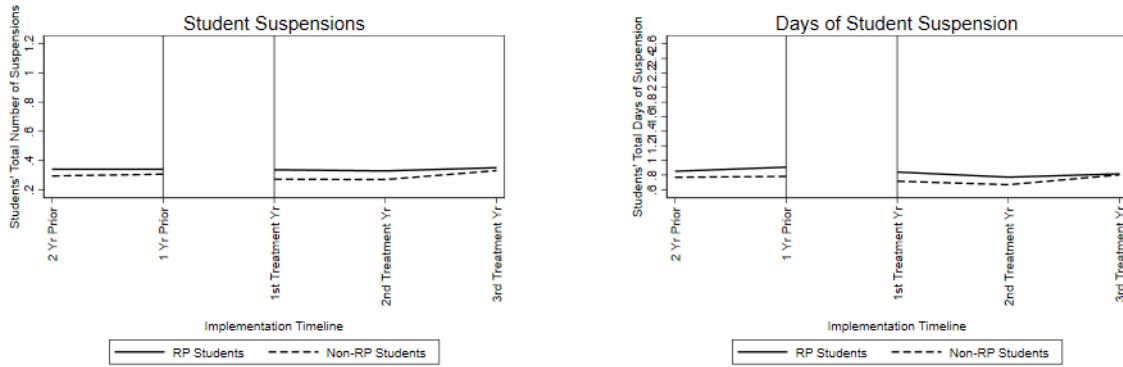
**Figure 4.** Percent of circles that result in resolution in a given year by implementer type



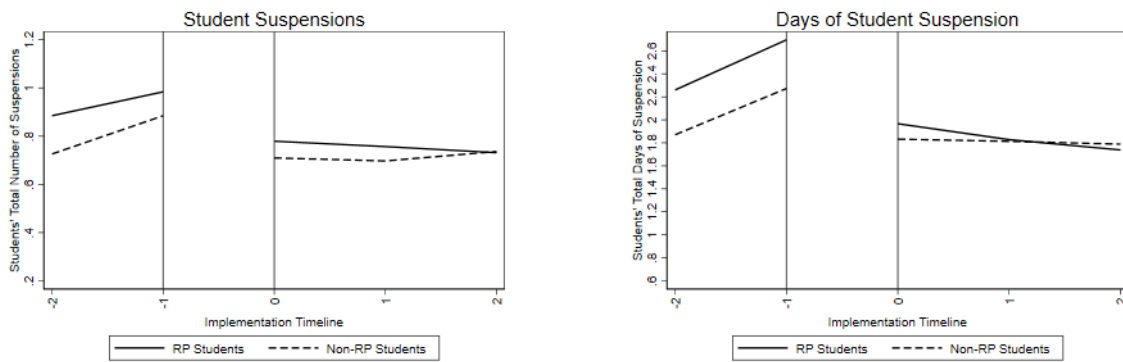
*Notes:* Each point represents a school in New Orleans partnered with the nonprofit during a given year. Schools represented are those in the analytical sample.

**Figure 5.** Effects of Restorative Practices on Student Discipline Outcomes – All Schools.

Panel A. All students.



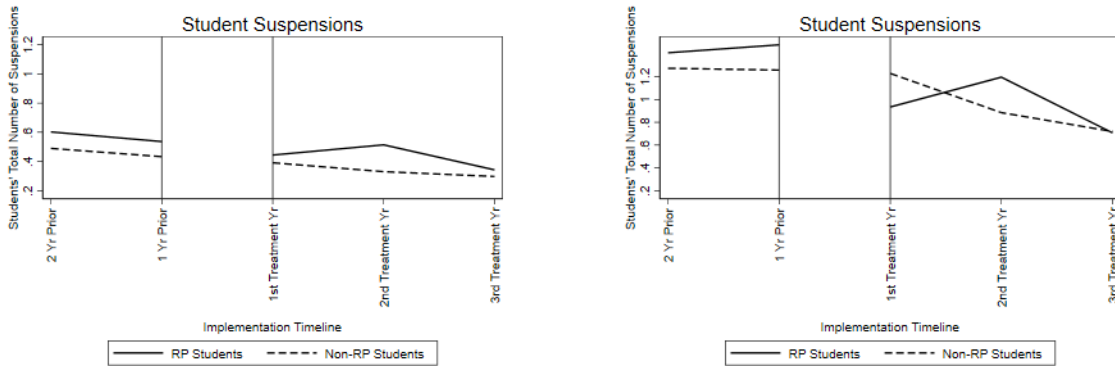
Panel B. Students previously suspended.



