

# AFTER SCHOOL CLOSURE: TRACKING THE ACADEMIC PERFORMANCE OF DISPLACED STUDENTS

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**RESEARCH QUESTION: What are the effects of closing low-performing schools on the reading achievement of displaced students?**

## EXECUTIVE SUMMARY

This study examined the effects of closing low-performing schools on the reading achievement of displaced students. School closure is a reform model used for federally-funded turnaround programs, and under this model, students from closed low-performing schools are reassigned to higher achieving schools to boost performance. Closure is also a strategy used more generally by Local Education Agencies (LEAs) to deal with a variety of issues, like low performance or cost control. However, the effects of closure on the students it displaces are not clear. This study explored these effects with a longitudinal analysis of performance on End-of-Grade (EOG) reading tests for students displaced by the closure of five low-performing North Carolina middle schools in the 2011-2012 school year. The analysis found that school closure had a negative effect in the announcement year and an insignificant effect in the closure year. However, students from these schools were not reassigned to significantly higher achieving schools.

These findings and previous research suggest that LEAs should exercise caution when closing low-performing schools because closure can have negative effects on displaced students. If local education agencies close low-performing schools, they should assign students to significantly higher achieving schools, support displaced students as they transition to new schools, and prepare receiving schools to provide additional instructional and social supports to their new students. To fully understand the effectiveness of closure as a policy, future research should examine spillover effects, the long-term effects of closure for displaced students, and the performance of future cohorts of students who avoided attending the closed low-performing school.

## BACKGROUND

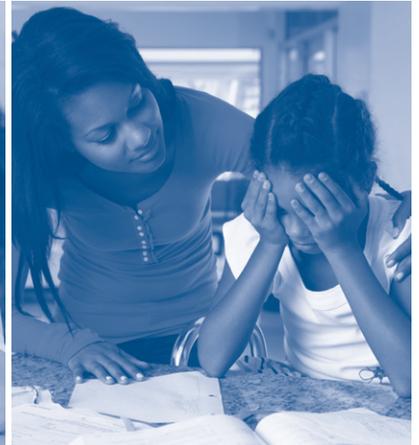
### SCHOOL CLOSURE POLICY

School closure has long been an option for reforming low-performing schools under federal policy. Under No Child Left Behind, schools failing to make Adequate Yearly Progress (AYP) for five or more consecutive years had to implement a major restructuring plan, with options including school closure, in order to maintain federal funding under the Elementary and Secondary Education Act (ESEA).<sup>1</sup> Under the ESEA flexibility waiver, closure remains a reform option for the lowest performing five percent of Title I schools.<sup>2</sup> School closure is also one of four reform models used for efforts to turn around the persistently lowest achieving schools under the Race to the Top<sup>3</sup> and School Improvement Grant<sup>4</sup> programs. In line with these federal policies, NC § 115C 105.37 authorizes the State Board of Education to approve the use of reform models, including closure, for those schools identified as continually low-performing. To close

<sup>1</sup> US Department of Education, LEA and School Improvement: Non-Regulatory Guidance, revised July 21, 2006, (Washington, DC, 2006). |

<sup>2</sup> NC Department of Public Instruction, ESEA Flexibility Request, (Raleigh, NC, 2012). | <sup>3</sup> US Department of Education, Race to the Top Program: Guidance and Frequently Asked Questions, updated May 27, 2010, (Washington, DC, 2010). | <sup>4</sup> US Department of Education, Guidance on School Improvement Grants Under Section 1003(g) of the Elementary and Secondary Education Act of 1965, revised June 29, 2010, (Washington, DC, 2010).





a school under this policy, districts must reassign students from closed schools to higher achieving schools. Some evidence supports the notion that reassigning students to higher achieving schools may improve performance. Several research studies have found that attending schools with higher achieving peers can benefit disadvantaged students.<sup>5</sup> Other studies have found that higher achieving schools tend to have more qualified teachers, and effective teachers can also benefit disadvantaged students.<sup>6</sup>

School closure is also an option for schools not identified as continually low-performing under state policy. NC §115C 72 gives LEAs the authority to close or consolidate schools in the same district, so long as they consider several factors relating to feasibility, cost, and student welfare.

### SCHOOL CLOSURE IN PRACTICE

In 2012, 29 schools closed in North Carolina.<sup>7</sup> A review of local school board minutes and news reports revealed that LEAs publicly justify school closure with a combination of reasons, including student achievement, facilities, enrollment, and cost savings. Despite the reasons LEAs cite for closure, community reactions to the decision highlight the contentious nature of the issue.

