The Association Between School Discipline and Academic Performance:

A Case for Positive Discipline Approaches

West Virginia Department of EDUCATION
Office of Research

The Association Between School Discipline and Mathematics Performance

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September 2014

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Keywords
Academic performance, proficiency, discipline, behavior, interventions, positive discipline, consequences, exclusionary practices, suspension.

Suggested Citation

Whisman, A. & Hammer, P. C. (2014). *The association between school discipline and mathematics performance: A case for positive discipline approaches*. Charleston, WV: West Virginia Department of Education, Division of Teaching and Learning, Office of Research.

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This research study was reviewed and approved by the West Virginia Department of Education Institutional Review Board (WVDE-IRB-023). Should you desire additional details about this study's approval status, you may contact the WVDE IRB chairperson, Patricia Cahape Hammer (phammer@k12.wv.us).

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Executive Summary

This study examined the impact on student academic performance of referrals for disciplinary intervention in West Virginia. The study also examined differences in these impacts among various student subgroups.

Method of study. Using discipline referral data entered into the West Virginia Education Information System for the 2012-2013 school year and employing cross tabulations and binary logistic regression procedures, the odds of scoring below proficiency on WESTEST 2 based on disciplinary involvement and student characteristics were determined. Findings were essentially the same for math and reading/language arts, so results focus only on math.

Findings. Of 160,480 students in the analysis, about 29.6% had one or more referrals for inappropriate behaviors. Overall about 12% had only a single referral, 10.4% had 2 to 4 referrals, and 6.7% had 5 or more. Results include the following:

- Students with one or more discipline referrals were 2.4 times more likely to score below proficiency in math than those with no discipline referrals; math proficiency among these students exhibited a 40 percentage point deficit (29.7% vs. 70.3%).
- As the number of discipline referrals increased so did the odds of poor academic performance. Students with 2 to 4 referrals were 2.7 more likely to score below proficiency; students with 5 or more were 4.6 more likely. Students with a single discipline referral saw a 25 percentage point proficiency gap, while 2 to 4 referrals added another 20 points and 5 or more referrals added yet another 20 points.
- When the disciplinary consequences take the form of in-school or out-of-school suspension, the risk of scoring below proficiency increases and proficiency gaps widen.
- Students with disabilities who had a single discipline referral were no more likely to score below proficiency than students with disabilities without discipline referrals. However, when they received 2 to 4 referrals they were 3.7 more likely to score below proficiency; with 5 or more discipline referrals they were 12 times more likely.
- Low income students with a single discipline referral were 1.48 times more likely to score below proficiency than low income students with no referrals; those with 5 or more were 3.25 more likely.
- While previous studies showed Black students to be at greater risk of receiving discipline referrals and suspensions, no interaction was found between disciplinary involvement and race relative to academic performance.

Limitations of study. 2012–2013 was a transition year as West Virginia deployed a new discipline management system. It is not clear what effect this transition had on the completeness or accuracy of data summarized in this report.

Recommendations include (a) encourage diligence in accurately reporting discipline behaviors as required by Policy 4373; (b) provide training/technical assistance specific to positive discipline approaches and alternatives to suspension; (c) build district and school staff capacity to provide appropriate behavioral interventions via the Support for Personalized Learning three-tiered framework; and (d) further investigate subgroup disparities and deliver professional development and technical assistance to minimize them.

Introduction

West Virginia Board of Education Policy 4373 calls upon schools to consistently and persistently work to improve student knowledge, skills, and dispositions that convey our nation's democratic principles and, in so doing, influence student behaviors toward others and affect student learning, motivation, and social development. A core premise is that schools stand to gain from an academic accountability perspective by delivering both appropriate behavioral instruction to enhance conditions for learning and delivering appropriate academic instruction. The purpose of this study is to provide evidence to support that premise.

Based on an analysis in a previous study of school discipline data for the 2012-2013 school year, we recommended that schools (a) be diligent in accurately reporting discipline behaviors; (b) implement positive discipline approaches and alternatives to suspension; (c) provide appropriate behavioral interventions in the context of a three-tiered framework; and (d) further investigate subgroup disparities in discipline practices and build capacity to minimize those disparities (Whisman & Chapman, 2013).

Several findings supported these recommendations. There appeared to be disproportionality in how schools use exclusionary disciplinary consequences. About 63% of all disciplinary interventions were exclusionary—detentions, in-school suspensions, or out-of-school suspensions—even though about two-thirds of student discipline referrals were for minimally disruptive behaviors, defined in policy as behaviors that "disrupt the educational process and the orderly operations of the school but do not pose direct danger to self or others" (WVBE Policy 4373, p. 45). Furthermore, looking only at these minimally disruptive behaviors, a third of the corresponding interventions or consequences were detentions, 19% were in-school suspensions, and about 7% were out-of-school suspensions. Notably, some students were also *expelled* for minimally disruptive behaviors. Overall for all levels of behavior, schools minimally used any other type of intervention or consequence (e.g., administrator/teacher and student conferences, warnings, loss of privileges, parental involvement, referrals for supportive services such as counseling, etc.).