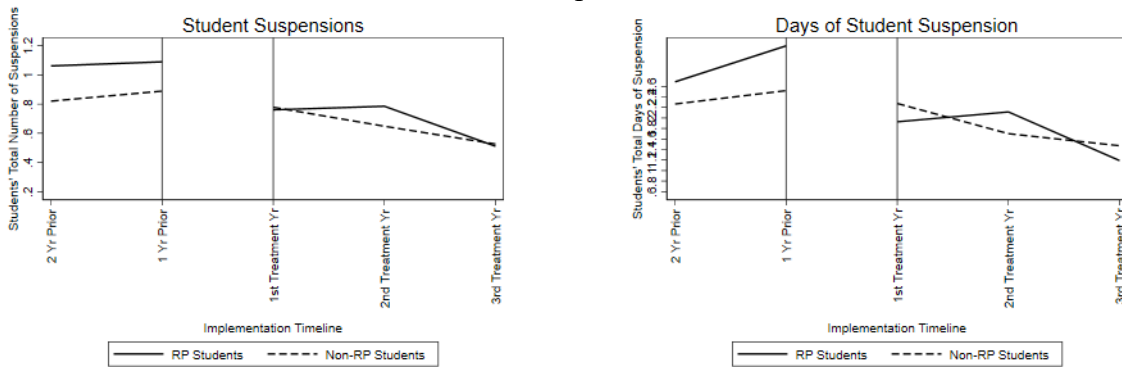
*Notes:* Estimates are based on equation (1); Table 3 provides the equivalent average treatment effect estimates. “RP Students” are students who attended a restorative practices school; “Non-RP students” are matched students who attended a comparison school.

**Figure 6.** Effects of Restorative Practices on Student Discipline Outcomes – Low Implementer Schools

Panel A. All students.



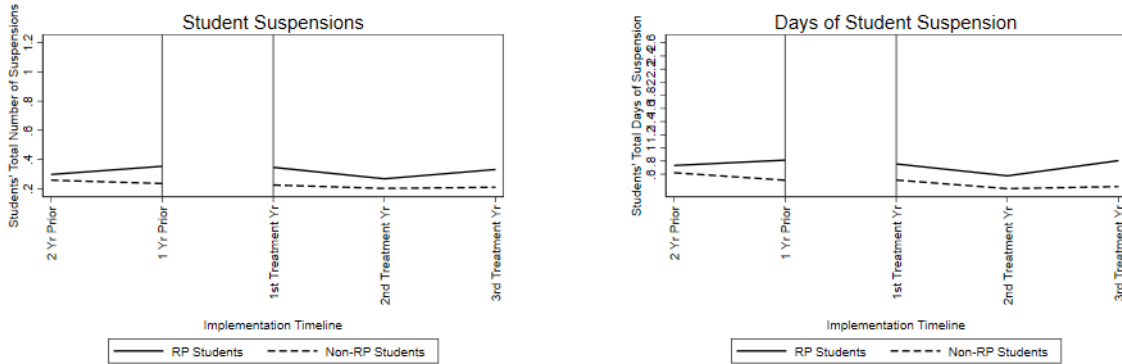
Panel B. Students previously suspended.



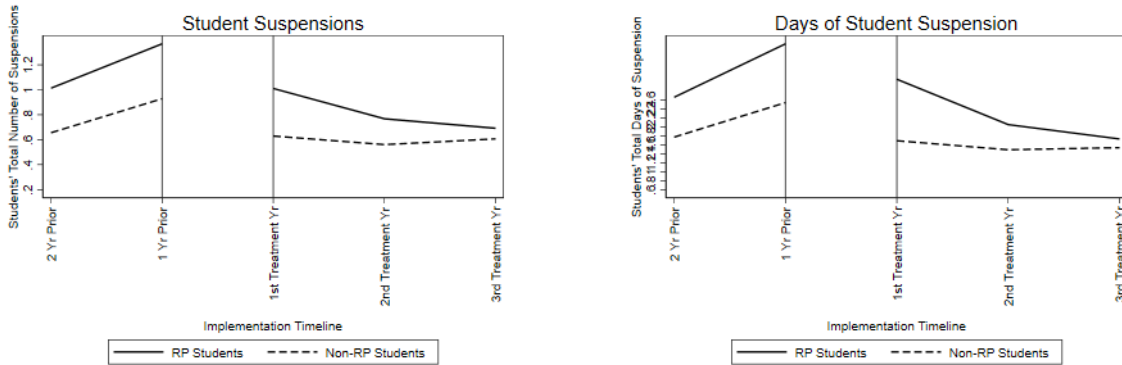
*Notes:* Estimates are based on equation (1); Table 3 provides the equivalent average treatment effect estimates. “RP Students” are students who attended a low implementing restorative practices school (i.e., a school in the bottom quartile of circles); “Non-RP students” are matched students who attended a comparison school.

**Figure 7.** Effects of Restorative Practices on Student Discipline Outcomes – High Implementer Schools

Panel A. All students.