### PREVIOUS RESEARCH

Few research studies document the impact of school closure on displaced students, with the three most prominent studies focusing on closures at the district level. These studies indicate three potential outcomes for school closure. De la Torre and Gwynne found that displaced students experienced a drop in performance during the announcement year but rebounded within one year of closure in their study of underutilized and low-performing Chicago elementary schools.<sup>8</sup> Kirshner, Gaertner, and Pozzoboni found that student performance fell in the announcement year and declined further in the closure year in their study of a continually low-performing western high school.<sup>9</sup> Engberg et al found negative effects on performance the year of closure, with no statistically significant changes in the second and third years after closure in their study of low-performing schools in a mid-sized urban school district.<sup>10</sup>

These studies identified several factors that improved outcomes for displaced students. First, transitioning to a higher achieving school benefited displaced students academically. De la Torre and Gwynne found that students benefited when their new schools were in the top quartile of schools. Engberg et al found that students attending significantly higher

### Community Reactions to School Closure at Public Meetings

*“The limited cost savings do not justify the decisions; and the burden of change falls on one segment of the school system (the minority and economically disadvantaged).”*

*“Moving students . . . would increase the burden for those families.”*

*“The plan is unjust, unfair, and the recommendations are race related and will return the community to segregation.”*

<sup>5</sup> Douglas N. Harris, “Educational Outcomes of Disadvantaged Students: From Desegregation to Accountability,” in *Handbook of Research in Education Finance and Policy*, eds. Helen F. Ladd and Edward B. Fiske (New York: Routledge, 2008), 551-572. | <sup>6</sup> Donald Boyd, Hamilton Lankford, and James Wyckoff, “Increasing the Effectiveness of Teachers in Low-Performing Schools,” in *Handbook of Research in Education Finance and Policy*, eds. Helen F. Ladd and Edward B. Fiske (New York: Routledge, 2008), 535-550. | <sup>7</sup> NC Department of Public Instruction Educational Directory and Demographical Information Exchange, *Closed Schools Report*, accessed June 2013. <http://www.ncpublicschools.org/fbs/accounting/eddie>. | <sup>8</sup> Marisa de la Torre and Julia Gwynne, *When Schools Close: Effects on Displaced Students in Chicago Public Schools (Chicago: Consortium on Chicago School Research at the University of Chicago, 2009)*. | <sup>9</sup> Ben Kirshner, Matthew Gaertner, and Kristen Pozzoboni, “Tracing Transitions The Effect of High School Closure on Displaced Students,” *Educational Evaluation and Policy Analysis* 32, no. 3 (2010): 407-429. | <sup>10</sup> John Engberg, Brian Gill, Gema Zamarro, and Ron Zimmer, “Closing Schools in a Shrinking District: Do Student Outcomes Depend on Which Schools Are Closed?” *Journal of Urban Economics* 71, no. 2 (2012): 189-203.

achieving schools, defined as a one-standard-deviation difference in a composite of value-added scores, did not experience any declines in performance, though other students' performance did decline. Positive relationships with teachers or other adults can also benefit students. De la Torre and Gwynne found that displaced students performed significantly better in schools with high teacher-student trust and more individual attention from teachers. Similarly, Kirshner, Gaertner, and Pozzoboni found that students linked some of their difficulty in transitioning in their new school to lower levels of individual support from teachers.

## METHODS

### SAMPLE

To determine how school closure in North Carolina has affected the reading performance of displaced students, we tracked students who attended low-performing middle schools that closed in 2012. We focused on the closure of low-performing schools because the students displaced from these schools, where proficiency attainment was low, are more likely to be behind, making them more vulnerable to disruptions in learning. Additionally, closure is a reform model currently used for federal turnaround programs serving low-performing schools, and more districts may consider closure under these programs. We defined a low-performing school as a school serving the general population with fewer than 60 percent of students scoring proficient on EOG assessments in the year prior to the closure announcement.

Our sample included 5 closed middle schools from 3 districts. Two schools qualified for turnaround services under Race to the Top. One school qualified for restructuring under NCLB. And the other two schools in our study did not meet the federal or state thresholds for low performance, but had fewer than 60 percent of their students achieve proficiency on EOGs.

