Technical Report

TEACHERS' PERSPECTIVES ON THE LEARNING AND WORK ENVIRONMENTS UNDER THE NEW ORLEANS SCHOOL REFORMS

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New Orleans schools experienced drastic reforms after Hurricane Katrina devastated the city in August of 2005. To examine teachers' perspectives on the impacts of these reforms, we surveyed 323 teachers who taught in New Orleans public schools before Hurricane Katrina and in the 2013-14 school year. The survey asked teachers to directly compare the learning and work environments of their current schools to that of their pre-Katrina schools. These returning teachers perceived significant and generally positive changes in the learning environment but a mix of positive and negative changes in the work environment. These results show that an intensive, sustained school reform effort can lead to significant change, including both the intended benefits asserted by advocates and the unintended consequences of concern to critics.

Introduction

A general theme of school reform is that policies change regularly, but school environments change slowly. Teachers often work in isolation (Lortie, 1975), and leaders buffer teachers from policies that might require changes that are inconsistent with their beliefs and school culture (Honig & Hatch, 2004), or that are simply beyond the capacity of teachers to carry out (Bryk et al., 2010). As a result, we see prominent books with titles like *Tinkering Toward Utopia* (Tyack & Cuban, 1995), *So Much Reform, So Little Change* (Payne, 2008), and *The Same Thing Over and Over* (Hess, 2010).[1]

There are signs that state and federal test-based accountability policies have changed schools and produced some positive effects on student achievement (Carnoy & Loeb, 2002; Dee & Jacob, 2011; Hanushek & Raymond, 2005). However, these effects are often interpreted as small (Ladd, 2017). Larger effects have been more common with more aggressive reforms. School improvement grant (SIG) recipients who adopted the "turnaround" model, firing the principal and at least half of teachers, saw an increase in student test scores (Dee, 2012), and charter schools using a "No Excuses" model have shown improved outcomes relative to traditional public schools (Angrist, Pathak, & Walters, 2013). A common thread among these approaches is that they required substantial changes in classrooms.

The school reforms put in place in New Orleans after Hurricane Katrina created drastic changes in the school landscape and led to large increases in achievement (Harris & Larsen, 2015). After Katrina, all public-school employees were placed on disaster leave without pay and eventually fired, the union contract expired and was not replaced, and tenure protections were effectively eliminated. Moreover, school attendance zones were replaced by a city-wide school choice system, and the vast majority of schools were placed under the control of a state agency, which later turned them into charter schools. In short, the New Orleans school reforms represent perhaps the most intensive implementation of test- and market-based accountability ever conducted. If ever there was a reform effort that would change what happens in schools, this is it.

In this study, we provide exploratory evidence on changes in schools' learning and work environments after these reforms using survey data from teachers. Few studies have examined the perspectives of a large sample of teachers who have experienced a drastic systemic reform, and no study that we are aware of has measured changes in such a broad range of both learning and work environment dimensions. Most research on this topic either uses a small case-study approach or compares cross sections of teachers in different school environments (for example, teachers in charters and traditional public schools).

Specifically, we surveyed a sample of 323 teachers who taught in New Orleans schools both before and after the storm and asked them to compare their

experiences under both systems. Our analysis examines (1) whether teachers report significant changes between the pre- and post-storm period along a number of dimensions; (2) whether the trends we see in our sample differ from national trends; and (3) whether characteristics of teachers' schools are associated with their perceptions of the post-storm changes. We also take steps to address potential threats to validity, especially those pertaining to retrospection bias. Overall, we conclude that large-scale reform in New Orleans had a significant influence on teachers' perceptions of the school environment. The mix of perceptions suggests that the reforms have the intended benefits that advocates argue for—the New Orleans reforms are not "the same thing over and over"—but also come with unintended consequences.

The Effects of School Reform on Students and Teachers

Successful school reform is difficult to achieve on a large scale. Individual schools with strong leadership and investment in a new program or approach are able to make gains (i.e., Dobbie & Fryer, 2013; Edmonds, 1979; Slavin & Madden, 2001). However, at district and state levels, examples of large-scale, expensive school improvement efforts that have no effect or only a small effect on achievement abound – Title I programs have little to no effect on achievement (van der Klaauw, 2007; Wong & Meyer, 1998), class size reduction efforts have not worked at scale (Chingos, 2012), and the federal comprehensive school reform efforts of the 2000's, though sometimes positive (Borman, Slavin,

Cheung, Chamberlain, Madden, & Chambers, 2007), resulted in only small and inconsistent effects on achievement (Gross, Booker, & Goldhaber, 2009; U.S. Department of Education, 2010). These results are discouraging and have led some scholars to call for a substantial revisioning of school reform (Hess, 2010; Payne, 2008).

Even more aggressive large-scale federal school turnaround efforts have produced mixed results. The Obama administration's Race to the Top initiative and revamping of the pre-existing School Improvement Grant (SIG) program both put substantial federal dollars toward turning around chronically low-performing schools. These initiatives were structured with the intent of creating meaningful changes in the schools and, as a result, student achievement. However, a recent national evaluation of the SIG program found null results on average across 22 states (Dragoset et al., 2017). Studies of the effects of SIG in specific states and districts find a mix of positive and negative effects and point to variation in intensity and district support as drivers of the direction and strength of the effects (Dee, 2012; Dickey-Griffith, 2013; Papay, 2015; Sun, Penner, & Loeb, 2017).

Similarly, research on Race to the Top-funded efforts have found mixed effects. Race to the Top efforts in Tennessee show some evidence of positive effects on achievement, particularly when schools were managed by the district (Zimmer, Henry, & Kho, 2016). However, in North Carolina, Heissel and Ladd (2016) found that most schools chose the least intrusive "transformation" model

(requiring a change in school leadership but not faculty), that this model had little to no effect on raising student achievement and that the changes did not result in an improved school climate, according to teacher surveys.

In addition to federal and state accountability policies, districts are increasingly turning to charter school operators to offer parents additional public school options and create market pressures to improve traditional public schools through competition for students (Berends, 2015; National Alliance of Public Charter Schools, 2014). However, charter schools are not universally successful at raising student achievement. A national evaluation found that on balance, charters were no more or less successful than traditional public schools, with wide variability across charter schools in the size and direction of effects (Gleason et al., 2010). Studies have even found negative effects in some contexts (Angrist, Pathak, & Walters, 2013; Bifulco & Ladd, 2006). However, in urban areas and with disadvantaged students (typically the focus of school reform efforts), charter schools have shown consistent, substantial, and positive effects on student achievement (Angrist et al., 2013; Dobbie & Fryer, 2011a; Hoxby, Murarka & Kang, 2009).