Panel B. Students previously suspended.



*Notes:* Estimates are based on equation (1); Table 3 provides the equivalent average treatment effect estimates. “RP Students” are students who attended a high implementing restorative practices school (i.e., a school in the top quartile of circles); “Non-RP students” are matched students who attended a comparison school.



Tables.

**Table 1.A.** Student demographics prior to restorative justice adoption.

	Year Prior to Restorative Practices Partnership Adoption		
	1	2	3
	Restorative Practices	Comparison (All)	Comparison (Matched)
<i>Outcome Variables</i>			
Total Suspensions	0.32	<b>0.45</b>	<b>0.39</b>
Total Days of Discipline	0.88	<b>1.15</b>	<b>1.03</b>
Math	-0.65	<b>-0.25</b>	<b>-0.54</b>
ELA	-0.62	<b>-0.28</b>	-0.54
Science	-0.71	<b>-0.28</b>	-0.57
Social Studies	-0.55	<b>-0.25</b>	<b>-0.46</b>
<i>Control Variables</i>			
Male	0.52	<b>0.51</b>	0.52
Black	0.80	<b>0.64</b>	0.79
Other Race	0.11	<b>0.13</b>	0.11
FRL	0.89	<b>0.77</b>	<b>0.87</b>
ELL	0.07	0.07	0.07
Special Needs	0.09	0.09	0.10

*Notes:* The reported means are from 2009-2010 school year – the last pre-treatment period – for all groups. The restorative practices group includes data for the 10,382 treated students who are matched to a comparison student. The comparison-all column includes data for the 73,322 possible comparison students. The comparison-matched group includes the 9,187 students matched to a restorative practices student. Bolded numbers indicate that a difference is significant between the treatment and comparison group at the 5% level.

**Table 1.B.** Student demographics prior to restorative justice adoption, for sample of students with prior suspensions.

	Year Prior to Restorative Practices Partnership Adoption		
	1	2	3
	Restorative Practices	Comparison (All)	Comparison (Matched)
<i>Outcome Variables</i>			
Total Suspensions	0.50	<b>0.83</b>	<b>0.62</b>
Total Days of Discipline	1.41	<b>2.14</b>	<b>1.66</b>
Math	-0.72	<b>-0.46</b>	<b>-0.59</b>
ELA	-0.70	<b>-0.49</b>	<b>-0.60</b>
Science	-0.76	<b>-0.48</b>	-0.69
Social Studies	-0.61	<b>-0.44</b>	-0.60
<i>Control Variables</i>			
Male	0.58	0.57	0.57
Black	0.84	<b>0.72</b>	0.83
Other Race	0.09	0.09	0.09
FRL	0.91	<b>0.82</b>	0.91
ELL	0.06	<b>0.05</b>	<b>0.05</b>
Special Needs	0.09	<b>0.10</b>	0.09

*Notes:* The reported means are from 2009-2010 school year – the last pre-treatment period – for all groups. The restorative practices group includes data for the 6,304 treated students who were suspended prior to treatment and are matched to a comparison student. The comparison-all column includes data for the 39,255 possible comparison students. The comparison-matched group includes the 5,772 students matched to a restorative practices student. Bolded numbers indicate that a difference is significant between the treatment and comparison group at the 5% level.

**Table 1.C.** Student demographics prior to restorative justice adoption, for school populations prior to adoption.

	Year Prior to Restorative Practices Partnership Adoption	
	1	2
	Restorative Practices	Comparison (All)
<i>Outcome Variables</i>		
Total Suspensions	0.60	<b>0.39</b>
Total Days of Discipline	1.45	<b>1.00</b>
Math	-0.39	<b>-0.26</b>
ELA	-0.40	<b>-0.28</b>
Science	-0.39	<b>-0.28</b>
Social Studies	-0.30	<b>-0.25</b>
<i>Control Variables</i>		
Male	0.51	0.52
Black	0.68	0.66
Other Race	0.18	<b>0.13</b>
FRL	0.75	<b>0.81</b>
ELL	0.10	<b>0.07</b>
Special Needs	0.08	0.09

*Notes:* The reported means are from 2009-2010 school year – the last pre-treatment period – for all groups. The restorative practices group includes data for all 13,158 students attending a future treatment school. The comparison-all column includes data for the 55,693 students attending a future comparison school. Bolded numbers indicate that a difference is significant between the treatment and comparison group at the 5% level.

