Teacher Involvement in Hiring: Changes over Time

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Introduction

Teachers have long been recognized as critical to student achievement and a substantial focus of many recent educational reforms has focused on identifying, recruiting, supporting, and retaining highly effective teachers. With the increased policy focus on identifying and recruiting effective teachers has come the recognition that we need to know more about how the key school decision about which teachers to hire (Harris, Rutledge, Ingle, & Thompson, 2010; Liu, Rosenstein, Swan, & Khalil, 2008; Rockoff, Jacob, Kane, & Staiger, 2011). The importance of teacher hiring as a critical school decision with implications for teacher and school effectiveness is emphasized in research that finds that principals who are more effective at organizational management tasks such as hiring teachers see greater gains in student achievement and more satisfied teachers (Grissom & Loeb, 2011; Horng, Klasik, & Loeb, 2010). Likewise, schools have steeper trajectories of school-wide achievement growth when they are more successful at hiring effective teachers (Loeb, Kalogrides, & Béteille, 2012).

At the same time that research on teacher hiring and its importance is accumulating, there is also research and policy focus on supporting and retaining effective teachers after they are hired. Organizational conditions inside schools shape teacher retention (Borman & Dowling, 2008; Ingersoll, 2001; Stuit & Smith, 2011). The social conditions within schools and relationships among colleagues influence teacher satisfaction and career plans, as well as student learning (Johnson, Kraft, & Papay, 2012). These organizational and social contexts within schools also include the presence of collaborative decision making as perceptions of having influence over school decisions and principals who encourage participatory decision making have been associated with higher retention (Bempah, Kaylen, Osburn, & Birkenholz, 1994; Ingersoll, 2001). Collaborative decision making and distributed leadership bring other benefits to

schools, including greater organizational change, sustained improvement efforts, and improved student learning (Harris, 2005; Leithwood, Mascall, & Strauss, 2009; Ronfeldt, Owens Farmer, McQueen, & Grissom, 2015).

This paper lies at the intersection of these two research domains to understand how decisions about teacher hiring occur through collaborative decision making within a school. The growing body of research on teacher hiring has focused primarily on understanding principals' preferences, assuming that principals have primary influence over these decisions. (Cannata & Engel, 2012; Engel, 2013; Engel, Cannata, & Curran, 2015; Harris, et al., 2010). This is understandable given that hiring decisions have been traditionally shared between school and district administrators, although recent evidence suggest hiring authority has become more decentralized from the central office to the school (Engel & Cannata, 2015; Engel, Cannata, & Curran, 2015). Yet the role of teachers in the teacher hiring process remains largely unexplored, even as a recent study suggests wide variation within a single district in the extent to which principals involved their teachers in the hiring process (Engel & Finch, 2015). However, including teachers has the potential to benefits schools in at least two ways. First, given the importance of fit in hiring (Harris et al., 2010; Liu & Johnson, 2006), involving teachers in the hiring process can provide more information for both schools and prospective teachers regarding fit. Second, teacher collaboration and involvement in decision-making can benefit the school, leading to greater student achievement and reduced teacher turnover (Ingersoll, 2001; Ronfeldt, Owens Farmer, McQueen, & Grissom, 2015). Moreover, prior work suggests that focusing exclusively on the principal in studying school leadership and management is shortsighted (Leithwood et al., 2010; Spillane & Healey, 2010). This paper contributes to these literatures by seeking to answer the following research questions:

1. Have teachers become more involved in hiring other teachers over time?
2. How do district, school, and teacher characteristics—such as union agreements, school level and size, and teacher experience —explain teacher influence in teacher hiring?

Distributed Leadership, Teacher Leadership and Hiring

Distributed Leadership

As a general concept, distributed leadership is understood as the distribution of leadership among multiple actors in a given context. In the context of K-12 education, distributed leadership refers to the distribution of leadership primarily among administrators and teachers (Woods et al., 2004). There is a plethora of research linking distributed leadership to instructional leadership, school improvement and school effectiveness and is often regarded as a precondition to successful reform and implementation (Camburn, Rowan, & Taylor, 2003; Datnow & Castellano, 2001; Harris, 2003; Muijs & Harris, 2006). For instance, Leithwood, Harris, and Hopkins (2008) asserted that school leadership, broadly defined, is the most important factor after classroom teaching as a source of influence on student learning. Despite of or maybe because of how distributed leadership has been studied in many different contexts, distributed leadership has been defined in many different ways and to different specificity, and sometimes, it has been defined by what it does or is intended to do rather than what it is (Spillane et al., 2008; Woods et al., 2004). This is partly due to how distributed leadership, which can be traced back to the field of organizational theory in the 60s, has been developed theoretically and empirically using different theories and frameworks (Spillane et al., 2008; Spillane, Halverson, & Diamond, 2004; Harris et al., 2007).

This has led researchers to critique that the loosely defined construct of distributed leadership and how it is operationalized is a critical challenge in the study of distributed leadership (Spillane, 2015). To facilitate and enhance the study of distributed leadership, these scholars ask researchers to explicitly define what they mean by distributed leadership and increase the level of specificity in how it is operationalized so that other researchers would know the extent to which their own definition of distributed leadership and how they operationalized it relate to previous scholarship. Following this judicious recommendation, we also define leadership as it pertains to our study, the organizational members to whom leadership is distributed, and the particular function(s) that these leaders undertake. Similar to Camburn and colleagues (2003) and following Spillane et al. (2001), we define leadership as a set of organizational functions that leaders might be expected to perform such as instructional leadership functions and broader school and building management. In this study, we focus narrowly on the distribution of leadership to the principals and teachers as we analyze how teachers are more involved with hiring other teachers over time in comparison with how principals have become more involved over time. More specifically, we analyze teachers' report and principal's report of their perception of how teachers and principals are involved in hiring teachers respectively.

