Inside the Black Box of School Autonomy:
How Diverse School Providers Use Autonomy
For School Improvement

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Ayesha K. Hashim, Susan C. Bush-Mecenas, and Katharine O. Strunk

Corresponding Author: Ayesha K. Hashim
Address: University of North Carolina – Chapel Hill, School of Education, CB 3500 Peabody Hall, Chapel Hill, NC 27599
Phone: 919-843-3870
Fax: 919-962-1693
Email: ahashim@unc.edu
Biographical Statement: Ayesha K. Hashim is an Assistant Professor of Educational Leadership and Policy at the University of North Carolina – Chapel Hill. Her research focuses on district-level school reforms aimed at improving student achievement in underserved communities, including popular initiatives to (1) modernize instruction with technology, (2) expand school choice for students, and (3) improve teacher quality through performance evaluation and coaching. She draws on theories from economics, sociology, and organizational change to study the impacts of these reforms on teacher and student outcomes, as well as leadership, organizational, and implementation conditions that shape these results.

Susan C. Bush-Mecenas
Address: Northwestern University, School of Education and Social Policy, Walter Annenberg Hall 230, 2120 Campus Drive, Evanston, Illinois 60208
Phone: 213-700-4523
Email: susan.bushmecenas@northwestern.edu
Biographical Statement: Susan C. Bush-Mecenas is a postdoctoral fellow at the Northwestern University School of Education and Social Policy. Her research examines the enactment and implementation of PreK–12 education policy in urban districts and school systems. Her work has focused on three interrelated areas of education policy—accountability, capacity building, and governance—blending perspectives from organizational theory, sociology, and political science.

Katharine O. Strunk
Address: Michigan State University, College of Education, Erickson Hall, 620 Farm Lane, East Lansing, MI 48824
Phone: (517) 884-6289
Email: kstrunk@msu.edu
Biographical Statement: Katharine O. Strunk is the Clifford E. Erickson Distinguished Chair in Education and Professor of Education Policy and, by courtesy, Economics at Michigan State University. She is also co-director of the Education Policy Innovation Collaborative (EPIC). Dr. Strunk's research focuses on teacher labor markets, accountability policy and school and district reform, all in service of helping education policymakers use evidence to inform programs and policymaking.

Structured Abstract

Purpose: *Districts are providing schools with autonomy to meet diverse student needs, but we know little about how schools use autonomy in practice. We examine how school leaders in the Los Angeles Unified School District's Public School Choice Initiative (PSCI) used autonomy to engage in more responsive, student-centered practices for teaching and learning. In PSCI, internal (i.e., district-employed) and external (e.g., charter schools) teams applied to manage low-performing and newly constructed schools and could choose to operate under one of seven school governance models that provided varying autonomy from state/district policies and negotiated labor agreements. Applicant teams submitted plans on how they would use model autonomies to engage in evidence-based practices for responsive instruction and were selected to operate schools based on plan quality.*

Methods: *In this mixed-methods study, we analyzed three years of principal survey data and case study data to triangulate and elaborate on findings on implemented autonomy and school practices at PSCI schools.*

Findings: *We found substantial variation in autonomy implementation across PSCI schools, stemming from governance conditions associated with each school model but also from organizational circumstances such as school leader intentions for using autonomy and limitations in district and school capacity. Autonomy implementation was positively associated with school plan implementation and teacher collaboration which, in turn, were positively associated with responsive practices for teaching and learning.*

Policy and Research Implications: *School leaders perceive autonomy to be a stepping stone for improving teaching and learning, but the process of distributing autonomy to schools is complex. Future research should examine autonomy implementation across different school governance contexts and how autonomy shapes teaching and learning.*

Introduction

In response to rapid changes in student demographics and persistent problems of low student achievement, many districts are providing schools autonomy to tailor educational practices around student needs. There are different shades of this movement. A growing tide of districts have adopted school contracting, autonomy, and choice to expand charter school enrollment (National Alliance for Public Charter Schools, 2017). Other districts in Los Angeles, New York, and Chicago have shared autonomy with schools through the Portfolio Management Model (PMM) or "portfolio" reform. The PMM, which originates from Paul Hill (1995) and the Center for Reinventing Public Education (CRPE), advocates for districts moving away from a top-down bureaucracy that directly manages a single type of traditional public school to a central oversight body supervising an array of autonomous schools (Bulkley, 2010). These schools can include private schools, charter schools as well as "internally managed" autonomous schools that are operated by district-employed administrators and educators and have varying degrees of autonomy in select areas of management such as pilot schools and site-based management schools (Honig & Rainey, 2012; Steinberg & Cox, 2016). Other school systems in Clark County, Nevada, and Atlanta, Georgia, have adopted select components of PMM reform, including school autonomy, but do not openly identify as PMM districts.

In theory, school autonomy is supposed to motivate and enable school leaders and teachers who have the most proximate understanding of student needs to engage in responsive practices for improving achievement and related outcomes (Sizer, 1984, 1992; Shanker, 1986, 1988; Budde, 1988; Chubb & Moe, 1990; Meier, 1995; Murphy & Beck, 1995; Ouchi, 2006). These practices can include data-driven instructional decision-making (Marsh & Farrell, 2015); adopting curricula and instructional materials that are aligned to

student learning preferences (Pane, Griffin, McCaffrey, & Karam, 2013); differentiating instruction for special student populations such as English language learners, students with disabilities, and those who are lower achieving (Dobbie & Fryer, 2013; Moschkovich, 2012); and providing social and emotional supports to students (Grant et al., 2017). Given the potential for school autonomy to facilitate these responsive practices, reform advocates across the spectrum—from Ted Sizer, Ray Budde, Deborah Meier, and Albert Shanker to John Chubb and Terry Moe—have argued that school autonomy is critical for providing underserved students access to high-quality schools and improving equity in public education (Sizer, 1984, 1992; Shanker, 1986, 1988; Budde, 1988; Chubb & Moe, 1990; Meier, 1995; Abrams, 2016).

In contrast, school leaders and teachers in traditional public schools that do not have school autonomy may not have the flexibility to adapt school practices to student needs. For instance, collectively bargained agreements (CBAs) between districts and the teachers' union can restrict the ability of traditional public schools to hire and assign teachers and adjust school schedules, calendars, and class sizes (Strunk & Grissom, 2010), posing barriers to school change. However, advocates for maintaining CBA protections argue that, while restrictive of school management, these protections improve teacher work conditions that, in turn, also support equitable outcomes for students (e.g., Bascia & Rottmann, 2011).

Despite these competing claims, many districts continue to leverage school autonomy as a reform strategy and we know surprisingly little about how schools are using autonomy in practice for better or for worse. Our study provides exploratory evidence on the proposition that school autonomy leads to responsive school practices. Specifically, we examine how diverse school models in the Los Angeles Unified School District (LAUSD), including externally managed charter schools and a set of internally managed schools, implemented autonomy and the association between implemented autonomy and responsive school

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practices. We situate our study in the Public School Choice Initiative (PSCI), a PMM reform that leveraged school autonomy to improve student achievement at low-performing ("focus") schools and newly constructed ("relief") campuses.

In PSCI, applicant teams interested in operating focus and relief schools could choose from one of seven school governance models, with varying degrees of autonomy from district policies and CBAs, to operate schools. These teams then developed school improvement plans detailing how they would use the autonomies afforded by their school model choice to improve school performance. These plans were put through a competitive screening process where multiple applicant teams submitted plans and applied to run the same school, with the LAUSD school board, under advisement from the Superintendent, deciding which applicant team submitted the highest quality school plan and awarding management of PSCI schools to the most qualified team. The theory of action underlying PSCI was that, under the guidance of school improvement plans that had been vetted for quality, school leaders and teachers would use school autonomy to implement plans with fidelity and build a collaborative professional culture which, in turn, would lead to the adoption of evidence-based, responsive school practices such as data-driven decision-making, targeted instruction for special student populations such as English language learners, and social and emotional advising of students.

In this context, we ask: *(1) How and why did the implementation of school autonomy vary within and across PSCI school models?,* and *(2) How was school autonomy associated with implementation fidelity of PSCI school plans, teacher collaboration, and responsive school practices?* We answered these questions in a convergent mixed-methods research design drawing on longitudinal survey data collected from PSCI school principals and qualitative case study data from 10 PSCI schools. Our results show that educators in PSCI schools implemented autonomy in alignment with the flexibilities afforded by their school model choice, but that there was variation in implemented autonomy stemming from other

organizational circumstances (e.g., educator intentions for using autonomy, district capacity for supporting autonomy implementation). More importantly, principal self-reports of implemented autonomy were positively related to implementation fidelity of school plans and teacher collaboration, which in turn were positively related to school leaders' perceived engagement in responsive school practices.