**Table 3.** Effects of restorative practices on student discipline outcomes for all schools.

	All Infractions		Non-Violent Infractions		Violent Infractions	
	Number of Suspensions	Days of Suspension	Number of Suspensions	Days of Suspensions	Number of Suspensions	Days of Suspension
<b>Panel A: All Students</b>						
RP Student	0.027 (0.025)	0.039 (0.066)	0.016 (0.020)	0.005 (0.048)	0.014 (0.011)	0.042 (0.036)
RP*1 Year Prior	-0.037 (0.030)	-0.003 (0.075)	-0.022 (0.023)	-0.012 (0.051)	-0.015 (0.014)	0.014 (0.050)
RP*1st Treatment Year	-0.021 (0.045)	-0.055 (0.117)	-0.019 (0.033)	-0.087 (0.080)	-0.001 (0.019)	0.033 (0.061)
RP*2nd Treatment Year	-0.043 (0.051)	-0.08 (0.102)	-0.01 (0.049)	0.018 (0.080)	-0.031* (0.018)	-0.100* (0.057)
RP*3rd Treatment Year	-0.074* (0.038)	-0.168 (0.119)	-0.049* (0.027)	-0.108 (0.082)	-0.025 (0.020)	-0.065 (0.067)
<i>N</i>	78,122	78,122	78,122	78,122	78,122	78,122
<b>Panel B: Students with Prior Suspension</b>						
RP Student	0.095** (0.042)	0.221 (0.159)	0.047 (0.036)	0.063 (0.113)	0.054** (0.023)	0.187** (0.088)
RP*1 Year Prior	-0.083 (0.067)	0.005 (0.218)	-0.045 (0.052)	-0.009 (0.143)	-0.037 (0.036)	0.03 (0.132)
RP*1st Treatment Year	-0.138 (0.098)	-0.367 (0.298)	-0.05 (0.072)	-0.183 (0.198)	-0.087* (0.046)	-0.192 (0.176)
RP*2nd Treatment Year	-0.172* (0.095)	-0.480* (0.246)	-0.045 (0.090)	-0.036 (0.185)	-0.123*** (0.039)	-0.447*** (0.129)
RP*3rd Treatment Year	-0.204** (0.080)	-0.469* (0.277)	-0.109 (0.067)	-0.112 (0.203)	-0.093** (0.038)	-0.376** (0.149)
<i>N</i>	24,581	24,581	24,581	24,581	24,581	24,581

*Notes.* Sample includes matched treated students at any restorative practices schools and their comparison student matches. Each cell represents a separate difference-in-difference regression with estimation at the student-level. *RP Student* is an indicator for if a student ever attends a restorative practices school. The average treatment effects of restorative practices on discipline outcomes are given by the coefficients on *RP\*Treatment Year*, the vector  $\beta_r$ , from equation (1). All models include additional student-level controls for prior achievement, gender, race, special needs status, and free- and reduced-lunch status. Standard errors are clustered at the school level.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table 4.** Effects of restorative practices on student discipline outcomes for high implementers.

	All Infractions		Non-Violent Infractions		Violent Infractions	
	Number of Suspensions	Days of Suspension	Number of Suspensions	Days of Suspensions	Number of Suspensions	Days of Suspension
<b>Panel A: All Students</b>						
RP Student	0.023 (0.050)	0.026 (0.119)	0.017 (0.035)	0.019 (0.083)	0.009 (0.022)	0.013 (0.058)
RP*1 Year Prior	0.061 (0.054)	0.224 (0.141)	0.043 (0.039)	0.128 (0.094)	0.019 (0.023)	0.106 (0.083)
RP*1st Treatment Year	0.022 (0.076)	0.027 (0.164)	0.007 (0.059)	0.017 (0.117)	0.016 (0.032)	0.006 (0.081)
RP*2nd Treatment Year	-0.087 (0.089)	-0.022 (0.174)	-0.072 (0.074)	0.029 (0.115)	-0.015 (0.027)	-0.072 (0.100)
RP*3rd Treatment Year	0.029 (0.087)	0.181 (0.251)	0.038 (0.064)	0.164 (0.171)	-0.009 (0.038)	0.017 (0.121)
<i>N</i>	14,803	14,803	14,803	14,803	14,803	14,803
<b>Panel B: Students with Prior Suspension</b>						
RP Student	0.319*** (0.100)	0.850*** (0.305)	0.188** (0.083)	0.533** (0.246)	0.144*** (0.052)	0.354* (0.199)
RP*1 Year Prior	0.046 (0.122)	0.259 (0.405)	0.1 (0.114)	0.107 (0.322)	-0.055 (0.060)	0.166 (0.271)
RP*1st Treatment Year	-0.126 (0.199)	-0.102 (0.531)	-0.036 (0.168)	-0.068 (0.416)	-0.081 (0.073)	0.009 (0.303)
RP*2nd Treatment Year	-0.356** (0.138)	-0.922** (0.424)	-0.238* (0.126)	-0.524 (0.349)	-0.113* (0.058)	-0.407* (0.242)
RP*3rd Treatment Year	-0.269* (0.137)	-0.789 (0.507)	-0.157 (0.124)	-0.352 (0.415)	-0.122* (0.069)	-0.473* (0.280)
<i>N</i>	4,758	4,758	4,758	4,758	4,758	4,758