Teacher Leadership

Highly related to the importance of distributing leadership among others beyond the principal or other administrators is the importance of teacher leadership. Harris (2005) suggests that "the DNA of distributed leadership has much in common with teacher leadership as teachers are increasingly assuming more leadership functions at both the instructional and organizational

level" (p. 203). Teacher leadership has been linked with various school factors such as collegial norms, instructional effectiveness, school effectiveness, as well as organizational improvement (Harris, 2005; York-Barr & Duke, 2004). For instance, Muijs and Harris (2006) reported that teacher leadership could have positive effects on school and teacher effectiveness as well as teacher motivation and retention, but these outcomes are context-dependent (Conley, 1989; Muijs & Harris, 2006; Smylie, 1992). Moreover, participation in decision-making process does not guarantee improved outcomes as teachers may not feel that they are sufficiently involved in the process and they continue to want more involvement than they are afforded (Rice & Schneider, 1994; Taylor & Bogotch, 1994). A strong and consistent focus of teacher involvement seems to be a condition for positive school- and teacher-level outcomes. The link between teacher leadership and student outcomes, however, is far less substantiated (Harris, 2004). There is some suggestive evidence that when teacher leadership is focused upon instructional leadership and the classroom rather than the organizational level, there is a greater chance of improved student outcomes as there is increased chance of getting to the "technical core" of education (Elmore, 1996; Harris, 2005). There is some recent evidence that teacher leadership does have indirect effects on student learning (Heck & Hallinger, 2009). The bulk of the evidence of teacher leadership, however, is firmly at the teacher- and school-level. In summary, decades of teacher leadership scholarship offer substantial evidence that teacher leadership has the potential to improve on a variety of school outcomes at the school level and teacher level (Harris, 2005; York-Barr & Duke, 2004).

Perhaps unsurprisingly, teacher leadership, like distributed leadership, has also been a loosely defined construct. It has been studied under different contexts and defined in various ways ranging from "the ability to encourage colleagues to change, to do things they wouldn't

ordinarily consider without the influence of the leader" (Wasley, 1991, p. 23, as cited in Harris, 2003) to "teachers who are leaders within and beyond the classroom" (Katzenmeyer & Moller, 2001, p. 17, as cited in Harris, 2003). Elsewhere, others have defined teacher leadership to include participation in school decisions (Wynne, 2001). In this article, our working definition of teacher leadership is the teacher's role in the decision-making process of school management, specifically the hiring of incoming teachers.

Variation in Distributed Leadership

Research on distributed leadership and teacher leadership has identified several characteristics of teachers, schools, and districts that are associated with greater distributed teacher leadership. Indeed, research on teacher leadership focuses on the conditions inside schools that can facilitate or impede teacher leadership, including a culture of trust, principal support, and the existence of structures through which teacher leadership can be enacted (Mangin & Stoelinga, 2007; York-Barr & Duke, 2004). We focus on three school-level structures that may facilitate the organizational conditions that foster teacher leadership and collaborative decision-making: charter status, instructional level, and size.

Several studies have sought to compare organizational conditions and the presence of collaborative school cultures in charter and traditional public schools. For example, Cannata (2007) finds that charter school teachers report greater influence over schoolwide decisions and a more professional community. Likewise, other researchers find that charter schools have better organizational conditions and more professional opportunities for teachers (Gawlik, 2007; Goldring & Cravens, 2008). In contrast, other research has found that charter school teachers feel less empowered in the schoolwide arena than their peers in traditional public schools and that the

substantial time demands in charter schools leave little time for collaboration (Bomotti, Ginsberg, & Cobb, 1999; Johnson & Landman, 2000). Given the mixed findings on school conditions in charter schools, this is an area where further research is needed. This is particularly true around the role of collaborative decision-making and teacher hiring since there is research that suggests charter schools are using different teacher recruiting practices, even if their preferences for whom to hire are largely similar (Cannata & Engel, 2015; Grogan & Youngs, 2008). Still, DeArmond and colleagues (2012) find that charter management organizations have a greater focus on hiring teachers who fit their mission and community, perhaps suggesting a larger role for teachers to help assess candidates' fit with the whole school community. Further, charter school teachers express a greater desire to work in a school that provides them with influence over school policies (Cannata & Penaloza, 2012).

It is also possible that opportunities for teacher leadership vary by school instructional level. Secondary schools are larger, organizationally more complex, and politically more complicated with multiple administrative layers and subject-based teachers and other specialists that often create natural divisions amongst staff (Cuban, 1984; Grossman, Wineburg, & Woolworth, 2001; McLaughlin & Talbert, 2001) and result in disagreements around goals, policies, and practices. Such factors make the process of change more difficult in secondary schools (Firestone & Herriott, 1982; Purkey & Smith, 1985). This may suggest that it is easier to develop collaborative decision-making in smaller, more organizationally simpler elementary schools. At the same time, the larger size and departmentalized nature of secondary schools may create more formal structures for teachers to be engaged in schoolwide decision making, or at least decision-making for their subject area, such as hiring a new teacher in their department.