We also used multivariate matching procedures to select similar students from schools that did not close to serve as a comparison, which enabled us to control for statewide events that may have impacted student performance during the closure year. We first selected schools that were similar to the closed schools in the year prior to the closure announcement using data from the School Report Cards database. We matched schools on variables for performance composites, years under improvement for NCLB, demographic characteristics, poverty level, grade structure, school type, and locale type. From among these schools, we selected the students who were most similar to our students from closed schools in the year prior to the closure announcement using data from NC DPI's Accountability Database, which tracks

student performance data for accountability reports. We matched students on variables for performance on math and reading EOG assessments (as a composite), race and ethnicity, economically-disadvantaged status, and participation in programs for academically and intellectually gifted (AIG) and disabled students. This matching sample included 1,125 students from 13 schools in 7 districts.

The majority of students from our closed schools and matching sample were economically disadvantaged minority students. Only 50 percent of the students in each group scored proficient on the reading EOG in the year prior to the announcement. Table 1 displays summary statistics for these groups.

**TABLE 1. STUDENT SUMMARY**

	Closed-School Group	Matching-Sample Group
<b>Number of Students prior to Closure</b>	1,100	1,125
<b>Percent Economically Disadvantaged</b>	93%	92%
<b>Percent Minority</b>	93%	94%
<b>Percent Proficient on Reading EOG (2010)</b>	50%	50%

We limited our study to students who were in the seventh- and eighth-grades the year of closure. North Carolina tests reading in third- through eighth-grades, so students in these grades each had at least four years of exam scores for the longitudinal analysis. Students in these grades also had to switch to a new school as a result of closure, whereas students entering sixth- and ninth-grades at the time of closure would have transitioned to a new middle or high school regardless of the closure.

### MODEL

To conduct the analysis, we compiled data for the students from our closed schools, "the transition group," and for the matching students, "the control group," from 2009 to 2012 using the Accountability Database. We used a multilevel model for discontinuous change, which allowed us to view changes in student performance trends due to closure.<sup>11</sup> We tested models that looked for immediate changes in the announcement and closure years and for differences in the rate of change after the announcement year. We also tested the effect of attending a higher achieving school during the closure year. Our models controlled for sex, race, economically-disadvantaged status, AIG status, and disability status. We also tested the difference between the control group and transition group prior to the closure announcement, and the model found no significant difference, indicating that the control group serves as a good match for the transition group. The results for the model of best fit are included in the Table 2.

<sup>11</sup> Judith D. Singer and John B. Willett, *Applied Longitudinal Data Analysis: Modeling Change and Event Occurrence* (New York: Oxford university press, 2003).

## LIMITATIONS

Several limitations should be considered when interpreting our results. First, the small sample size of closed schools limits the generalizability of our results because factors unique to the districts that serve these schools could influence the outcomes. Second, our study does not consider certain factors that other closure studies have identified as affecting the impact of closure, including covariates representing relationships with teachers, support services at new schools, and reassignment policies.\* Our study also does not assess the long-term effects of closure on students, and previous research has found both improvements and stabilization in performance in the years after closure. Finally, it is important to note that our study only assesses one small portion of the closure effect and cannot evaluate the policy as a whole.

## RESULTS

Our results indicate that closure has a negative effect on performance on EOG reading assessments for displaced students. Controlling for demographic factors, students from closed schools experienced a loss of 12 Lexile points in the announcement year, for an estimated growth of 75 Lexile points that year rather than the 87 Lexile points expected without the closure. Figure 1 displays these results.

Table 2 presents detailed results for the model of best fit. The first section of the table displays results for the initial status of displaced students in the year prior to the announcement. Students began with an average Lexile score of 817 points, controlling for AIG status, race, sex, limited English proficiency