LAUSD's Public School Choice Initiative

LAUSD is the second largest district in the country, serving 655,000 students from diverse socioeconomic backgrounds in approximately 900 schools at the time of our study. LAUSD is an ideal case for studying how schools use autonomy because it was at the forefront of authorizing a range of autonomous school model types. Prior to PSCI, the LAUSD portfolio included 153 charter schools and a small number of internally managed schools such as magnet schools (n=22), affiliated charter schools (n=8), pilot schools (n=9), network partnership schools (n=19), extended site-based management model (ESBMM) schools (n=1), and traditional schools (n=680). PSCI was implemented to accelerate LAUSD's transformation into a portfolio district, scaling up the adoption of the above-mentioned school models to improve student achievement at low-performing ("focus") and brand-new ("relief") schools.[1] District leaders implemented this reform over consecutive school cohorts in 2010-11 (Cohort 1.0, 41 schools), 2011-12 (Cohort 2.0, 31 schools), 2012-13 (Cohort 3.0, 42 schools), and 2013-14 (Cohort 4.0, 16 schools).

Theory of Action of PSCI

To operate focus and relief schools, school operators in PSCI participated in a competitive selection process in which they adopted one of seven school governance models

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[1] Ten Cohort 3.0 schools were put through an alternative plan writing process where they did not have to compete with other applicant teams to maintain control over their schools because they demonstrated one-year gains in student achievement. We still include these schools in our analysis.

and developed strategic plans around how they would use autonomies associated with their school model choice to improve school practices and student achievement (Strunk, Marsh, Bush-Mecenas, Duque, 2015). These school models (described in detail below) included externally managed charter schools and a set of internally managed schools operated by administrators and educators within the district. These models had varying degrees of autonomy from state/district policies and CBA provisions, with charter schools being by far the most autonomous schools.

School plans were screened by the superintendent and school board, with district leaders granting school operators with the highest quality plans the authority to manage schools. The Request for Proposals (RFP) in PSCI required applicants to identify several evidence-based school practices for improving teaching and learning, with an emphasis on responsive school practices intended to build rigor and personalization in academic programing and inclusive spaces for student learning. Specifically, applicant teams were asked to develop plans for: (1) addressing the academic needs of special populations of students (e.g., English language learners, students with disabilities), (2) providing social and emotional support to students, and (3) using assessment and school data to monitor and improve instruction. To support the implementation of these responsive practices, district leaders expected PSCI schools to build a cohesive professional environment of teachers working in tandem to improve instruction. Applicant teams had to explain how they would use model autonomies to facilitate teacher professional development and collaboration.

As shown in Figure 1, school providers had to choose their school model as part of the school planning process in PSCI and explain how they would use model autonomies to achieve school goals (Step A). District leaders intended for school providers to use their autonomy to implement school plans with fidelity (Step B) and build teacher collaboration around school improvement (Step C), with both these intermediate outcomes reinforcing one

another and leading to responsive school practices (Step D) that improve student outcomes.

To inform this relationship between school autonomy and student outcomes, district leaders exposed schools to other reform strategies commonly featured in PMM districts, including: (1) performance-based procedures for monitoring school performance (e.g., data-driven review sessions, threat of future school closure or reconstitution); (2) parent and community engagement; and (3) capacity-building supports provided by the district and its partners (e.g., the teachers and administrators' unions and the Los Angeles School Development Institute) for school plan development and performance management (see Marsh, Strunk & Bush, 2013; Marsh, Strunk, Bush-Mecenas, & Huguet, 2015; and Strunk et al., 2015 for more detail). As shown in Figure 1, these mechanisms were supposed to inform how schools used autonomy for improvement.

School Governance Models in PSCI

PSCI allowed school providers to operate under one of seven types of school governance models that offered varying degrees of autonomy from district policies and CBAs, including traditional, affiliated charter, extended-site based management (ESBMM), network partnership, local initiative (LIS), pilot, and charter schools.[2] Figure 2 aligns these school models from least to most autonomous according to freedom from state/district policies (y-axis) and negotiated teacher labor agreements (x-axis). Externally managed charter schools have autonomy in most areas of school management.[3] Following charter schools are pilot schools that can set their own procedures for student discipline, health, and safety and operate under a "thin" union contract that provides substantial autonomy from

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[2] At the time of PSCI, district leaders still viewed magnet schools as fulfilling LAUSD's mission to create desegregated school settings for students and not necessarily as form of school choice. As such, magnet schools were not included in the list of school models that applicant teams could adopt through the PSCI process.
[3] While charter schools have autonomy from most state and district policies, charter schools that participated in PSCI agreed to give up some of these autonomies, such as prioritizing enrollment for students in their neighborhood attendance zone and to use certain facilities and service providers contracted by LAUSD.

CBAs in management of teaching staff. Following pilot schools are all remaining internally managed school models that have varying degrees of autonomy from state/district policies in a restricted set of operational areas and little autonomy from CBAs.

Internally managed schools in PSCI differ in other important respects that are not fully apparent in Figure 2. Specifically, pilot schools operate as small theme-based schools (with student enrollments of less than 500), LIS schools have the option to choose from a menu of autonomies (hence the dashed box for LIS schools in Figure 2), network partnership schools partner with an external, non-profit partner organization that can contribute additional school resources, and ESBMM schools can engage in participatory decision-making processes that affords parent and teachers input into school management.

In 2011, following his appointment as Superintendent, Dr. John Deasy ratified a new Memorandum of Understanding (MOU) with the teachers' union (UTLA) that provided opportunities for all schools in LAUSD to obtain autonomies related to district policies and negotiated CBAs. This MOU came into effect during the plan writing process for PSCI Cohort 3.0 schools. Based on the MOU, any district school could choose to operate as a LIS school and the district removed all caps on the number of ESBMM and pilot schools operating in the region. Moreover, all 3.0 schools were asked to identify a potential school model to operate under but had to wait until after their first year of operation to formally adopt the autonomies of their chosen model. Meanwhile, schools could apply for LIS waivers from district policies for their first year of operation.[4] Finally, the MOU required all PSCI schools (including charter schools) to hire teacher employees under the current CBA.

Across all PSCI cohorts, traditional schools (n=59) made up the lion's share of schools, followed next by pilot schools (n=28), ESBMM schools (n=18), charter schools

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[4] Note that, while schools could apply for LIS waivers in their first year of operation, these schools could adopt any governance model after this first year and did not necessarily have to become LIS schools.

(n=15), and LIS (n=5) and network partnership schools (n=5). Because no charter school operators submitted plans for managing schools with teacher employees protected under the current CBA in Cohorts 3.0 or 4.0, these schools only participated in Cohorts 1.0 and 2.0.

Contributing to the Literature on School Autonomy

The case of LAUSD's PSCI affords several opportunities for advancing the literature base on school autonomy. Currently, there is little evidence on how schools use autonomy to engage in responsive school practices and improve student learning (Honig & Rainey, 2012).

Most studies to date have focused on charter schools as the exemplar of autonomous schools, comparing these schools to district-run schools to assess the impacts of autonomy on school practices and student achievement (e.g., Abdulkadiroğlu, Angrist, Dynarski, Kane, & Pathak, 2011; Berends, 2015; Clark, Gleason, Tuttle, & Silverberg, 2015). These studies find that charter schools in urban areas such as Boston can have sizeable positive effects on student achievement for low-income and under-represented minority students (Abdulkadiroğlu et al., 2011; Angrist, Pathak, & Walters, 2013). These achievement effects may be driven by responsive school practices geared toward students with low levels of baseline achievement – often grouped under the "No Excuses" charter school model -- such as extended instructional periods/days, high-dosage tutoring, data-driven instruction, and school-wide discipline policies (Angrist et al., 2013; Gross, 2011). However, it is unclear if school autonomy is the driving mechanism behind these school practices and achievement gains versus other dimensions of school governance that distinguish charter schools from district-run schools (e.g., differences in school funding, accountability, etc.).

More importantly, the above evidence from charter schools is not generalizable to internally managed school models in systems such as LAUSD that have limited autonomy in certain areas of school management (Honig & Rainey, 2012). These internally managed

schools also include governance features that could obscure the relationship between school autonomy, school practices, and student outcomes. In the case of LAUSD, these governance features include participatory decision-making structures that give voice to teachers and parents (featured in ESBMM schools), partnerships with community-based organizations (featured in network partnership schools), and the option for schools to choose from a menu of autonomies in accordance with educator preferences and needs (featured in LIS schools).

