

Mediated diffusion: Translating professional practice across schools in a high-stakes system

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Abstract Educational systems across the globe are attempting to reshape the vertical and horizontal dimensions of school accountability. The vertical dimension involves devolution of responsibility to individual schools while the horizontal typically entails promoting the professionalism of leaders and teachers through school networks and school-to-school pairings. In many systems, these shifts occur within an environment of high-stakes accountability. Little is known about the ways that high-stakes consequences for individual schools shape the translation of professional practice across schools. The study reported here traces the diffusion of data-informed practices in a formal pairing of two primary schools in England—a school ranked as “outstanding” and a school in “special measures,” a persistently low-achieving school. Study findings trace the ways in which the threat of consequences under which the low-achieving school operates shapes the diffusion of professional practice across schools. The study details how the lead school brokered, or mediated, state requirements, co-constructing the supported school’s narrative of improvement. Findings from this study illuminate the ways that vertical relationships within the system of schooling influence horizontal relationships across schools. Clarifying the shaping of professional practice across schools is increasingly critical as patterns of provision of schooling proliferate and the links among the state and schools become increasingly complex.

Keywords Data-based decision making in education · Educational leadership · System change · Horizontal networks · Professionalism · Diffusion of innovation · Accountability · Partnership · School improvement

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Introduction

Recent educational reforms in England have emphasized school-to-school relationships as the cornerstone of school improvement initiatives in a radically devolved system of schooling (Department for Education 2010, 2016; Hargreaves 2010). These shifts reflect an emphasis in new public management more broadly on organizational autonomy within overarching frameworks of “light touch” institutional regulation by the state (Mulgan 2009). Such devolution highlights linkages among organizations as a means of systemic improvement in lieu of centralized initiatives (e.g., Eddy Spicer 2014; King 2010; OECD 2003; Rashman Withers and Hartley 2009). Educational reform initiatives based on these premises attempt to couple the competition of the marketplace, as introduced through the increasing autonomy of schools, with professional collaboration across schools as a means of ensuring that the most disadvantaged pupils have access to high-quality education.

Concurrent with the promotion of increased school autonomy and professional collaboration, the English system is known to be among the most centralized in terms of accountability requirements (Ozga 2009). There is a highly codified system of periodic school inspections carried out by an independent inspectorate (Ehren et al. 2013) and national agreement on compulsory standardized tests in Year 6 (typically age 11 at the end of Year 6, equivalent to U.S. Fifth Grade). School league tables, comparing school results on standardized assessments and inspection grading, are publicly available, and teachers as well as school leaders are typically evaluated in part on the performance of their pupils on standardized assessments.

The emphasis on outcome-oriented, high-stakes accountability coupled with increased autonomy corresponds with close attention to international competitiveness and the standing of the English education system in international assessments. The results of the 2016 round of the Programme for International Student Assessment (PISA), a 69-country, triennial survey of the educational performance of 15-year-old pupils, showed average science, reading and mathematics scores in England largely on par with the preceding three rounds (Jerrim and Shure 2016). In 2009, however, similar results formed an essential part of the justification offered for extensive educational reforms, leading the education secretary at the time to push for tightening assessment standards, increasing school autonomy, and promoting teacher professionalism (Gove 2010). In 2015, a different education secretary pledged renewed commitment to this policy direction with the aim of enabling England to rank among the top 5 highest-scoring countries in the 2019 tabulation of PISA results (“Nicky Morgan announces” 2015; Stewart 2016).

In the constellation of practices associated with standardized assessment and accountability, professional facility with using pupil data is broadly recognized in England, as in other countries, as a core component for improving leading and teaching in a devolved system (Downey and Kelly 2013; Earl and Fullan 2003). The study reported in this paper explores the regulation of professional practice in a system that couples outcome-oriented, high-stakes accountability requirements with an emphasis on increased professionalism and professional autonomy through data-based decision making. The study examined the diffusion of school leaders’ and

Year 6 teachers' framing of data and data-informed practices in one formal pairing of primary schools, in which a lead school entered into a structured partnership to support a school in difficulty. The study explored how school leaders' and Year 6 teachers' framing of instructional decision-making through and with data, and the contexts of that framing, mutually shape how professionalism is defined, promoted and developed in the day-to-day work of schools.

The overarching questions guiding this research were the following: In what ways do practices around connecting Year 6 pupil data and instructional decision-making diffuse from a lead school to a supported school in a structured school partnership? What do patterns of diffusion reveal, if anything, about the institutional regulation of professional practice across schools?

The study approached these overarching questions by probing how school leaders and Year 6 teachers in each school made sense of student data in relation to repertoires of collective action for instructional decision-making. The specific research questions the study sought to address were:

1. What repertoires of collective action in each school are in place for school leaders and Year 6 teachers to connect pupil data with instructional decision-making?
2. What are the framing processes in each school through which Year 6 teachers and school leaders interpret the repertoires of collective action around data-informed decision-making?
3. In what ways, if any, have the repertoires of collective action and framing processes within each school been shaped by the structured partnership?
4. What, if anything, does the diffusion of data-informed practices reveal about the institutional and organizational regulation of professional practice across schools?