**TABLE 2. RESULTS FOR MODEL OF BEST FIT**

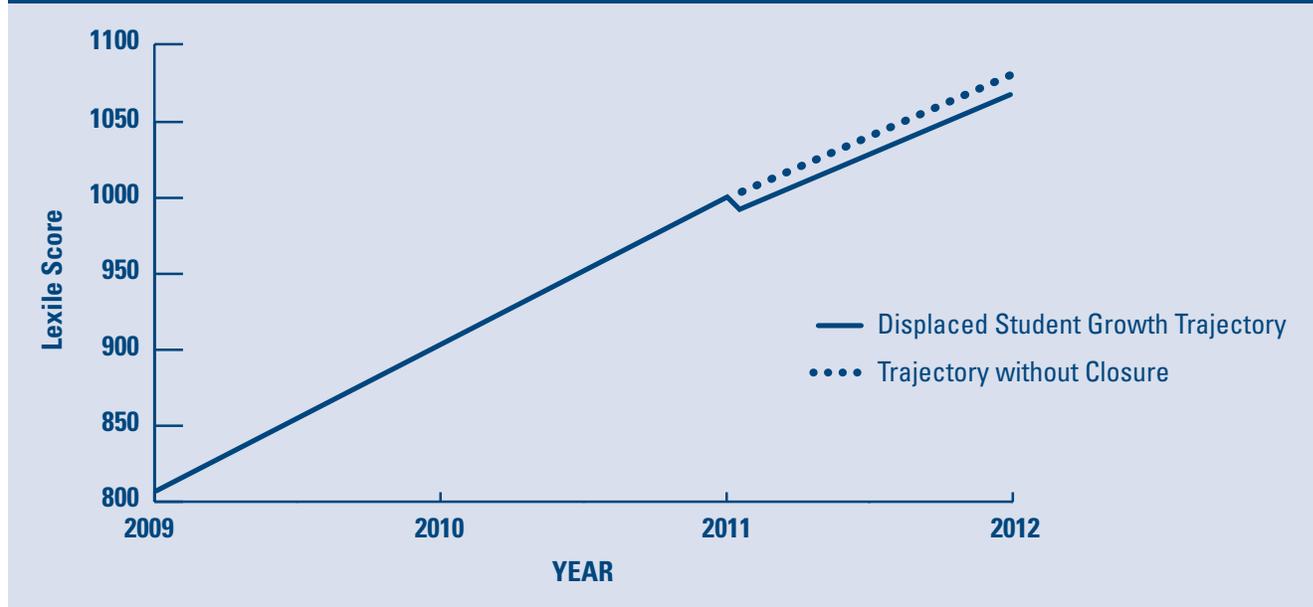
INITIAL STATUS	
Intercept	817.20*** (17.80)
Academically and Intellectually Gifted (AIG) (1 – yes, 0 – no)	177.13*** (24.74)
Minority (1 – yes, 0 – no)	-122.44*** (17.94)
Sex (1 – male, 0 – female)	-32.78*** (6.28)
Limited English Proficient (1 – yes, 0 – no)	-98.82*** (13.33)
Student with Disability (1 – yes, 0 – no)	-77.23*** (7.38)
RATE OF CHANGE	
Grade (Centered)	86.60*** (4.13)
Academically and Intellectually Gifted (1 – yes, 0 – no)	-25.27*** (6.98)
Minority (1 – yes, 0 – no)	9.04* (4.08)
Limited English Proficient (1 – yes, 0 – no)	16.72*** (3.64)
Economically Disadvantaged (1 – yes, 0 – no)	-3.46* (1.62)
ANNOUNCEMENT YEAR INTERCEPT	
Announcement Year (Coded 1 for 2011 and 2012 for students from closed schools)	-12.29*** (3.48)

\* Significant at the  $p < .05$  level

\*\* Significant at the  $p < .01$  level

\*\*\* Significant at the  $p < .001$  level

**FIGURE 1. CHANGE IN GROWTH IN ANNOUNCEMENT YEAR**



\* The "Previous Research" section describes the importance of relationships with teachers and of support services for displaced students. For more information on the importance of reassignment policies, see Engberg et al's (2012) study, which includes controls for family choice and reforms at receiving schools, like restructuring the grade-levels served.