Other school characteristics may enhance or inhibit the development of teacher community and teacher influence. These characteristics include structural features, such as school size (Lee & Loeb, 2000; Lee & Smith, 1996) and teacher influence over school decisions (Louis et al., 1996), as well as social support features, such as principal support (Bryk et al., 1999; Louis et al., 1996). For instance, Lee and Loeb (2000) found that teachers have more positive attitudes about their responsibility for student learning and that students learned more in small schools compared to medium and large schools. Small schools may facilitate teacher community since teachers may have more opportunities for frequent and sustained interaction with colleagues. Professional community is more likely to develop when teachers work in close proximity and interact frequently, suggesting that school size facilitates the development of teacher community (Kruse et al., 1995). However, there has been other works that suggest that there was a positive association between school size and teacher efficacy (Lee, Dedrick, & Smith, 1991). In this work, the researchers argued that once school characteristics are controlled, larger schools may have more resources that teachers want or need compared to smaller schools, resulting in teachers reporting higher efficacy. As a whole, there are multiple reasons why school size plays a role in teacher community and their work lives.

Less is known about individual teacher characteristics associated with teacher leadership. Only a few studies have examined the qualities that distinguish teacher leaders or why some teachers have more influence over schoolwide decisions. This may be due to the difficulty of identifying teacher leaders and influential teachers as leadership does not necessarily come from particular positions (Cannata, McCrory, Sykes, Anagnostopoulos, & Frank, 2010). For example, a study of teachers certified by the National Board for Professional Teaching Standards found that teachers with this esteem took on more leadership responsibilities, but did not report greater

influence over schoolwide policies than others in their schools (Cannata, McCrory, Sykes, Anagnostopoulos, & Frank, 2010). Teachers that feel competent in their teaching skills and are at a personal or career stage that provides time for additional responsibilities tend to become teacher leaders (Katzenmeyer & Moller, 2001). Teacher leaders are driven by a need for achievement, new challenges, and a need for collaboration and affiliation with their peers lifelong (LeBlanc & Shelton, 1997; Wilson, 1993).

While there is little evidence that links easily observable teacher characteristics to teacher leadership or greater perceptions of influence over schoolwide decisions, the fact that teacher leaders are excellent teachers and driven by a need for new challenges perhaps suggests that teachers with more experience are more likely to engage in leadership activities. As teachers feel more competent in their core job of teaching and enter their second stage of teaching, they begin to seek out new ways to engage in their schools (Donaldson, Johnson, Kirkpatrick, Marinell, Steele, & Szczesiul, 2008). Indeed, many second stage teachers with four to ten years of experience seek out teacher leadership opportunities within their school as a way to strengthen their engagement to teaching and their school (Kirkpatrick & Johnson, 2014). One particular way for teachers to engage in the decision-making process at the school level is the teacher hiring process.

Teacher Hiring

Most research on teacher hiring focuses on the principal as the critical decision-maker and thus there is little research on the extent to which teachers have influence over teacher hiring. There is some suggestive evidence on teacher involvement in hiring. Liu and Johnson (2006) found that about 46% of new teachers were interviewed by other teacher(s) at the school

were they were hired, suggesting that some teachers are at least meeting candidates for positions in their school. Yet the role of teachers in the teacher hiring process remains largely unexplored, even as a recent study suggests wide variation within a single district in the extent to which principals involved their teachers in the hiring process (Engel & Finch, 2015). There is little to no evidence on trends in teacher influence over hiring, but recent analyses of the Schools and Staffing Survey found that teachers feel they had less autonomy over issues that affect their classroom in 2012 compared to 2003 (Sparks & Malkus, 2015). Relatedly, higher rates of teacher turnover are associated with limited teacher input into school decision-making process (Ingersoll, 2001). The core contribution of this paper is the gap of whether teachers have been more involved in teacher hiring, exploring national trends in the decentralization process of teacher hiring over the past 25 years.

Data/Methods

We use the Schools and Staffing Survey (SASS), a nationally representative sample of school principals and teachers. For this study, we use data from all seven iterations of the SASS; specifically 1987-88, 1990-91, 1993-94, 1999-2000, 2003-04, 2007-08, and 2011-12. These data allow us to explore national trends in the decentralization of teacher hiring over the past 25 years. We are focused on the influence of teachers over the hiring of new teachers in their school; we rely on reports from both teachers and their principals about how much influence teachers have. Thus, teacher ratings of their own influence over hiring and principal's report of teacher influence over hiring are the key dependent variables of interest in this study. After case-wise deletion for missing covariates and the variables of interest, our pooled analytic sample contains 39,686 principals and 117,067 teachers.

At each wave of SASS other than 2011, school principals were asked to rate the degree of influence that teachers had over teacher hiring. Likewise, teachers were asked to rate the degree of influence they had over teacher hiring except they were only asked this question in the 1993, 1999, 2003, and 2011 waves. While this question has been included more consistently for principals and in four of the waves for teachers, the number of response categories has varied across years. For instance, in the earliest years, principal's report of teacher influence on a Likert scale ranging from 1 to 6, with 1 representing no influence and 6 representing a great deal of influence. The scale was reduced to 5 categories for the 1999 iteration and to 4 categories (ranging from no influence to major influence) for years 2003 forward.

