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More than a Drop in the Bucket: The Social and Economic Costs of Dropouts and Grade Retentions Associated With Exclusionary Discipline

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More than a Drop in the Bucket: The Social and Economic Costs of Dropouts and Grade Retentions Associated With Exclusionary Discipline

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Disciplinary sanctions are used to manage student behavior in schools at alarming rates. More than 5% of students are expelled or receive an out-of-school suspension in a given year across four of the most large and ethnically diverse states in the country: California, Florida, New York, and Texas (Fabelo, et al., 2011). In California alone, the annual rate of exclusionary discipline exceeds 12%. Whereas some scholars have alluded to the detrimental effects exclusionary discipline has on student achievement, few longitudinal investigations document the association of discipline practices with students' long-term academic outcomes (see Balfanz, in press; Shollenberger, in press). Particularly lacking are studies that explore the economic relationship between discipline and grade retention and/or dropping out.

This study highlights the added risk for grade retention and dropping out that is associated with suspensions, and in light of these significant associations it breaks new ground by also estimating the economic costs related to exclusionary discipline. To the extent that school discipline is related to negative academic effects that present economic hardship for communities and states, educational agencies should reexamine the need for exclusionary discipline and seek ways to limit its relationship with negative academic effects.

In 2011, the average high school dropout rate was 7.1% in the United States, with dropout rates of 5.0% for Whites, 7.3% for African Americans, and 13.6% for Hispanics. More troubling is the fact that while only 79.6% of White students graduate high school nationally, minorities fare worse, with 61.7% of African Americans and 68.1% of Hispanics graduating (Swanson & Lloyd, 2013). These statistics continue a 40-year trend wherein dropout rates for Black and Hispanic students have exceeded that of Whites (National Center for Education Statistics, 2012). Given the societal and economic impact of high school dropout rates on future employment and involvement in the criminal justice system (Belfield, Levin, & Rosen, 2012),

scholars have called for explanations, and remedies, for the racial disproportion in high school non-completion (Orfield, Losen, Wald, & Swanson, 2004; Swanson, 2006). Federal accountability measures attached to federal funds already call for improvements in graduation rates. With policymakers giving increased attention to reducing dropout, many researchers have moved beyond describing who drops out of school to the more fundamental questions of why.

In general, there are apparently two types of students that fail to complete high school: students who are pulled out of school and those who are pushed out (Bradley & Renzulli, 2011; Jimerson, Anderson, & Whipple, 2002). Students who are pulled out of school are forced to leave due to personal circumstances such as pregnancy, or by the need to support their family financially. Most of these students would complete school if they did not have demands that conflict with their desire to graduate (McNeal, 1997).

Conversely, students who are pushed out appear to exhibit undesirable traits that officials generally perceive as troublesome. They share many characteristics of students who are frequently subject to inequitable disciplinary practices (Bradley & Renzulli, 2011). Pushed out students are characterized as being academically disengaged, have tumultuous relationships with other students and school staff, and a history of academic and disciplinary problems (see Balfanz, in press; Shollenberger, in press; Toldson, McGee and Lemmons, in press). These students are believed to drop out due to feelings of alienation that arise, at least in part, from their frequent involvement in the school discipline system.

Students who are retained in grade represent a subset of students at risk of being pushed to drop out. The dominant perception is that retained students fail to complete high school because they are not academically capable of doing so. However, Jimerson and colleagues (2002) found retention itself to be a greater predictor of dropout than low academic performance.

Across 17 studies, when prior academic achievement, standardized tests scores, aggression, and family background variables were controlled, students' history of grade retention, not academic performance, proved to be most predictive of students' risk for leaving school. Other meta-analytic studies that controlled for study design features and methodological quality yielded weaker relationships but still suggested that for some students grade retention is associated with school non-completion (Allen, Chen, Willson, & Hughes, 2009).

These findings imply that grade retention contributes to the risk that a student will become a high school dropout. Academic and behavioral problems have also been carefully examined as risk factors. However, few empirical investigations have explored the impact of persistent exposure to exclusionary discipline -- which involves removing students from the classroom setting for a specific period of time through means such as in-school suspension, out-of-school suspension, or expulsion -- on grade retention and dropout. Because children of color are disproportionately subject to sanctions involving removal from the classroom (see Balfanz, in press; Finn & Servoss, in press; Shollenberger, in press; Toldson, et al, in press), research that establishes how exclusionary discipline contributes to racial/ethnic disparities in educational outcomes is important for educators and policymakers who are interested in creating a more efficient system of public education—and one that produces more successful and productive citizens regardless of race or ethnicity and does not have hidden costs.

This study begins by examining the degree to which exposure to exclusionary discipline contributes to students' risk for dropping out, and to the increased risk that a disciplined student will be retained in grade. If exclusionary discipline also has economic significance, then policymakers and the public should know more about the costs of such a practice. A second goal

of this study, then, is to determine the economic impact of exclusionary discipline by identifying its relationship to high school dropout and grade retention.