To garner more direct evidence on autonomy implementation in schools, education scholars have relied on observational and self-reported data from school leaders and teachers (Finnigan, 2007; Gawlik, 2007; Mayer, Donaldson, LeChasseur, Welton & Cobb, 2013; Shin, Slater & Backhoff, 2012); we use similar self-report data in our study of PSCI schools. Interestingly, these studies show that school leaders and teachers do not fully implement the autonomies granted to them (Honig & Rainey, 2012), and that there can be substantial variation in implemented autonomy both within and across school model types (Finnigan, 2007). These studies also do not find consistent evidence of there being a positive relationship between school autonomy and student achievement (Shin et al., 2012). Given the nascent state of this literature, LAUSD's PSCI represents an ideal setting to explore patterns and sources of variation in implemented autonomy across diverse school model types and the relationship between autonomy implementation and responsive school practices.

Beyond describing autonomy implementation, LAUSD's PSCI provides a case for studying if and how other PMM policy mechanisms might mediate the effects of school autonomy on school practices. As noted earlier, PSCI leverages other reform strategies such as school planning, accountability, capacity building, and parent engagement to support school improvement. Recent evidence suggests that school districts may need to invest in these reform mechanisms to help schools exercise autonomy (Honig & Rainey, 2012). For instance, the recruitment of high-quality school leaders and teachers into autonomous schools

can be critical for building school capacity for improvement (Gross, 2011; Steinberg & Cox, 2016). Our own prior research on PSCI suggests that strategic planning for school improvement (Strunk et al., 2015) and parent engagement (Marsh et al., 2015) were important reform mechanisms, but we have yet to explore how school autonomy worked alongside these mechanisms to shape school practices.

Data and Methods

We employed a convergent mixed-methods study design (Cresswell & Clark, 2011) in which we analyzed three years of qualitative case study data, principal survey data, and public school data to triangulate and elaborate on findings on school autonomy and improvement efforts. These data track the first three cohorts of PSCI schools.[5]

Principal Survey Data

We administered a survey to Cohort 1.0, 2.0. and 3.0 PSCI school principals in the spring of the 2011-12, 2012-13, and 2013-14 school years. Principals were contacted via email and asked to take the survey online through a secure individualized link. Our team followed up with non-respondents and offered hard-copy versions of the survey. The surveys asked about school principals' experiences with executing their school plans in the second, third, and/or fourth years of implementation for Cohort 1.0 schools; first, second, and/or third years of implementation for Cohort 2.0 schools; and the first and second years of implementation for Cohort 3.0 schools. Table 1 shows our survey response rates by PSCI school cohort and school model for each year of implementation and all years combined.[6] While response rates vary by cohort and school model in each year, our response rates when

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[5] We surveyed Cohort 4.0 schools in 2013-14 but our response rate ncas very low (30%). Our results do not change when we include this cohort in our analysis (available upon request).
[6] Following Strunk et al. (2015), we combined all years of implementation data to increase statistical power in our analysis. We include cohort fixed effects in this pooled analysis to account for differences between cohorts.

we pool data across all years is relatively high.[7]

Explanatory variables. We used these data to observe key reform strategies featured in PSCI, including principal reports on implemented autonomy, performance-based accountability, parent and community engagement, and school capacity building. Table 2 provides summary statistics on these survey constructs for each year of implementation in our data and for our averaged data across all years. We standardized all survey indices within implementation year to have a mean of zero and a standard deviation of one.

Implemented autonomy. We asked nine survey items about how much control principals had in curriculum and instruction, personnel, budget and operations, and creating structures for school decision-making. Our survey items for curriculum and instruction included selecting curricular materials, participating in district benchmark assessments, providing professional development, and setting their school's daily schedule and/or annual calendar. Our survey items for personnel management included selecting/hiring teachers, removing teachers, and evaluating teachers. We included two additional items with regards to determining spending of school budgets and structures for school decision-making (e.g., school committees, etc.). These items were measured on a four-point scale, with 1=no control, 2=slight control, 3=moderate control, and 4=complete control.

We averaged all nine items to create a single measure of implemented autonomy (α=0.87). While we could have disaggregated this implemented autonomy scale into sub-areas of school management (e.g., curriculum and instruction, personnel management, budgeting, etc.), we did not have consistent coverage of these sub-areas in our survey data, with some sub-areas such as budgeting only being measured with a single survey item,

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[7] Because the survey items of interest to our analysis were interspersed throughout our survey instrument, we only counted principals as responding to our survey if they fully completed the survey.

leading us to use a single, aggregate scale for implemented autonomy.[8]

Performance-based accountability. We measured performance accountability with a single item on the extent to which principals agreed or disagreed that the district would hold PSCI schools accountable for implementing their school plans. This item was rated on a four-point Likert scale with 1=strongly disagree, 2=disagree, 3=agree, and 4=strongly agree. We specified this item as a binary indicator for principals who agreed or strongly agreed.

Parent and community pressure. Because PSCI created formal outlets for parents and the community to voice feedback on the quality of school plans and participate in school reviews, we asked principals about the extent to which their school felt pressure from (1) parents and (2) community members for improving school performance. Responses were recorded on the same four-point Likert scale from strongly disagree (1) to strongly agree (4). We averaged these items into a single measure for parent and community pressure (α=0.73).

Quality of district-provided support. We asked three survey items on the extent to which principals agreed or disagreed with the following statements on district-provided capacity building: (1) schools received adequate technical assistance from the district and its partners for implementing school plans, (2) the district central office was responsive in addressing implementation challenges at school sites, and (3) the district's regional branches or local offices were responsive in addressing implementation challenges at school sites. Reponses were again recorded on a four-point Likert scale from strongly disagree (1) to strongly agree (4). We averaged these three items to generate a single index (α=0.74).

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[8] We collected data on implemented autonomy in two-part question. Part A asked principals if they had requested autonomies as part of their school plan. Part B asked how much autonomy principals exercised in practice. We noticed that 10% to 20% of principals did not respond to Part B for any one of our survey items. Most of these principals were in traditional public schools and had indicated no in Part A. We impute these missing data by taking the minimum, median, or maximum response of implemented autonomy reported by other school leaders in the same model type. We find similar results across imputations methods (available upon request) and present results in this paper with missing data imputed with median values.

Outcome measures. We also used survey data to measure school outcomes of interest to our analysis, including principal reports on implementation fidelity of school plans, teacher collaboration, and responsive school practices. We again standardized all continuous outcome measures within implementation year.

Plan fidelity. Because school planning was a central process for selecting high-quality PSCI school operators, we focused on the extent to which schools implemented these plans as an intermediate reform outcome. We asked nine survey items on the extent to which principals implemented different aspects of their PSCI plans as covered in LAUSD's RFP, including: curriculum and instruction; assessment and school data plan; professional development; envisioned school culture and climate; family and community engagement; school governance structures; school leadership and staffing plan; site-based budgeting and financial practices; and operational plan. Survey items were measured on a Likert scale of 1 to 4, with 1=not implemented at all, 2=slightly, 3=moderately, and 4=fully. We averaged all nine survey items into a single measure for plan fidelity (α=0.85).

Teacher collaboration. We considered teacher collaboration as an additional intermediate outcome since district leaders envisioned PSCI schools using autonomy to recruit and/or develop teaching staff who would be committed to their school's improvement plan. We asked nine survey items, four of which inquired about the frequency of teacher meetings to analyze student achievement, discuss instructional planning, observe lessons, and discuss the social and behavioral needs of students. These items were rated on a scale from 1 to 6, with a 1 signifying that the activity never occurred or had not yet occurred in the school year and a 6 indicating that the activity occurred almost daily. We re-scaled principals' responses into four categories, collapsing responses values of 1, 2, and 3 into one category.[9]

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[9] This collapsed category included responses of never (1), once or twice a year (3), every few months (3), which are less frequent than once or twice a month (4), once or twice a week (5), or daily 6).

Next, we incorporated another five survey items that measured the extent to which teachers collaborated with one another at a school site, felt responsible for one another's success, could be counted on to help each other outside of official assignments, shared materials and ideas[10], and had time within the school day to meet with each other. These survey items were measured on a scale from 1 to 4, with 1 indicating that these practices did not occur or that the principal strongly disagreed with these statements about his/her school, and 4 implying that these practices occurred to a great extent or the principal was in strong agreement. We averaged all nine survey items into a single measure for teacher collaboration (α=0.73).