Policies that are successful in raising student achievement do so through changes in administrative and instructional practices. In response to test-based accountability reforms, schools focus on instructional alignment with assessment standards and increase professional development for teachers (Hamilton et al.,

2007). These changes tend to be particularly sizable for schools under threat of sanctions or closure. For example, F-graded schools under Florida's accountability system increased their focus on low-performing students, their instructional time, and the resources available to teachers (Rouse et al., 2013). Additionally, schools under threat of sanctions raised their spending on instruction and teacher training (Chiang, 2009). A substantial body of research demonstrates that high-stakes testing also changes both the content and delivery of instruction, with teachers often using more lectures and teacher-centered practices and narrowing the curriculum to focus on tested topics – changes that educators often dislike (Abrams, Pedulla, & Madaus, 2003; Au, 2007; Diamond & Harris, 2012; Rouse et al., 2013). Despite the demonstrated effectiveness of test-based accountability and the increase in instructional resources, teachers have reported negative views of high-stakes testing (Abrams et al., 2003).

Similarly, charter school reforms lead to changes in the school environment that can have both positive and negative effects on teachers. Successful charter schools often share a set of similar practices linked to higher achievement, including a No Excuses model of strict discipline, high expectations, data-driven instruction, increased instructional time, and frequent feedback to teachers (Angrist et al., 2013; Dobbie & Fryer 2011b). Surveys of charter and traditional public school teachers reveal perspectives that reflect these differences. Charter-school teachers often report a stronger academic culture – for

example, higher levels of academic press (Goldring & Cravens, 2007) a stronger emphasis on academic learning (Bomotti et al., 1999), and a stronger climate of high expectations as compared to traditional public schools (Angrist et al., 2012; Wei et al., 2014).

However, charter-school teachers' reviews of the work environment, compared with those of traditional public school teachers, are mixed. Most charter schools do not have collective bargaining agreements (Rebarber & Zgainer, 2014). The absence of a formal process between teachers and administrators to define compensation and various working conditions has raised concern that charter schools may create more difficult work environments for teachers (Angrist et al., 2012; Wei et al., 2014). However, others suggest that the absence of a collective bargaining agreement can help foster a more professional work environment focused on collaboration and in turn increase focus on the learning environment and student outcomes (Hill, Pierce, & Guthrie, 1997; Hess & Loup, 2008). The available evidence indicates that though charter schools may have improved learning environments, these improvements may come at a cost to teachers. Findings that are relatively consistent suggest that charter school teachers experience longer work days (Malloy & Wohlstetter, 2003; Ni 2012; Torres, 2016), less professional development (Johnson & Birkeland, 2003), less satisfaction with evaluation (Wei et al., 2014), and higher turnover (Torres & Oluwole, 2015).

The New Orleans School Reforms and the Teacher Workforce

Hurricane Katrina and the school reforms implemented afterwards had a major impact on the teacher workforce in New Orleans. In the wake of Hurricane Katrina, with no operational schools, the Orleans Parish School Board terminated all school staff and allowed the collective bargaining agreement to expire. In the months following the storm, almost all the schools in the city (102 of 126 schools) were taken over by the state's Recovery School District (RSD). The schools reopened under the RSD had no attendance zones or admissions requirements, essentially making them accessible to students from anywhere in the city. Over the subsequent years, the state RSD issued charters to operators to open new schools and at the same time closed or turned over all of its direct-run schools to charter management operators (CMOs). By the 2013-14 school year, only eight public schools in New Orleans were directly run by the state or district, and the remaining 78 were charter schools.

Though schools were not required to rehire teachers, many former New Orleans teachers were rehired. But, even as the city began to rebuild, there was a dramatic decrease in the number of students, and therefore the number of teachers needed to educate them. Two years after Hurricane Katrina, the public-school teacher workforce was only 57.5 percent of its previous size, with a roughly even split between pre-Katrina teachers and those new to the district (55.5 versus 44.5 percent, respectively; Barrett & Harris, 2015).

By 2014, a large share of the city's schools were managed by leaders with weaker local ties, and the share of teachers in New Orleans who had taught in the city pre-Katrina dropped to 28.3 percent (Barrett & Harris, 2015).[2] KIPP, for example, became the largest charter network, operating nine separate school campuses in 2013-14, and tended to hire teachers from alternative preparation programs. Teach for America teachers and alumni eventually comprised one fifth of all teachers in public schools (Teach for America, 2016), and a sizeable share of the remaining teachers came from the local program TeachNOLA, affiliated with the national New Teacher Project.

The Current Study

New Orleans is the only city in the country in which almost all publicly funded schools are operated by independent charter management organizations. This system has created a full-scale test of market-based reforms. Recent research reveals that New Orleans school leaders feel and respond to these pressures, using a variety of methods to attract and retain the students they want in their schools (Jabbar, 2016). In addition to this market pressure, schools are under intense test-based accountability pressure from the charter authorizing agencies. The threat of school closure is more realistic in the post-Katrina period: no schools were closed for performance prior to Katrina, but more than 25 of the schools that had been opened after Katrina were shut down for low performance by 2014 (Bross & Harris, 2016).

The combination of evidence on the effects of accountability policies and differences between charter and traditional public schools indicates that the drastic reforms in New Orleans had the potential to affect what happens in schools, in both positive and negative ways. We examine teachers' perspectives on these factors, and other aspects of their work environments and schools' learning environments, addressing the following research questions:

1. How did returning teachers perceive the changes in New Orleans publicly funded schools after the reforms?
2. How are teachers' perceptions of the learning and work environments related to the types of schools they worked in after the reforms?

Few studies have examined teachers' perspectives on their schools before and after a reform, and no prior study that we are aware of has surveyed teachers who have experienced a system-wide transition from a traditional district to a market-based system dominated by charters. The current study provides a unique opportunity to examine the effect on teachers and on school practices of the most extreme district-level school reform effort ever undertaken.

Data and Methods

Sampling

In the spring of 2014, we conducted a survey of educators with a sampling frame that included all teachers (3,219) in all 88 traditional public and charter

schools in New Orleans. Fifty-three schools (60.2 percent) agreed to participate. Schools had the option to have the researchers administer the survey on paper during a teacher professional day, with a catered lunch provided, or to send an online version to teachers with a $1000 gift given to schools that reached an 80% response rate. As a result, within-school response rates were high.

To generate our sample for this study, the survey asked educators to indicate whether they taught in a New Orleans public school before Hurricane Katrina, in the 2004-05 school year or before, and to list the school where they taught. Of the participating teachers, 323 indicated that they taught in New Orleans before the storm and listed a public school in the city (103 of the city's 128 pre-Katrina schools were listed by study participants). Using administrative data collected by the Louisiana Department of Education, we identified 420 teachers in participating schools that taught in New Orleans before the storm, resulting in a within-school response rate of 76.9% for pre-Katrina teachers. In total, including the non-participating schools, there were 771 teachers who taught in New Orleans before the storm and were still teaching there in 2014, meaning that we sampled 41.9 percent of the population of interest.