Exclusionary Discipline and High School Dropout

Studies over time have shown that exclusionary discipline strategies have a profound impact on students in numerous ways. Research dating back to the 1980's highlights the association between exclusionary disciplinary rates and academic failure, high school dropout, grade retention, and juvenile justice involvement (Costenbader & Markson, 1998; DeRidder, 1990; Ekstrom, Goertz, Pollack & Rock, 1986; Gersch & Nolan, 1994; Rausch & Skiba, 2004; Safer, Heaton & Parker, 1981; Safer, 1986; Wehlage & Rutter, 1986). By design, exclusionary discipline strategies remove students from the classroom through placement of students in short-term, or possibly long-term, settings such as in-school suspension, out-of-school suspension, or disciplinary alternative education sites. As a result, these students receive fewer opportunities than their peers to obtain necessary classroom instruction, which increases their risk for academic failure (Losen & Skiba, 2010).

In addition to difficulties within the classroom, time spent outside the classroom can disrupt a student's long-term trajectory in learning necessary skills for overall academic performance. Arica (2006) found that standardized reading scores were lower for students who were suspended relative to those that were not and that achievement scores were lower for students who were suspended longer. Plausibly, students with lower academic skills are more likely to engage in disruptive and defiant behaviors to avoid academically demanding tasks, and these outbursts result in the receipt of exclusionary discipline sanctions. Another possibility is that students who are frequently suspended from school suffer academically as a result of their time away from the learning environment. At the state-level, researchers have found an

association between elevated school suspension rates and lower state accountability test scores (Skiba & Rausch, 2006). These findings imply that less class time results in missed opportunities for students to learn foundational academic skills necessary for meeting increasing academic demands and passing standardized tests. Students' failure to grasp academic tasks could result in frustration and disengagement from school, creating a trajectory for academic failure and school dropout.

Indeed, students who frequently receive exclusionary discipline sanctions have been found to have greater levels of academic disengagement and negative perceptions of school compared to peers not involved in the school discipline system (Brown, 2007; Sekayi, 2001; Skiba & Noam, 2002; Wald & Kurlaender, 2003). Two independent investigations, Sekayi (2001) and Brown (2007), found commonalities among students in alternative education settings. Students removed from their campus for the purpose of discipline expressed feelings of resentment towards the school administration for the inability to attend school amongst their peers and reported poor relationships with teachers and administrators compared to students with lower suspension rates. Overall, the impact of exclusionary discipline practices results in suspended students perceiving their discipline consequences as being too punitive and not suitable for the act committed (Brown, 2007).

Exclusionary Discipline and Grade Retention

Since exclusionary disciplinary sanctions result in a student's removal from essential classroom instruction, it is important to understand the possible association between these practices and grade retention. While grade retention has been used as an academic intervention for students failing to meet grade level standards (Allen et al., 2009; Anderson, Whipple, & Jimerson, 2002), the practice is highly controversial given its inconsistent effects on achievement

and behavior outcomes (Jimerson, 2001, Hong & Yu, 2008; Wu, West, & Hughes, 2008; Hughes, Chen, Thoemmes, & Kwok, 2010). Many researchers have attributed the inconsistency in findings to poor methodological designs of studies analyzing the association between grade retention and academic achievement. For example, critics of grade retention commonly cite the meta-analysis conducted by Jimerson (2001) which found negative effects of grade retention on academic achievement. Yet other researchers have questioned this conclusion based on the absence of a high quality comparison group of promoted students to control for baseline differences in key academic and social-emotional variables prior to the student being retained (Lorence, 2006; Allen et al., 2009).

Some studies have extended the existing literature on grade retention by examining its link with exclusionary discipline practices (Rodney, Crafter, Rodney, & Mupier, 1999; Safer, 1986). Chronic absenteeism due to discipline sanctions has been proposed as increasing a student's risk for grade retention given that many school policies connect grade promotion with regular attendance and successful passing of statewide achievement tests (Jimerson, 2001). It is plausible that if students are frequently removed from class due to disciplinary infractions, then missed classroom instruction not only equates to increased risk for academic failure, but also places students at-risk for repeating the same grade.

To understand linkages between exclusionary discipline and grade retention, scholars have also investigated the presence of racial/ethnic disparities in grade retention. Using data from the 2010 National Assessment of Educational Progress (NAEP), the American Psychological Association Presidential Task Force on Educational Disparities demonstrated that African American males and females were more likely to experience grade retention compared to White or Latino youth (American Psychological Association, 2012). Additionally, numerous studies

have examined the long-term impact of grade retention predicting later high school dropout (Jimerson, 1999; Jimerson & Ferguson, 2007; Mann, 1987; Roderick, 1994).