*Notes.* Sample includes matched treated students at a high implementing restorative practices schools (i.e., one in the top quartile of circles) and comparison student matches. Each cell represents a separate difference-in-difference regression with estimation at the student-level. *RP Student* is an indicator for if a student ever attends a restorative practices school. The average treatment effects of restorative practices on discipline outcomes are given by the coefficients on *RP\*Treatment Year*, the vector  $\beta_r$  from equation (1). All models include additional student-level controls for prior achievement, gender, race, special needs status, and free- and reduced-lunch status. Standard errors are clustered at the school level.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table 5.** Effects of restorative practices on student discipline outcomes for low implementers.

	All Infractions		Non-Violent Infractions		Violent Infractions	
	Number of Suspensions	Days of Suspension	Number of Suspensions	Days of Suspensions	Number of Suspensions	Days of Suspension
<b>Panel A: All Students</b>						
RP Student	0.045 (0.059)	0.042 (0.238)	0.03 (0.055)	-0.017 (0.171)	0.023 (0.030)	0.061 (0.138)
RP*1 Year Prior	-0.04 (0.095)	-0.023 (0.198)	-0.038 (0.080)	0.007 (0.131)	-0.002 (0.044)	0.019 (0.146)
RP*1st Treatment Year	-0.071 (0.084)	-0.629** (0.271)	-0.07 (0.070)	-0.491*** (0.185)	-0.006 (0.035)	-0.166 (0.147)
RP*2nd Treatment Year	0.072 (0.077)	0.244 (0.246)	0.089 (0.069)	0.226 (0.181)	-0.028 (0.051)	-0.028 (0.142)
RP*3rd Treatment Year	-0.092 (0.076)	-0.162 (0.245)	-0.072 (0.060)	-0.161 (0.150)	-0.028 (0.052)	-0.047 (0.154)
<i>N</i>	9,157	9,157	9,157	9,157	9,157	9,157
<b>Panel B: Students with Prior Suspension</b>						
RP Student	0.132 (0.100)	0.131 (0.385)	0.116 (0.074)	0.136 (0.247)	0.03 (0.057)	0.089 (0.226)
RP*1 Year Prior	-0.005 (0.140)	0.541 (0.411)	-0.026 (0.090)	0.435* (0.257)	0.019 (0.081)	0.173 (0.269)
RP*1st Treatment Year	-0.273** (0.133)	-0.851* (0.453)	-0.247*** (0.087)	-0.799** (0.320)	-0.04 (0.083)	-0.165 (0.288)
RP*2nd Treatment Year	-0.014 (0.151)	0.392 (0.449)	-0.036 (0.136)	0.03 (0.366)	0.001 (0.069)	0.207 (0.256)
RP*3rd Treatment Year	-0.154 (0.154)	-0.32 (0.527)	-0.149 (0.107)	-0.38 (0.380)	-0.029 (0.079)	-0.137 (0.269)
<i>N</i>	5,140	5,140	5,140	5,140	5,140	5,140

*Notes.* Sample includes matched treated students at a low implementing restorative practices schools (i.e., one in the bottom quartile of circles) and comparison student matches. Each cell represents a separate difference-in-difference regression with estimation at the student-level. *RP Student* is an indicator for if a student ever attends a restorative practices school. The average treatment effects of restorative practices on discipline outcomes are given by the coefficients on *RP\*Treatment Year*, the vector  $\beta_r$  from equation (1). All models include additional student-level controls for prior achievement, gender, race, special needs status, and free- and reduced-lunch status. Standard errors are clustered at the school level.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table A1.** Effects of restorative practices on student discipline outcomes for schools that both partner with nonprofit and self-report using restorative practices.

