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SUPPLEMENTARY ANALYSIS 2-D

THE RELATIONSHIP BETWEEN ACHIEVEMENT,
DISCIPLINE, AND RACE: AN ANALYSIS OF FACTORS
PREDICTING ISTEP SCORES

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The Relationship between Achievement, Discipline, and Race: An Analysis of Factors Predicting ISTEP Passing Percentages

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Previous research has suggested that increased use of school suspension and expulsion may be associated with increased risk of dropout and lower achievement.¹ Part of the purpose of school discipline is to maintain school climates conducive to learning. This presentation will describe analyses exploring the relationship between school use of out-of-school suspension and achievement outcomes in one Midwestern state.

We began the analysis by looking at the relationship between a school's rate of out-of-school suspension and the percent of students who passed both the Math and English/Language Arts section of the Indiana State Test of Educational Progress (ISTEP) for the 2002-2003 school year. Out-of-school suspension and expulsion data were drawn from the Suspension and Expulsion Report from the Indiana Department of Education. Percent of students passing ISTEP was calculated by dividing the total number of students who scored proficient or above both the Math and English/Language Arts sections, by the total number of students tested in that school.

Figure 1 presents a graphic representation of achievement outcomes among schools with a high rate of out-of-school suspension as compared to those with a relatively low rate. Schools were divided into quartiles (four equal groups) based on their rate of out of school suspension. Schools with a high rate of usage of out-of-school suspension (schools with an out-of-school suspension rate in the top 25%) clearly have a lower ISTEP passing rate than those with a lower rate of usage of out-of-school suspension. In short, schools with high rates of out-of-school suspension have lower average passing rates on ISTEP than schools with the lower rates of suspension.

Could this simply be due to demographic factors? That is, one might expect that schools in more disadvantaged areas might have a higher percentage of difficult students who were both suspended and had lower achievement. To control for this possibility, a linear multiple regression equation was constructed with the school's percentage of students passing ISTEP serving as the dependent variable. Predictor variables were the school's percentage of free and reduced lunch students (poverty), percentage of African American students, and school type (elementary or secondary²). Since we found differences between elementary and secondary schools on some of the variables, we ran the analysis three ways: for all schools, for elementary schools only, and for secondary schools only.

Table 1 presents the partial correlations resulting from those analyses showing the strength of the relationships among the variables. Across all schools, poverty, out-of-school suspension rate, and percent African American enrollment were all significant predictors of the percent of students passing ISTEP. It is important to note that in this

type of multivariate analysis, the contribution of each variable to the final outcome can be assumed to be independent. Thus, higher school rates of out-of-school suspension are associated with lower passing ISTEP rates, regardless of the demographic or racial makeup of the school. These results also mean that depressed passing ISTEP scores for schools with higher percentages of African American students are not due solely to the influence of poverty, since there is a significant relationship between race and achievement outcomes even *after* controlling for poverty.

There is one interesting and important difference that emerged when the sample was broken into subgroups of elementary and secondary schools. At both the elementary and secondary level, percent African American enrollment makes a significant contribution to predicting ISTEP passing rates, but the relationship becomes much stronger at the secondary level. This suggests that schooling contributes to the test score gap, and that the contribution of school variables to the test score gap increases over time.

SUMMARY

A combination of factors, including poverty, race, and school rate of out-of-school suspension are able to significantly predict school passing rates on ISTEP. Thus, regardless of demographic factors, schools with a higher rate of out-of-school suspension have lower percentages of students who pass ISTEP. Moreover, by examining these factors simultaneously, it is clear that lower passing rates for African American students are not solely due to the effect of poverty, but that race makes a contribution of its own to average passing ISTEP scores. The increasing influence of race from elementary to secondary school analyses is similar to previous research in this area³ and suggests an increasing contribution of schooling over time to the black-white test score gap.

Endnotes

¹ Raffaele Mendez, L.M. (2003). Predictors of suspension and negative school outcomes: A longitudinal investigation. *New Directions for Youth Development*, 99, 17-33; Skiba, R., Simmons, A., Staudinger, L., Rausch, M.K., Dow, G., & Feggins, L. (2002). *Consistent Removal: Contributions of school discipline to the school-to-prison pipeline*. Paper presented at the Harvard Civil Rights Conference School-To-Prison Pipeline Conference.

² Elementary schools refer to schools serving grades 1 through 5. Secondary schools, a combination of middle and high schools, refer to schools serving grades 6 through 12.

³ Phillips, M., Crouse, J. & Ralph, J. (1998). Does the black-white test score gap widen after children enter school. In C. Jencks, & M. Phillips (Eds.), *The Black-White Test Gap*. Washington, D. C.: Brookings Institution Press.

Figure 1. Percent Passing ISTEP by School Use of Out-of-School Suspension

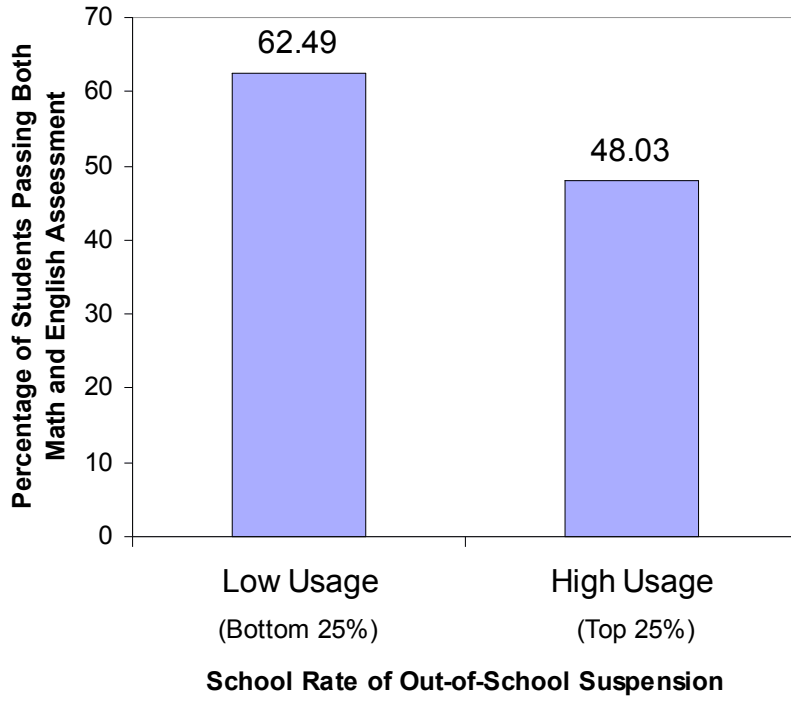


Table 1

Variables Significantly Predicting the Percent of Students Passing the Indiana State Test of Educational Progress (ISTEP) at the School Level: Partial Correlations for the 2002-2003 School Year

Variable	All	Elementary	Secondary
Poverty Rate ^a	-.233	-.453	-.211
Out-of-School Suspension Rate ^b	-.344	-.134	-.392
African American Enrollment Rate ^c	-.491	-.186	-.608

Note: All results are significant at the $p < .001$ level (Less than a 1 in 1000 chance that the relationships are due to chance).

^a Poverty rate was calculated by taking the number of students who qualify for free or reduced lunch divided by the total school population. Results control for a school's out-of-school suspension rate and African American enrollment rate.

^b Out-of-school suspension rate was calculated by summing the total incidents of out-of-school suspension divided by a school's total enrollment. Results control for a school's poverty rate and African American enrollment rate.

^c African American enrollment rate was calculated by dividing a school's number of African American students by the school's total enrollment. Results control for a school's poverty rate and out-of-school suspension rate.