Study Purpose

Due to the existing research highlighting the association between exclusionary discipline and grade retention, as well as between grade retention and high school dropout, there is a need to examine the relationship between exclusionary discipline, grade retention, and high school dropout within a large representative sample of students. Prior research provides a compelling argument for the negative impact of exclusionary discipline practices on academic failure, and school disengagement and grade retention. The strong relationship between discipline and failing to graduate that we describe in the report *Breaking Schools Rules* (Fabelo et al, 2011) is repeated here. This study is an extension of that analysis, and controls for individual- and school-level characteristics that can mitigate the effect of exclusionary discipline on student achievement. We include here the findings which tracked nearly one million middle school students in the state of Texas over several years and provided an unprecedented exploration of the degree to which school discipline is related to increased levels of grade retention and dropout. This study takes an additional step not included in *Breaking School Rules*, in that we have added an assessment of the economic costs of school discipline encounters that result from increased rates of grade retentions and dropouts.

Overview of the Research

Sample and Data Sources

Our sample was drawn from the Texas Education Agency's (TEA) Public Education Information Management System (PEIMS), which is a statewide repository that contains student

records collected by all Texas school districts. Educational records from 1999 to 2007 were extracted for all Texas students enrolled in 7th grade at a public school during the 2000-2001, 2001-2002, or 2002-2003 academic years. The three cohorts were scheduled to graduate in 2006, 2007, and 2008, respectively. Students' progress was tracked from 7th grade through at least their cohort's 12th-grade year with follow-up year(s) for the classes of 2006 and 2007 to allow for evidence of completion for students who were retained. In addition to education records, data on the characteristics of the schools and districts students attended were included to provide contextual information about their educational environment.

The sample is nearly evenly divided between White and Hispanic students, 43% and 40% respectively; African-American students make up 14% of the sample. The heterogeneity of Texas extends beyond race/ethnicity; there are over 1,200 school districts in the state with 38% of districts being in urban areas and 52% in non-urban areas. The remaining 10% of districts are located in counties that border Mexico.

Measures

Individual-level student characteristics. The PEIMS database provides a method to track Texas students throughout their public school career. For the purpose of this study, we included the following individual-level student characteristics as predictor variables in the analyses: student demographic characteristics, attendance history, grade promotion, special status (e.g., disability status, English proficiency, gifted and talented), standardized test performance, and discipline contact consistent with the extant school dropout literature (Hammond, Linton, Smink, & Drew, 2007). A full list of control variables is available in the appendix.

Discipline contact. For the purpose of this study, we used each of the reported disciplinary events included in the PEIMS database: in-school suspension (ISS)—removed from the classroom but kept at the home campus; out-of-school suspension (OSS)—removed from the school for up to three days; expulsion— permanent or long-term removal from the school system; Disciplinary Alternative Education Placement—long-term housing on a campus designed to educate students who have exhibited serious or persistent behavior problems; or Juvenile Justice Alternative Education Placement—long-term housing on a campus run by the juvenile justice department and designed to educate students who have exhibited serious or persistent behavior problems. As such, students who stay after school, are sent to the office, provided with a warning, or assigned to a diversionary program (e.g., student court) for discipline are not reported to TEA.

Within our study cohorts, the majority of the students (60%) were subject to discipline during the period studied. The racial breakdown reveals deep disparities: 75% of African American students and 65% of Hispanics were disciplined, compared to 49% of White children. Furthermore, when we applied multivariate analyses that controlled for 83 variables to isolate the effects of race on disciplinary actions, we found that African American students had a 31% higher chance of experiencing a discretionary school disciplinary action, compared to otherwise identical White students (Fabelo et al., 2011).

School dropout. School dropout serves as a dependent variable. When a student leaves a school, either by withdrawal or by not returning at the start of a new school year, the district is required to report a “leaver code” indicating why the student no longer attends the school. Some leaver codes simply indicate that a student transferred to another district, while others note that a student graduated. Before 2005-2006, Texas classification of dropouts was not strict. For

instance, students who completed all required coursework but failed the state standardized test required to graduate were not counted as dropouts (Texas Education Agency, 2008). Students who left school and were unaccounted for were not counted as dropouts (Losen, Orfield & Balfanz, 2006). Beginning in the 2005-2006 school year, however, Texas adopted the more stringent National Center for Education Statistics definition for dropouts. For the purposes of this study, we used the definition of dropping out that was used by the TEA during each year for which data were extracted.

Grade retention. Grade retention, also a dependent variable in the analyses, was determined by the student's grade in the current year relative to the prior year. Students who were in the same grade in the fall as in the spring of the previous school year were classified as being retained. Information on retention was not available in years prior to 7th grade.

School-level characteristics. A complementary dataset to the PEIMS, the Academic Excellence Indicator System (AEIS), includes a variety of school-level measures, such as school-level indicators of wealth and expenditures, teacher demographics and professional experience, student-teacher ratios, campus-wide attendance rates, dropout rates, and much more. For the purpose of this study, the following variables were extracted from the AEIS: school measures, academic measures and others. A full list of control variables is available in the appendix.