Of all students enrolled in West Virginia schools included in the 2012-2013 analysis, most (78%) were absent from the discipline data, indicating no referrals were made for them for inappropriate behaviors. The remaining 22%—totaling 62,727 students—had one or more referrals for inappropriate behaviors reported in the discipline data. Of those students, 35,851 (i.e., about 13% of total student enrollment) were referred multiple times and accounted for 88% of all reported school discipline behaviors. Nearly 14,000 of the students represented in discipline referral data were reported for five or more offenses, and more than 1,000 were reported for 20 or more offenses. The maximum number of referrals recorded for any single student was 71.

We also reported disproportionate subgroup representation in the discipline data. The student population in West Virginia is relatively homogenous with regard to racial and ethnic diversity—in the 2012–2013 school year about 91% of students self-identified as White, about 5% as Black, and fewer than 3% as multiple or other races. About 1.3% self-identified as Hispanic. Of students represented in the 2012–2013 discipline data, however, 89% were White, slightly lower than the subgroup's representation in the statewide student population. About 8% were Black,

indicating representation in the discipline data at a rate higher than their representation in the student population as a whole. Black students were 1.7 times more likely to be present in the discipline data than White students, while all other race categories and Hispanic students appeared at rates comparable to their representation in the student population. When looking at corresponding interventions and consequences, Black students also were disproportionately represented. Risk ratios calculated for selected exclusionary consequences (single and multiple occurrences of in-school and out-of- school suspensions, and expulsions) indicated Black students to be twice as likely to experience single suspensions, and 2.5 times more likely to experience multiple suspensions.

Disproportionate representation also was reported for students with disabilities. For example, about 15% of the statewide population of students during 2012–2013 was identified as having disabilities. Of students represented in the discipline data, nearly 18% were among those identified with a disability—a greater rate than the subgroup's representation in the statewide student population. Students with disabilities also experienced a greater likelihood for multiple in-school suspensions, for single and multiple out-of-school suspensions, and expulsion-related actions.

The Discipline–Achievement Trade-Off

A growing body of research provides evidence of a link between school discipline practices—especially the use of suspensions—with lower academic achievement. The level of disciplinary involvement also has a strong negative relationship with the ability of students to achieve at grade level or graduate from high school. In a large-scale study following three cohorts of Texas seventh graders (Years 2000 through 2002) through subsequent years in school, Fabelo and colleagues (2011) found that the rates of repeating grades and dropping out of school rose along with the number of disciplinary violations of any kind in which a student was involved. So, students with as few as one disciplinary contact during their middle and high school years were twice as likely to repeat a grade or to drop out of school as students with no disciplinary contacts. As the number of disciplinary contacts increased, so did the odds of grade retention or dropping out. At the extreme, students with 11 or more disciplinary violations were at much greater risk of repeating a grade or dropping out.

Although there are certain illegal or violent behaviors (i.e., safe schools violations) that warrant exclusionary consequences, students' ability to do well academically is generally further impeded when disciplinary involvement leads to removal from the instructional environment. Studies indicate several mechanisms that contribute to the problem. First, there is the simple loss of instructional time that comes with suspensions. Student achievement tends to rise along with increases in academic learning time (Brophy, 1988; Fisher et al., 1981; Greenwood, Horton, & Utley, 2002; in Gregory, Skiba, & Noguera, 2010); so to deprive students of such learning time is counterproductive. Second, when excluded from school, students "may become less bonded to school, less invested in school rules and course work, and subsequently, less motivated to achieve academic success" (Gregory, Skiba, & Noguera, 2010, p. 60). When bonds to school are broken, students are also more likely to repeat misbehavior and even turn to law breaking in the larger community (Fabelo, et al., 2011; Hemphill, Toumbourou, Herrenkohl, McMorris, & Catalano, 2006).

Several factors, some school-based and within a school's sphere of influence, that can contribute to student behavioral problems at school include

- exposure to adversity, including violence and substance abuse in economically distressed neighborhoods, which can lead to anxiety, irritability, stress, and hyper vigilance;
- the need to ward off the threat of violence by developing a tough persona;
- being from a low-income family, living in a low-income community, and attending school with high rates of low-income students;
- the frustration, disaffection, and lower self-confidence that can come with low school achievement; and
- differential selection for discipline referrals, that is, Blacks, Hispanics, and American Indian students receiving more serious penalties than White students for similar behaviors (Gregory, Skiba, & Noguera, 2010).