	All Infractions		Non-Violent Infractions		Violent Infractions	
	Number of Suspensions	Days of Suspension	Number of Suspensions	Days of Suspensions	Number of Suspensions	Days of Suspension
<b>Panel A: All Students</b>						
RP Student	0.016 (0.028)	0.014 (0.078)	0.011 (0.022)	-0.008 (0.051)	0.008 (0.013)	0.028 (0.044)
RP*1 Year Prior	-0.03 (0.034)	0.019 (0.096)	-0.021 (0.023)	-0.009 (0.056)	-0.006 (0.018)	0.043 (0.063)
RP*1st Treatment Year	-0.011 (0.043)	-0.061 (0.108)	-0.006 (0.030)	-0.065 (0.073)	0 (0.021)	0.013 (0.064)
RP*2nd Treatment Year	0.006 (0.049)	0.025 (0.102)	0.033 (0.047)	0.088 (0.081)	-0.025 (0.017)	-0.061 (0.057)
RP*3rd Treatment Year	-0.031 (0.044)	-0.04 (0.141)	-0.016 (0.030)	-0.023 (0.094)	-0.01 (0.022)	-0.002 (0.079)
<i>N</i>	52,585	52,585	52,585	52,585	52,585	52,585
<b>Panel B: Students with Prior Suspension</b>						
RP Student	0.117** (0.054)	0.285 (0.176)	0.065 (0.041)	0.123 (0.115)	0.060* (0.030)	0.190* (0.106)
RP*1 Year Prior	-0.137 (0.088)	-0.143 (0.274)	-0.073 (0.060)	-0.104 (0.170)	-0.059 (0.050)	0.003 (0.180)
RP*1st Treatment Year	-0.099 (0.098)	-0.377 (0.283)	-0.001 (0.070)	-0.148 (0.169)	-0.094* (0.050)	-0.23 (0.195)
RP*2nd Treatment Year	-0.101 (0.111)	-0.413 (0.277)	0.038 (0.105)	0.032 (0.208)	-0.135*** (0.043)	-0.424*** (0.147)
RP*3rd Treatment Year	-0.15 (0.093)	-0.392 (0.317)	-0.05 (0.076)	-0.018 (0.226)	-0.092** (0.039)	-0.369** (0.156)
<i>N</i>	15,024	15,024	15,024	15,024	15,024	15,024

*Notes.* Sample includes matched treated students at a restorative practices schools that reported using restorative practices to the New Orleans Parents' Guide, and treated students' comparison student matches. Each cell represents a separate difference-in-difference regression with estimation at the student-level. *RP Student* is an indicator for if a student ever attends a restorative practices school. The average treatment effects of restorative practices on discipline outcomes are given by the coefficients on *RP\*Treatment Year*, the vector  $\beta_r$  from equation (1). All models include additional student-level controls for prior achievement, gender, race, special needs status, and free- and reduced-lunch status. Standard errors are clustered at the school level.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table A2.** Effects of restorative practices on student discipline outcomes for students that remain in same school throughout entirety of treatment.

	All Infractions		Non-Violent Infractions		Violent Infractions	
	Number of Suspensions	Days of Suspension	Number of Suspensions	Days of Suspensions	Number of Suspensions	Days of Suspension
<b>Panel A: All Students</b>						
RP Student	0.021 (0.021)	0.004 (0.061)	0.014 (0.017)	-0.01 (0.046)	0.006 (0.014)	0.010 (0.040)
RP*1 Year Prior	-0.068** (0.027)	-0.162** (0.073)	-0.022 (0.018)	-0.03 (0.046)	-0.047*** (0.017)	-0.132*** (0.050)
RP*1st Treatment Year	-0.032 (0.034)	-0.08 (0.095)	-0.024 (0.022)	-0.093 (0.060)	-0.01 (0.019)	0.015 (0.050)
RP*2nd Treatment Year	-0.042 (0.049)	-0.111 (0.098)	-0.015 (0.043)	-0.026 (0.067)	-0.025 (0.025)	-0.082 (0.065)
RP*3rd Treatment Year	-0.125** (0.060)	-0.264 (0.167)	-0.067* (0.040)	-0.13 (0.107)	-0.054* (0.031)	-0.13 (0.091)
<i>N</i>	33,214	33,214	33,214	33,214	33,214	33,214
<b>Panel B: Students with Prior Suspension</b>						
RP Student	0.108* (0.059)	0.185 (0.181)	0.036 (0.040)	-0.043 (0.132)	0.085** (0.039)	0.265** (0.131)
RP*1 Year Prior	-0.235** (0.101)	-0.621** (0.291)	-0.058 (0.064)	-0.029 (0.188)	-0.193*** (0.067)	-0.632*** (0.194)
RP*1st Treatment Year	-0.228* (0.121)	-0.585 (0.376)	-0.118 (0.086)	-0.363 (0.246)	-0.126* (0.064)	-0.268 (0.193)
RP*2nd Treatment Year	-0.311* (0.185)	-0.823** (0.386)	-0.099 (0.163)	-0.079 (0.287)	-0.209*** (0.071)	-0.758*** (0.207)
RP*3rd Treatment Year	-0.402*** (0.132)	-0.815* (0.434)	-0.189* (0.097)	-0.285 (0.282)	-0.212*** (0.077)	-0.582** (0.281)
<i>N</i>	7,120	7,120	7,120	7,120	7,120	7,120

*Notes.* Sample includes matched treated students who remained at a restorative practices schools throughout the three years of treatment, and these treated students' comparison student matches. Each cell represents a separate difference-in-difference regression with estimation at the student-level. *RP Student* is an indicator for if a student ever attends a restorative practices school. The average treatment effects of restorative practices on discipline outcomes are given by the coefficients on *RP\*Treatment Year*, the vector  $\beta_r$  from equation (1). All models include additional student-level controls for prior achievement, gender, race, special needs status, and free- and reduced-lunch status. Standard errors are clustered at the school level.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$



**Table A3.** Effects of restorative practices on student discipline outcomes for all schools, by specificity of discipline infraction.