Data Analytic Strategy

The study analyzes the effect of discipline on the probability that a student would drop out or be retained at least once during their secondary school career. The student/year serves as the unit of analysis. For example, student's probability of discipline and grade retention is examined independently each year they are in the sample. The effect of discipline on the

probability that a student would dropout or be retained at least once is the focus of study analyses. Both of these are terminal outcomes, meaning that once a student has been retained or has dropped out they are not included in subsequent years' models. The analyses utilize multivariate techniques that statistically controlled for over 40 factors to produce a more accurate estimate of the true relationship between discipline and grade retention/dropout. The most straightforward approach, then, is to calculate the change in the probability of the outcome of interest when a student was disciplined.

In order to ensure that changes in dropout/grade retention rates were not the result of other factors, we also control for over 40 variables that had been associated with academic failure and exclusionary discipline in prior research (Hammond et al., 2007). These variables include measures of students' academic performance, socioeconomic status, race/ethnicity, and disabilities. We also include measures of students' school environment that are believed to be important predictors of students' academic outcomes, such as student-teacher ratios, and district wealth. We use the results of these logistic regression analyses to identify the difference in dropout/retention rates for students who were disciplined and those for students who did not have any school disciplinary experience. To quantify the economic effects of exclusionary discipline, we assign an economic value to the resulting difference in rates, based on available measures and previous economic studies.

What are the economic effects of exclusionary discipline on dropouts?

Dropout

Overall, 31% of our study cohort did not graduate high school; 6.7% dropped out. While 10% of those that were disciplined dropped out and roughly 40% of them failed to graduate, only

2% of those who were not disciplined dropped out with 18% not graduating during the study period (Fabelo, et al, 2011). These numbers represent the official dropouts; they ignore many others who did not receive a diploma, such as those enrolled in a GED prep course.

Table 1

School Discipline and Likelihood of Dropout

Characteristic	Label	Raw probability	Percentage increase
Base	No discipline	0.0005	...
	One in-school suspension	0.0006	23.7

As Table 1 indicates, a “typical” student who received one ISS placement during the year was 23.7% more likely to drop out during that year. This finding is statistically significant. The effects of school discipline occur each year that a student is present at school. This makes the overall likelihood of dropping out dependent on tracking this outcome over multiple academic years, rather than for just a single year. We calculate the effects of exclusionary discipline (including ISS, OSS, expulsion, DAEP and JJAEP) on the probability that a student will drop out of school. Although all types of discipline were included in the model, we report on ISS as the exemplar sanction because it is the most common and least serious; therefore, when we refer to “disciplinary sanctions” moving forward, we are referring to the less severe ISS. The students in our cohort who were disciplined at least once (ISS or worse) between 7th and 12th grade averaged 1.4 disciplinary removals per year. These students were 23.5% more likely to drop out at some point during their secondary school career—a conservative value.

We note again that Texas increased the strictness of its dropout measure during the time the study cohorts were in school. For instance, students who could not pass the standardized tests

required to graduate were previously not counted as dropouts; therefore, if the more inclusive measure of dropout were used in all years, dropout rates would be higher. In fact, the official dropout rate for the class of 2007 was twice as high as for the class of 2005, the last class completely counted under the old rules (Texas Education Agency 2008, pp. 56, 94).

The 24% increase in dropout rates associated with those who are disciplined provides a platform from which to investigate the costs associated with school discipline, through its relationship with dropping out. If the 59.6% of students who were disciplined dropped out at rates comparable to their peers who avoided punishment (e.g., the 23.5% increase in dropping out vanished), the overall dropout rate in Texas would be approximately 14% lower (23.5% x 59.6%). While this measure applies the multivariate rate to all disciplined individuals, the relationship would still be substantive if the real value were only a fraction of this amount. For instance Table 4.2 shows the predicted effects were the relationship between school discipline and dropout to be reduced by much smaller values.

Table 2

Reduction in Dropout with Hypothetical Lower Relationships Between School Discipline and Dropout

Hypothetical Relationship	Overall Dropout Reduction	Low Estimate	High Estimate
1%	0.60%	\$31,890,324	\$57,435,946
5%	2.98%	\$159,451,622	\$287,179,728
10%	5.96%	\$318,903,243	\$574,359,456
15%	8.94%	\$478,354,865	\$861,539,184
20%	11.91%	\$637,806,487	\$1,148,718,913

A recent study examined the economic costs associated with dropouts from a single Texas cohort (Alvarez et al., 2009). This impressive analysis used a vast array of data to calculate these values. First, adjusting for the demographics of the state, the study found that a single cohort's dropouts had between \$5.0 billion and \$9.0 billion in present-value lost wages over the course of their careers. Using Texas state comptroller data, it also found that the state forgoes between \$279 million and \$507 million in lost sales tax revenue over the course of the cohort students' lifetimes. The study next examined increased welfare costs associated with dropout, finding the value to be between \$404 million and \$736 million. These welfare figures are conservative, because they ignore the difference in the number of children dropouts have relative to graduates—a key predictor of welfare expenses. The study subsequently explored the increased criminal justice costs associated with dropouts, which it found to be between \$595 million and \$1.0 billion. Finally, the study acknowledged that dropouts do provide savings to the state in one area—the cost of education. The authors estimated this amount to be between \$625 million and \$1.1 billion.