Further some researchers make the case that disproportionate discipline sanctions imposed on Black and some other minority and low-income students may be contributing to the achievement gap (Gregory, Skiba, & Noguera, 2010). Looking at the role of race in differential selection of students for discipline referrals, especially suspension and expulsion, Skiba and colleagues (2011) documented patterns of discipline referrals in a nationally representative sample of middle and elementary schools during the 2005-2006 school year. They found that Black elementary and middle school students were two to nearly four times as likely to be referred to the office for problem behaviors as their White peers. Additionally they and Latino students were much more likely to receive expulsion or out-of-school suspension than White students for the same infractions. So this examination documents differential treatment at both the classroom and school administrative levels, confirming previous findings by other researchers, including our own previous work in West Virginia (Anderson, Howard, & Graham 2007, Whisman & Chapman, 2013).

Research Questions

In this study the academic performance of students who behave inappropriately and as a result are referred for disciplinary intervention was examined. Also investigated was the interaction of disciplinary involvement and student characteristics on academic performance.[1]

RQ1. Are students with discipline referrals for inappropriate behaviors at increased odds of scoring below mathematics proficiency compared to students with no discipline referrals?

The null hypothesis posits no difference in academic performance between students with discipline referrals for inappropriate behaviors compared to students with none.

RQ2. Does the level of disciplinary involvement—i.e., the number of discipline referrals—increase the odds of scoring below mathematics proficiency?

[1] This study included analyses of academic performance for both Math and Reading/Language Arts. The findings and conclusions for both content areas were largely identical. Only results for Math are presented.

The null hypothesis posits no difference in academic performance on the basis of the level of disciplinary involvement.

RQ3. Do the odds of scoring below mathematics proficiency vary by disciplinary involvement, student race, disability status, or socioeconomic status?

The null hypothesis posits no interaction between disciplinary involvement and students' race, disabilities status, or socioeconomic status

Methods

Population Characteristics

The population of interest for this study included all Grade 3–11 students enrolled in public school districts in West Virginia during the 2012-2013 school year. Of the 225,320 discipline referrals recorded in the system, about 2% were initially omitted from the data file, including records with coding errors or anomalies, records of students who were identified as nonoffenders (i.e., targets of another student's inappropriate behavior), and records generated by Institutional Education Programs and the WV Schools for the Deaf and Blind due to uncertainty about the extent to which these school districts use the WVEIS for reporting discipline behavior (for more details, see Whisman & Chapman, 2013).

In this study, we also excluded

- students from schools with Grade 3–11 enrollments of less than 25 students because, even with low numbers of discipline referrals, these schools would have disproportionately influenced the analysis.;
- students from schools where less than 5% of students had any disciplinary involvement because these schools likely were under-reporting, which could have the effect of artificially diminishing associations between student disciplinary involvement and academic performance;[2] and
- students for which no proficiency scores were reported in the 2012-2013 WESTEST 2 testing year.

After applying these criteria, we considered the remaining 160,480 students to be the *population* of interest, not a sample of students drawn from the population of all students. As such, the assumptions about statistical significance in inferential statistics relevant to sample data do not apply. Further, with such a large numbers of students in the analysis, even very small differences may prove statistically significant yet have little practical consequence. Nonetheless, we indicated in our reporting when findings were statistically significant.

[2] Whisman and Chapman (2013) reported that statewide about 22% of all students enrolled in West Virginia were present in the 2012-2013 discipline data. We know, however, that under-reporting of discipline behaviors occurs. For example there were about 30 schools in 2012-2013—some of which had enrollments of more than 300 students—that reported no student discipline problems. As a safeguard, schools with exceptionally few discipline reports were excluded. This approach, however, may prove to be a somewhat conservative measure and we suspect under-reporting could still be an influential, but unmeasured, factor in the analysis.

Measures and Covariates

The dependent variable of interest was *academic performance*. For the purposes of this study, this was operationalized dichotomously relative to students' proficiency status—that is, the respective percentages of students scoring below *Mastery* versus those scoring at *Mastery* or higher—in mathematics during the 2012-2013 WESTEST 2 testing year.

Variables were coded dichotomously and categorically for each respective research question (Table 1). For RQ1, the *discipline referral status* of students was defined dichotomously as students with no discipline referrals versus students having 1 or more discipline referrals. Similarly, for RQ2 the *level of disciplinary involvement* of students was defined categorically as students with no discipline referrals, students with 1 discipline referral, students with 2 to 4 discipline referrals, and students with 5 or more discipline referrals.

In the context of RQ3, students' *disability* status was defined on the basis of having been identified as a student with a disability in the 2012-2013 WESTEST 2 data file. Similarly, students' *socioeconomic status* was identified in the 2012-2013 WESTEST 2 data file as having been determined eligible for federal free or reduced-price meals (FRL) by direct certification.[3]

Based on the increased risk for discipline referrals and for exclusionary disciplinary actions experienced by Black students described above, for purposes of RQ3 in this study students' *race* was defined dichotomously (i.e., Black students compared to students of all other race/ethnicity categories).