	All Infractions		Non-Specific Infractions		Specific Infractions	
	Number of Suspensions	Days of Suspension	Number of Suspensions	Days of Suspensions	Number of Suspensions	Days of Suspension
<b>Panel A: All Students</b>						
RP Student	0.027 (0.025)	0.039 (0.066)	0.014 (0.017)	-0.005 (0.040)	0.016 (0.012)	0.052 (0.042)
RP*1 Year Prior	-0.037 (0.030)	-0.003 (0.075)	-0.021 (0.021)	0.013 (0.042)	-0.016 (0.016)	-0.012 (0.052)
RP*1st Treatment Year	-0.021 (0.045)	-0.055 (0.117)	-0.014 (0.029)	-0.043 (0.067)	-0.007 (0.021)	-0.012 (0.073)
RP*2nd Treatment Year	-0.043 (0.051)	-0.08 (0.102)	-0.001 (0.045)	0.047 (0.070)	-0.040** (0.019)	-0.128* (0.065)
RP*3rd Treatment Year	-0.074* (0.038)	-0.168 (0.119)	-0.04 (0.025)	-0.065 (0.068)	-0.034 (0.024)	-0.107 (0.084)
<i>N</i>	78,122	78,122	78,122	78,122	78,122	78,122
<b>Panel B: Students with Prior Suspension</b>						
RP Student	0.095** (0.042)	0.221 (0.159)	0.042 (0.029)	0.056 (0.087)	0.060** (0.026)	0.189* (0.110)
RP*1 Year Prior	-0.083 (0.067)	0.005 (0.218)	-0.044 (0.046)	-0.006 (0.119)	-0.038 (0.043)	0.025 (0.151)
RP*1st Treatment Year	-0.138 (0.098)	-0.367 (0.298)	-0.041 (0.068)	-0.106 (0.163)	-0.098* (0.050)	-0.276 (0.202)
RP*2nd Treatment Year	-0.172* (0.095)	-0.480* (0.246)	-0.019 (0.081)	0.019 (0.159)	-0.147*** (0.042)	-0.496*** (0.158)
RP*3rd Treatment Year	-0.204** (0.080)	-0.469* (0.277)	-0.101 (0.061)	-0.1 (0.173)	-0.100** (0.046)	-0.381* (0.193)
<i>N</i>	24,581	24,581	24,581	24,581	24,581	24,581

*Notes.* Sample includes matched treated students at any restorative practices schools and their comparison student matches. Each cell represents a separate difference-in-difference regression with estimation at the student-level. *RP Student* is an indicator for if a student ever attends a restorative practices school. The average treatment effects of restorative practices on discipline outcomes are given by the coefficients on *RP\*Treatment Year*, the vector  $\beta$ , from equation (1). All models include additional student-level controls for prior achievement, gender, race, special needs status, and free- and reduced-lunch status. Standard errors are clustered at the school level.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table A4.** Effects of restorative practices on student discipline outcomes for high resolution schools.

	All Infractions		Non-Violent Infractions		Violent Infractions	
	Number of Suspensions	Days of Suspension	Number of Suspensions	Days of Suspensions	Number of Suspensions	Days of Suspension
<b>Panel A: All Students</b>						
RP Student	0.056 (0.035)	0.142 (0.107)	0.038 (0.029)	0.087 (0.078)	0.024* (0.014)	0.066 (0.053)
RP*1 Year Prior	0.02 (0.032)	0.094 (0.098)	0.028 (0.026)	0.056 (0.075)	-0.009 (0.014)	0.032 (0.059)
RP*1st Treatment Year	0.069 (0.054)	0.154 (0.134)	0.051 (0.038)	0.095 (0.089)	0.019 (0.023)	0.071 (0.072)
RP*2nd Treatment Year	0.019 (0.043)	0.008 (0.132)	0.026 (0.032)	0.058 (0.084)	-0.005 (0.018)	-0.046 (0.076)
RP*3rd Treatment Year	0.024 (0.059)	-0.047 (0.213)	0.044 (0.048)	0.059 (0.164)	-0.019 (0.026)	-0.104 (0.098)
<i>N</i>	25,980	25,980	25,980	25,980	25,980	25,980
<b>Panel B: Students with Prior Suspension</b>						
RP Student	0.181** (0.079)	0.550* (0.284)	0.088 (0.067)	0.263 (0.206)	0.111*** (0.040)	0.327* (0.175)
RP*1 Year Prior	0.041 (0.099)	0.355 (0.348)	0.077 (0.085)	0.223 (0.266)	-0.043 (0.047)	0.117 (0.211)
RP*1st Treatment Year	0.079 (0.119)	0.269 (0.383)	0.137 (0.109)	0.259 (0.306)	-0.049 (0.051)	0.059 (0.238)
RP*2nd Treatment Year	-0.12 (0.115)	-0.483 (0.365)	-0.007 (0.100)	-0.03 (0.273)	-0.109** (0.048)	-0.421** (0.208)
RP*3rd Treatment Year	-0.185 (0.124)	-0.631 (0.478)	-0.086 (0.110)	-0.127 (0.390)	-0.109* (0.056)	-0.535** (0.241)
<i>N</i>	5,528	5,528	5,528	5,528	5,528	5,528