Table 1 summarizes the characteristics of the sample relative to New Orleans teachers in 2004-05 and to the population of teachers who taught pre-Katrina and had returned by 2013-14. Pre-Katrina teachers teaching in 2014 were slightly more likely to be Black and less likely to be White relative to the

population of 2004-05 New Orleans teachers and were naturally more experienced, as they had all taught at least nine years prior to the survey administration. Additionally, teachers who were in failing schools pre-Katrina were five percentage points less likely to be teaching in New Orleans in 2013-14, compared to teachers who were in non-failing schools (see Lincove, Barrett, & Strunk, 2017, for a full discussion of the characteristics of teachers who were more likely to return). Finally, an analysis of teacher salary data reveals that teachers were, on average, making about $3,500 more in 2014 than teachers with the same education and experience in 2005 (see Table A3 in the Appendix).

Our survey sample was similar in race and years of experience to the 2014 pre-Katrina teachers but was not representative by school sector. All of the Orleans Parish School Board (OPSB) direct-run schools participated in our survey, and as a result, our sample over-represents teachers from this sector. Both OPSB and RSD charter schools were less likely than direct-run schools to participate, and thus our sample somewhat under-represents these sectors. Our validity checks with sampling weights (see below) indicate that the differences between sample and population do not appear to have had a substantial impact on our results. However, the teachers who returned to teach in the city may be different from the teachers who did not return. For example, given the citywide increase in scores, and policies making it easier to fire low-performing teachers, the returning teachers might be more effective than those who did not. However,

it remains unclear whether teachers who differ on effectiveness or other dimensions would respond differently.

[Table 1]

Advantages and Limitations of Retrospective Surveys

Given the sparse data available from the pre-Katrina period, retrospective data comparing the pre- and post-Katrina experiences of this group is one of the only ways to understand how the inner workings of schools changed in the wake of the reforms. Even if a pre- and post-reform survey had been possible, this approach is subject to response-shift bias, i.e., respondents' internal frame of reference may change after a reform, altering their responses on the post-reform survey. As a result, a direct comparison of pre- and post-test surveys may not reflect true changes (Pratt, 2000). Our retrospective survey design avoids this issue, as teachers are directly comparing their pre- and post-Katrina schools at the same point in time.

However, retrospective surveys are problematic because they rely on memory and, in this case, perhaps one's perspective on the reforms. The longer the period of time between the event and the point of recall, the more likely the event is to be forgotten or distorted. Our survey was conducted nine years after the event (teaching in a pre-Katrina school) that teachers are asked to recall. Additionally, the present serves as a benchmark for the recollection of past events, so teachers' current schools can have an influence on the way they remember

their past schools. Current beliefs also affect the way that previous events are recalled and interpreted, and as teachers may have formed an opinion of the reforms as generally "good" or "bad," they may answer the questions based on that belief, leading to a halo effect in which all their responses are consistent with schools being generally better or worse (Cooper, 1981). Finally, respondents may have an implicit theory of change (for example, that these reforms should have led to better learning environments but not improved working conditions) that caused them to shift their answers in a way that is consistent with their theory (Pearson, Ross, & Dawes, 1992). For these reasons, we frame this as analysis of teacher perceptions, which are easier to establish than actual teacher practices or school climates. We also provide tests for whether perceptions are influenced by (1) teachers' current school environments and (2) how positively they view the reforms. As we show, the results hold up well to various validity checks designed to address these issues.

Dependent Variables

We examined how this sample of teachers describes the New Orleans school changes on a wide variety of dimensions, which we separate into two broad constructs: the learning environment and the work environment. Across these categories, returning pre-Katrina teachers were given 58 questions asking them to indicate whether the statement better described their pre-Katrina school or their current school. Almost all questions had either three response options ("more

like my pre-Katrina school", "no difference", or "more like my current school") or five (adding "much more like my pre-Katrina school" and "much more like my current school"). About half of these questions were drawn from the national Schools and Staffing Survey or the School Leadership for Student Achievement Survey (used in a study of school reforms in Florida); the other half were written specifically for this study, with technical support from the University of Wisconsin Survey Center (see Table 1 in supplementary material). Questions were grouped thematically into 20 composite measures, with teachers' responses averaged across questions within each measure.

Ten of these composite measures describe aspects of teachers' work environments, as identified in the work of Ladd (2011) and others (i.e., Johnson, 2006; Berry, Smylie, & Fuller, 2008). We define work environment characteristics as those elements of school climate and operations that affect teachers, but are primarily out of their control (though we recognize that many of these work environment domains can also affect students' learning); learning environment characteristics we define as teacher behaviors and beliefs that directly affect students. Our work environment measures include school culture, school autonomy, administrator data use, the likelihood of a low-performing teacher's dismissal, teacher support, professional community practices, teacher autonomy, evaluation satisfaction, work hours, and students' home resources. The remaining ten measures fell into three categories: teacher outcomes (attendance,

retention, and job satisfaction), the learning environment (emphasis on academic, socio-emotional, and vocational goals, teacher-student relationships, and teacher data use), and student outcomes (engagement and persistence through school).

Individual item non-response is low; only teachers who taught tested grades and subjects answered questions about data use, so the number of responding teachers for that construct is substantially lower. The reliability of all composite measures is above the standard threshold of .70 (Kline, 1993). Questions with clear negative valences were reverse-coded so that "more like now" indicated that the outcome was "better" in the current school. We standardized teachers' responses so that results across outcomes measured with different scales can be directly compared. Most outcomes measured on a five-point scale had a standard deviation near one, so an effect size of 1.0 can be loosely interpreted as moving from the "no difference" category to "more like now" or from "more like now" to "much more like now."

We first provide a simple descriptive analysis of teacher responses, summarizing the mean for each outcome and whether it significantly differs from the scale's neutral ("no difference") point. We also count the share of responses in each answer category (for scales with more than three response options, we collapsed to three: "more like then," "no difference," or "more like now"). We then compared answers on a subset of nine outcomes to differences from two repeated cross-sectional (2012 versus 2004), nationally representative samples of

urban teachers drawn from the federal Schools and Staffing Survey (SASS). Finally, we regressed the outcomes on a variety of teacher and school characteristics to identify predictors of teachers' response patterns. Because some teachers did not report their background information, and school characteristics were occasionally unavailable, regression results are based on approximately three quarters of the sample with complete information. However, the answers of teachers who were missing this information did not differ significantly from those of the teachers with complete information.

Results

Average Differences: Learning Environment and Student Outcomes

Of the five dimensions of the learning environment measured, teachers reported, on average, a significant change in three dimensions, all in the positive direction, indicating what most would consider to be improvement (see Table 2). Teachers reported that their current schools had greater emphasis on both academic and socio-emotional goals (though no difference in vocational goals), as compared to their pre-Katrina schools. The majority of teachers of tested grades also reported that they used testing data for instruction more now than in their pre-Katrina school (with only five percent reporting more use before). Teachers, on average, reported no differences in the quality of teacher-student relationships. Finally, teachers reported that more students stayed in school, though they did not report any differences in student engagement. This perception of reduced dropout

is consistent with other data showing higher high school graduation rates after the reforms (Perry, Harris, & Buerger, 2015).