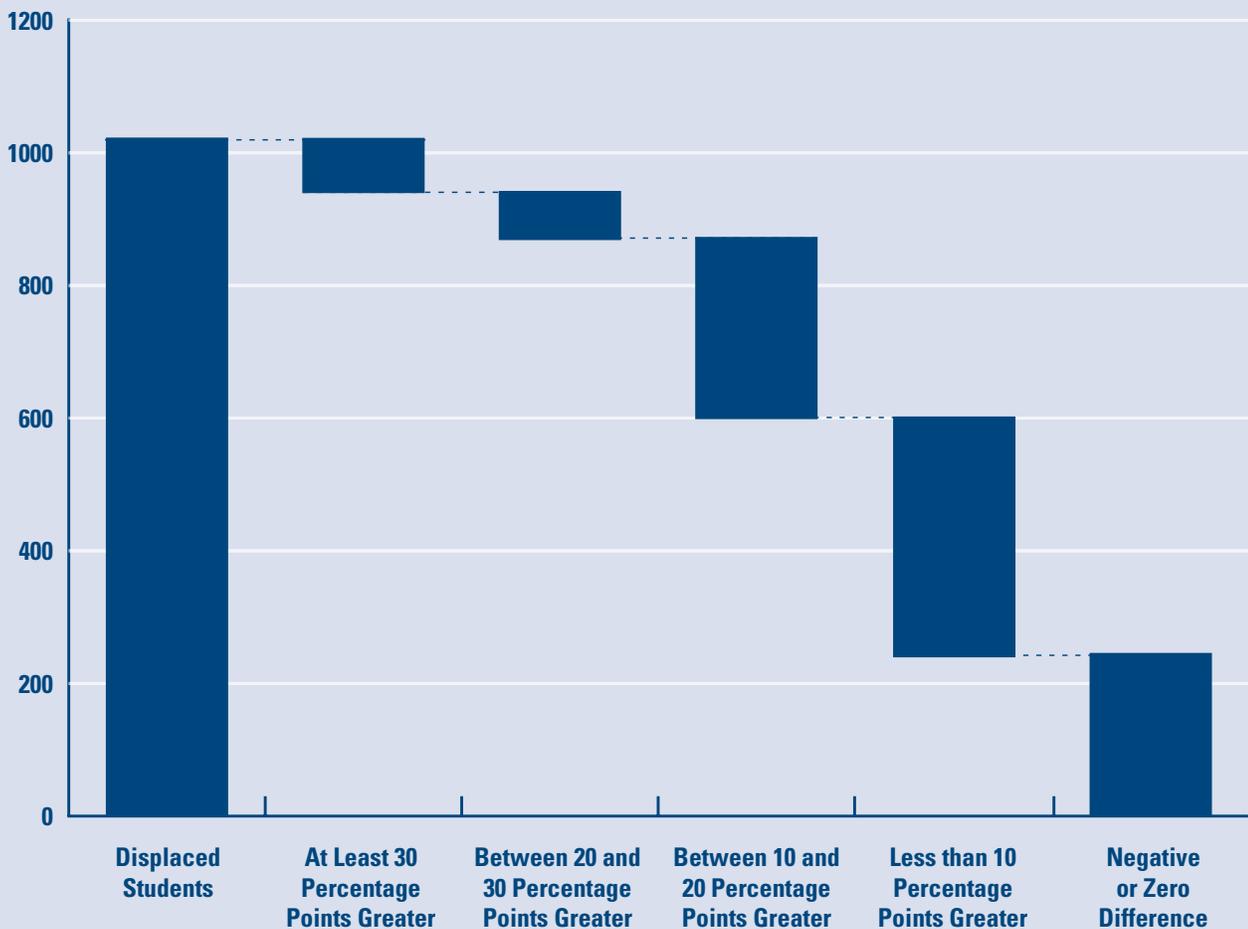
status, and disability status. The second section of the table displays results for the rate of change. Students gained an average of 87 points with each increase in grade level, controlling for AIG status, race, limited English proficient status, and economic disadvantage. The third section of the table displays the announcement year effect – a 12-point drop in Lexile score for students in closed schools.

There were no further significant changes in student performance in the closure year, even for students who attended a higher achieving school. We examined reassignment patterns for displaced students for a better understanding of these closure year results. One district allowed parents to choose their child’s new school from four of the district’s middle schools. One district reassigned students from two schools to their former elementary schools, which had been reconfigured to serve grades K through 8, so future students would not lose ground in the elementary-to-middle

transition. Students from one school were reassigned to neighboring middle schools. And, the majority of students from one school were reassigned to an early college that expanded to serve middle grades and accommodate a nearby low-performing high school.

These reassignment policies resulted in 76 percent of transition cohort students moving to a school that had a higher performance composite in the year prior to closure. However, few students transitioned to a significantly higher achieving school – only 14 percent of students transitioned to a school with a performance composite above 60 percent, our threshold for designating schools as low-performing. In fact, only 40 percent of all students transitioned to a school with a performance composite at least 10 percentage points higher than their closed school, and only 14 percent switched to a school with a composite of 20 percentage points higher. Figure 2 displays these reassignment patterns.