Analytical Approach

Cross tabulations with chi square tests and binary logistic regression procedures were used to test the null hypotheses for the stated research questions. Odds ratios of scoring below proficiency on WESTEST 2 were calculated. Odds ratios also were used as measures of effect size to indicate the relative importance of covariates in terms of the odds of students scoring below proficiency on the basis of disciplinary involvement and their respective characteristics.

Results

Student Characteristics

Students were fairly evenly split by gender (48.9% female) and somewhat evenly distributed across grades—ranging from 8.9% to 13.1% each in Grades 3 through 11. By race/ethnicity they were predominately White (91.5%), with Black students making up 5.2% and all other races/ethnicities making up the remaining 3.3%. Overall 49.3% of students were identified as eligible for free or reduced-lunch, and students with disabilities accounted for 13.8%. With regard to academic performance, 45% of the students overall scored at proficient levels (Mastery or above) in mathematics.

[3] See http://www.fns.usda.gov/sites/default/files/NSLPDirectCertification2013_Summary.pdf for a description of direct certification criteria.

Table 1. Variable Coding for Cross Tabulation and Binary Logistic Regression Analysis

Research question	Dependent variable	Coding	Covariate	Coding
RQ1	Academic performance	0 = At proficiency 1 = Not at proficiency	Discipline referral status	0 = Discipline referrals 1 = 1 or more discipline referrals
RQ2	Academic performance	0 = At proficiency 1 = Not at proficiency	Level of disciplinary involvement	1 = 0 Discipline referrals 2 = 1 Discipline referral 3 = 2 to 4 discipline referrals 4 = 5 or more discipline referrals
RQ3	Academic performance	0 = At proficiency 1 = Not at proficiency	Level of disciplinary involvement	1 = 0 Discipline referrals 2 = 1 Discipline referral 3 = 2 to 4 discipline referrals 4 = 5 or more discipline referrals
			Race	0 = Students of other race/ethnic categories 1 = Black students
			Disability status	0 = Student with no disability 1 = Student with disability
			Socioeconomic status	0 = FRL ineligible 1 = FRL eligible

About 29.6% of students included in the analysis had one or more referrals for inappropriate behaviors. Overall about 12% had only a single referral, but 10.4% had 2 to 4 referrals and 6.7% had 5 or more referrals. These percentages differ slightly from those described in the introduction. The reason is that only Grade 3 through 11 students meeting the inclusion criteria were included in the analysis reported herein, whereas the earlier description was from a statewide analysis for 2012-2013 including all students.

Research Question 1 (RQ1)

For students with one or more discipline referrals a 49 percentage point proficiency gap existed (29.7% vs. 70.3%), whereas nearly equal proportions of students with no discipline referrals scored above or below proficiency (Table 2, $\chi^2 = 6246$, $p<0.0001$). As such the null hypothesis of no differences in academic performance on the basis of disciplinary referral status failed to hold up. The calculated odds ratio (OR) suggests students with one or more discipline referrals were 2.4 times more likely to score below proficiency in math than their counterparts with no discipline referrals. Converting these odds to probabilities, students with one or more discipline referrals experienced a 70% probability of scoring below proficiency.

Table 2. Cross Tabulation and Chi Square Analysis of Math Proficiency by Student Discipline Referral Status

Disciplinary involvement	At proficiency	Not at proficiency	Total	χ^2	*df*	*p*
0 Discipline referrals	50.7% [a]	49.3% [b]	100.0%	6246.9	1	<0.0001
1 or More discipline referrals	29.7% [a]	70.3% [b]	100.0%			

Each superscript letter denotes column proportions that do not differ. For column cells having different superscript letters there is sufficient evidence that they differ at $p < 0.05$.

Research Question 2 (RQ2)

There was also sufficient evidence to reject the hypothesis of no differences in academic performance by the level of disciplinary involvement (Table 3, $\chi^2 = 7732.2$, $p<0.0001$). The results indicate that even a single discipline referral puts students at increased odds of scoring below proficiency (OR = 1.72). Furthermore, as the number of discipline referrals increased so did the odds of poor academic performance. Students with 2-to-4 referrals were about 2.7 times more likely to score below proficiency in math, whereas students with 5-or-more were about 4.6 times less likely to reach proficiency.