For consistency, we recoded principal's report of teacher influence and teacher rated influence so that the response categories were consistent across years to a 0 to 3 scale ranging from no influence to major influence. For years with a 6 item scale (i.e., 1987-88 through 1993-94), we converted categories 2 and 3 to 1, categories 4 and 5 to category 2, and left the top and bottom categories intact. For the year with a 5-item scale (i.e., 1999-2000), we converted categories 2 and 3 to category 1, category 4 to category 2, and left the top and bottom categories intact. This recoding resulted in a consistent scale from 0 to 3, with 0 always representing the lowest rating of principal or teacher influence and 3 always representing the highest rating of principal or teacher influence. Table 1 and 2 show overall means for principal's report of teacher influence and teachers' report of their own influence, respectively, over hiring and the proportions for each response category by year. As shown, principal reports indicate that teacher influence over hiring has consistently risen since 1987. At the same time, teacher reports indicate that their influence over hiring has also risen since 1993 and it has leveled out since 2003. Table 3 shows descriptive statistics of the sample by year of the SASS administration. It should be

noted that a few variables, namely charter school status, collective bargaining agreement, % approved for free and reduced price lunch (FRPL), and number of schools in the district, were not available in the early waves of SASS.

Methods

After showing descriptive statistics describing changes in principal's report of teacher influence and teacher reported influence on teacher hiring over time for the full sample and for subgroups of interest, we explore the relationship between the key variables of interests and principal's report and teacher ratings of their influence on teacher hiring controlling for relevant covariates. Specifically, we use ordered logistic regression models of the form:

$$Influences_{sdy} = \beta_0 + \beta_1 CBA_{sdy} + \beta_2 Urban_{sy} + \beta_3 Charter_{sdy} + \beta_4 \boldsymbol{School}_{sy}$$

$$+\beta_5 \boldsymbol{Principal}_{sy} + \beta_6 \boldsymbol{Teacher}_{sy} + \beta_7 \boldsymbol{District}_{y} + \beta_8 Year_y + e \quad (1)$$

$Influences_{sdy}$ represents the principal or teacher rated influence of teachers on teacher hiring for school *s* in district *d* in year *y*, *CBA* is a binary variable of whether the school in the district has a collective bargaining agreement, *Urban* is a binary variable for urban schools, *Charter* is a binary variable for charter schools, *School* is a vector of school level control covariates, *Principal* is a vector of principal control variables, *Teacher* is a vector of teacher control variables, *District* is a vector of district level control variables, and e is an stochastic error term. The coefficients of interests are β_1, β_2, β_3, and β_6, which represent the relationship between teacher reported influence over hiring with collective bargaining agreement, urbancity, charter school status, and teacher characteristics that may be associated with their influence or formal position in school.

We use ordered logistic regression since the outcomes are categorical and differences across response categories are not uniform. Estimates from these models can be interpreted as the predicted change in the outcome level in the ordered log-odds scale for a one-unit change in the independent variable of interest. As log-odds are difficult to interpret, we have also included the exponentiated forms or odds ratios where an odd ratio greater than 1 indicates greater odds of predicted change in outcome level, an odd ratio of 1 indicates no change, and an odd ratio less than 1 indicates smaller odds.

Results

Based on simple descriptive statistics in Tables 1 and 2, both principals' report of teacher influence and teachers' report of their own influence increased over the past 25 years. The average principal rating of teacher influence over hiring increased from .81 in 1987 to 1.86 in 2007. Though the data are not available for teacher reported influence for all years, there seems to be a similar trend in the average level of influence over hiring for teachers. The average teacher rating of their influence over hiring increased from .62 in 1993 to .84 in 2011. This shift came from more teachers reporting that they have some influence over hiring (category 2) than having no influence at all (category 0). Furthermore, only a small percentage of 3% to 5% of teachers ever reported of having major influence over teacher hiring. Notably, principals report more influence of teachers on hiring than teachers themselves report, and the increase over time is larger when reported by principals than by teachers. Based on these descriptive statistics, it seems that the hiring process has become more collaborative within schools over the past 25 years.

Table 3 provides the descriptives of the sample by year. Some note worthy general trends over the last 25 years are an increase in urban schools, a decrease in principle experience, an increase in the percentage of schools approved for FRPL, and an increase in the percentage of minority enrollment. These changes provide some overview of the shifts in the education landscape in America in the last 25 years. As the context of education changed and as principal and teacher reported influence over hiring changed, it is then important to take these changes into account. We explore how principal and teacher reported influence vary over time for some of these key variables of interest in Tables 4 and 5.

The most pronounced change in principal's report of teacher influence in the past 25 years is in urban schools, increasing from .68 to 1.96. At non-urban schools, there is likewise an increase in principal reported influence but the increase has been slower. Indeed, while principals in urban schools in 1987 reported less influence of teachers over hiring than non-urban schools, this difference was reversed by 2007. In terms of school enrollment size, principals in schools with enrollment in the highest quartile reported less influence of teachers than their counterparts at the smallest quartile in 1987. However, this gap has narrowed to essentially zero by 2007, suggesting that school enrollment size differences has played less of a role over time.