Data-informed practice and school-to-school development

Education reforms over the past 6 years in England have encouraged schools graded as outstanding to loosen their oversight by local authorities and receive their budget directly from the national Department for Education, converting to independent, state-funded schools (known as academies in England, similar to charter schools in the United States). One stipulation of such conversion, however, is that schools enter into inter-organizational relationships with schools that are not graded as highly, connections that intend to provide a cornerstone of school improvement initiatives in a radically devolved system of schooling (Department for Education 2010, 2016). The promotion of data-informed practice through the use of interim assessments, the systematic codification of pupils' progress, and collaboration among teachers and leaders is a central aspect of such approaches (Hill et al. 2012).

Using data to inform ongoing instructional decision-making through the collaborative work of teachers and school leaders has come to be viewed internationally as an important means of monitoring the quality of teaching and learning within classrooms (Coburn and Turner 2012; Datnow et al. 2013; Hoogland et al. 2016; Schildkamp et al. 2013). This study uses the generic term "data-

informed practice” as an umbrella for all uses of data by teachers or school leaders with the intention of shaping the practices of teaching and leading. The past 15 years have seen a profusion of research emphasizing teachers’ and school leaders’ uses of data to improve instruction through the collection, analysis and interpretation of data, an ideal type of data-informed practice known as data-based or data-driven decision making (Hoogland et al. 2016; Marsh et al. 2006; Schildkamp and Kuiper 2010).

A broader literature on the practices of data-use in state-sponsored systems of accountability contrasts the formative approaches of data-based decision making with the summative uses of data to evaluate school and teacher performance (Henig 2012). Earl and Fullan (2003) for example, contrast data for external accountability with data for improvement in a review of research of reform efforts in Canada and England. They report on the overwhelming emphasis in England on data as a “mechanism of oversight” by the state (p. 390). A subsequent study of professional attitudes to data in England (Downey and Kelly 2013) concluded that, “staff in participating schools think that the current reasons for collecting pupil data are primarily ‘external’ (i.e., for accountability and public use), but that it *should be* collected for ‘internal’ reasons (i.e., for self-evaluation and improvement)” (p. 86).

Practices of data use for internal accountability, i.e., its formative aspects, and practices associated with external accountability are presented in other research not as contrasting binaries but as shaped by a constellation of social, organizational, and policy features of a given context (Coburn and Turner 2011). A systematic review of research on data-based decision making by Hoogland et al. (2016) highlights that while too much accountability pressure has been found across a number of studies to impede the positive development of instructional practice, several studies also conclude that formative uses of data were minimal in the absence of any centralized accountability systems (p. 6).

This study uses school-to-school development as a natural laboratory to explore the balance of external accountability pressures with the development of internal accountability in terms of increased professionalism among teachers and school leaders through the formative uses of data for improving instruction. The theory of action in school-to-school work is that organizational relationships across schools are more likely to strike the right balance between external pressure and internal development than is the relationship between a low-performing school and a central office. That is, the outstanding school is, presumably, in a better position than a central office to promote professionalism within the low-performing school while supporting that school’s capability to meet the demands of external accountability.

The gateway to learning primary trust

Edgware Close primary academy

In 2013, Edgware Close Primary Academy¹ was considered among the top state-funded primary schools in the country. Edgware Close is a large primary school in

¹ Pseudonyms for organizational names and individuals are used throughout to protect confidentiality.

a lower middle-class community, inland from England's east coast. Most of the students are from White British families, but substantial numbers of students are from minority ethnic families, especially Asian British. The school is below the national average in terms of students eligible for free school meals. The state inspectorate in 2002 reported that the school had declining enrollment and was barely meeting the needs of its pupils. By 2009, it had earned the highest inspection grade of 'outstanding' and was over-enrolled.

The strong position of the school in 2009 and the changes underway in the national system of schooling spurred the Governing Body and the senior leadership team of Edgeware Close to make a series of decisions to further solidify the school's standing. In 2012, the school converted to an independent state-funded school, in line with a concerted effort by the Department for Education in England to increase the numbers of independent, state-funded schools. Also that year, the senior leadership team with the backing of the Governing Body established a 'multi-academy trust', Gateway to Learning Primary Schools Trust, akin to a charter management organization. The Trust, according to its leaders, would put Edgeware Close at the hub of a group of primary schools across the region. The network of schools were to be formally overseen by the non-profit trust with the Headteacher of Edgeware Close, Allan, serving as chief executive, or "Executive Headteacher", and "Principals" of affiliated schools serving under his leadership. Leaders of Gateway to Learning envisioned that such a regional trust would promote local autonomy for its schools, what leaders believed to be a more appropriate model for primary schools than the assimilationist and more corporate model of multi-academy trusts that had grown out of secondary schools (Chapman 2015, p. 55).