Responsive school practices. LAUSD focused on responsive school practices as a central outcome for PSCI schools. To observe these practices, we asked four items about the extent to which schools: (1) used data to inform instruction; (2) implemented new curriculum and instructional methods to improve student achievement; (3) targeted the learning needs of special populations of students such as English language learners, low-achieving, and special education students; and (4) offered professional development to teachers on how to address the needs of special populations of students in their classroom. These items were rated on a four-point Likert scale ranging from 1=not at all, 2=small extent, 3=moderate extent, and 4=great extent. We also asked three items on the extent to which principals agreed or disagreed with the following statements about the quality of teacher-student relations, including if teachers: (1) managed student behavior effectively in their classrooms; (2) provided students with adequate advice on their social and emotional needs; and (3) had a strong rapport with students. These items were rated on a four-point Likert scale, with 1=strongly disagree, 2=disagree, 3=agree, and 4=strongly agree. We averaged all seven survey items into a single index for responsive school practices (α=0.64).

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[10] We asked school leaders if staff do not share materials or ideas with one another which we reverse coded when preparing our measure for teacher collaboration.

School Controls

We used principal self-reports on years of administrator experience and publicly available school data to control for other conditions that could influence the relationship between implemented autonomy and PSCI school practices. These school-level data included the treatment status of schools in PSCI (i.e., focus or relief schools), PSCI cohort, school enrollment (in log form), Academic Performance Index (API) scores normed by year (a school-level aggregate performance index), school administrator and teacher experience, and school demographics such as the percent of students who received special education services, were English language learners and were eligible for free and reduced price lunch.[11]

Qualitative Data

We supplemented our survey data with qualitative case data intended to illuminate how and why schools used autonomy. We collected interview data from a purposeful sample of 10 case study schools representing variation in grade levels served, geographic location, and relief (new) and focus (turnaround) status. These cases participated in two cohorts of PSCI (2.0 and 3.0), and we followed them over two years (for 3.0 schools) to three years (for 2.0 schools). Our sample included three charter schools, two network partnerships schools, two schools that planned to become pilots, one ESBMM school, and two traditional schools. Four of our case schools (from Cohort 3.0) supplemented their selected governance model with LIS waivers. We conducted interviews with 16 principals, 16 other school administrators, 60 teachers, and four organizational leaders (e.g., from charter management organization), as well as 16 accountability review observations. We also interviewed 36

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[11] We are missing school-level data for Cohort 1.0 and 2.0 pilot schools that were not assigned state-level identifiers in their first year of operation. We impute the missing data for these pilot schools in two ways: (1) treating the data of larger school campuses where these pilots were co-located as their data in earlier years, and (2) attributing the first year of available data for these pilot schools to their data in earlier years. Our regression results are comparable across these different approaches so we present our results based on the first approach.

leaders at LAUSD and partner organizations over the first two years of our study, including superintendents (there were two during this period), LAUSD administrators, partner organization leaders (e.g., United Way, Unite LA), and union leaders. We used semi-structured protocols in all interviews and transcribed recordings prior to coding and analysis.

Research Question 1 Methods: How and why did the implementation of school autonomy vary within and across PSCI school models?

To visualize patterns in autonomy implementation across and within school model categories, we generated boxplots showing the distribution of implemented autonomy by school model. Box plots are graphical displays of data that show the minimum, first quartile, median, third quartile, and maximum values, making these plots ideal for visualizing the range in implemented autonomies within and across school model types. We prepared these boxplots for five samples. First, we generated boxplots for the entire sample of principal survey respondents, taking the average response for principals who had two or more years of data. Then we generated boxplots for sub-samples of principals who responded to our survey during their (2) first year of plan implementation (Cohorts 2.0 and 3.0); (3) second year of plan implementation (Cohorts 1.0, 2.0, and 3.0); (4) third year of plan implementation (Cohort 1.0 and 2.0); and (5) fourth year of plan implementation (Cohort 1.0 only).

We then coded our qualitative data within each case and year for themes on how and why school leaders and teachers reported using school autonomy (e.g., reasons for selecting governance model, contextual factors shaping autonomy use). We prepared a standardized write-up for each case-year and compared write-up themes from year to year. We then analyzed across cases and years by themes to identify possible explanations for variation in autonomy implementation within and across school model categories.

Research Question 2 Methods: How was implementation of school autonomy associated

with implementation fidelity of PSCI school plans, teacher collaboration, and responsive school practices?

We first investigated the relationship between implemented autonomy, plan fidelity, and teacher collaboration in the theory of action of PSCI (Steps B and C in Figure 1). Specifically, we ran ordinary least squares (OLS) models predicting intermediate outcomes of plan fidelity or teacher collaboration as a function of implemented autonomy, other PSCI reform mechanisms (e.g., performance-based accountability, parent engagement, and capacity building) and school controls. These models took the following form:

$$IntOutcomes = ImpAut_s + PerfAct_s + ComPress_s + DistSup_s + X_s + \varepsilon_s \quad (1)$$

where *IntOutcomes* was principal reports on plan fidelity (*PlanFid_s*) or teacher collaboration (*TchrColl_s*) in school s, *ImpAut_s* was principal reports on implemented autonomy, *PerfAct_s* was an indicator for whether principals agreed that the district held them accountable for implementing their school plans, *ComPress_s* was the level of pressure that principals perceived from parents and the community for improving school performance, and *DistSup_s* was principal reports on the quality of district-provided technical assistance. While *ImpAut_s* was our main coefficient of interest, we also interpreted the coefficient estimates for other PSCI reform mechanisms (e.g., *DataAct_s*, *ComPress_s*, *DistSup_s*) to understand how these mechanisms mediated the relationship between implemented autonomy, plan fidelity, and teacher collaboration. X_s is a vector of school controls that could also influence plan fidelity and teacher collaboration such as principal years of administrator experience, median years of teacher experience, the natural log of student enrollment, school level, PSCI

treatment status (i.e., focus, relief, watch), cohort indicators (with Cohort 2.0 as the reference group), and the percent of students who were eligible for free and reduced-price lunch, special education services, and who were English language learners.[12]

We then examined the relationship between plan fidelity, teacher collaboration, and responsive school practices (Step D in Figure 1) in equation 2:

$$RespSchls = PlanFids + TchrColls + PerfActs + ComPresss + DistSups + Xs + \varepsilon s \ (2)$$

where $RespSchls$ was our measure for responsive school practices. In this model, $PlanFids$ and $TchrColls$ were our main covariates of interest.

We ran models 1 and 2 for the same analytic samples used to generate our boxplots, including our sample of all PSCI school principals, with data averaged across all years of implementation data[13], and for the sub-samples of principals who responded to our survey in years 1, 2, 3, and 4 of school plan implementation. We also tested to see if our main effects were driven by charter schools, which were granted far more autonomy than internally managed school models in PSCI. We focused on this distinction since LAUSD expanded internally managed school models in PSCI to promote within-district choice for students while only giving up some state/district regulations and CBA provisions to appease the teachers' union, school board members, and other constituents opposed to the expansion of charter schools. As such, we wanted to investigate if this politically feasible decision led to marginal increases in autonomy that principals still perceived as contributing to responsive schooling. To test this possibility, we limited our sample to internally managed schools, using

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[12] We did not control for school API performance because 2013-14 was a year in which schools did not implement standards-based assessments and did not receive a performance rating. Our results are consistent when we control for API in years when API ratings are available (2011-12 and 2012-13).

[13] In these pooled models, we take the maximum of our binary indicator for performance-based accountability and the average of all standardized survey measures and school controls.

data averaged across all years of implementation. Because we could not control for all unobservable factors, all our results should be interpreted as descriptive and not causal.

We then used similar case study methods from our first research question to inform our survey results. We coded our data across a wide range of implementation themes, including teacher collaboration and responsive school practices (e.g., teacher participation in joint-decision making, teacher provision of social and emotional supports to students), and then prepared standardized write-ups for each case. We compared themes in our write-ups across years of implementation and cases of school model types.

Note that we selected cases prior to the selection of a plan and followed applicant teams throughout the application process as well as implementation of the accepted plan. Therefore, we could not foresee which school model would be adopted in each of our cases. As a result, our sample was limited in terms of the school models represented and our analysis was grounded in the unique context of each case. For these reasons, our case study data did not allow us to systematically analyze and present broad findings regarding trends in school practices utilized in particular school models. As such, we utilized these data to offer examples of school practices that school leaders and teachers attributed to their use of school model autonomies but could not go into further detail was to why we observed certain school practices for certain school model types.

Limitations

There were important limitations to our data that led us to interpret our results as strictly exploratory. Since we did not have full representation of all PSCI schools in our survey data, we cannot generalize our results to all reform schools but can at least speak to a sizeable share of these schools. To address the unevenness in response rates across implementation years of PSCI, we triangulated our results across these separate years and

with our case study data to make final inferences but acknowledge that there could still be gaps in our analysis. Finite resources also limited us to just 10 case studies that may not be representative of the entire population of PSCI schools, but nonetheless offer rich detail on the relationships between implemented autonomy and school practices in the observed sites.