Average Differences: Work Environment and Teacher Outcomes

Teachers' perceptions of changes in the work environment were mixed. Of the ten measured dimensions, teachers reported only two clearly positive changes: an increase in teacher support and a stronger school culture (measured by reported academic rigor, consistent behavior management, and a clear vision from the school leader). Teachers also reported an increase in school autonomy, though no corresponding increase in their own autonomy over their instruction. Teachers reported, by a large margin, greater use of data in administrative decisions and an increased likelihood of the dismissal of a low-performing teachers – two trends that would likely be viewed positively by education reform advocates but which could also contribute to a more stressful work environment for teachers. Teachers also perceived students' home environments to be more problematic than before the storm. Given that poverty rates were essentially unchanged, this could be due to lingering trauma of the hurricane itself (Harris and Larsen, 2015). Finally, teachers reported working longer hours and experiencing greater staff turnover, two findings which are corroborated by other data sources (Arce-Trigatti, Lincove, Jabbar, & Harris, 2015; Barrett & Harris, 2015) and which could be sources of stress for teachers.

Given the above results, it is unsurprising that job satisfaction also diminished. The two questions that comprise this construct showed almost identical results: about 60 percent of teachers reported that schools and that their lives as teachers are both worse under the reforms.[3] This perception likely results from a combination of higher-stakes teacher evaluations, diminished job security, and longer work hours. These reductions in satisfaction were apparently not offset by other improvements in the job or work environment, in the minds of these teachers. For example, in theory, teachers might value the higher salaries, increased goal orientation, stronger school culture, and climate of teacher support enough to increase their job satisfaction, but this does not seem to have occurred.

[Table 2]

Comparisons with Nationally Representative Data

The summary results presented in the previous section have some limitations, one of which is that we have no direct comparison with a sample of teachers in another city that did not undergo the sweeping reforms experienced in New Orleans. However, some of the questions on our survey were based on or very similar to questions in the SASS, enabling us to compare our results on a subset of dimensions with the differences in the average answers given by urban teachers in the closest years of this survey: 2004 and 2012. We use the entire sample of urban teachers in 2004 and the sample of teachers in 2012 with nine or

more years of experience to more closely represent the sample of teachers for New Orleans.

We compared our two student outcome measures (persistence and engagement), but no clear pattern emerged. New Orleans teachers reported an increase in student persistence, as did the national samples of urban teachers from 2004 to 2012. Conversely, urban teachers nationally reported higher student engagement in 2012 as compared to 2004, but New Orleans teachers perceived no change over this period (see Table 3). We also compared five work environment measures (school culture, teacher support, teacher autonomy, work hours, and students' home resources) and two teacher outcomes (attendance and job satisfaction). On three of the work environment measures, the New Orleans trend is more positive than the national trend. New Orleans teachers reported increases in school culture and teacher support, whereas the national trend is negative. Additionally, New Orleans teachers' report of no change in teacher autonomy appears to be better relative to the national trend – urban teachers in 2012 reported less autonomy, on average, than their counterparts in 2004. On one measure, students' home resources, both the New Orleans teachers we surveyed and the teachers sampled in the two SASS surveys indicated a decline. For work hours and both teacher outcome measures, the New Orleans trend is worse than the national trend. The national comparison indicates a slight reduction in work hours, and an increase in teacher attendance and job satisfaction.

The differences in the trends suggest that teachers in urban settings nationally have had different experiences in the changes in their environments than our sample of New Orleans teachers. While the two surveys are not perfectly comparable (see Table A2 in the Supplemental Material), the findings indicate that the trends we see in New Orleans largely diverge from national trends, supporting our theory that these shifts in teachers' perceptions of school environments are due in large part to the education reforms.

[Table 3]

Regression Results

Finally, we examined how teacher responses varied with their characteristics and those of their current schools. As covariates we included three teacher characteristics: gender, race (black vs. all others), and years of experience. School-level covariates included current district (RSD vs. OPSB), whether the current school is a charter, and the difference (standardized relative to the state distribution within year) between the current and pre-Katrina schools' School Performance Scores (SPS is the state's school accountability metric, which is largely comprised of student test scores). We also controlled for whether the teacher had switched school level (elementary/middle/high) between the pre-Katrina and current school. Teacher gender had limited influence on the outcomes and so is not displayed in the regression tables, though it is controlled in all models.

Teacher characteristics had limited predictive power, though black teachers had somewhat lower job satisfaction post-Katrina. In general, school characteristics were much better predictors of teachers' responses, indicating that teachers were responding to genuine changes in the school environment. As expected, an increase in SPS led teachers to answer questions more favorably across both categories, with effect sizes in the 0.1 to 0.2 range. Recall that in these data, one standard deviation is approximately equal to the difference between any two neighboring categories on a 5-point scale, ranging from "much more like then" to "much more like now." So an effect size of 0.2 is roughly equivalent to one fifth of the distance between any two categories (i.e., between "no difference" and "more like now").

Additionally, RSD teachers indicated that they saw more positive changes, relative to OPSB teachers, in outcomes that indicate a climate of collegiality among teachers and administrators: larger increases in professional community practices and in satisfaction with the teacher evaluation process. Finally, teachers in charter schools responded more positively than teachers in direct-run schools to multiple work and learning environment outcomes, reporting a greater increase in school autonomy (relative to teachers in traditional schools) and a greater increase in emphasis on academic and socio-emotional goals, a finding consistent with the prior literature on charter school teachers discussed above. They also report a smaller decline in satisfaction with their evaluations and jobs. However, it is

possible that charter and direct-run teachers' different responses may be partially the result of different recollections of their pre-Katrina schools (see next section).

[Table 4]

Validity Checks

Because our sample was not representative of the distribution of returning teachers across sectors, we were concerned that this sampling may have skewed our results. However, the same analyses weighted by sector changed only one outcome: in the weighted analysis, teacher evaluation satisfaction was no longer significantly different from the neutral point. It appears that returning teachers in OPSB direct-run schools post-Katrina were the least satisfied with the new evaluation system, which lowered the unweighted mean. This could be due to the fact that OPSB teachers lost tenure protections in 2012 due to changes in state policy, making their evaluations high-stakes (Strunk et al., 2016). Charter teachers, on the other hand, never had tenure protections in the post-storm system.

We also noted concerns about analyzing retrospective surveys, particularly that teachers' current school environment would affect the way that they remember their pre-Katrina school. To assess the extent to which this bias may have occurred, we developed a test using a separate set of 38 questions from the same survey which asked teachers to directly rate aspects of their pre-Katrina school *without reference to their current school*. The 38 pre-Katrina-only items included statements like "Teachers participated in developing my school's

policies," with response options s*trongly disagree, disagree, agree, strongly agree*. We regressed each of these questions on the current school's charter status (charter vs. direct-run), sector (RSD vs. OPSB), SPS score, and level (elementary, middle, or high), controlling for the pre-Katrina school's SPS score and level. The logic of the test is that characteristics of the post-Katrina school cannot cause past experiences. Therefore evidence that teachers in certain types of schools answered differently would be evidence of either retrospection bias or non-random sorting of teachers into particular schools. This approach allows us to test for both retrospection and sorting bias at the same time (though we cannot distinguish between them).