Charlton Green primary academy

The initiation of the Gateway to Learning trust had come about in response to a request from the Department for Education for Edgeware Close to support Charlton Green, a school in a neighboring coastal community threatened with either closure or takeover by a national school chain. Charlton Green was a smaller than average primary school with declining enrollment in one of the highest-poverty areas on England's east coast. Three-quarters of pupils were eligible for free school meals, and ninety percent were White British. Local press had reported that the school was on an unpublished list of the 200 worst primary schools in the country. The sponsorship of Charlton Green by Edgeware Close through the Gateway to Learning trust began in the 2011–2012 school year, with the conversion of Charlton Green to an academy as part of the trust.

By the 2013–2014 school year, Charlton Green continued to operate under a "statement of action" from the local educational authority, which was in effect, a stay of closure provided that the school met certain benchmarks according to a timeline agreed upon with the local authority and the senior leadership of Edgeware Close. The benchmarks included meeting 65% of students passing the English and Maths Year 6 standardized assessments. The "statement of action" also meant that the school was subject to unannounced inspections from both the state inspectorate as well as officials of the local education authority. With the intention of developing

Charlton Green's capacity to operate autonomously, the Headteacher of Edgware Close recruited one of his two Deputy Headteachers, Richard, to serve as acting Principal of Charlton Green, with the support of Stephanie, an experienced local authority official who had previously worked with teachers at the school and had come out of retirement specifically to support Charlton Green as Assistant Principal and Director of Learning.

Exchanges between the two schools in the first year of the structured partnership included the following:

- The remaining Deputy Headteacher from Edgware Close, Barbara, visited Charlton Green regularly to consult with the Principal and Assistant Principal.
- The two schools shared a School Improvement Partner, an experienced former headteacher, who consulted monthly with the leadership team and the Governing Bodies of each school.
- Four Newly Qualified Teachers who had done their practicum training at Edgware Close were hired to work at Charlton Green in Years 3, 4, and 5 (typically ages 8–10) and continued to consult with teachers at Edgware Close.
- The Year 6 teachers of both schools exchanged periodic school visits.

At the time of the research, Charlton Green had 9 teachers in their first two years of teaching out of a staff of 14, which included 12 recently-hired teachers overall. The new-to-the-profession teachers taught in the middle grades; three recently-hired, experienced teachers were assigned to Year 6, which because of the standardized tests at the end of that year was the most consequential year group for the school. The three Year 6 teachers at Charlton Green, Yvonne, Valerie, and Terence, had all previously worked in schools graded as outstanding by the inspectorate, and two among the three had worked in high-performing, high-poverty schools. All noted that the structured partnership and the support it implied were among the primary reasons they had decided to take on the challenge of working at Charlton Green. The research reported here began in the second year of the structured partnership.

Theoretical framework

Recent research on teachers' and school leaders' uses of data has made use of the conceptual resources of organizational theory to explain the ways in which organizational structure and processes provide conditions for meaning making with pupil data and conversely, how that meaning making might come to shift processes and structures. For example, Honig and Venkateswaran (2012) examine 'evidence use processes' in the relationships between school-based practitioners and those in central district offices. Spillane (2012) examines organizational practice through the analytic lens of 'organizational routines' to explain connections between external regulation and patterns of organizing. Coburn and Turner (2011) develop a conceptual framework for data use that describes the multiple dimensions that condition practice in schools. Sensemaking (Weick et al. 2005) features prominently

in these and other studies of data-informed practice as a key analytic concept connecting teachers' and leaders' meaning making with recurrent patterns of practice that structure how meaning is made (see also: Bertrand and Marsh 2015; Cho and Wayman 2014; Coburn and Talbert 2006).

This study also begins with attention to collective meaning making and identification of recurrent patterns of practice. However, the study aims to explain local sensemaking in term of the structuring of patterns of practice through the diffusion of practice across schools. The term 'diffusion of practice' as applied here encompasses the processes through which professionals' actions around and meaning making about their students and their own approaches to teaching and learning shift in response to the advent of relationships with other schools and contact with professionals in other schools. Tracing the translation of practice demands methodological means of relating the micro-processes of interaction, the meso-processes of organizing and the macro-processes of social regulation within and across organizational contexts (Eddy Spicer 2012).

The study applies a socio-cognitive lens (Fiske and Taylor 2013; Fiske and Macrae 2012) to the regulation of professional practice, drawing on the literature around diffusion in social movements (Givan et al. 2010) and the strategic framing of change in commercial industries (Cornelissen and Werner 2014; Fiss and Zajac 2006; Nadkarni and Narayanan 2007). The study examines the interplay of social and cognitive dimensions of diffusion by tracing the translation of repertoires of collective action across schools while exploring the similarities and differences in interpretive schemes associated with those repertoires in each setting. The aim is to understand how repertoires of action and corresponding interpretive schemes are regulated by organizational and institutional conditions.