Our survey constructs for implemented autonomy, school practices, and other PSCI reform mechanisms are also not comprehensive. We only collected data on a sub-set of autonomies and focused on a limited set of responsive school practices that, while central to PSCI, might not represent best practices for schools and districts in other contexts. Our survey data were also based on principals' perceptions of autonomy and school outcomes and therefore might not be indicative of actual school practices. That said, there is still value in understanding how principals perceive school autonomy since district leaders are intentionally positioning principals with increased authority over school management.

Results

Overall, principal reports of implemented autonomy in PSCI varied across school model types as intended by the design of reform. However, there was also variation in implemented autonomy with internally managed school types that stemmed from organizational circumstances not fully accounted for in the design of PSCI. Consistent with district leaders' expectations, we found that principal reports of implemented autonomy were positively related to principal perceptions of plan fidelity and teacher collaboration, which in turn were related to principal reports of responsive school practices. Our case study data further suggest that PSCI schools may have engaged in a broader range of activities for teacher collaboration and responsive schooling than what we observed in our survey data.

Research Question 1: Implemented autonomy varied within and across school models

Our survey data showed that charter schools implemented higher levels of autonomy than internally managed schools, consistent with the formal autonomies granted to school models in PSCI. At the same time, however, we found substantial variation in implemented autonomy among internally managed schools.

Figure 3 shows five boxplots of our aggregate measure of implemented autonomy by school model across all years of survey data (top left), and then in each year 1 through 4 of implementation. The red line indicates the mean in our sample (standardized to zero). First, the boxplot derived from all years of our survey data shows a clear distinction across school models corresponding to their official autonomies. Principals at charter schools reported the highest level of implemented autonomy, with the median charter school landing at close to two standard deviations above the mean. Next are pilot schools, with the median pilot school falling at close to one standard deviation above the mean. All remaining school models are below average, with LIS schools being the lowest at around one standard deviation below the mean. This finding is not surprising since LIS schools had to wait a full year before implementing model autonomies and had to get majority staff approval, which could have limited principal control and resulted in lower self-reports of implemented autonomy.[14]

While it appears that autonomy was more constrained for internally managed schools, it is important to note that these schools still experienced *some* autonomy in practice. As shown in Table 2, our index for implemented autonomy had a mean of 2.62 and a standard deviation of 0.62 (on a four-point scale) across all years of survey data, suggesting that even principals at LIS schools, located at one standard deviation below the mean, reported having a little control over school operations (i.e., close to a level of 2 on our four-point scale). This evidence suggests that, consistent with district leaders' expectations, principals at PSCI

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[14] Because LIS schools were only available to Cohort 3.0 PSCI schools, we only have data on these schools in 2012-13 (year 1 of implementation) and 2013-14 (year 2 of implementation).

schools reported a baseline level of autonomy from district policies that was greater than zero.

Interestingly, we found little variation in implemented autonomy among externally managed charter schools, but a lot of variation in implemented autonomy within internally managed school models including pilot, network partnership, ESBMM, and traditional schools. For instance, as shown in Figure 3 (top left), some principals at pilot schools reported low levels of implemented autonomy that were comparable to the median network partnership school, whereas principals at certain ESBMM and traditional schools reported high levels of autonomy that were almost equivalent to the median pilot school in PSCI.

Our year-by-year box plots also show less variation in implemented autonomy of internally managed autonomous school models over time and especially for pilot schools. Although response rates for pilot schools are relatively low in each year of implementation of PSCI (43% or less) and are especially low by year 4 of the reform (14%), we nonetheless see less variation in the implemented autonomy in years 2 (top right), 3 (bottom left), and 4 (bottom middle) of PSCI relative to year 1 (top middle) among pilot schools that responded to our survey. Most of this lost variation comes from the bottom end of the distribution of implemented autonomy, suggesting that, on average, pilot schools moved upward toward the median of their range. This convergence in pilot school autonomy eventually contributed to starker differences between these schools and other internally managed schools in PSCI. In contrast, variation in implemented autonomy for traditional schools persists over time, suggesting that some traditional school principals exercised autonomies (that were not formally granted to them) without any pushback (or potential awareness) from the district.

In sum, our results suggest that there was variation in implemented autonomy across school models in PSCI. These results support the theory of action in PSCI that, through introducing diverse school models, LAUSD could create variation in school autonomy for PSCI schools to implement their plans. That said, our results also point to variation in

implemented autonomy within internally managed school categories. Next, we turn to our case study data to offer potential explanations for this finding including: (1) the use of de facto autonomy by traditional schools, (2) differing motivations for using autonomy among internally managed schools, and (3) uneven organizational capacity at the district and school levels that led internally managed schools to execute model autonomies differently.

De facto autonomy of traditional schools. First, our data revealed that staff at traditional schools implemented autonomies that were not officially permitted under their school governance model. We might characterize this theme as "ask forgiveness, not permission." For example, when asked whether they needed more autonomy in staffing, traditional case principals reported that they were generally successful in encouraging staff who were not well suited to the school to be voluntarily transferred to another district school, effectively working around CBA provisions that restricted involuntary staff transfers to manage schools. Similarly, teachers in some traditional schools felt that they had substantial autonomy in curriculum and instruction in terms of utilizing preferred materials and teaching strategies on a day-to-day basis that deviated from their PSCI school plan (note, for traditional schools to exercise autonomy in curriculum and instruction, they had to describe intended changes in their school plan and adhere to this plan). Of note, all of these de facto autonomies concerned the implementation of district policy and stayed within the limits of CBA provisions. This de facto, non-CBA flexibility was generally exercised by school leaders (and their staff) with longer tenure and stronger networks, who may have had a stronger understanding of district monitoring and expectations.

Further to this point, principals at traditional schools sought to avoid constraints arising from the process of officially adopting an autonomous school model, such as obtaining majority teacher approval for this transformation. Instead these principals reported acting upon the autonomies that they needed to operate their school or to which teachers had

informally agreed. It may be that adopting a more autonomous model attracted greater scrutiny, thereby constraining how much local control principals had in practice. As one district administrator shared, "with more autonomy, comes more responsibility." For instance, when asked if his school would adopt a new school model after their first year of implementation (a requirement for Cohort 3.0 schools), one principal at a traditional case school (relief) implied that officially changing his school's governance status could actually prevent him and his staff from doing the work they sought out to accomplish:

> *Could be, but right now things are going so good with me, I don't want to like rock the boat. I mean whatever you may call our model is, it works for us. That name is not going to bind us or make us act differently. I don't want to set a tone—a negative tone by bringing in and telling them, "Oh, this is a pilot school, this is that school." Right now, everybody is doing that leadership, everybody is owning the responsibility. I don't want anything to come and hamper the progress for me.*

Variation in autonomy use for other internally managed schools. Our case study data also revealed different motivations for adopting school models among other internally managed schools in PSCI, resulting in these schools exercising autonomy in ways that differed from the autonomies formally granted to them. For example, some internal schools that were supposed to be more autonomous than traditional schools expressed low-level intentions or commitment to use the autonomies in their selected school model. At a few case schools, applicant teams reported that they had selected autonomous models and/or waivers in their school plans for strategic purposes, to appease district leader expectations of using autonomy to innovate schooling on paper and thus improve their chance of selection during the PSCI process, but that they did not intend to execute all their requested autonomies or waivers.

Because district leaders intended to promote a range of autonomous models through PSCI, some applicant teams believed that semi-autonomous models might be preferred and

more readily approved. The preference of certain district leaders and board members for internally managed school models was also well-known at the time. Indeed, politically charged negotiations centered upon raising the existing caps on the allowed number of pilot and ESBMM schools (see Marsh, 2016). This strategic application for autonomy is evident in the following quote from an applicant team leader (and current teacher) at one case school who was asked if he used the autonomies requested in his/her school plan:

> *I don't know if we used any of them [waiver autonomies]. I know we have to redo those again I believe for the next school year, I think. I think we do. We have to request them again. I don't think we used any of them. We wrote them in case we need them.*

In most case schools, however, respondents expressed deliberate intentions for using model autonomies, so as to "not have those same chains" over school decision-making and practice that would prevent innovation with teaching and learning. For these schools, autonomy was a necessary and crucial factor in allowing them to fully realize their school plan. For example, a pilot school embracing a community-schooling model required commitments from staff to attend community events, mentor students, or fulfill additional roles on campus outside of their normally contracted duties. The principal and teachers at a STEM-themed ESBMM school believed that the flexibility to alter their bell schedule to allow for block scheduling was essential to their goal of providing students with longer lab-style science courses. One case respondent described that they selected the pilot model to access scheduling, curricular, and hiring autonomies, as follows:

> *[The pilot model] gives us all the autonomies that we desperately need in order to function in the way that we see fit: choosing a better textbook, changing the curriculum, introducing an advisory period, [and] lengthening the day. More importantly... [the pilot model] empowers me to make sure that you're [as a teacher] playing ball to get an educational outcome, you're not sitting here absorbing a paycheck. If you are, I will be able to get rid of you as soon as possible because you signed the elect to work agreement, which basically supplants the contract in many*

ways…The elect to work agreement is central to what we wanted, the ability to pick and choose staff as one of the pilot autonomies.