The total social cost of dropping out for the lifetime of each cohort of students in the Alvarez et al. (2009) study was between \$5.4 billion and \$9.6 billion. We don't know with certainty the direct causal effects of discipline on dropping out. However, the statistical model demonstrates that discipline is associated with a 14% higher risk for dropping out in Texas. If policymakers could remove the 14% elevation in dropout associated with school discipline, the total lifetime savings for each cohort would be between \$750 million and \$1.35 billion.

In other words, these estimates demonstrate that exclusionary discipline is likely attached to tremendous hidden costs. Even if reducing suspensions lowered dropouts by 1% for each cohort, Texas would save millions per cohort. Table 2 indicates the cost savings associated with

lower discipline if the relationship between exclusionary practices and dropout were attenuated. If the relationship between discipline and dropping out were simply reduced from 23.5% to 20%, the cost savings to the state would be \$112-202 million per year (roughly \$443 per student in the cohort).

What are the economic effects of exclusionary discipline on retention?

As mentioned above, one area where dropouts save the state money is by removing its need to spend money on their education. However, this relatively small savings pales in comparison to the dramatic lifetime costs associated with dropping out of school. This section demonstrates what happens to the “best case” marginalized students—those who are retained rather than dropping out. These students do continue their education but, as we demonstrate, this does not occur without costs.

Table 3 details the relationship between school discipline and first-time grade retention within one school year. A typical student with no disciplinary record has a small probability of grade retention (0.013). A single ISS encounter nearly doubles the probability to 0.025 and is statistically significant.

Table 3

School Discipline and Likelihood of Grade Retention

Characteristic	Label	Raw probability	Percentage increase
Base	No discipline	0.013
	One in-school suspension	0.025	91.9%

In order to conduct the economic analysis, the probability that a student will be retained during their secondary school career is needed. A student who matriculates from 7th grade to 12th grade has six chances to be retained. Our results illustrate the serious effect school discipline can have on long-term prospects for grade retention. A typical student who is never disciplined has a probability of being retained during their secondary school career of only 0.034. Recall that the students in our cohort who were disciplined in the 7th through 12th grades averaged 1.4 discipline encounters per year. A typical student with this level of discipline has a 0.067 probability of being retained, which is nearly double the rate for students with no prior discipline history. Furthermore, students who are given ISS once in the 9th grade are 46.2% more likely to be retained during junior/senior high than their peers who were never disciplined. A single disciplinary event at any time during a student's secondary academic career has a profound relationship on the likelihood that they will repeat a grade. To the extent that minority students are involved in school discipline more often than their White counterparts, as documented above, they are also at higher risk for grade retention and dropping out.

When a student is retained, there are serious economic consequences for both the state and the student. The state and its school districts combined spend an average of \$11,543 a year per student (Texas Education Agency, 2012). When a student is retained, the state is forced to spend this amount for an additional year, which absorbs funds that would otherwise be available for other purposes. Of course, we cannot establish the direct causal effects of discipline on retention. However, the statistical model demonstrates that discipline is associated with a higher risk for being retained.

The analyses here examine the likelihood a student will be retained at least once. If a student is retained multiple times, the additional costs are felt multiple times as well. If anything,

then, the cost estimates we present are conservative. To the extent that a child is retained multiple times, the costs to the state would be greater than reported here.

These additional costs are magnified by the size of the Texas public school system. Texas has over 4.9 million students, approximately 10% of all public school students nationally (National Center for Education Statistics, 2012; Texas Education Agency, 2012). Each year, Texas receives more than 350,000 new students. For instance, the 2010-2011 8th-grade cohort had 354,139 students (Texas Education Agency, 2012). Therefore, when calculating annual costs, it is necessary to extrapolate from the students modeled in the study to all students enrolled in the same grade and school year.

Using the 2010-2011 8th-grade cohort for size and the racial breakdown from our study (14% African American, 39% Hispanic, and 43% White), Table 4 displays the discipline rate by gender and race/ethnicity, and after controlling for over 40 variables, and indicates the predicted increase in grade retention associated with school discipline for these groups. Discipline among the three largest races/ethnicities in Texas leaves a per-year increase in retention of 6,603 students. While discipline-based retention of less than 2% of the cohort may seem trivial, the economic effects are profound. Spending an additional \$11,543 on each of these students results in a total annual cost of over \$76 million.