We found no evidence of bias by current school's sector, SPS score, or level, but teachers currently in charter schools showed some tendency to remember their pre-Katrina schools more negatively than did teachers currently in direct-run schools (answers were significantly different at $p<.05$ for 10 of 38 items, where we would expect answers to differ on only two items by chance). However, it is possible that these responses reflect true differences in teachers' previous environments or in their perceptions of the environments at the time, as teachers who were less happy with their pre-Katrina school may have been more likely to switch to the charter sector.

We were also concerned that teachers' perceptions of the reforms may have biased their recollections of the past and thus their answers to the survey

questions, creating a halo effect. To address this, we asked teachers to rate their agreement with this statement: "I'm better off as an educator now than I was before Katrina." We divided teachers into two groups based on their responses: the 39 percent of teachers who agreed or strongly agreed with this statement were assigned to the "better-off" group, and the 61 percent who disagreed or strongly disagreed with assigned to the "worse-off" group. We then regressed this "better-off" indicator on the same 38 questions (asking teachers to directly rate their pre-Katrina school without reference to their current school), controlling for the pre-Katrina school's SPS score and level (elementary vs. secondary), and found that teachers in the worse-off group answered 27 of the 38 questions more positively than teachers in the better-off group. If teachers' recollections of the past were unbiased, we should have found few significant differences between these groups of teachers in their ratings of their pre-Katrina schools, after adjusting for SPS scores and level. The substantial number of significant differences we found indicates that teachers' overall view of the reforms had indeed colored their recollections and may have caused them to inflate or deflate their assessments of how much the schools had changed, i.e., teachers who think they are better-off now remember their previous school as worse than it was and therefore perceive greater improvements in schools, and the reverse is true for teachers who think they are worse-off. Because there are more teachers in the worse-off group, the overall effect is to slightly upwardly bias the average recollections of pre-Katrina

schools, thereby slightly deflating perceptions of how much has changed. We estimate that the potential downward bias is roughly 0.04 standard deviations, which is quite small compared with our effect sizes.[4]

To summarize, we generally found that observable characteristics of teachers' current schools did not have much impact on their recollections of their pre-Katrina schools. We did find evidence that their perceptions of the reforms affected their recollections, but this bias is too small to have affected our conclusions. Additionally, the data follow patterns that we find predictable and that tend to suggest that these self-reported perceptions plausibly reflect real changes. Finally, teachers' answers generally align with objective information about the post-storm changes, like longer school days and increased teacher turnover.

Conclusion

New Orleans experienced a massive shift in policies, all intended to increase the autonomy and accountability of school leaders. These large changes in policy yielded substantial changes in the schooling environment that generally align with prior research on test-based accountability and cross-sectional research on charter schools. Our study provides the first look at the perspectives of a large sample of teachers who have experienced both a traditional district and an open-choice, charter-dominated school system.

Teachers reported having more support now as compared to pre-Katrina, which may be an outcome of the test-based accountability pressures that administrators feel. Teachers also report changes that are typical of charter environments: a stronger school culture and focus on academics, but a simultaneous increase in work hours and teacher turnover and decrease in evaluation satisfaction. In general, our results are robust to alternative methods and assumptions, and our analysis provides novel methods for addressing retrospection and sorting bias.

Our results, in combination with recent work showing that the New Orleans school reforms had an unusually large positive effect on achievement (Harris & Larsen, 2015), support the findings of previous research that show that drastic changes to low-performing schools can change school climate and raise student achievement. Though we cannot attribute that increase to a particular change in the school environment, some of the changes that teachers report are similar to the characteristics of effective charter schools reported by others – high academic expectations, longer instructional time, and the use of data to drive instruction (Dobbie & Fryer, 2013; Edmonds, 1979).

Whether the changes represent broad-based improvement is a different matter. Critics often call accountability-based reforms "corporate," and these surveys do suggest that the reformed schools operate more like businesses. Teachers report that school leaders have more autonomy, rely more heavily on

data, and are more goal-oriented. Since they have more control over personnel, and teachers have less job security, leaders can have teachers work longer hours and dismiss low-performers.

The net result seems to be that the majority of teachers are less satisfied with their jobs. This change may not seem surprising given their diminished job security, longer hours, and the fact that they perceive their students to be in more challenging home environments (perhaps driven partly by Hurricane Katrina). These factors appear to have more than offset positive changes such as a strong school culture and more positive student outcomes. In fact, the new school cultures, which often take a No Excuses approach, may not be what educators are looking for and are likely not what these pre-Katrina teachers would have been accustomed to.

In the long run, however, diminished job satisfaction may undermine the supply of able teachers. With such long hours and low job security, the schools in New Orleans are not designed to fit the lives of teachers, such as those we surveyed, who are older than newly-minted college graduates and have families to care for. Even if the system can continue to function this way, it is not clear how much more improvement is possible in a system that generates such high turnover, resulting in many inexperienced educators. Our findings are consistent with concerns being expressed nationally. Survey evidence suggests that in 2012, 29.8 percent of U.S. teachers indicated that they would leave teaching as soon as a

better paying job came along, a number that increased nine percentage points from 2004.[5] Schools of education have also experienced significant declines in teacher majors, dropping 31 percent from 2009 to 2013. (U.S. Department of Education, 2015). While there remains debate about the causes of these trends, they coincide with changes in teacher policy like those in New Orleans and associated negative messages about the need to hold teachers accountable. The broader concern is that the very policies that intend to improve teacher effectiveness may have the opposite effect in the long run by driving out high-performing teachers (Barrett & Crittenden-Fuller, 2015; Rothstein, 2015).

Small changes in policy lead to small changes in practice, but larger ones, such as those in New Orleans, can lead to large changes. The overhaul in policy experienced after Katrina, the most extensive school autonomy and intensive test-based accountability that has ever existed in the United States, produced substantial changes in perceived learning and work environments, which may also explain the improved students academic outcomes. But do these aggressive reforms have longer-term consequences for the teaching profession? Can such academic improvements be achieved while still making the work attractive to large numbers of potentially excellent teachers? Can improvements in the learning environment be sustained and scaled in the face of reduced satisfaction with the work environment? These are important questions to address as accountability-based school reforms continue to evolve. Teachers' job satisfaction matters, first

because attracting and retaining good teachers is essential to students' achievement, but also because the work environment directly affects the learning environment and experiences of students. Policymakers and school leaders should strive to create environments in which both students and teachers are set up for success.