Inadequate district and school organizational capacity. Finally, leader interviews and case studies indicated that organizational capacity to support and monitor the provision and implementation of autonomy for internally managed schools was an ongoing challenge and led to inconsistent autonomy implementation across schools. This was less of a challenge for charter schools that were managed externally by charter management organizations or other non-profits and where we see less variation in autonomy implementation.

As noted above, internally managed schools in LAUSD are supported through the district central office and regional administrative offices (initially called Local Districts and reorganized into Educational Service Centers midway through PSCI). Our data suggest that regional superintendents varied in their willingness and ability to support schools in accessing their autonomies. One Local District Superintendent illustrated the challenge in supporting autonomous schools and stated that the onus for demanding and implementing autonomies fell on the schools:

> *What I tell the school, "You just have to remind us, because I can't remember all of the autonomies that everybody has. So if something comes up, you need to say, 'Okay part of our governing model is that we do this' and then show me that." And then we then try to work it through…It's going to be difficult to remember and to know what … [each school is allowed to do]. So they have to really be the ones that keep reminding us what those are…there's no way that I could keep up with 100 schools that … had all kinds of autonomies.*

A senior LAUSD official echoed this concern that school autonomies were not honored because of inadequate knowledge and management of autonomies in the Local District offices. He suggested that these challenges were acute for pilot schools where school leaders and teachers expected to exercise substantial local control over school practices:

> *The pilot schools were sort of in an uproar because they really don't get their autonomies honored. They have a whole MOU with a bunch of autonomies attached to it and they come over here to get the things they are entitled to ...I mean they don't have to follow district policy, for example. And when they don't follow district policy, they get written up.*

Similarly, our case data for Cohort 3.0 case sites indicated that these schools experienced resistance from local district administrators when attempting to implement LIS waivers or school models that departed from CBAs. The principal at one Cohort 3.0 school reported selecting a less autonomous model because "they [the district staff] don't know what that [LIS model] looks like yet… so that [less autonomous internal model] was the safest model for our school just starting this three-year journey." Another case principal expressed his/her concern regarding district support for implementing waivers on teacher dismissal as follows:

> *I'm totally in dark in what waivers we got. The people that are my bosses are not aware of any of these things. Some of them don't even know the PSC process. They all go back to the UTLA Union stuff [CBA]. I have to keep telling them, "You know after one year, if I'm not happy with a teacher, will I have the chance to get rid of them?" "Oh no, no, you are to follow the [collective bargaining agreement]—"No," I said, "No, we applied for very many waivers." They still want us to follow [the CBA].*

In response to these challenges, the district reorganized school support within Educational Service Centers (ESCs) in the 2011-12 school year. While most schools were assigned to ESCs according to geographic locations, all schools with autonomous models across the district were assigned to one ESC, called the Intensive Support and Intervention Center (ISIC), where midlevel district administrators would be better able to understand and facilitate the implementation of school autonomies. As one of these administrators explained:

"It hasn't worked to have pilots in a bunch of different local districts but if we put them in one place then we can work through the autonomy issues once and they will be consistently applied afterwards. So this is 4 or 5 years into the whole process but they are ecstatic."

Aside from capacity constraints within the central and local district offices, limited school capacity contributed to differences in implemented autonomy. One ESBMM school administrator admitted to lacking the knowledge to access the full range of model autonomies when he first adopted this model in year one. He explained that "I did not recognize how powerful the ESBMM could be" and "wish I'd gotten the vision of that a little sooner and started that a little sooner, because I think I could have changed a few more things sooner than we did." As this respondent demonstrates, school leader capacity for understanding model autonomies was a critical but lacking factor for some internally managed case schools.

In addition to school leadership, pilot schools also needed time to implement the autonomies associated with their model choice due to other capacity-related factors. First, because these schools were operated by teachers embracing new leadership opportunities, teachers needed time to familiarize themselves and develop experience in these new roles. As a leader from one case school shared:

> *With the pilot school, … the teachers that are coming in don't necessarily have the experience as an administrator to run a school or to balance or to do budgets and I mean I think that's the biggest piece. ...They haven't run a school before. And so I think the challenges that that brings… If you really want to do something different and not have that capacity, I think it kind of almost invites you to go back into the same norms that you know or the status quo. So at the same time if we should apply them, we'll also need to make sure that they're gaining the capacity that they need, the supports that they need to actually be successful to implement.*

Additionally, most PSCI pilot schools were located on new (relief) school sites and had to hire teachers from neighboring feeder campuses who elected to move to relief schools with students from their prior school. Our interviews suggest that this requirement constrained pilot schools from exercising autonomy in hiring teachers. That is, pilot school leaders wished to hire teachers who were drawn to apply to the school and support their mission for change, not teachers who only wanted to work in the same geographic region, move with

their students, and/or who needed continued employment. Given the small size of pilot schools, uneven commitment from teachers may have further impeded the ability of school leadership and staff to implement model autonomies in the first year of operation. In light of our survey data showing reduced variation in autonomy implementation amongst pilot schools over time, it is possible that improvements in district and school capacity for administering the pilot school model (i.e., through ISIC and improvements in teacher leadership and hiring) contributed to this trend.

Research Question 2: Implemented autonomy associated with plan fidelity and teacher collaboration which, in turn, were associated with responsive school practices

Did variation in implemented autonomy among PSCI schools amount to tangible shifts in school leader perceptions of school practices? Our regression results show that autonomy implementation was in fact positively associated with principal perceptions of plan fidelity (Step B in Figure 1) and teacher collaboration (Step C). Panels 1 and 2 of Table 3 reports our model results from equation 1 for plan fidelity and teacher collaboration respectively. Column 1 in these panels shows results from our averaged survey data, columns 2-5 show results from each individual year of implementation (years 1-4), and column 6 shows results with our averaged survey data and charter schools excluded from our sample. As shown in column 1 of panel 1, a one standard deviation unit increase in implemented autonomy is associated with a 0.537 standard deviation unit increase in perceived plan fidelity. Similarly, in column 1 of panel 2, we see that a one standard deviation unit increase in implemented autonomy is associated with a 0.388 standard deviation unit increase in principal perceptions of teacher collaboration. These positive associations are consistent across implementation years 1 through 4, although we lose statistical power due to our

smaller sample sizes in the individual years.[15] Aside from autonomy implementation, we do not find evidence of a direct relationship between plan fidelity, teacher collaboration, and other school improvement mechanisms in PSCI such as performance-based accountability, parent and community engagement, or district-provided capacity building.

Our main effects for plan fidelity and teacher collaboration also hold when we restricted our analytical sample to principals at internally managed schools (shown in the final column of Table 3). For this sub-set of schools, a one standard deviation unit increase in implemented autonomy was associated with a 0.612 standard deviation unit increase in principal perceptions of plan fidelity (panel 1, column 6), and a 0.557 standard deviation unit increase in principal perceptions of teacher collaboration (panel 1, column 6). This finding suggests that LAUSD's strategy of providing autonomy to internally managed school models may have supported the development and implementation of school plans for improvement, or at the very least, shaped school principal beliefs that they were leading school environments geared toward such change. Our results further suggest that, among the competing narratives raised in our case study analysis—with some schools indicating that they did not intend to use model autonomies for school improvement and others indicating a strong commitment to doing so—the latter group of autonomy-committed schools was more representative of PSCI since we observed a significant and positive relationships between implemented autonomy, plan fidelity and teacher collaboration in our survey data sample.