Policy pronouncements by the UK Department for Education invoke diffusion in statements about the generation of "supported autonomy" from structured relationships among schools (Department for Education 2016). The characteristics of such relational diffusion are direct interactions among actors within an existing network (Givan et al. 2010, p. 10). Relational trust is a key aspect of diffusion that depends on direct connection among those involved. However, relational diffusion is not the only type of diffusion that may be possible. Givan and co-authors (2010) identify two other types based on their review of the literature on social diffusion. Non-relational diffusion happens through indirect ties, cultural appropriation or the "attribution of similarity" without necessitating direct interaction or trust among actors (Givan et al. 2010, p. 11). The third type, mediational diffusion, arises when two individuals or organizations are connected to a third entity which mediates the relationship between the first and second (*ibid.*). The result is that "the diffusion process can be influenced by mediators' preferences, beliefs, and interests." (Givan et al. 2010, p. 12). The study began from the proposition that relational diffusion would operate between the lead school and the supported school, as policy assumes. The study then aimed to identify empirically what modes of diffusion were in operation, how those modes operated, and how the modes of diffusion were regulated by the wider system of schooling as well as the organizational conditions within and across these two schools.

Research design and data sources

The early stages of a structured partnership between schools offers the opportunity to study whether and how instructional practice is shaped by organizational relationships. The four secondary research questions listed in the introduction encompass different levels in the system of schooling. The first two questions look at the connection between pupil data and instructional decision-making within each school. The third sub-question encompasses the diffusion of practice across schools within the context of the structured partnership. The final question focuses on the relationship of patterns of diffusion to the institutional and organizational regulation of practice in each setting and across settings, which offers a new direction for understanding processes of diffusion and professional practice.

The analytic construct I used to explore the micro-processes of interaction and sense-making within and between schools (sub-questions 2 and 3) is that of the strategic framing of change, “the purposeful communication efforts of leaders or managers in shaping the frames of interpretation of others in an organization, so that they collectively accept and support a change” (Cornelissen and Werner 2014, p. 198). To address the fourth question around the regulation of professional practice, I then compare patterns of framing between schools in relation to modes of diffusion that regulate what is considered legitimate professional practice. The first three questions are addressed empirically, through close analysis of interviews and observations, as described below and reported in the findings section. The fourth question draws on this analysis but is approached inferentially and addressed in the discussion section.

The pupil performance data that are at the center of this study are codified teacher judgments and associated evidence of student academic performance derived from the Assessing Pupils’ Progress (APP) initiative (Gardner et al. 2011). These level-specific indicators are keyed to the UK National Curriculum and the Year 6 standardized assessments, or SATs.² APP “levels” are designed to be used in an ongoing way with interim assessments and are viewed as a benchmark of “best practice” when coupled with school-wide efforts to systematize both the summative assessment of pupils’ progress towards annual goals as well as the formative assessment of pupils’ learning in relation to specific teaching practices in order to inform future practice (Hopkins and Reynolds 2001). Pupils in Year 6 (exiting age 11) are tested in writing and reading, mathematics and science. The results of these externally-marked tests have substantial consequences for pupils and for schools; results are used to gauge pupils’ trajectories beyond primary school and are published in performance tables by England’s Department for Education. Beginning in Year 5, anticipation of these standardized tests is typically a regular feature of teacher talk as well as teacher-student talk (Black 2004). By focusing on Year 6, this

² The label “SATs” derives from the initial introduction of the National Curriculum and the intention to assess student performance through Standard Assessment Tasks. Mandatory use of the National Curriculum was suspended in 2010, but many schools, including those studied here, continued to use National Curriculum guidelines and associated materials such as the APP level indicators. Moreover, the National Curriculum Tests, which did not change after 2010, continued to be tied to National Curriculum guidelines.

study captures a year in which schools typically concentrate instructional resources and teaching expertise, one that would expect to be a special focus of the structured partnership and efforts towards school-to-school diffusion of practice.

Teachers and school-leaders in this study were using the web-based application Target Tracker, based on the National Curriculum and APP level indicators to support school-wide data-use and collaborative decision-making. Reflecting the APP, progress in Target Tracker is accounted in sub-levels; students are expected to progress an average of three sub-levels each year from Level 2 in Year 3 to Level 5 in Year 6. Target Tracker serves as a means of documenting and reporting on pupil progress, drawing on formative assessment data entered following periodic interim assessments, typically once a term.

The research design makes use of an embedded case study to address the research questions (George and Bennett 2005). This structured partnership as an embedded case comprises nested, dependent cases—those of the lead and the supported school as unique organizational contexts as well as that of the pairing of lead and supported schools as a hybrid context. Fieldwork consisted of data collected over 16 months, June 2012–October 2013. Data was generated during four visits in each of the schools from semi-structured interviews (22) of senior school leaders, year-team leaders, and teachers; naturalistic observations of teacher meetings (8 h); and review of school documents. All interviews and meetings were documented through fieldnotes and audio-recording.