In comparison, teacher reported influence over hiring has increased for both urban and non-urban school but there is little difference in the reported influence between the two groups of teachers, suggesting once again that though both principals and teachers reported increased influence, this has happened more at the principal level than at the teacher level. In terms of school enrollment, teachers at the middle two quartiles, on average, reported more influence than those at the highest and lowest quartiles. Like the principal, collective bargaining does not seem to play in role in teacher influence. However, teachers at charter schools, on average, reported

that they have more influence over hiring than teachers at non-charter schools. Interestingly, teachers in charter schools report decreasing levels of influence over teacher hiring from 1999 to 2011; this is the only subgroup examined for whom teacher influence over hiring decreased over time. Teachers in secondary schools reported less influence than teachers in primary schools.

To further describe these associations beyond descriptive means, we estimate the change in predicted principal's report of teacher influence and teacher report of hiring influence using ordered logistic regression in Tables 6 and 7, respectively. These models pool all years of available data and include year dummy variables to test whether trends over time suggested in the descriptive statistics are statistically significant. Since some variables of interest (e.g., charter, collective bargaining) are not available until 1999, there are two models for each respondent. The "constant controls" model includes data from all available years but only includes variables across all years. The "max controls" model only includes data from 1999 forward, but includes all variables of interest in this study.

Looking at the principal reported influence of teachers in teacher hiring (Table 6), we see that principals report increasing influence of teachers over time. That is, the coefficients and odds ratios for the year dummies show a clear time trend, with a statistically significant negative coefficient in 1987 to 1993 (compared to 1999) and a statistically significant positive coefficient in 2003 and 2007. The statistically significant positive coefficient in 2003 and 2007 compared to 1999 is also evident in the max controls model. Looking at teacher reports of their own influence in teacher hiring (Table 7), we see a similar pattern of increasing influence of teachers over time. That is, the coefficients and odds ratios for the year dummies show a clear time trend, with a statistically significant negative coefficient in 1993 (compared to 1999) and a statistically significant positive coefficient in 2003 and 2011. The statistically significant positive coefficient

in 2003 and 2011 compared to 1999 is also evident in the max controls model. In short, both principals and teachers report teachers having increasing influence over teacher hiring over time. Comparing coefficients between teachers and principal reports, coefficients are larger when using principal reports of teacher influence.

There are a number of school and district-level variables that are associated with greater teacher influence over hiring. Teachers in charter schools report higher amounts of influence over teacher hiring than their peers in traditional public schools. The coefficient on charter status in the pooled model is .34, which is positive and statistically significant. The coefficient in the principal-reported model is .45, which is slightly larger but also positive and statistically significant. Similarly, teachers in urban schools appear to have more influence over teacher hiring. The coefficients are positive and statistically significant in all models, including whether reported by the principal or teachers themselves. On the other hand, there is a consistent negative and statistically significant relationship between being in a secondary school and teacher influence over hiring.

There is some evidence that teachers in districts with collective bargaining have less influence over teacher hiring than their peers in districts with no collective bargaining. Teachers in collective bargaining districts report less influence than their peers, the coefficient is -.09, which is negative and statistically significant. When teacher influence is reported by principals, the coefficient is also negative, but is not statistically significant.

There is mixed evidence about the relationship between school size and teacher influence over hiring. When using teacher reports of their own influence, school size has a negative relationship with teacher influence over hiring. However, when using principal reports of teacher

influence, the coefficient on school size is positive, although it is only statistically significant in the constant control model model.

Table 7 also examines the relationship between teacher characteristics and their reported influence over hiring. Teacher experience is negatively and statistically significantly associated with lower reports of influence in teacher hiring. It is not clear if this is due to real differences in influence by teachers of varying experience levels, or if more experienced teachers have greater expectations for involvement in such decisions that may or may not be met. There were no statistically significant differences in teacher influence on hiring by teacher gender or certification status. There were differences by teacher race/ethnicity. Hispanic teachers reported statistically significant more influence over hiring than White teachers, while American Indian teachers reported statistically significant less influence over hiring than White teachers.

Discussion and Conclusion

Our main finding is that teacher influence over hiring has increased over time. The increase in teacher influence in hiring suggests substantial decentralization with regard to a key organizational decision in schools. From 1987 to 2011, teachers have gained influence over hiring new teachers in their school, suggesting that hiring decisions have become more collaborative over time. This increased teacher influence and collaboration is noteworthy given the importance of distributed leadership and collaborative school cultures (Camburn, Rowan, & Taylor, 2003; Ingersoll, 2001; Johnson, Kraft, & Papay, 2012; Ronfeldt, Owens Farmer, McQueen, & Grissom, 2015). When considered in light of research that also finds principals also gaining influence over hiring during this same time period (Engel, Cannata, & Curran, 2015), it points to substantial decentralization of teacher hiring decisions and shifts in distribution of authority around teacher hiring over the past 25 years.

Looking at teacher and school characteristics that are associated with greater teacher influence over hiring, we find more school-level variables are consistently related to the amount of influence teachers have over hiring than teacher-level variables. This is consistent with the literature on teacher leadership that emphasizes the conditions inside schools that can facilitate or impede teacher leadership and influence (Mangin & Stoelinga, 2007; York-Barr & Duke, 2004). Additional research should examine teacher characteristics in more depth; it is likely that SASS measures of teacher demographic characteristics are not nuanced enough to capture characteristics the literature associates with greater teacher leadership, such as desire for additional challenges and need for collaboration with peers (Katzenmeyer & Moller, 2001; LeBlanc & Shelton, 1997; Wilson, 1993). Contrary to research that suggests second stage teachers are eager to seek out ways to engage in schoolwide endeavors (Donaldson, Johnson, Kirkpatrick, Marinell, Steele, & Szczesiul, 2008; Kirkpatrick & Johnson, 2014), our results indicate that teacher experience was negatively associated with influence over teacher hiring. Future analyses will explore additional ways of measuring teacher experience, to distinguish new teachers from second stage teachers, and from more veteran teachers.