Table 4

School Discipline Related to Predicted Grade Retention and Cost Increases

Race	Gender	Discipline Rate	Increased Retention	Education Costs	Lost Wages	Lost Sales Tax	Total	Per Capita
Black	Male	83%	623	\$7,191,125	\$9,033,294	\$541,998	\$16,766,417	\$773
Black	Female	70%	405	\$4,677,509	\$5,875,759	\$352,546	\$10,905,813	\$503
Latino	Male	74%	2,094	\$24,170,351	\$30,362,133	\$1,821,728	\$56,354,212	\$806
Latina	Female	58%	1,270	\$14,656,332	\$18,410,882	\$1,104,653	\$34,171,866	\$489
White	Male	59%	1,491	\$17,209,625	\$21,618,259	\$1,297,096	\$40,124,980	\$526

White Female	37%	721	\$8,317,218	\$10,447,861	\$626,872	\$19,391,951	\$254
Total	60%	6,603	\$76,222,160	\$95,748,187	\$5,744,891	\$177,715,239	\$529

The student does not fare much better. An additional year in school likely signals delayed entry into the workforce. Students who begin their career late miss out on the earning potential that more time would give them. Individuals with a minimum wage full-time position will miss out on \$14,500 in earnings. When the entire cohort is considered, nearly \$96 million in purchasing power is lost.

There are also lost sales tax revenues. The state comptroller reports that households earning less than \$29,233 spend 6% of their income on sales tax (Combs, 2011). This translates to \$870 per person, or \$5.7 million in lost sales tax revenue. Students obtaining a higher paying job would only magnify the costs of delayed entry. For instance, a beginning career in the Army would provide \$18,194, plus substantial benefits and allowances (United States Army, 2012). Furthermore, since many wages/salaries are determined by time on the job, the lower earning power resulting from delayed entry can affect the student for the duration of their career.

Table 5 indicates that even if the relationship between discipline and retention is dramatically lower than the statistical model predicts, substantial costs are still present. The total relationship between school discipline and grade retention costs the state over \$44 million even if the association is only one-fourth as strong as the multivariate model posits.

Table 5
*School Discipline Related to Predicted Grade Retention and Cost Increases
 Assuming Lower Association*

Percent of Model	Increased Retention	Education Costs	Lost Wages	Lost Sales Tax	Total	Per Capita
5%	330	\$3,811,108	\$4,787,409	\$287,245	\$8,885,762	\$26

25%	1,651	\$19,055,540	\$23,937,047	\$1,436,223	\$44,428,810	\$132
50%	3,302	\$38,111,080	\$47,874,094	\$2,872,446	\$88,857,619	\$265
75%	4,952	\$57,166,620	\$71,811,140	\$4,308,668	\$133,286,429	\$397

As the far right column of Table 4 indicates, the costs are not evenly borne across races or genders. Males consistently have higher per-capita costs than females due to their higher rates of discipline. Further, Latino and African-American males have the highest per-capita costs due to their elevated discipline rates relative to White students.

Summary

The results indicate that the negative effects of school discipline do not end with exclusionary suspension or expulsion. Involvement in school discipline is associated with at least two further deleterious outcomes—grade retention, and dropping out of the school system. The effects of these negative outcomes are felt not only by the individual but by society as a whole.

Previous research has largely neglected the economic costs associated with school discipline. This research shows that students who are disciplined are more likely to be retained and to drop out, and that there are serious economic costs associated with these negative outcomes. We estimate that grade retentions associated with discipline cost the state of Texas \$76 million per year. Further, those who are disciplined are significantly more likely to drop out. As mentioned, the associated dropout increase was a very conservative estimate. In Balfanz's study of Florida (in press) he found similar associations, namely that being suspended out of school just once was associated with a doubling of the dropout risk from 16% to 32%. Balfanz also suggested that although suspension was just one of many predictors of dropping out, for about one fifth of the suspended students, discipline was the only factor linked to dropping out.

In Texas, we found the increase in dropout is associated with between \$750 million and \$1.35 billion in increased costs and lost wages over the lifetime of each cohort.

Moreover, this study ignores other economic costs associated with school discipline. This is a significant omission considering that Fabelo et al. (2011) establish that those individuals who are disciplined are much more likely to move into the juvenile justice system. Shollenberger (in press), similarly found that “Among boys suspended for 10 total days or more, less than half had obtained a high school diploma by their late 20s; more than three in four had been arrested; and more than one in three had been sentenced to confinement in a correctional facility.” Levin, et al. (2006) estimate that across the nation each individual dropout is associated with crime related costs of approximately \$26,000 per student, on average. Given the limited scope of this economic analysis, the associated costs of school discipline estimated in this study are conservative.