**FIGURE 2. REASSIGNMENT PATTERNS FOR DISPLACED STUDENTS**



*Difference in Performance Composites between New Schools and Old Schools in 2011*

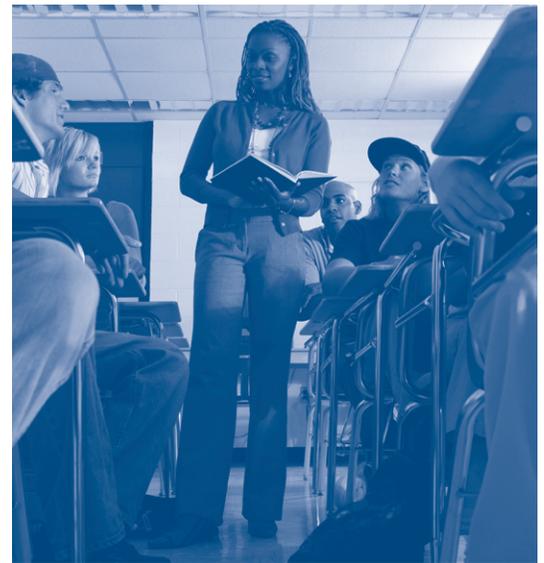
## CONCLUSION

Our study, in line with previous research, indicates that LEAs should be cautious when implementing school closure. We found that seventh- and eighth-grade students displaced by closure experienced negative effects in the announcement year. Previous studies have found similar declines in the announcement year or closure year for a range of grades, including elementary and high school.<sup>12</sup> Furthermore, the full impact of closure remains unclear. Research suggests that reassigning disadvantaged students, particularly those who are low-performing, to higher achieving schools can benefit these students, which bodes well for future cohorts of students who attend a higher achieving school in place of a closed low-performing school.<sup>13</sup> However, closure could have a multitude of spillover effects for these receiving schools, the district, personnel, and the community.

## RECOMMENDATIONS

If LEAs choose to close a low-performing school, several steps can mitigate the negative effects for displaced students and strengthen the reform's overall results.

1. The reassignment plan must assign displaced students to new schools with significantly higher achievement. We found no significant effects in the closure year, even when students attended higher achieving schools. Unfortunately, a minority of students in our study transitioned to a new school with a performance composite of even ten percentage points greater than that of their previous school. Fewer still attended a school with more than 60 percent of students scoring proficient on EOGs. Previous research has defined "significantly higher achieving" in different ways. De la Torre and Gwynne (2009) found that students improved if they



<sup>12</sup> De la Torre and Gwynne, *When Schools Close*; Kirshner, Gaertner, and Pozzoboni, "Tracing Transitions;" and Engberg, Gill, Zamarro, and Zimmer, "Closing Schools in a Shrinking District." | <sup>13</sup> Harris, "Educational Outcomes for Disadvantaged Students."



attended schools in the top quartile. Engberg et al (2012) found that students did not decline if they attended a school that had a value-added composite score of at least one standard deviation higher than the previous school.

2. LEAs should provide additional support to students in the announcement year, which is when our study recorded a drop in performance for displaced students. However, researchers have not identified any strategies for LEAs to use in the announcement year that are linked to better outcomes for students. De la Torre and Gwynne (2009) posit that the announcement results in negative effects for students because of the disruption it causes for students, parents, and teachers. To reduce these negative effects, Kirshner, Gaertner, and Pozzoboni (2010) suggest a more participatory decision-making model, which they argue will make the experience less negative for families and will increase the amount of time and information families have to explore options for new schools.
3. LEAs must ensure that receiving schools are prepared to adequately support displaced students as they transition to their new school and make up lost ground from the announcement year. Kirshner, Gaertner, and Pozzoboni (2010) found that students may need more individual support with their coursework as they transition to a new school, and de la Torre and Gwynne (2009) found that students performed better in schools with more teacher attention and higher student-teacher trust.

#### **FUTURE RESEARCH**

More research is needed to understand the full impact of school closure. As a long-term strategy, it is important to understand the effects of closure on students who avoided attending the low-performing school because it closed before they ever had to enroll. Along the same lines, research should explore spillover effects for receiving schools, the district, and the community. To strengthen the reform's results, research should examine strategies to better support displaced students in both the announcement and closure years. Additionally, a better understanding of effective reassignment patterns will be essential for this policy's future success.



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