Teachers in charter schools appear to have greater levels of influence over teacher hiring, which may reflect organizational conditions in charter schools that lead to more communal and collaborative school cultures (Cannata, 2007; Goldring & Cravens, 2008). It may also reflect research that finds charter schools organizing their teacher hiring and recruitment practices in ways that differ from traditional public schools (De Armond, Gross, Bowen, Demeritt, & Lake, 2012; Grogan & Youngs, 2008) or that teachers attracted to charter schools are themselves more eager to play a role in schoolwide decisions such as hiring (Cannata & Penaloza, 2012). Given that newer charter schools may require substantial time demands on teachers that leave little

room for involvement in hiring decisions (Johnson & Landman, 2000), future analyses will explore the interaction between charter status and time trend, to disentangle the increasing influence of teachers in hiring decisions with being in a charter school.

Our findings also indicate that teachers in secondary schools have less influence over hiring than their peers in primary schools. This is contrary to our hypothesis that secondary schools, given their departmentalized nature, may offer more opportunities for influence as teachers are hired into specific departments or principals involve departmental chairs in the hiring process. The reduced influence of secondary school teachers over hiring may reflect that the presence of organizational positions of leadership such as department chairs does not necessarily lead to greater influence over decisions (Cannata, McCrory, Sykes, Anagnostopoulos, & Frank, 2010). It may also reflect that the organizational complex nature of secondary schools is less conducive to creating collaborative decision-making processes (McLaughlin & Talbert, 2001).

Examining differences in principal and teacher influence over hiring suggests not all increases in principal authority in hiring leads to more influence for teachers. For example, Engel, Cannata, and Curran (2015) found that principals in urban schools had less influence over hiring than their non-urban peers. Yet the findings presented here indicate that teachers in urban schools had more influence over hiring than their peers in non-urban schools. This finding may act as a counterpoint to research that emphasizes inefficiencies and challenges in how hiring is organized in urban districts (Levin, Mulhern, & Schunck, 2005; Levin & Quinn, 2003).

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Table 1: Means and proportions by response category for principal report of teacher hiring influence by year

Year	Mean	0	1	2	3
1987	0.81	0.40	0.42	0.16	0.03
1990	1.10	0.27	0.41	0.26	0.06
1993	1.54	0.16	0.28	0.42	0.14
1999	1.58	0.10	0.40	0.30	0.20
2003	1.81	0.10	0.27	0.36	0.27
2007	1.86	0.08	0.25	0.40	0.27
2011	.	.	.	.	.

Note. Recoded Likert scale ranges from 0 (no influence) to 3 (major influence). Missing values (.) indicate that the question was not administered in that survey year.

Table 2: Means and proportions by response category for teacher report of hiring influence by year

Variable	Mean	0	1	2	3
1987	.	.	.	.	.
1990	.	.	.	.	.
1993	0.62	0.57	0.27	0.14	0.03
1999	0.72	0.47	0.39	0.10	0.04
2003	0.85	0.44	0.32	0.18	0.05
2007	.	.	.	.	.
2011	0.84	0.44	0.33	0.18	0.05

Note. Recoded Likert scale ranges from 0 (no influence) to 3 (major influence). Missing values (.) indicate that the question was not administered in that survey year.

Table 3. Means and proportions for school and district control variables

	1987	1990	1993	1999	2003	2007	2011
School Level							
Urban	0.24	0.23	0.23	0.23	0.25	0.24	0.38
Primary	0.70	0.72	0.72	0.76	0.74	0.74	0.73
Secondary	0.24	0.24	0.25	0.21	0.19	0.20	0.20
Combined	0.06	0.04	0.04	0.03	0.07	0.07	0.07
Charter school	.	.	.	0.01	0.02	0.03	0.04
Principal exp (years)	10.06	9.43	8.70	8.94	7.75	7.50	7.19
Novice principal	0.08	0.09	0.08	0.08	0.08	0.09	0.08
% Apprv for FRPL	31.06	34.46	31.92	40.06	44.57	46.55	51.29
% Minority enroll	25.53	26.51	27.56	32.02	38.82	40.50	43.11
Total K-12 enroll	516.44	511.15	514.82	545.05	548.93	550.20	561.39
Teacher experience	14.29	14.66	14.73	14.57	14.36	13.81	13.46
Female	0.76	0.76	0.76	0.78	0.78	0.78	0.78
State certification	0.97	0.98	0.96	0.94	0.88	0.88	0.91
District Level							
Northeast	0.17	0.17	0.16	0.16	0.17	0.16	0.16
Midwest	0.30	0.30	0.29	0.29	0.27	0.27	0.26
South	0.33	0.34	0.34	0.35	0.35	0.35	0.35
West	0.20	0.20	0.21	0.21	0.22	0.22	0.23
Collective bargaining	.	.	.	0.65	0.64	0.60	0.57
Total K-12 enroll	32909	35292	37885	37389	39810	40027	36367
% Minority enroll	25.45	25.90	28.24	29.38	35.33	37.14	40.98
% Apprv forFRPL	.	.	.	39.99	43.89	43.60	50.98
Number of schools	.	.	.	50.88	51.65	43.60	31.86

Sample sizes vary due to missing data on individual variables. Sample size shown corresponds to those in regressions in Table 5. Missing values (.) indicate that the question was not administered in that survey year.