Recommendations for Policy/Practice

The results of this study should be interpreted with several limitations in mind. One such limitation is the method in which school dropout was conceptualized. There is controversy surrounding how states measure school dropout rates. The ambiguity in the way Texas codes students who exit school prior to graduating forced us to adopt an overly conservative and restrictive definition of dropout that might not extend to other studies that measure this construct more liberally. As mentioned above, Texas relies on student exit codes to determine number of dropouts. However, many students likely exit school while claiming to pursue homeschooling or move out of state. Furthermore, in calculating dropout rates, the state discards student data when the outcome records are missing (Losen et al., 2006). This restrictive definition likely led to a

dramatic undercount of dropouts within our cohort. For instance, only 7% of students within our cohort were categorized as dropouts, compared to 31% of students who did not graduate high school for all reasons combined. Of course, some of the students in our cohort that did not graduate likely had legitimate reasons such as moving out of state or attending private school. However, the likelihood of the difference being this large is small. Still, this limited definition can provide a clue as to how school discipline relates to dropping out of school. While it is possible that the relationship between school discipline and the likelihood of dropping out differs for students who do not formally dropout, this is not likely.

Additionally, the study cannot explore the mechanisms by which school discipline or the associated negative outcomes can be prevented. Although state-level educational databases provide a variety of measures on students' educational status and trajectory, educational records often have limited depth and restrict researchers ability to explore the nuances in behaviors that affect a students' outcomes. Future investigations should work in a handful of campuses to explore what programs of promise are available to limit the need for school discipline and to prevent the negative outcomes associated with it. Despite these limitations, education agencies and taxpayers would be well served to explore the economic burden exclusionary discipline places on schools and society as a whole. Because administrators can affect the level of discipline that occurs in their schools, they can act to reduce discipline and, in turn, any deleterious economic effects it brings (Booth, Marchbanks, Carmichael, & Fabelo, 2012; Fabelo, et al. 2011).

It is important to understand, as Table 5 shows, that the economic costs associated with discipline are distributed as unequally as discipline itself. As mentioned above, Black students were 31% more likely to be disciplined after controlling for all other variables (Fabelo et al.,

2011; see also Finn and Servoss, in press; Shollenberger, in press; Skiba, Chung, Trachok, Baker, Sheya, & Hughes, in press; Toldson, et al, in press). We recommend that educational agencies adopt evidenced-based programs that reduce school officials' use of punitive and exclusionary measures to manage student behavior, and that extra attention is given to programs that reduce these outcomes for children of color.

While alternatives likely will not be free, cost-conscious policymakers must take into account the cost associated with suspensions described here. Positive Behavior Intervention Supports (PBIS) is a comprehensive school-wide behavior management program that provides proactive alternatives to managing student behavior through reinforcement, behavior modeling, and the development of an infrastructure for monitoring and evaluating the effectiveness of student's adherence to school rules (Sugai, et al., 2000). By requiring school officials to operationally define school rules into positive behavioral standards that they wish students to display, PBIS allows for consistent communication to students regarding school officials' expectations for student conduct. This adoption of universal standards for student behavioral has the potential to minimize bias in identifying discipline infractions and the assignment of discipline sanctions and, ultimately, to curtail school officials' overreliance on discipline referrals to manage student behavior.

However, recent research has shown that PBIS does is ineffective in reducing the racial disparities that exist in discipline and often fails to account for the diverse nature of a campus's student body (Vincent, Sprague, CHiXapkaid, Tobin and Gau, in press). Further, even under the PBIS framework there will be a small segment of the student population that needs additional support to meet these standards of behavior. Thus, it behooves school officials to employ

secondary and tertiary dropout prevention programs that are targeted at the most academically and behaviorally at-risk students in schools in addition to PBIS.

One approach that might prove cost-effective is investing in dropout-prevention programs that are linked to tracking discipline. To do this, educational administrators would need to identify students who are at risk for receiving frequent disciplinary sanctions by monitoring the number of classroom and office discipline referrals these students receive. Students who receive a number of discipline referrals (e.g., more than the mean for their grade) should be included in two distinct types of dropout-prevention programs adopted by the school: a dropout-prevention program that focuses on gaining the academic skills needed for school success, and a dropout-prevention program that fosters school engagement by building positive relationships with meaningful adults in the student's school (Sugai, Sprague, Horner, & Walker, 2000). Evidenced-based academically oriented dropout prevention programs should be implemented since students with elevated discipline referrals may use misbehavior as a strategy to escape academic tasks. These programs will also be critical for students with an extensive discipline history who have significant gaps in their academic skills as a result of missed instructional time due to the receipt of exclusionary discipline sanctions. In addition to addressing at-risk students' academic skill deficits, school officials should adopt prevention programs that attempt to reintegrate at-risk students into the school setting and rebuild these students' relationships with their teachers, peers, and educational administrators. The formation of such alliances will likely reduce feelings of being disconnected from school and encourage school completion. Programs that use adult mentors to monitor at-risk students' attendance, motivation, and engagement in school may foster levels of belonging that will be helpful in disrupting the cycle of exclusionary discipline and high school dropout.