Table 3. Binary Logistic Regression of Levels of Math Proficiency by Student Disciplinary Involvement

				95% C.I.	
	B (SE)	Sig.	Odds ratio	Lower	Upper
Disciplinary involvement					
0 discipline referrals (referent category)	n/a	n/a	n/a	n/a	n/a
1 discipline referral	0.54 (0.02)	0.000	1.72	1.67	1.77
2 to 4 discipline referrals	0.98 (0.02)	0.000	2.65	2.56	2.75
5 or more discipline referrals	1.52 (0.03)	0.000	4.56	4.34	4.79
Constant	-0.03 (0.01)	0.000	0.97		
R2 = 0.042 (Cox & Snell), 0.057 (Nagelkerke). Model $\chi^2(3) = 7732.2$, $p < 0.0001$					

The impact is more explicitly illustrated by examining the proficiency gap between students at escalating levels of disciplinary involvement. Again, nearly equal proportions of students with no discipline referrals scored above proficiency or below proficiency (Figure 1). For students with a single discipline referral there was about a 25 percentage point proficiency gap (37% vs. 63%), which increased by about 20 percentage points with each level of increased disciplinary involvement.

Also of interest in RQ2 was the impact of disciplinary involvement when accompanied by exclusionary disciplinary practices, which for purposes of this study were defined as in-school or out-of-school suspensions. The use of binary logistic regression for this analysis was complicated by the fact that only 27% of the students included in the study had 1 or more discipline referrals—a necessary condition for students to experience suspensions. The alternative was to examine this question using cross tabulation with chi square tests replicated across the four levels of disciplinary involvement.

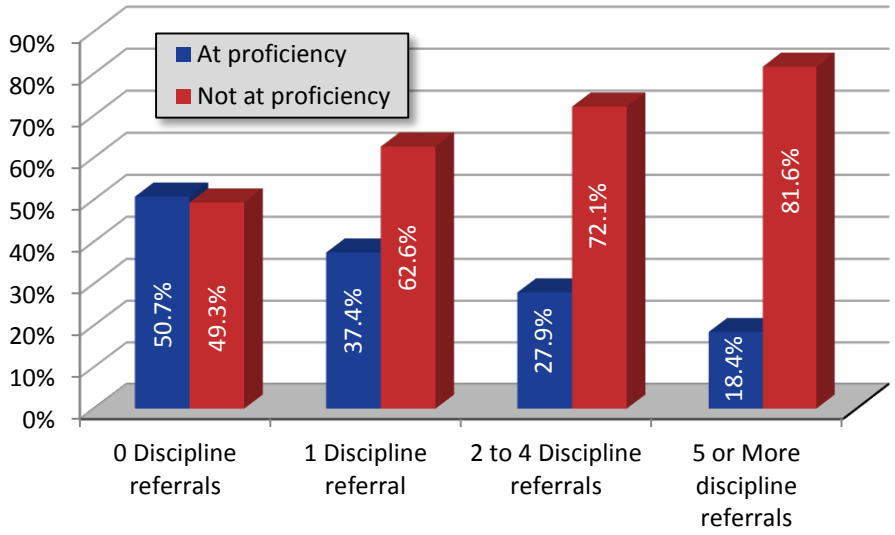

Figure 1. Math Proficiency Rates by Level of Disciplinary Involvement

Once again, the academic performance of students differed significantly by the level of disciplinary involvement when accompanied by in-school or out-of-school suspensions (Table 4). Further, within each level of disciplinary involvement a widening of the proficiency gap was found. For example, for students with only one discipline referral there was about a 20 percentage point proficiency gap (39.8% vs. 60.2%) when the consequence of the incidents did not involve suspension. This gap increased to about 33 percentage points (33.2% vs. 66.8%) when the incidents resulted in suspension. As expected, similar increases were observed as disciplinary involvement escalated. In sum, these results indicate that increasing levels of disciplinary involvement place students at significantly greater risk of scoring below math proficiency, and the risk is even greater when the consequences of disciplinary involvement take the form of in-school or out-of-school suspension.

Table 4. Cross Tabulation and Chi Square Analysis of Math Proficiency by Student Suspension Status

Disciplinary involvement	School suspension status	At proficiency	Not at proficiency	Total	χ^2	*df*	*p*
0 discipline referrals	0 suspensions	50.7%[a]	49.3% [b]	100.0%	--	--	--
	1 or more suspensions	n/a	n/a	n/a			
1 discipline referral	0 suspensions	39.8% [a]	60.2% [b]	100.0%	85.4	1	<0.0001
	1 or more suspensions	33.2% [a]	66.8% [b]	100.0%			
2 to 4 discipline referrals	0 suspensions	34.0% [a]	66.0% [b]	100.0%	246.3	1	<0.0001
	1 or more suspensions	23.1% [a]	76.9% [b]	100.0%			
5 or more discipline referrals	0 suspensions	25.8% [a]	74.2% [b]	100.0%	85.1	1	<0.0001
	1 or more suspensions	16.8% [a]	83.2% [b]	100.0%			
Total	0 suspensions	48.6% [a]	51.4% [b]	100.0%	5529.1	1	<0.0001
	1 or more suspensions	23.8% [a]	76.2% [b]	100.0%			

Each superscript letter denotes a column proportions that do not. Column cells with different superscript letters differ at $p \leq 0.05$.