Analysis of this data led to my identification of 464 topical segments of interviews and observations that addressed the uses of data in relation to prospective discussion of instructional strategies, reflection on enacted strategies in the classroom, assessments of students' learning, and administrative uses of data. I coded these segments by school and by role (teacher or leader), iteratively and inductively generating an initial list of analytic codes, which I then refined into the final code list, encompassing 7 topical codes (data, student, teacher, senior leadership team, internal to school, across schools, external to school), each of which had multiple associated inductively-derived thematic codes (e.g., internal-to-school: “analytic culture”, with quotes indicating a label generated from the words of a participant). My final approach to coding was to use deductively-defined codes for three characteristic framing processes—focusing, configuring, and transforming (Snow 2013)—to label associative networks of thematic codes for each of the two groups of participants in each school, school leaders and Year 6 teachers. The final step in analysis was to compare and contrast framing processes within each school in relation to the diffusion of data-informed practices across schools through such processes as frame bridging, extension, amplification, and transformation (Cornelissen and Werner 2014).

Findings

In this Section I present findings for each school in turn, and within each school, for each role perspective (i.e., school leader or Year 6 teacher). I conclude with a comparison of patterns of framing across both schools and any observed or interpreted indications of dominant processes of framing.

Edgware Close

Year 6 teachers: Levels as signpost of exam results

APP levels and the targeted skills contained in level descriptors were used frequently and informally by Daniel and Elliott, the two Year 6 teachers at Edgware Close, as well as other teachers throughout the school to characterize the state of learning of individual students and groups of students and to make daily decisions about instructional strategies. The universal use and acceptance of levels and benchmarks associated with lessons in the descriptors were foundational to the ways that teachers and, as I discuss later, leaders configured students as learners, especially in Year 6. Year 6 students themselves used levels and the language of descriptors to characterize their own learning and that of their peers, according to teachers and as observed in students' interactions with one another and with teachers. For students, teachers, and leaders, this emphasis on progression within and among levels was a central part of the necessary work throughout the school but especially in Year 6, in which "level progress" took on special meaning.

The ways levels served to frame student progress in Year 6 encompassed not only the individual student but also broader consequences for the class, for teachers, and especially for the school. For Year 6 teachers Daniel and Elliott, calibrating instructional decisions to ensure that each student progressed as much as possible was inevitable in Year 6, with students preparing for the end-of-year standardized assessments. In Year 6, this framing of level progress was extended from an interpretation of individual student progress to the wider awareness that results carried consequences for the school as a whole. Exam performance was portrayed as collective effort, or as Daniel emphasized, an "opportunity to show off what you know", not only for oneself but also to uphold the good standing of the school.

The attention to levels as signposts of results played out in instructional decision-making through careful discernment of the types of students who needed focused attention. This led teachers in Year 6 to pay particularly close attention to the students who were on the cusp of reaching the requisite Level 4 that would define them as "proficient", providing them with "that little push". Daniel comments:

And it's a sad state of affairs but you know, we're trying to help them, trying to help us, trying to help the school. So I use it as kind of where are they now to support how have I done but also where are we going to go kind of thing. To kind of say how can I help that person to make that little push?

Level descriptors served as a shared means of characterizing student performance not only among teachers of the same year group but among teachers across years, between teachers and school leaders, and also between teachers and students and even among students. This carefully calibrated framing of student learning in terms of sub-levels depended on close coordination of interpretation of levels across years, and shared alignment of meaning about levels among teachers and between teachers and students. Both Year 6 teachers noted that the shared framing of student learning in terms of descriptors allowed them to make comparisons between current students

and comparable students they had taught in the past as well as consult with a student's previous teachers to understand how others had assessed the same student.

This coherent framing of levels as signpost for exam results was made possible by alignment among teachers, between teachers and students and between teachers and leaders around what constituted a level and what constituted sub-levels. Across the school there appeared to be common agreement around what particular data represented and how numerical representation in terms of levels corresponded with expected student learning.

Edgware Close leadership: Alignment of management systems and instructional practice

The senior leadership of Edgware Close characterized the current uses of data for instructional decision-making throughout the school in relation to a longer developmental trajectory related to the management of teachers and overall organizing processes in the school. In Edgware Close, data had been used intensively for several years, which had led to the development of a wide range of material artifacts and patterns of practice that were integral to teachers' daily practices as well as the way the school was run.

The Headteacher, Allan, Deputy Headteacher, Barbara, and a former headteacher who consulted with Gateway to Learning Trust as a School Improvement Partner described data-use practices as a fulcrum that allowed the senior leadership team to make connections across their management systems, the curriculum, and student learning. The team attributed the growing sophistication of data-use practice to the transformation they had achieved in the ways that teachers held themselves accountable for students' performance. The coherence of teachers' use of levels across years was one manifestation of a broader interweaving of instructional and managerial decisionmaking that consisted of several key aspects, including a common curriculum across years, agreement around core skills for learning, and teachers' expectations for performance. As Allan emphasized:

... we'd got in place the curriculum, we'd got in place the core learning, core skills curriculum, we got in place expectations for teachers, we implemented data tracking systems, and that then meant that... and we cracked the behaviour... and that then meant that we could then start holding the teachers to account who were blaming the children.