Finally, principal perceptions of plan fidelity and teacher collaboration were positively associated with principal reports of responsive school practices (Step D in Figure 1). We report these results in Panel 3 of Table 3. As shown for our averaged data in column 1, a one standard deviation unit increase in plan fidelity and teacher collaboration were

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[15] We do not see a significant relationship between implemented autonomy and plan fidelity in year 4 of PSCI due to our small sample size in this year of data and the large standard errors of our coefficient estimates.

associated with a 0.405 and 0.301 standard deviation unit increase in responsive school practices, respectively. This effect holds in magnitude and sign for most years of implementation (i.e., columns 2-5) and when we restrict our sample to internally managed schools (column 6). To ensure these relationships are independent from principal self-reports regarding implemented autonomy, we re-ran our models while controlling for our scale for implemented autonomy. Our observed effects for plan fidelity and teacher collaboration do not change. Moreover, we do not see a significant relationship between implemented autonomy and responsive school practices, suggesting that autonomy was perhaps a stepping stone for other intermediate school practices related to responsive teaching and learning (results available upon request). We again did not find significant and consistent associations between other PSCI mechanisms and principal reports of responsive school practices.

Case schools further elaborate on teacher collaboration and responsive school practices. Our case study data provided more detail on teacher collaboration and responsive school practices that we could not directly observe in our survey data. For example, one of our charter case schools reported benefiting from small school enrollments, selective staffing procedures, and collaborative structures such as team teaching and joint lesson planning that allowed them to personalize instruction around student's social and behavioral needs. As this example suggests, autonomy in teacher staffing and lesson planning may have interacted with other school conditions such as enrollment size to facilitate joint teacher practices for improving students' social and emotional well-being.

We also observed different routines for teacher collaboration and responsive school practices among internally managed schools. In one ESBMM school, teachers and administrators worked together to pare down committee memberships and allow additional time for teachers to collaborate. One respondent at this school noted that "in ESBMM, teachers are empowered to be part of the decision-making process--it's a power shift", while

another noted that "it's weird coming from a top-down model or even from a model where the principal tries to be transparent…Here, we [teachers] have a say-so." As these quotes suggest, school autonomy in the ESBMM model may have provided teachers influence in school decision-making as an example of teacher collaboration that goes beyond instructional planning and that we did not inquire about in our survey data.

At another ESBMM school, respondents noted that their autonomies allowed them to switch to a block schedule "so the kids can spend more time on actual learning" and have "more experiential learning and projects." A pilot teacher also noted that they, too, embraced an "experiential" approach, engaging students in an in-depth community service field trip to "integrate the kids into the new community and help them feel a sense of camaraderie with each other." In this way, students' socioemotional needs, as well as their engagement in learning activities, were a priority for some of the case schools. A pilot school principal noted that she appreciated her ability, under the pilot model, to "do things differently—more innovatively, more student-centered" and that, under the pilot small school model, "the connection you have with the students in stronger and you really get to know them." As these examples imply, responsive school practices at PSCI schools may have included additional activities not observed in our survey data such as project-based and experiential learning, community service, and building strong student-to-student relationships.

Implications for Research and Practice

In summary, PSCI principals reported levels of autonomy in alignment with their school models, with principals at charter schools reporting the highest levels of autonomy followed next by pilot schools, followed next by all remaining internally managed schools. However, we also observed substantial variation in reported autonomy within internally managed school model categories. Our case data revealed that the use of autonomy at

internally managed schools was shaped by factors other than model type. In particular, some school leaders in traditional schools adopted de facto autonomies that were not officially granted to them. In addition, staff intentions for using autonomy and organizational capacity drove variation in the implementation of autonomy among internally managed schools. Our OLS models further suggest that school autonomy was related to school principal perceptions of plan fidelity and teacher collaboration which, in turn, were related to school principal perceptions of responsive school practices. We continued to see these trends even when narrowing our sample to internally managed schools that had lower overall levels of autonomy in comparison to charter schools, suggesting that district efforts to increase autonomy at these schools was perceived as helpful by school leaders and positively related to their ability to engage in school practices tailored to student needs.

Policy Implications

Our results suggest that district efforts to engage school providers in strategic planning around the use of autonomy for school improvement might link autonomy to positive outcomes such as plan fidelity and teacher collaboration that, in turn, are related to responsive school practices. Consistent with other studies (Honig & Rainey, 2012; Strunk et al., 2015), we find that strategic planning may ascribe purpose to school autonomy and help focus school improvement efforts and professional culture around district standards for school quality. Interestingly, we do not find evidence of other policy mechanisms such as school accountability, capacity building, and parent and community engagement mediating the relationship between school autonomy and school practices, but these null findings could also be due to poor measurement of these complex policy mechanisms in our survey data.

Our results also build on a growing body of evidence suggesting that schools can use autonomy to tailor instruction around student needs and invest in human capital practices that

reinforce instructional improvement (e.g., Dobbie & Fryer, 2013; Gross, 2011). While much of this evidence comes from studies of charter schools, we show that these trends are present among internally managed schools that operate with lower levels of autonomy.

While autonomy seems to be related to plan fidelity and teacher collaboration, our results show that school implementation of autonomy is highly complex in practice. This is especially true for internally managed schools, where principals do not only attribute their autonomy to model type but rather to a range of organizational circumstances. Nevertheless, given that our results show that increasing autonomy for these schools can be related to responsive school practices, district leaders should consider investing in a range of autonomy-enhancing measures beyond just authorizing diverse school operators.

Our case data point to several potential measures for increasing school autonomy, including robust training for school leaders and staff in the essential governance components of different school models, as well as the actual uses of school autonomy. However, this places an immense burden upon district administrators to manage, monitor, and effectively facilitate the use of granted school autonomies. District administrators, at all levels and in all capacities, would then benefit from training in understanding autonomies, codified and unified procedures for granting autonomy, and structures to promote school differentiation. Because such training would involve administrators managing a wide range of areas, such as curriculum and instruction, human resources, professional development, and school maintenance and operations, a promising approach may be to divert the management of autonomous schools to administrative teams well-versed in school autonomy that can buffer between schools and central district offices. Structures allowing schools to iteratively adjust their autonomies may also be helpful. Of course, these recommendations require substantial district investments in training, restructuring, and management, and a shared commitment to decentralizing school management.

Finally, it is important to interpret our findings in the context of the theory of action of PMM districts, which conceptualizes the district as overseeing a portfolio of diverse school providers to improve school performance among other educational goals. In this setting, it may be wise for districts to promote school providers with varying degrees of autonomy to manage risk. Moreover, school models serve several functions beyond just providing flexibilities from district policies and CBAs which could be beneficial to student learning, such as facilitating partnerships between district schools and community-based organizations, protecting teacher work conditions, and creating procedures and structures for parents to have input on school decision-making. As such, portfolio managers may wish to continue operating schools with low levels of autonomy given that they fulfill other needs.

Research Implications

Our study demonstrates that autonomy is a multifaceted and dynamic construct that needs to be studied along a continuum, in different areas of school management, and over time. This stands in contrast to much of the extant literature that addresses school autonomy by comparing charter schools as totally free centers of innovation to district-managed schools as standardized and uniform entities. We also shed light on mechanisms of change that bridge school autonomy to responsive school practices that should be explored further.

Future research would benefit from complementing educator self-reports on school autonomy and practices with in-depth observations of principals and teachers at work. Linking implementation data, especially fine-grained data illustrating variation in school autonomy within model, with student achievement may help to shed light on the causal relationship between autonomy and school outcomes. Additional qualitative research may help to illuminate the relationship between school model and implemented autonomy, why some schools use their autonomies while others do not, and how to support optimal operating

conditions for autonomous schools. Finally, given that we observed school autonomy as influencing responsive school practices through conditions of plan fidelity and teacher collaboration, future research may wish to further explore the connection between these intermediate outcomes and other desired school practices.

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Table 1. Principal survey administration by years of implementation and response rates

	PSCI Cohorts					
Year of Implementation	Cohort 1.0 (n=41)	Cohort 2.0 (n=31)	Cohort 3.0 (n=42)			
Year 1		52% (2011-12)	67% (2012-13)			
Year 2	66% (2011-12)	42% (2012-13)	57% (2013-14)			
Year 3	66% (2012-13)	42% (2013-14)				
Year 4	56% (2013-14)					
All Years	88% (2011-12 to 2013-14)	71% (2011-12 to 2013-14)	86% (2012-13 to 2013-14)			
	PSCI School Governance Models (across Cohorts 1.0-3.0)					
Year of Implementation	Traditional (n=49)	ESBMM (n=14)	Network Partner (n=5)	LIS (n=3)	Pilot (n=28)	Charter (n=15)
Year 1	70%	86%	100%	67%	43%	40%
Year 2	57%	57%	80%	33%	43%	47%
Year 3	63%	78%	50%	--	35%	47%
Year 4	74%	86%	33%	--	14%	20%
All Years	90%	93%	100%	67%	68%	60%

Note. Response rates for each year of implementation are calculated based on the total number of schools in each cohort/model. For example, while there are 15 charter schools from Cohorts 1.0 to 3.0, we only surveyed five of these schools (from Cohort 1.0) in year 4 of implementation and received completed surveys from one of these schools (for a response rate of 20%). Because LIS schools only started operating in Cohort 3.0, we could only track these schools in years 1 and 2 of implementation.