Research Question 3 (RQ3)

The results so far demonstrate that disciplinary involvement increases the students' likelihood of performing poorly academically. Of interest with RQ3 is whether the association between disciplinary involvement and academic performance varied by student characteristics; namely disability status, socioeconomic status, and race. When looking at these factors individually significant associations were observed for each (Table 5, page 10). Students with disabilities were at increased odds of scoring below proficiency (OR = 4.14), as were students with economic challenges (OR = 2.1) and Black students (OR = 1.43).

These findings for student characteristics, however, should not be taken at face value without first looking at whether an interaction with disciplinary involvement existed. With regard to disability status a significant interaction was observed, but only for higher levels of disciplinary involvement—2-to-4 referrals and 5-or-more referrals (Table 5). In other words, among students with disabilities, those with a single discipline referral were no more likely to score below proficiency than their counterparts with no discipline referrals. However, students with disabilities who had 2-to-4 or 5-or-more discipline referrals were at even greater odds— at 3.7[4] times—of scoring below proficiency than similar students with no referrals. Students with disabilities and 5-or-more discipline referrals were at about 12 times the odds of scoring below proficiency.

A significant interaction also was found between disciplinary involvement and socioeconomic status, yet the meaning was less clear as it was limited to students with a single discipline referral and to those with 5-or-more (Table 5). Because of the direction of the interaction, it appears the odds of scoring poorly were slightly dampened among these students. Low income students with a single discipline referral were at 1.48 greater odds of scoring below proficiency, and those with 5-or-more were at 3.25 greater odds of scoring below proficiency, than similar low income students with no referrals.

Interestingly, despite Black students experiencing increased risk of being referred for inappropriate behavior and for being suspended (Whisman and Chapman, 2013) no interaction was found between disciplinary involvement and race relative to the likelihood of scoring at or below proficient levels.

Summary of Findings

The following are key findings from this study:

- A total of 160,480 students were included in the analysis. About 29.6% had one or more referrals for inappropriate behaviors. Overall about 12% had only a single referral, but 10.4% had 2-to-4 referrals and 6.7% had 5-or-more referrals.
- Students with one or more discipline referrals were 2.4 times more likely to score below proficiency in math than those with no discipline referrals.

[4] Obtained by taking the exponent of the sum of respective regression coefficients for disciplinary involvement and the corresponding interaction terms.

Table 5. Binary Logistic Regression Math Proficiency by Student Disciplinary Involvement, Disability Status, Socioeconomic Status, and Race

	B (SE)	Sig.	Odds ratio (OR)	95% C.I. Lower	95% C.I. Upper
Disciplinary involvement					
0 discipline referrals (referent category)	n/a	n/a	n/a	n/a	n/a
1 discipline referral	0.51 (0.02)	0.00	1.67	1.60	1.75
2 to 4 discipline referrals	0.83 (0.03)	0.00	2.30	2.17	2.43
5 or more discipline referrals	1.29 (0.04)	0.00	3.63	3.34	3.94
Disability status					
Students with disability	1.42 (0.02)	0.00	4.14	3.96	4.32
Socioeconomic status					
FRL eligible	0.74 (0.01)	0.00	2.10	2.05	2.16
Race					
Black	0.36 (0.03)	0.00	1.43	1.34	1.52
Interaction disciplinary involvement * disability status		0.00			
1 discipline referral * disability status	0.05 (0.06)	0.42	1.05	0.93	1.18
2 to 4 discipline referrals * disability status	0.49 (0.08)	0.00	1.63	1.39	1.91
5 or more discipline referrals * disability status	1.17 (0.14)	0.00	3.22	2.42	4.27
Interaction disciplinary involvement * socioeconomic status		0.00			
1 discipline referral * socioeconomic status	-0.12 (0.03)	0.00	0.89	0.83	0.95
2 to 4 discipline referrals * socioeconomic status	-0.06 (0.04)	0.12	0.94	0.87	1.01
5 or more discipline referrals * socioeconomic status	-0.11 (0.05)	0.04	0.90	0.81	1.00
Interaction disciplinary involvement * race		0.51			
1 discipline referral * race	-0.06 (0.07)	0.43	0.94	0.82	1.09
2 to 4 discipline referrals * race	-0.08 (0.08)	0.29	0.92	0.79	1.07
5 or more discipline referrals * race	-0.1 (0.09)	0.25	0.90	0.75	1.08
Constant	-0.53 (0.01)	0.00	0.59	-	-

R2 = 0.122 (Cox & Snell), 0.163 (Nagelkerke). Model $\chi^2(15) = 20989.2$, $p < 0.0001$