Practices around data encompassed the articulation of each teacher's performance management objectives, which always included detailed targets around pupil progress that were tied to indicators drawn from pupil data. Just as students were aware of level descriptors in tracking their own attainment, teachers were aware of the implications of student progress through sublevels and its implications for their performance reviews. Middle leaders met with senior leaders each term to review pupil data in Target Tracker for each year group, and these discussions were preceded by discussion among the senior leadership team examining data across the year groups. Deputy headteacher Barbara describes:

And we very quickly linked performance management and targets in with the kind of structures that we're doing, (...) structures very much supporting it, so we linked it all in so that we were supporting the staff as well to enable them to hit their targets. So if they really didn't hit their targets it's like well....

Barbara explicitly sought in her initial efforts to frame data use as diagnostic and formative through an emphasis on data-informed practice development among teachers. She characterized her responsibility as engaging teachers in a process of inquiry, not managing performance. As she explained, "Data doesn't give you anything other than another question to ask and find out". Barbara described the process that the school went through to arrive at a diagnostic approach to the use of data:

So it was very much... we almost had to go through stages. So the first one was just getting them feeling they liked Target Tracker and they'd have to put data on, so the very beginning we didn't hold them too much to account within the data because we wanted it to be seen as a positive tool to support them.

Barbara describes the initial steps as giving teachers responsibility for collecting and entering data, coupled with supportive, non-evaluative coaching. This emphasized accuracy of the data first and then focused on developing common understanding within and across years, what Barbara describes as a moment when "the penny dropped".

We very carefully at the beginning just went along, let the teachers be happy with the data, we then, alongside them being happy [entering data], we did a lot of work around checking that we know what the levels are. And then we also... it's a longer route, but we also had to get people to understand expectations [...] And it's only then that the penny dropped, and then we finally got it where everyone was working together.

Barbara and many of the teachers attributed the effective diagnostic uses of data throughout the school to the integration of data analysis with the annual cycle of professional development that was overseen by a teacher-leader, Christine, who worked solely with other teachers in her role as Senior Teacher. Christine and Barbara had initiated a program that involved the whole staff reviewing termly data and identifying subgroups of children who were consistently not performing as well as teachers believed they were capable of performing in a specific area. Barbara noted that this "Barriers to Learning" initiative was the most visible indicator that teachers held "consistent high expectations" around all their students and were able to move on to work with those who presented specific challenges, the "barriers" children. "Data", as Barbara highlighted, "takes care of itself" as the focus shifted from data to instructional practice.

over the years we've probably stepped back more from the data now because we know it's... in my mind the data takes care of itself if in every lesson the children are making progress. If teachers base their lesson on assessment, the children make progress and the actual data you need or want or would love to aspire to actually happens.

In sum, the Edgware Close senior leaders had worked consistently over eight years to portray data as essential as a means of illuminating and sharpening classroom practice, “as supportive tool” in helping teachers make data-informed decisions around teaching and learning rather than primarily as a tool for monitoring and judging teachers’ performance. In part this involved working with assessment data and associated level descriptors until the level descriptors became a shared vocabulary that enabled concrete discussions around expectations of students and student progress, not only within each year but across all years. The explicit framing of data in this way enabled level descriptors to serve as tools for focusing instruction across the school and established data as collective means of judging student learning and making decisions around teaching practices in relation to that learning. There was also an implicit framing of data-informed practice that had to do with expectations for teachers around meeting annual targets for student performance. However, for teachers interviewed in this study, that internal “mechanism of oversight” appeared to operate in the background, with foreground focus going to uses of data to improve instruction. In other words, performance in relation to targets was uniformly accepted as a reasonable yardstick used to judge teacher performance. An essential aspect of the data taking care of itself was that teachers had internalized expectations and thus regulated themselves.

Charlton Green

The promotion of Richard, formerly a Deputy Headteacher at Edgware Close, to take on the role of principal at Charlton Green aimed, in part, to facilitate the translation of a range of organizational routines that had been developed over the past decade at Edgware Close. Leaders and teachers in both schools deemed the translation of carefully-honed routines essential for the rapid improvement that would be necessary to meet external expectations of improvement at Charlton Green.

Charlton Green year 6 teachers: Data as entry-point

The three Year 6 teachers, Yvonne, Valerie, and Terence, shared the view of their Edgware Close counterparts around the importance of student interim assessment data in Year 6. Increasing students’ targeted scores on the Year 6 standardized assessments was an ever-present goal that held significance for the students themselves, their teachers, and the school. As Yvonne summarizes, “You have got an end point and you have got a target.” However, Charlton Green’s target was not around the results of individual students but a threshold percentage that had high-stakes implications for the school and for its teachers. That number was 65%. According to the school’s “statement of action”, the school needed to demonstrate that 65% of its Year 6 students could achieve a Level 4 in both English and Maths. If they did not, the school could only be evaluated as underperforming, no matter the evidence provided of improvements in other areas or other years. The teachers were aware of their students’ current scores to the first decimal place of estimated results based on interim assessments, which at the midpoint in the school year stood

at 61.1%. They framed the task facing them as finding “another 3.9%”, according to Valerie. She elaborated, “These numbers are what we are going to get judged on at the end of the year so you can’t ignore it.”