Conclusion

These are just some possible approaches to alternative disciplinary measures. The U.S. Department of Justice and the U.S. Department of Education have formed the Safe and Supportive School Discipline Initiative (U.S. Department of Education, 2014), and the Council of State Governments Justice Center created national consensus-building project around school discipline (Morgan, Salomon, Plotkin, & Cohen, 2014). Each of these efforts produce detailed policy recommendations that should be considered.

In closing, this research adds to the policy discussion by identifying the economic costs associated with the school discipline. Using a robust sample of 900,000 students, our analyses show that receiving exclusionary discipline is associated with students' negative academic outcomes and that serious economic costs for both the student and state are associated with these negative outcomes. In that minority students are overrepresented in the area of school discipline, they likely are experiencing higher levels of grade retention and dropout as well. Policymakers should explore programs that can disrupt or eliminate this relationship and/or prevent disciplinary actions in the first place, as doing so may lead to substantial cost savings.

Appendix

Variables Included in Analysis

Measures	Label	Definition	Type
School	Charter school	Student attends a charter school	Binary
	Title I school	Student attends a Title I school	Binary
	Student/teacher ratio	The number of students per teacher on the campus	Continuous
	Average actual salaries of teachers	Average salary paid to each FTE teacher at the campus	Continuous
	Average years experience of teachers	Average years experience for teachers at the campus	Continuous
	District wealth per capita	Total taxable property value per student	Continuous
County	Suburban county	Student lives in a suburban county	Binary
	Non-metro adjacent county	Student lives in a non-metro county adjacent to a metro county	Binary
	Rural county	Student lives in a rural county	Binary
Academic	At-risk of dropping out	Student is at-risk of dropout (TEA designation)	Binary
	Gifted	Student is classified as gifted	Binary
	Has failed a TAKS test	Student has failed a TAAS/TAKS test (state test) before--during our study period	Binary
	Failed last TAKS test	Student failed at least one section of the TAAS/TAKS test (state test) at least one time the last year s/he took the exam.	Binary
	Retained	Student was retained in the previous year	Binary
	Years behind	Number of years student is behind expected	Continuous

		grade level	
	Attendance rate	Student's attendance rate	Continuous
Cohort	7th grade	Student is in the 7th grade	Binary
	8th grade	Student is in the 8th grade	Binary
	9th grade	Student is in the 9th grade	Binary
	10th grade	Student is in the 10th grade	Binary
	11th grade	Student is in the 11th grade	Binary
	Cohort year	The number of years the student's cohort has been in the study	Continuous
Demographic	African-American	Student is African-American	Binary
	Latino	Student is Hispanic	Binary
	Other race	Student is not a White, Hispanic or Black student	Binary
	Male	Student is male	Binary
	Autism	Student is diagnosed with autism	Binary
	Emotional disturbance	Student is diagnosed with an emotional disturbance	Binary
	Learning disability	Student is diagnosed with a learning disability	Binary
	Mental retardation	Student is diagnosed with mental retardation	Binary
	Physical disability	Student is diagnosed with either an orthopedic impairment, auditory impairment, visual impairment, deaf-blind, speech impairment, non-categorical early childhood or other health impairment	Binary
Traumatic brain injury	Student is diagnosed with a traumatic brain injury	Binary	
Discipline	Disciplined	Student was disciplined	Binary

	Encountered TJPC in the past	Student was referred to TJPC in the past	Binary
	Number of ISS disciplinary actions	Total number of discipline events where the action taken was in-school suspension	Continuous
	Number of OSS disciplinary actions	Total number of discipline events where the action taken was out-of-school suspension	Continuous
	Number of DAEP disciplinary actions	Total number of discipline events where the action taken was referral to a DAEP	Continuous
	Number of JJAEP disciplinary actions	Total number of discipline events where the action taken was referral to a JJAEP	Continuous
	Number of expulsion disciplinary actions	Total number of discipline events where the action taken was expulsion	Continuous
	Number of fine disciplinary actions	Total number of discipline events where the action taken was truancy-related fines	Continuous
	Number of no action disciplinary actions	Total number of discipline events where no action was taken	Continuous
	Number of unknown disciplinary actions	Total number of discipline events where the action taken was not reported.	Continuous
Unique	Title I Ind.	Student receives Title I services	Binary
	Economical disadvantaged	Student is eligible for free or reduced-price lunch or other public assistance	Binary
	Limited English Proficiency	Student is classified as having limited English proficiency	Binary
	Migrant	Student is classified as a migrant	Binary
	Number of schools attended	Number of schools the student attended in the year	Continuous

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