Table 4. Mean principal's report of teacher influence on teacher hiring by urbanicity, school size, collective bargaining, and charter status

	myres 1987	1990	1993	1999	2003	2007	2011
Full sample	0.81	1.10	1.54	1.58	1.81	1.86	.
Urban	0.68	1.00	1.50	1.64	1.86	1.96	.
Non-urban	0.85	1.14	1.55	1.57	1.80	1.83	.
School Enrollment Qrt 1	0.73	1.00	1.37	1.47	1.75	1.83	.
School Enrollment Qrt 2	0.82	1.12	1.61	1.61	1.85	1.88	.
School Enrollment Qrt 3	0.83	1.13	1.61	1.66	1.85	1.89	.
School Enrollment Qrt 4	0.94	1.22	1.62	1.60	1.81	1.83	.
Collective Bargaining	.	.	.	1.60	1.84	1.87	.
No collective bargaining	.	.	.	1.53	1.73	1.82	.
Charter School	.	.	.	1.93	2.04	2.14	.
Non-charter school	.	.	.	1.58	1.81	1.85	.
Secondary	0.91	1.16	1.54	1.54	1.77	1.84	.
Primary	0.76	1.07	1.55	1.61	1.85	1.88	.
Combined secondary and primary	0.78	1.03	1.39	1.42	1.62	1.74	.

Missing values (.) indicate that the question was not administered in that survey year.

Table 5. Mean teacher influence on teacher hiring by urbanicity, district size, collective bargaining, and charter status

Variable	1987	1990	1993	1999	2003	2007	2011
Full sample	.	.	0.62	0.72	0.85	.	0.84
Urban	.	.	0.60	0.69	0.82	.	0.83
Non-urban	.	.	0.63	0.73	0.86	.	0.84
School Enrollment Qrt 1	.	.	0.56	0.67	0.84	.	0.90
School Enrollment Qrt 2	.	.	0.69	0.79	0.91	.	0.91
School Enrollment Qrt 3	.	.	0.65	0.71	0.85	.	0.81
School Enrollment Qrt 4	.	.	0.57	0.67	0.77	.	0.74
Collective Bargaining	.	.	.	0.72	0.87	.	0.83
No collective bargaining	.	.	.	0.68	0.78	.	0.83
Charter School	.	.	.	1.09	1.12	.	0.95
Non-charter school	.	.	.	0.72	0.85	.	0.84
Secondary	.	.	0.57	0.69	0.81	.	0.80
Primary	.	.	0.66	0.73	0.87	.	0.86
Combined secondary and primary	.	.	0.59	0.59	0.72	.	0.84

Missing values (.) indicate that the question was not administered in that survey year.

Table 6. Coefficients, standard errors and odds ratios from ordered logistic regressions predicting principal's report of teacher influence over teacher hiring using data pooled across years

Variable	(1) Constant controls	(2) OR	(3) Max controls	(4) OR
Urban	0.161***	1.174***	0.328***	1.388***
	(0.0448)	(0.0526)	(0.0641)	(0.0889)
Northeast	-0.149**	0.862**	-0.270***	0.763***
	(0.0521)	(0.0449)	(0.0758)	(0.0579)
South	-0.115**	0.891**	-0.110	0.896
	(0.0404)	(0.0360)	(0.0649)	(0.0582)
West	0.732***	2.079***	0.577***	1.780***
	(0.0497)	(0.103)	(0.0676)	(0.120)
Secondary	-0.0866**	0.917**	-0.187***	0.830***
	(0.0295)	(0.0271)	(0.0464)	(0.0385)
Combined	-0.174***	0.840***	-0.328***	0.720***
	(0.0524)	(0.0440)	(0.0705)	(0.0508)
Principal experience	-0.00651***	0.994***	-0.00193	0.998
	(0.00188)	(0.00186)	(0.00298)	(0.00298)
Principal Novice	-0.0303	0.970	-0.0381	0.963
	(0.0564)	(0.0547)	(0.0793)	(0.0763)
% School FRPL	-0.00648***	0.994***	-0.00399***	0.996***
	(0.000756)	(0.000751)	(0.00113)	(0.00113)
% School Minority	0.00121	1.001	-0.0000732	1.000
	(0.00104)	(0.00104)	(0.00137)	(0.00137)
Enrollment (1000)	0.140***	1.151***	0.0221	1.022
	(0.0383)	(0.0441)	(0.0477)	(0.0488)
District enrollment (10000)	-0.00523	0.995	0.00443	1.004
	(0.00285)	(0.00283)	(0.00369)	(0.00371)
% District Minority	-0.00398**	0.996**	-0.00135	0.999
	(0.00123)	(0.00123)	(0.00155)	(0.00155)
Year 1987	-1.724***	0.178***		
	(0.0512)	(0.00913)		
Year 1990	-1.039***	0.354***		
	(0.0455)	(0.0161)		
Year 1993	-0.166**	0.847**		
	(0.0547)	(0.0463)		
Year 2003	0.486***	1.626***	0.465***	1.592***
	(0.0599)	(0.0974)	(0.0582)	(0.0927)
Year 2007	0.606***	1.833***	0.575***	1.777***
	(0.0600)	(0.110)	(0.0569)	(0.101)
Charter status			0.447**	1.564**
			(0.139)	(0.218)
Collective bargaining			-0.0830	0.920