- Overall, for students with one or more discipline referrals a 40 percentage point proficiency gap existed (29.7% vs. 70.3%), whereas nearly equal proportions of students with no discipline referrals scored above and below proficiency.
- As the number of discipline referrals increased so did the odds of poor academic performance. Students with 2-to-4 referrals were at 2.7 greater odds of scoring below proficiency, whereas students with 5-or-more were at about 4.6 greater odds.
- Looking at proficiency gaps, among students with a single discipline referral there was a 25 percentage point proficiency gap, which increased by about 20 percentage points with each level of increased disciplinary involvement, i.e., 2-to-4 discipline referrals or 5-or-more discipline referrals.
- When the consequences of disciplinary involvement take the form of in-school or out-of-school suspension, the risk of scoring below proficiency is even greater and proficiency gaps are widened.
- For students with disabilities, those with a single discipline referral were no more likely to score below proficiency than students with disabilities without discipline referrals.

- Students with disabilities and 2-to-4 referrals were at 3.7 greater odds of scoring below proficiency than similar students with no referrals. Students with disabilities and 5-or-more discipline referrals were about 12 times the odds of scoring below proficiency.
- Low income students with a single discipline referral were at 1.48 greater odds of scoring below proficiency, and those with 5-or-more were at 3.25 greater odds of scoring below proficiency, than low income students with no referrals.
- Despite previous studies showing Black students in West Virginia to be at increased risk of being referred for inappropriate behavior and for being suspended, no interaction was found between disciplinary involvement and race relative to academic performance.

Discussion and Recommendations

Whisman and Chapman (2013) offered four recommendations based on an analysis of school discipline data from the 2012-2013 school year: 1) encourage diligence among schools in accurately reporting discipline behaviors; 2) implement positive discipline approaches and alternatives to suspension; 3) provide appropriate behavioral interventions in the context of a three-tiered framework; and 4) further investigate and build capacity to minimize subgroup disparities in discipline practices. Based on the findings of this study, these recommendations stand and their implementation seems even more urgent in view of the impact of disciplinary involvement on academic performance.

Consistent with previous research (e.g., Fabelo et al., 2011), disciplinary involvement among students in West Virginia was strongly associated with poor academic performance. Similarly, the greater the disciplinary involvement the greater the negative impact on students' ability to achieve. Furthermore, the negative impact on academic performance was intensified when behaviors resulted in removal from the instructional environment by means of in-school or out-of-school suspensions. There appear to be three major justifications for suspensions and expulsions (Losen, 2011, p. 8): (a) to improve the student's behavior in the future by getting the parents' attention and active involvement; (b) to deter other students from misbehaving; and (c) to ensure that the school environment is conducive to teaching and learning. In West Virginia the purpose of suspension, whether in-school or out-of-school, is to "protect the student body, school personnel and property, the educational environment, and the orderly process of the school. Suspension is considered a temporary solution to inappropriate behavior until the problem that caused the suspension is corrected" (WVBE Policy 4373, p. 69). Despite efforts to prevent inappropriate behaviors, it is probably not possible to totally eliminate the need for detention, suspensions, and expulsions as appropriate courses of action. Yet, the evidence indicates that the hoped-for outcomes are rarely realized, first because student misbehavior is often a reflection of problems at least partially attributable to the home; so removing a child from school may result in more time spent in a dysfunctional environment. Even in cases of effective parenting, suspensions can be a hardship for families, potentially resulting in lost wages or even lost employment, especially for low-income and single parents (American Academy of Pediatrics, 2003).

Nor does excluding a child from school serve as a deterrent for misbehavior by other students. In a 2008 review of the literature on the application of zero-tolerance disciplinary

policies for nonviolent misbehavior, the American Psychological Association Zero Tolerance Task Force found that "frequent use of suspension alone has no measurable positive deterrent or academic benefit to either the students who are suspended or to non-suspended (observer) students" (in Losen, 2011, p. 10). Lastly, in an experiment that allowed teachers in a California school district to send disruptive students to a separate classroom, many teachers reported that after their departure, other students who had not previously been particularly disruptive emerged as major problems (Noguera, 2001). Further, if removing disruptive students helped to improve the learning environment, achievement rates should improve. Yet, studies have shown that high rates of school suspension are associated with lower achievement rates, even when controlling for income level and race (Skiba & Rausch, 2006; in Losen, 2011).