Teachers readily accepted the targeted 65%, nodding in agreement with Yvonne as she said that aiming for such a goal is “the way it has to be addressed”, referring to establishing uniform and high standards of quality across the school. Terence said that school leaders were doing “the right thing in the right way and the right direction” to establish order in the school, to set high standards for student learning across the school, and to hold teachers accountable for their students’ learning through evaluations based in large part on student performance. All of the teachers praised school leaders as doing everything possible to help teachers meet their own targets as well as the school target, highlighting that the leaders regularly worked with groups of their students, allowing the teachers to work more intensively with other students who needed additional help.

Teachers knew to the first decimal where their students were in relation to the goal of achieving 65% because they conducted interim assessments every 6 weeks and entered results into Target Tracker at the middle and end of each term, twice as frequently as the Edgware Close Year 6 teachers. However, teachers did not believe that Target Trackers’ representation of data about student progress accurately portrayed where individual students stood, and the emphasis on using data to address external demand was not matched by internal emphasis on the uses of data for diagnostic purposes. Teachers offered three reasons for the misalignment between the framing of data for meeting external demand and the framing of data for internal decision-making about students. These were historical inaccuracies in the data, the divergence of the current curriculum from what had been used at the school prior to the partnership, and the need for close attention to students’ social and emotional wellbeing.

At Charlton Green, repertoires of action around data that included teachers and that had been adopted from Edgware Close had only been in place for two years. The constellation of routines around data collection and analysis had only begun in the second year to produce what the teachers considered valid and reliable data. Moreover, historical data on students from the previous administration, entered by a school administrator and not involving teachers in analysis, were uniformly viewed as inflated and unreliable.

But it was not only the reliability of the data that caused concern. Interim assessments aligned with the level descriptors did not provide teachers with nuanced indicators of where their children stood in relation to what would be demanded of them in the year-end tests. The alternative curriculum that the school had pursued prior to the partnership meant that children were uneven within levels. Levels, then, were not a useful fine-tuned analytic for gauging pupil progress in a formative way. Valerie comments:

[T]here are historical issues here which means they are not quite where you would want them to be, (...) there are holes to fill in and stuff, so these are requiring a bit more than you would if you had to have another school where you had consistency all the way through, you would really be teaching exam

technique and focussing on that sort of thing. Whereas here you are doing exam technique, filling in the gaps, doing competence you know.

All three teachers insisted that the only way they could determine how to “fill in the gaps” was by working with students directly to watch how students responded to questions, noticing when they made mistakes in an effort to identify holes in their understanding. Moreover, teachers described the need to understand where children were in a holistic way that the progression articulated through level descriptors failed to capture.

Valerie: I think [level descriptors are] probably initially very, very useful but when you actually get to know the children then you unpick what they need to work on more by working with them than looking at a number.

Yvonne: So you keep in your head what they need to do to get to the next step and work from there. But you wouldn't go back to [the level descriptors] and go ‘Yeah, they got that, that is where they are’. Do you know what I mean? It would be a guideline.

Moreover, according to the Year 6 teachers, no data could capture important details about students' behaviour, particularly interpersonal interaction among students that were of consequence for their learning. According to Yvonne, understanding the needs of individual pupils was more subjective and nuanced than any objective measure could tally.

So if you are purely going by number you wouldn't think, ‘Oh I don't think that person would cope in there’ or ‘they are not the right personality to be in that room’ or there is someone in there that they clash with. So you don't purely look at a number.

In sum, Yvonne, Valerie, and Terence viewed the needs of their students as far more complex and variable than numbers alone could capture. The numbers did not entirely express their students lived reality or their own as teachers; although data could serve as a rough guide for initial groupings of students. Most important, numerical results demanded attention because of their use outside the school as a gauge of school performance and inside the school as a measure of the performance of the teachers themselves.

Charlton Green leadership: Data as improvement narrative

Richard, Charlton Green principal, and Stephanie, Assistant Principal and Director of Learning, portrayed data-use in ways that mirrored the teachers' characterizations. The strategic framing of practices around the uses of data was oriented externally towards those who evaluated the progress of the school with the data they provided, most immediately the leadership of Gateway Learning Trust, including Allan the Headteacher of Edgware Close as partner, as well as officials in the Local Authority and Ofsted in their role as judges of the school's improvement trajectory. Richard and Stephanie also viewed data-use practices as a way of holding teachers to account; however, this holding to account emphasized teachers who were

performing below expectations, not as a means of inducting teachers into an analytic culture. Both Richard and Stephanie saw the cultivation of an analytic culture as an aspiration once they had met demands from the state for improvement.

Inflated, historical data about children at the school that preceded the structured partnership were a major impediment to showing evidence of short-term progress to those on the outside. Thus, what was most important to the leadership of Charlton Green was first, the integrity of data they were currently collecting and, second, the story of improvement they could tell with that data to outside audiences. The Principal and Assistant Principal spoke of ‘audiences’ for the data that included a wide range of those responsible for ensuring that the school was improving. There were two types of audiences—their allies in the structured partnership who might help them shape and sharpen the story they were telling with their data and their evaluators who stood in judgement of the school’s improvement path. The former included Allan and, especially, Barbara, the Headteacher and Deputy Head of Edgware Close, representing the Trust, as well as the School Improvement Partner. Those standing in judgement included the local authority, the inspectorate, and ultimately, the Department for Education.