Notes

1. Other books have similar themes, though made less obvious in the titles (e.g., *California Dreaming: Reforming mathematics education*, Wilson, 2008).
2. In 2007, about 10 percent of principals attended an out of state undergraduate institution. By 2014, 32 percent of principals attended an out of state undergraduate institution.
3. The "satisfaction with the system" items were on a 4-point scale and had no neutral point; thus teachers were forced to choose between being more or less satisfied. While there is no reason to expect that this difference in the wording led to the more negative results, it is a possibility worth noting.
4. To quantify the degree of this potential bias, we started by standardizing the outcomes, calculating the standardized difference between "better-off" and "worse-off" teachers' answers, and averaging those differences across the 38 items, finding that the average was 0.35 standard deviations. This means that, relative to the null, each extreme is biased by 0.35/2=0.175 standard deviations. But this exaggerates the problem because some of the responses are biased upwards and others downward. If the 61 percent of teachers who felt that they were worse off deflated their responses by 0.175 SD, and the 39 percent who felt better off inflated their responses by the same amount, then the overall results that we present in Table 3 may be underestimated by an average of (0.61)(0.175)-(0.39)(0.175)=0.04 SD.
5. Authors' analysis of data from the Schools and Staffing Survey (SASS).

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Table 1: Descriptive Statistics for Pre-Katrina Teachers and Sample

	2004-05 Pre-Katrina Teachers	2013-14 Returning Pre-Katrina Teachers	Sampled 2014 Returning Pre-Katrina Teachers
Race (%)			
Black	71.1	75.8	73.4
White	25.8	21.0	21.1
Other	3.1	3.2	5.5
Years of Experience	15.4	22.3	21.8
N	*4,332*	*771*	*287*
School Sector (%)			
OPSB Direct-Run	97.5	20.9	38.1
OPSB Charter	0	24.4	18.0
RSD Direct-Run	0	5.6	5.9
RSD Charter	0.4	45.7	38.1
State Charter	2.1	3.5	0.0
N	*4,332*	*771*	*323*

Note: No OPSB charter or RSD direct-run schools existed in New Orleans in 2004-05.

Table 2: Teacher Perceptions of Changes in Learning and Work Environments

	More Like Then	No Difference	More Like Now	Mean	Standard-ized Mean	Scale
Learning Environment						
Emphasis on Academic Goals	10%	42%	48%	2.38	0.68*	(1-3)
Emphasis on Socio-Emotional Goals	20%	47%	34%	2.13	0.24*	(1-3)
Emphasis on Vocational Goals	26%	43%	31%	2.04	0.06	(1-3)
Teacher-Student Relationships	28%	46%	25%	1.97	-0.04	(1-3)
Teacher Data Use	5%	41%	54%	3.66	0.79*	(1-5)
Student Outcomes						
Engagement	30%	44%	26%	2.92	-0.08	(1-5)
Persistence through School	20%	42%	38%	3.25	0.23*	(1-5)
Work Environment						
Strong School Culture	19%	41%	40%	2.21	0.37*	(1-3)
School Autonomy	21%	36%	43%	2.23	0.29*	(1-3)
Administrator Data Use	5%	31%	64%	3.98	1.11*	(1-5)
Likelihood of Low-Perf. Teacher Dismissal	5%	19%	76%	4.08	1.08*	(1-5)
Teacher Support	21%	42%	36%	2.13	0.21*	(1-3)
Professional Community Practices	24%	42%	35%	3.09	0.09	(1-5)
Teacher Autonomy	37%	35%	29%	1.92	-0.10	(1-3)
Teacher Evaluation Satisfaction	40%	30%	30%	3.80	-0.12*	(1-7)
Work Hours	10%	36%	54%	3.65	0.63*	(1-5)
Students' Home Resources	38%	45%	17%	2.72	-0.34*	(1-5)
Teacher Outcomes						
Attendance	24%	51%	25%	3.03	0.03	(1-5)
Retention	46%	33%	21%	2.63	-0.35*	(1-5)
Job Satisfaction[1]	61%	--	39%	2.28	-0.24*	(1-4)

Notes: * Indicates that the 95% confidence interval for the mean does not overlap with the scale's neutral point. Standardized means are centered on the scale's neutral point so that means below zero indicate that the average is "more like then" and means above zero indicate "more like now." Standardized means can be directly compared across measures, whereas the raw means cannot be compared across measures with different scales. [1]Overall satisfaction items did not have a "no difference" option.

Table 3: Changing Teacher Perceptions in National Urban School Districts

	Urban U.S. Teachers (2004)	Urban U.S. Teachers with 9+ years of experience (2012)	Standardized Difference
Student Outcomes			
Engagement (attend + care)	2.57	2.64	0.096*
Persistence through School	3.43	3.49	0.064*
Work Environment			
Strong School Culture	3.11	3.03	-0.010*
Teacher Support	3.35	3.13	-0.258*
Teacher Autonomy	3.22	3.09	-0.213*
Work Hours	52.41	51.57	-0.090*
Students' Home Resources	2.25	2.23	-0.028
Teacher Outcomes			
Attendance	3.31	3.37	0.077*
Job Satisfaction	3.02	3.13	0.158*

Notes: * indicates that the standardized difference between the 2004 mean and the 2012 mean is statistically significant at the 0.05 level using a two-tailed test.

Table 4: Correlates of Teacher Perception Changes (Regression Analysis)

	Years Teaching	Black	RSD School	Charter School	Change in SPS	R2	N
Learning Environment							
Emphasis on Academic Goals	-0.002	-0.021	-0.065	0.355*	0.123**	0.09	249
	(0.008)	(0.145)	(0.165)	(0.162)	(0.045)		
Emphasis on Socio-Emotional Goals	-0.007	0.037	-0.041	0.411**	0.137**	0.13	248
	(0.007)	(0.140)	(0.158)	(0.156)	(0.043)		
Emphasis on Vocational Goals	0.002	-0.215	0.170	0.082	0.044	0.03	237
	(0.008)	(0.151)	(0.172)	(0.171)	(0.046)		
Teacher-Student Relationships	0.001	-0.274+	0.007	0.062	0.145**	0.10	249
	(0.008)	(0.146)	(0.166)	(0.162)	(0.045)		
Teacher Data Use	-0.009	-0.223	-0.116	0.005	0.011	0.03	131
	(0.009)	(0.188)	(0.212)	(0.206)	(0.054)		
Student Outcomes							
Student Engagement	0.008	-0.110	0.299+	-0.028	0.234**	0.13	248
	(0.007)	(0.138)	(0.158)	(0.154)	(0.042)		
Student Persistence Through School	0.000	-0.057	-0.100	0.213	0.145**	0.09	235
	(0.007)	(0.146)	(0.166)	(0.164)	(0.045)		
Work Environment							
Strong School Culture	-0.003	-0.058	0.235	0.025	0.186**	0.06	249
	(0.007)	(0.144)	(0.163)	(0.160)	(0.044)		
School Autonomy	0.006	-0.154	0.179	0.413**	0.127**	0.11	241
	(0.007)	(0.143)	(0.161)	(0.158)	(0.044)		
Administrator Data Use	-0.007	-0.086	0.085	0.000	0.092+	0.06	231
	(0.008)	(0.157)	(0.171)	(0.169)	(0.049)		
Likelihood of Low-Perf. Teacher Dismissal	-0.011	0.117	0.153	0.245	0.070+	0.08	250
	(0.007)	(0.135)	(0.153)	(0.149)	(0.041)		
Teacher Support	-0.005	-0.256+	0.268	0.050	0.134**	0.08	249
	(0.007)	(0.143)	(0.163)	(0.156)	(0.044)		
Professional Community Practices	-0.010	-0.075	0.386*	0.176	0.06	0.10	248
	(0.007)	(0.143)	(0.163)	(0.161)	(0.044)		
Teacher Autonomy	0.009	-0.133	0.216	0.159	0.054	0.04	247
	(0.008)	(0.151)	(0.169)	(0.166)	(0.046)		
Evaluation Satisfaction	0.007	-0.033	0.382*	0.353*	0.016	0.10	248
	(0.007)	(0.140)	(0.160)	(0.156)	(0.043)		
Work Hours	-0.007	0.159	0.247	0.101	0.001	0.09	249
	(0.007)	(0.144)	(0.163)	(0.160)	(0.044)		
Students' Home Resources	0.011	-0.253+	-0.070	0.182	0.229**	0.17	248
	(0.007)	(0.135)	(0.155)	(0.151)	(0.042)		
Teacher Outcomes							
Attendance	-0.001	-0.116	0.026	0.338*	0.107*	0.09	241
	(0.007)	(0.143)	(0.164)	(0.160)	(0.044)		
Retention	0.028**	-0.090	-0.261	-0.059	0.107*	0.15	250
	(0.007)	(0.141)	(0.162)	(0.158)	(0.043)		
Job Satisfaction	-0.012	-0.323*	0.051	0.326*	0.084+	0.10	241
	(0.007)	(0.145)	(0.166)	(0.163)	(0.045)		