			(0.0561)	(0.0517)
District percentage of students in FRPL			-0.00445**	0.996**
			(0.00143)	(0.00143)
Number of Schools in district			-0.000485	1.000
			(0.000411)	(0.000411)
Observations	39686	39686	17847	17847

Note. Robust standard errors clustered by district-year in parentheses. Omitted categories are non-urban, Midwest, elementary, non-charter, no collective bargaining, white, and year 1999. Columns 1 and 2 use a consistent set of controls that was asked every year. Columns 3 and 4 use the maximum set of controls resulting in casewise deletion of observations from year 1993 when a set of variables such as charter status was not asked.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 7. Coefficients, standard errors and odds ratios from ordered logistic regressions predicting teacher rating of influence over teacher hiring using data pooled across years

	(1) Constant controls	(2) OR	(3) Max controls	(4) OR
Urban school	0.114**	1.121**	0.113*	1.120*
	(0.0380)	(0.0426)	(0.0454)	(0.0508)
Region: Northeast	-0.149***	0.861***	-0.175***	0.839***
	(0.0442)	(0.0380)	(0.0514)	(0.0431)
Region: South	-0.157***	0.854***	-0.223***	0.800***
	(0.0400)	(0.0342)	(0.0547)	(0.0438)
Region: West	0.384***	1.468***	0.264***	1.302***
	(0.0472)	(0.0693)	(0.0564)	(0.0735)
Secondary school	-0.156***	0.855***	-0.116**	0.891**
	(0.0325)	(0.0278)	(0.0380)	(0.0338)
Combined	-0.213***	0.808***	-0.254***	0.775***
	(0.0529)	(0.0428)	(0.0597)	(0.0463)
Yrs principal at this or any school	-0.00361	0.996	-0.00154	0.998
	(0.00201)	(0.00201)	(0.00241)	(0.00241)
Novice principal	0.0957	1.100	0.124	1.132
	(0.0554)	(0.0609)	(0.0661)	(0.0749)
School level FRPL	-0.00632***	0.994***	-0.00410***	0.996***
	(0.000720)	(0.000716)	(0.000925)	(0.000921)
Percent minority students at school level	-0.00130	0.999	-0.00155	0.998
	(0.00103)	(0.00103)	(0.00122)	(0.00122)
School enrollment (1000)	-0.0777*	0.925*	-0.0987**	0.906**
	(0.0319)	(0.0295)	(0.0349)	(0.0316)
District Enrollment (10000)	-0.00382*	0.996*	0.000102	1.000
	(0.00180)	(0.00179)	(0.000920)	(0.000920)
Prop of minority in dist	-0.00205	0.998	-0.00109	0.999
	(0.00112)	(0.00111)	(0.00133)	(0.00133)
Teacher experience	-0.0320***	0.968***	-0.0294***	0.971***
	(0.00394)	(0.00382)	(0.00477)	(0.00463)
Teacher exp squared	0.000660***	1.001***	0.000643***	1.001***
	(0.000116)	(0.000116)	(0.000138)	(0.000138)
Female	-0.00309	0.997	0.00168	1.002
	(0.0212)	(0.0211)	(0.0255)	(0.0256)
Has regular or standard state teaching certification	-0.0492	0.952	-0.0557	0.946
	(0.0421)	(0.0401)	(0.0462)	(0.0437)
American Indian	-0.302**	0.739**	-0.317**	0.728**
	(0.102)	(0.0754)	(0.121)	(0.0885)
Asian	0.0127	1.013	0.0483	1.050

	(0.0880)	(0.0891)	(0.100)	(0.105)
Black	-0.0473	0.954	-0.0164	0.984
	(0.0558)	(0.0532)	(0.0680)	(0.0669)
Hispanic	0.271***	1.312***	0.305***	1.357***
	(0.0596)	(0.0782)	(0.0686)	(0.0930)
Year 1993	-0.301***	0.740***		
	(0.0393)	(0.0290)		
Year 2003	0.252***	1.286***	0.261***	1.298***
	(0.0394)	(0.0507)	(0.0399)	(0.0518)
Year 2011	0.317***	1.373***	0.317***	1.374***
	(0.0462)	(0.0634)	(0.0465)	(0.0639)
Charter status			0.339***	1.404***
			(0.0994)	(0.140)
Collective bargaining			-0.0920*	0.912*
			(0.0455)	(0.0415)
District percentage of students in FRPL			-0.00427***	0.996***
			(0.00102)	(0.00101)
Number of schools in district			- 0.000392***	1.000***
			(0.000112)	(0.000112)
Observations	117067	117067	77624	77624

Note. Robust standard errors clustered by district-year in parentheses. Omitted categories are non-urban, Midwest, elementary, non-charter, no collective bargaining, and year 1999. Columns 1 and 2 use a consistent set of controls that was asked every year. Columns 3 and 4 use the maximum set of controls resulting in casewise deletion of observations from year 1993 when a set of variables such as charter status was not asked.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$