As suggested in the studies reviewed earlier, a self-perpetuating relationship may exist between school performance and behavior—the frustration, disaffection, and lower self-confidence associated with low achievement may manifest through students acting out in inappropriate ways. Some studies suggest that intervening early, both behaviorally and academically, can mitigate this pattern. Addressing low levels of inappropriate behavior and redirecting positively may circumvent escalation to more severe and aggressive behaviors, and can reduce the potential need for more punitive consequences at a later time (National Association of School Psychologists, 2001). Academically, Lin and colleagues (2013) investigated the relationships between reading, mathematics, and behavior difficulties among students followed from third to fifth grade and found evidence to indicate the directionality of those relationships. That is, other than in the case of poor task management, academic difficulties early on seem to lead to the behavior difficulties. Anderson, Howard, and Graham (2007) previously noted this relationship between reading and behavior difficulties, suggesting that "Overall, our findings suggest that a downward spiral of suspensions can be reduced if reading is improved by the end of 6th grade" (p. 58).

To improve conditions for learning in this era of standards-based education, Sailor, Stowe, Turnbull, and Kleinhammer-Tramill (2007) argue for social-behavioral standards to produce higher academic achievement. In alignment with this argument the West Virginia Board of Education (WVBE) has promulgated legislative rules that establish school and community social skills standards (WVBE Policy 4373) and seven standards for high quality schools (WVBE Policy 2322). In the former, the standards compel schools to promote social and emotional learning among students in three core areas: *self-awareness and self-management; social awareness and interpersonal skills;* and *decision-making skills and responsible behaviors*. These standards are intended to serve as a framework for establishing school-wide student behavior expectations as determined by the needs of each school.

With regard to the latter, elements of school climate are threaded through all seven standards, but three in particular are relevant to the findings of this study: *Positive Climate and Cohesive Culture* whereby schools are called upon to cultivate shared educational beliefs and values and foster engaging and orderly learning environments; *Standards-Focused Curriculum, Instruction, and Assessments* to ensure students attain essential knowledge, skills, and dispositions; and *Student Support Services and Family/Community Connections*, requiring schools to attend to student well-being, provide appropriate support services to address student

physical, social/emotional and academic growth, and to form positive relationships among student and staff and positive connections to families and the community.

Despite having these standards in place, the results of this study and its predecessor (Whisman & Chapman, 2013) demonstrate an ongoing need for improvement. Our findings add weight to recommendations for schools to intervene early, to implement positive discipline approaches and alternatives to suspension, and to deliver behavioral interventions in the context of a multitiered intervention framework to reduce students' engagement in inappropriate behaviors.

Very recently the U.S. Department of Education released a resource guide aimed at improving conditions for learning in the context of three guiding principles: Principle 1—create positive climates and focus on prevention; Principle 2—develop clear, appropriate, and consistent expectations and consequences to address disruptive student behaviors; and Principle 3—ensure fairness, equity, and continuous improvement (U.S. Department of Education, 2014). To operate in alignment with Principle 1, schools must begin by understanding their own climate conditions. Fortunately educators in West Virginia have access to multiple tools for soliciting input from school staff, families, and students about relationships, safety (perceived and real), and the academic and disciplinary environment.[5] Such information is key to setting goals for improvement. The use of evidence-based interventions such as tiered supports to better manage student behaviors, social-emotional learning and character education programs, and partnerships with community-based mental health providers can also help improve conditions for learning.

WVBE Policy 4373 provides broad guidance for discipline policies and expectations for appropriate behaviors (Principle 2); it also provides direction for implementation at the school level. Schools might translate the policy into a few global but clear behavior expectations and establish processes for consistently applying supports and consequences. In doing so, schools also stand to minimize subgroup disparities in discipline practices and consequent impacts on achievement (Principle 3).

What do schools stand to gain from embracing these practices? Of all the students included in this study 45% were proficient in math; 30% had one or more discipline referrals putting them at 2.4 times greater risk of scoring below proficiency. If through early intervention and positive discipline approaches schools reduced the proportion of students with one or more discipline referrals from 30% to 20%, a third fewer students would be exposed to increased risk of poor academic performance. In turn, these students would be better positioned to be successful not only academically but also in their social development.

[5] Examples include:
West Virginia School Climate Survey (wvde.state.wv.us/healthyschools/wvscs/);
School Culture Survey (wvde.state.wv.us/schoolimprovement/school-culture-survey.html);
WVEIS Discipline Module (wvde.state.wv.us/healthyschools/WOWDisciplineReportingTutor.php)

Selected Resources

Listed below are resources schools can use to address disciplinary practices and school climate issues described in this study:

National Center on Safe and Supportive Learning Environments (NCSSLE) at http://safesupportivelearning.ed.gov.

National Center on Supportive School Discipline at http://supportiveschooldiscipline.org/.

PromotePrevent Positive School Discipline at http://www.promoteprevent.org.

U.S. Department of Education, School Climate and Discipline at http://www2.ed.gov/policy/gen/guid/school-discipline/index.html.

Technical Assistance Center on Positive Behavioral Interventions and Supports at http://www.pbis.org/.

Supportive School Discipline Communities of Practice (SSDCoP) at http://ssdcop.neglected-delinquent.org/.

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