Notes: + $p<0.1$; * $p<0.05$; ** $p<0.01$. Each row is a separate OLS regression, with the left column listing the dependent variables and the other column headings indicating the independent variables. All regressions control for teacher gender (not shown).

Supplementary Online Material

Table A1: Component Questions

	Learning Environment	Source
Emphasis on Academic Goals	Compared to your last year before Katrina, how important are the following educational goals to educators in your current school? Q1: Building basic literacy skills (reading, math, writing, speaking) Q2: Encouraging academic excellence Q3: Preparing students for postsecondary education Q4: Promoting students' critical thinking skills Answer options: 1=Much less now; 2=Less now; 3=About the same now; 4=More now; 5=Much more now	
Emphasis on Socio-Emotional Goals	Compared to your last year before Katrina, how important are the following educational goals to educators in your current school? Q1: Promoting good work habits, self-discipline, or 'grit' Q2: Promoting personal growth (self-esteem, self-knowledge, etc.) Q3: Promoting human relations skills Q4: Promoting specific moral values Q5: Promoting multicultural awareness or understanding Q6: Fostering religious or spiritual development Answer options: 1=Much less now; 2=Less now; 3=About the same now; 4=More now; 5=Much more now	
Emphasis on Vocational Goals	Compared to your last year before Katrina, how important are the following educational goals to educators in your current school? Promoting occupational or vocational skills Answer options: 1=Much less now; 2=Less now; 3=About the same now; 4=More now; 5=Much more now	
Teacher-Student Relationships	For each statement, indicate whether the statement better describes your pre-Katrina school or your current school. Q1: Teachers are committed to the school and students Q2: Teachers have good relationships with students and parents Q3: Teachers can relate to students' lives and experiences Answer options: 1=Better describes pre-Katrina school; 2=No difference; 3=Better describes current school	

Teacher Data Use	Compared to your last year before Katrina, how frequently do you do the following now: Q1: Use LEAP and other standardized student test data to inform your instruction? Q2: Speak with school leaders about the LEAP and other standardized student test results of your students? Q3: Spend time preparing students for the LEAP and other standardized student tests? Answer options: 1=Much less now; 2=Less now; 3=About the same now; 4=More now; 5=Much more now	School Leadership for Student Achievement School Leadership for Student Achievement School Leadership for Student Achievement
	Student Outcomes	
Student Engagement	To what extent is each of the following a problem now compared with your school in the last year you taught pre-Katrina? Q1: student tardiness (R) Q2: student absenteeism (R) Q3: student class-cutting (R) Q4: student apathy (R) Answer options: 1=Much less of a problem now; 2=Less of a problem now; 3=About the same now; 4=More of a problem now; 5=Much more of a problem now	Schools and Staffing Survey Schools and Staffing Survey Schools and Staffing Survey Schools and Staffing Survey
Student Persistence through School	To what extent is each of the following a problem now compared with your school in the last year you taught pre-Katrina? students dropping out (R) Answer options: 1=Much less of a problem now; 2=Less of a problem now; 3=About the same now; 4=More of a problem now; 5=Much more of a problem now	Schools and Staffing Survey
	Work Environment	
Strong School Culture	For each statement, indicate whether the statement better describes your pre-Katrina school or your current school. Q1: School leaders have a vision for the school and its future Q2: The academic program is rigorous Q3: Educators manage student behavior in a consistent way Answer options: 1=Better describes pre-Katrina school; 2=No difference; 3=Better describes current school	Schools and Staffing Survey Schools and Staffing Survey
School Autonomy	Policies set by the CMO, charter, board, RSD, or OPSB allow for school autonomy. Answer options: 1=Better describes pre-Katrina school; 2=No difference; 3=Better describes current school	

Administrator Data Use	Thinking about the use of data from the LEAP, iLEAP, and ITBS, please answer the following questions comparing your experiences pre-Katrina to now. Q1: How strongly were LEAP, iLEAP, or ITBS data considered when making decisions about curriculum and instruction? Q2: How strongly were LEAP, iLEAP, or ITBS data considered in teacher hiring decisions? Q3: How strongly were LEAP, iLEAP, or ITBS data considered in teacher evaluations? Answer options: 1=Much less now; 2=Less now; 3=About the same now; 4=More now; 5=Much more now	School Leadership for Student Achievement School Leadership for Student Achievement School Leadership for Student Achievement
Likelihood of Low-Performing Teacher Dismissal	How likely is a low-performing teacher to be dismissed now, compared with pre-Katrina? Answer options: 1=Much less likely now; 2=Less likely now; 3=About the same now; 4=More likely now; 5=Much more likely now Answer options: 1=Much less likely now; 2=Less likely now; 3=About the same now; 4=More likely now; 5=Much more likely now	
Teacher Support	For each statement, indicate whether the statement better describes your pre-Katrina school or your current school. Q1: Teachers collaborate with each other to improve student performance Q2: Teachers have support from school leaders and colleagues Q3: Professional development activities are appropriate and effective Q4: Teachers are well trained Answer options: 1=Better describes pre-Katrina school; 2=No difference; 3=Better describes current school	Schools and Staffing Survey
Professional Community Practices	Compared to last year before Katrina, how often do you now experience each of the following? Q1: Other teachers give me feedback on my teaching Q2: I give other teachers feedback on their teaching	School Leadership for Student Achievement School Leadership for Student Achievement