*Notes.* Sample includes matched treated students at a “high resolution” restorative practices schools (i.e., those in the top quartile of circles that created a contract) and comparison student matches. Each cell represents a separate difference-in-difference regression with estimation at the student-level. *RP Student* is an indicator for if a student ever attends a restorative practices school. The average treatment effects of restorative practices on discipline outcomes are given by the coefficients on *RP\*Treatment Year*, the vector  $\beta_r$  from equation (1). All models include additional student-level controls for prior achievement, gender, race, special needs status, and free- and reduced-lunch status. Standard errors are clustered at the school level.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table A5.** Effects of restorative practices on student academic outcomes.

	Math	ELA	Science	Social Studies
<b>Panel A: All Students</b>				
RP Student	-0.034 (0.03)	0.002 (0.03)	-0.064 (0.04)	0.026 (0.04)
RP*1 Year Prior	0.004 (0.04)	-0.041 (0.04)	0.035 (0.05)	-0.033 (0.05)
RP*1st Treatment Year	-0.036 (0.04)	-0.007 (0.05)	0.064 (0.07)	0.097 (0.07)
RP*2nd Treatment Year	0.009 (0.04)	0.013 (0.05)	0.110** (0.05)	-0.029 (0.06)
RP*3rd Treatment Year	-0.045 (0.04)	-0.071* (0.04)	-0.038 (0.05)	-0.069 (0.06)
<i>N</i>	20,543	20,619	20,571	17,675
<b>Panel B: Students with Prior Suspension</b>				
RP Student	(0.022) (0.036)	0.008 (0.038)	(0.009) (0.045)	0.041 (0.053)
RP*1 Year Prior	0.025 (0.041)	(0.020) (0.048)	0.018 (0.059)	0.002 (0.053)
RP*1st Treatment Year	0.023 (0.051)	0.005 (0.051)	0.015 (0.073)	0.059 (0.070)
RP*2nd Treatment Year	0.011 (0.058)	0.012 (0.070)	0.077 (0.061)	(0.032) (0.072)
RP*3rd Treatment Year	-0.006 (0.060)	-0.129** (0.058)	-0.057 (0.063)	-0.059 (0.077)
<i>N</i>	11,374	11,386	11,290	10,234

*Notes.* Sample includes matched treated students at any restorative practices schools and their comparison student matches. Each cell represents a separate difference-in-difference regression with estimation at the student-level. *RP Student* is an indicator for if a student ever attends a restorative practices school. The average treatment effects of restorative practices on discipline outcomes are given by the coefficients on *RP\*Treatment Year*, the vector  $\beta_r$  from equation (1). All models include additional student-level controls for prior achievement, gender, race, special needs status, and free- and reduced-lunch status. Standard errors are clustered at the school level.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table A6.** Predicted probability student will attend a restorative practices school.

Variable	<i>With Suspensions</i>	<i>Without Suspensions</i>
Male	0.023*** (0.003)	0.025*** (0.003)
Black	0.667*** (0.004)	0.669*** (0.004)
Other Race	0.268** (0.006)	0.269** (0.006)
FRPL	0.120*** (0.003)	0.121*** (0.003)
Special Education	0.065** (0.004)	0.067** (0.004)
ELL	0.136*** (0.006)	0.136*** (0.006)
Switched Schools One Year Ago	0.166*** (0.003)	0.166*** (0.003)
Number of Suspensions Two Years Ago	0.068** (0.003)	
Days of Suspensions Two Years Ago	-0.006*** (0.001)	
Number of Suspensions One Year Ago	0.026*** (0.002)	
Days of Suspension One Year Ago	-0.004***	
Pseudo R-Squared	0.038	0.038
Observations	1,241,822	1,241,822

*Notes:* Table shows the coefficients associated with the predicted probability of a student attending a school with or without the suspension covariates included. Analyses are at the student level. Standard errors appear in parentheses.  
 \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$