Table 2. Measures of PMM mechanisms and school outcomes in PSCI.

	Avg. (Yrs. 1-4) N=92	Year 1 N=44	Year 2 N=60	Year 3 N=38	Year 4 N=23	α
PSCI School Improvement Mechanisms	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
Implemented autonomy ($ImpAut$)	2.62 (0.62)	2.59 (0.66)	2.74 (0.66)	2.73 (0.70)	2.37 (0.51)	0.87
Performance-based accountability ($PerfAct$)	2.88 (0.61)	2.90 (0.66)	2.83 (0.67)	2.82 (0.73)	2.73 (0.69)	--
Parent and community engagement ($ComPress$)	2.55 (0.57)	2.80 (0.60)	2.40 (0.63)	2.46 (0.76)	2.50 (0.58)	0.73
District-provided support quality ($DistSup$)	2.66 (0.59)	2.65 (0.69)	2.72 (0.67)	2.64 (0.75)	2.56 (0.56)	0.74
School Practices	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	α
Plan Fidelity (PlanFid)	3.05 (0.47)	2.96 (0.47)	3.14 (0.50)	3.15 (0.61)	3.00 (0.39)	0.85
Teacher Collaboration (TchrColl)	2.76 (0.36)	2.85 (0.45)	2.80 (0.36)	2.70 (0.33)	2.60 (0.31)	0.73
Responsive School Practices (RespSchl)	3.15 (0.36)	3.10 (0.45)	3.19 (0.36)	3.19 (0.34)	3.24 (0.32)	0.64

Table 3. OLS model results

	1	2	3	4	5	6
	Avg. Yrs. 1-4	Year 1	Year 2	Year 3	Year 4	Avg. Yrs. 1-4 (no charter)
			(1) Plan fidelity			
Imp. autonomy (*ImpAuts*)	0.537***	0.458+	0.504*	0.542*	0.163	0.612***
	(0.146)	(0.229)	(0.201)	(0.248)	(0.250)	(0.166)
Performance account (*PerfActs*)	0.104	0.267	0.076	0.240	0.365+	0.098
	(0.100)	(0.169)	(0.138)	(0.178)	(0.188)	(0.107)
Comm. engagement. (*ComPress*)	0.060	0.267	-0.117	-0.315	-0.076	0.085
	(0.107)	(0.184)	(0.142)	(0.193)	(0.262)	(0.114)
District support (*DistSups*)	0.086	0.271	0.072	0.213	0.450+	0.058
	(0.106)	(0.183)	(0.167)	(0.186)	(0.213)	(0.117)
Xs	Y	Y	Y	Y	Y	Y
r-squared	0.254	0.277	0.129	0.345	0.238	0.224
# schools	90	41	54	36	21	82
F-Stat	2.892	2.201	1.493	2.314	1.416	2.457
			(2) Teacher collaboration			
Imp. autonomy (*ImpAuts*)	0.388*	0.057	0.335	0.500+	0.524	0.557**
	(0.157)	(0.252)	(0.211)	(0.290)	(0.402)	(0.168)
Performance account (*PerfActs*)	0.089	0.203	0.204	0.320	0.128	0.019
	(0.108)	(0.186)	(0.145)	(0.208)	(0.303)	(0.108)
Comm. engagement. (*ComPress*)	0.127	0.196	0.030	0.018	0.060	0.111

	(0.115)	(0.202)	(0.149)	(0.225)	(0.422)	(0.115)
District support (*DistSups*)	-0.109	-0.043	-0.283	-0.015	-0.239	-0.167
	(0.114)	(0.201)	(0.176)	(0.218)	(0.342)	(0.118)
Xs	Y	Y	Y	Y	Y	Y
r-squared	0.063	0.131	-0.040	0.107	-0.039	0.125
# schools	90	41	54	36	21	82
F-Stat	1.373	1.403	0.871	1.299	0.942	1.724
	(3) Responsive school practices					
Plan fidelity (*PlanFids*)	0.405***	0.374+	0.354*	0.424+	-0.218	0.442***
	(0.117)	(0.187)	(0.139)	(0.237)	(0.612)	(0.125)
Teacher Collab (*TchrColls*)	0.301**	0.520**	-0.034	0.328	0.011	0.285*
	(0.114)	(0.183)	(0.138)	(0.211)	(0.351)	(0.126)
Performance account (*PerfActs*)	0.022	-0.006	0.114	-0.114	0.683	0.001
	(0.095)	(0.169)	(0.116)	(0.196)	(0.404)	(0.102)
Comm. engagement. (*ComPress*)	0.068	0.316+	-0.275*	0.622**	-0.264	0.054
	(0.101)	(0.183)	(0.118)	(0.215)	(0.389)	(0.109)
District support (*DistSups*)	-0.022	-0.021	-0.282+	0.355+	0.171	-0.056
	(0.099)	(0.183)	(0.145)	(0.195)	(0.430)	(0.107)
Xs	Y	Y	Y	Y	Y	Y
r-squared	0.317	0.351	0.403	0.337	-0.124	0.318
# schools	90	41	54	36	21	82
F-Stat	3.435	2.352	3.109	2.187	0.842	3.225

Note. +=p<0.10, *=p<0.05, **=p<0.01, ***=p<0.001. This table reports our regression results when predicting plan fidelity (panel 1), teacher collaboration (panel 2), responsive school

practices in equations 1-2. We report results for our averaged survey data (Avg. Yrs. 1-4), separately for each year of implementation (Year 1, Year 2, Year 3, and Year 4), and for our averaged survey data with internally managed schools only.
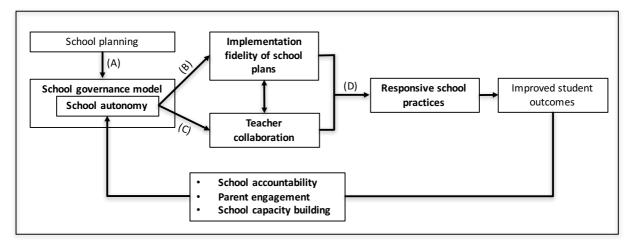

Figure 1. Theory of action of LAUSD's Public School Choice Initiative (PSCI). Bolded items are aspects of this theory of action that we can observe in our study.
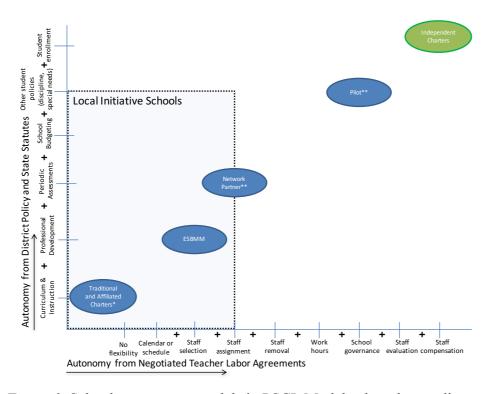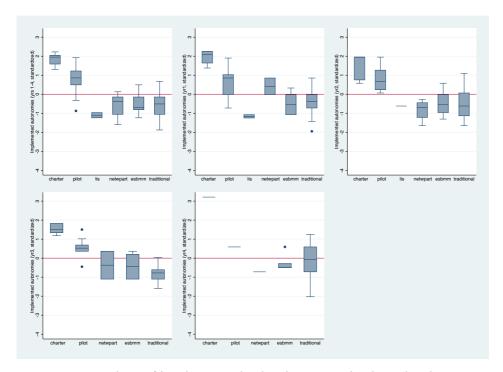

Figure 2. School governance models in PSCI. Models plotted according to autonomies from district and state policies (y-axis) and teacher labor agreements (x-axis). Internally managed schools are blue and externally managed charter schools are green. Schools positioned farther along the y and x-axes have more autonomy. LIS schools are represented by a square region

since staff can choose from a range of autonomies. *Affiliated charter schools have some autonomy in spending their school budgets. **Network partner schools can hire their own principals and implement their own school principal coaching programs and teacher career ladders. Pilot schools can hire principals from non-traditional administrator preparation.

Figure 3. Boxplots of implemented school autonomies by school governance model (standardized by year of implementation) for all years of implementation data (top left) and years one (top middle), two (top right), three (bottom left), and four (bottom middle). The red line indicates standardized values at the mean in our data.