	Q3: I watch other teachers model instruction	School Leadership for Student Achievement
	Q4: Other teachers observe me teach Answer options: 1=More important pre-Katrina; 2=No difference; 3=More important in current school	School Leadership for Student Achievement
Teacher Autonomy	Teachers have autonomy over their instruction. Answer options: 1=Better describes pre-Katrina school; 2=No difference; 3=Better describes current school	Schools and Staffing Survey
Evaluation Satisfaction	Still comparing your last year before Hurricane Katrina to now, how would you rate each of the following? Q1: How fair are teacher evaluations? Q2: How fair are the criteria you are evaluated on? Q3: How likely is the teacher evaluation process to encourage your professional growth? Q4: Overall, how satisfied are you with the teacher evaluation process? Answer options: 1=Much less now; 2=Somewhat less now; 3=Slightly less now; 4=Neither more nor less now; 5=Slightly more now; Somewhat more now; Much more now	
Work Hours	How does the total number of hours you worked per week compare to the hours in your current position? (10+ hours less now, 5 to 10 hours less now, About the same, 5 to 10 hours more now, 10+ hours more now) Answer options: 1=10+ hours less now; 2=5 to 10 hours less now; 3=About the same; 4=5 to 10 hours more now; 5=10+ hours more now	Schools and Staffing Survey
Student Background	To what extent is each of the following a problem now compared with your school in the last year you taught pre-Katrina? Q1: Lack of parental involvement (R) Q2: family poverty (R) Q3: students come to school unprepared to learn (R) Q4: poor student physical health (R) Q5: poor student emotional health (R) Q6: student mobility (R) Answer options: 1=Much less of a problem now; 2=Less of a problem now; 3=About the same now; 4=More of a problem now; 5=Much more of a problem now	 Schools and Staffing Survey Schools and Staffing Survey Schools and Staffing Survey Schools and Staffing Survey Schools and Staffing Survey

	Teacher Outcomes	
Teacher Attendance	To what extent is each of the following a problem now compared with your school in the last year you taught pre-Katrina? Teacher absenteeism Answer options: 1=Much less of a problem now; 2=Less of a problem now; 3=About the same now; 4=More of a problem now; 5=Much more of a problem now	Schools and Staffing Survey
Staff Retention	To what extent is each of the following a problem now compared with your school in the last year you taught pre-Katrina? Q1: Teacher Turnover (R) Q2: Administration turnover (R) Answer options: 1=Much less of a problem now; 2=Less of a problem now; 3=About the same now; 4=More of a problem now; 5=Much more of a problem now	Schools and Staffing Survey Schools and Staffing Survey
Overall Satisfaction	The following questions have the response options "Strongly Disagree," "Disagree," "Agree," "Strongly Agree," and "Don't Know." Q1: Schools are better now than they were before Katrina Q2: I'm better off as an educator now than I was before Katrina Answer options: 1=Strongly Disagree; 2=Disagree; 3=Agree; 4=Strongly Agree	

Note: (R) indicates that the item was reverse-coded.

Table A2: SASS Component Questions

Student Outcomes			
Student Engagement	To what extent is each of the following a problem in this school?	2003-04 Item	2011-12 Item
	Q1: Student tardiness	65(a)	64(a)
	Q2: Student absenteeism	65(b)	64(b)
	Q3: Student class-cutting	65(c)	64(c)
	Q4: Student apathy	65(g)	64(f)
Student Persistence through School	To what extent is each of the following a problem in this school?	2003-04 Item	2011-12 Item
	Q1: students dropping out	65(f)	64(e)
Work Environment			
Strong School Culture	To what extent do you agree or disagree with each of the following statements?	2003-04 Item	2011-12 Item
	Q1: Rules for student behavior are consistently enforced by teachers in this school, even for students who are not in their classes. (R)	63(i)	63(h)
	Q2: The principal knows what kind of school he/she wants and has communicated it to the staff. (R)	63(k)	63(j)
Climate of Teacher Support	To what extent do you agree or disagree with each of the following statements?	2003-04 Item	2011-12 Item
	Q1: There is a great deal of cooperative effort among the staff members. (R)	63(l)	63(k)
Teacher Autonomy	How much actual control do you have IN YOUR CLASSROOM at this school over the following areas of you planning and teaching?	2003-04 Item	2011-12 Item
	Q1: Selecting textbooks and other instructional materials	62(a)	62(a)
	Q2: Selecting content, topics, and skills to be taught	62(b)	62(b)
	Q3: Selecting teaching techniques	62(c)	62(c)
	Q4: Evaluating and grading students	62(d)	62(d)
	Q5: Determining the amount of homework to be assigned	62(f)	62(f)
Work Hours	Including hours spent during the school day, before and after school, and on the weekends, how many hours do you spend on ALL teaching and other school-related activities during a typical FULL WEEK at THIS school?	2003-04 Item	2003-04 Item
		57	57
Students' Home Resources	To what extent is each of the following a problem in this school?	2003-04 Item	2011-12 Item
	Q1: Lack of parental involvement	65(h)	64(g)
	Q2: Poverty	65(i)	64(h)
	Q3: Students come to school unprepared to learn	65(j)	64(i)
	Q4: Poor student health	65(k)	64(j)
Teacher Outcomes			
Teacher Attendance	To what extent is each of the following a problem in this school?	2003-04 Item	2011-12 Item
	Q1: Teacher absenteeism	65(d)	64(d)

Overall Satisfaction	To what extent do you agree or disagree with each of the following statements?	2003-04 Item	2011-12 Item
	Q1: I am generally satisfied with being a teacher at this school. (R)	63(u)	63(q)
	Q2: The teachers at this school like being here; I would describe us as a satisfied group. (R)	66(b)	65(b)

Note: (R) indicates that the item was reverse-coded.

Table A3: Pre-Katrina Teacher Salaries in 2014: Actual Compared to Predicted

	Mean Difference	Number of Teachers Below Predictions	Mean Below	Number of Teachers Above Predictions	Mean Above
Pre-Katrina Teachers 2014 Actual Compared to Predicted	$3,545	166	-$4,869	598	$5,880
OPSB Direct	3,332	32	-2,544	121	4,886
OPSB Charter	4,887	24	-6,428	163	6,554
RSD Direct	4,844	7	-3,126	39	6,275
RSD Charter	3,060	95	-4,851	264	5,787
BESE	-1,874	11	-9,705	8	8,895
TRSL	3,519	117	-4,314	445	5,579
Non-TRSL	3,621	49	-6,193	150	6,826

Note: 2014 salaries were projected by using estimates from the regression of 2005 salary on teacher experience and degree and then adjusting for inflation. Controlling for inflation, in 2014 the average teacher made $3,545 more than she would have in 2005 with the same amount of experience and education.