Framing the data as a narrative of improvement was vital for Charlton Green to demonstrate to authorities that it was making progress. Richard continues:

... so we’re very much all the time getting data and also at the same time make sure the books match data, that the teaching matches the data. So it’s all the time we’re thinking, before we say something, are we... have we got the evidence to say yes, things are good because... and we’ve got as much information as we can.

One of the most important aspects of the school partnership with Edgware Close at that time was helping the Charlton Green leadership prepare for inspection through the elaboration of a carefully justified story about the data. Richard called this preparation for inspection a “rehearsal”:

Yes, we rehearse it and also just throw the questions, anything else you think we could do to make it look as good as possible... Not as good, that’s the wrong... as positive... not inflated, not an inaccurate picture, but this is where we are. (...) It’s all going in the right direction. Have we got as much positive data to reflect that to the powers that be really? It’s basically sharing of ideas between the two schools because, you know, this is a predicament where we have to... imaginative is the wrong word, but find different ways of presenting our data as positively as we can to show that actually we are having an impact.

Both Richard and Stephanie were aware that the current externally-oriented approach to the uses of data were not how the organizational routines adopted from Edgware Close came into being. Stephanie described the constant need to justify and constant awareness of external evaluation as “closed down” in contrast with the “opened up” diagnostic uses of data at Edgware Close. Richard and Stephanie viewed this diagnostic approach as an aspiration, a possibility for the future once the school has met its “statement of action” targets. Richard elaborates:

Because that's the advice we've been given, you focus on these and you get these right. [Edgeware Close shows] us the future don't they... It's where we aspire to be and we can see ourselves en route and we're sort of being guided but at the same time allowed to, you know, make it appropriate for this local community. Because it couldn't just all be brought over wholesale, it had to be... well it had to be seen in context.

The “context” is not only the local community and the needs of the students and their families, but also the need to meet improvement targets set by external evaluators through means, such as developing a solid, data-informed narrative of improvement, enabled through the partnership.

Strategic framing and the diffusion of data-informed practices

Instructional decision-making at Edgeware Close was tightly coupled with the data in a way that “data took care of itself” as part of the normative landscape of the school. In other words, data-informed practices at Edgeware Close had the qualities of dialogic, data-based decision making commonly invoked in the literature, including promoting teacher ownership, nurturing a culture of inquiry, and matching data to specific instructional problems (Earl and Louis 2013; Hoogland et al. 2016). In Charlton Green, data was primarily used to monitor the school's present circumstances, internally for evaluating teaching performance and externally for evaluating the performance of the school. These findings are more consistent with earlier studies of English schools that emphasize the “surveillance” functions of data-use practices (Earl and Fullan 2003; Downey and Kelly 2013).

As mentioned in the introduction, government policy around the pairing of schools hinged on the assumption of *relational* diffusion, predicated on the direct interaction among those involved and on trust. The Department for Education viewed school-to-school interaction of this kind as a means of more carefully calibrating the demands of external accountability in ways that would strengthen teacher and leader professionalism (Department for Education 2010). Leaders and teachers in these two schools did demonstrate ample trust in one another, and in the work going on across schools. Moreover, there was substantial, direct interaction among school leaders and regular interaction among teachers.

The relationship between the two schools did lead to the adoption of a wide array of repertoires of collective action around data-use. This corresponds with the mirroring of features of organizational structure to gain legitimacy that new institutionalist theories of organizing describe as isomorphic (Powell and Dimaggio 1991). But this structural isomorphism of collective repertoires of action did not lead to equivalence in the ways that people made sense of their uses of those structures. Staff in both schools were well aware that Charlton Green was in a very different position than Edgeware Close within the system of schooling, one that was unique to the government's current attention to outcomes-based benchmarks of student learning. The Senior Teacher at Edgeware Close, Christine, described the different institutional conditions faced by the two schools:

The reason [Barbara, Edgeware Close Deputy Headteacher] and I are how we are is because we had free rein, you know there was nobody who was there who sort of had the answers. So we were like constantly analysing and thinking and talking and developing.

Charlton Green, on the other hand, faced far greater and more immediate external pressure to improve due to the requirements of its “statement to improve” and the threat of unannounced inspection. Moreover, Charlton Green had to respond to those pressures at a time when it was not only putting in place new data systems but also trying to redress the deficiencies of old data and the lack of trust it had engendered.

Under these conditions, leaders in the lead school focused their attention on ensuring external legitimacy (Henig 2012; Huxham and Vangen 2000), bridging the demands of the outside evaluators with current conditions in Charlton Green through the considered construction of a data-informed improvement narrative. The lead school brokered the requirements of local and state officials, not only lending symbolic credibility to the Charlton Green narrative of improvement, but strategically co-constructing that narrative in ways that would be acceptable to local authority and state inspectors. This was accomplished not by distorting the data, as had been done before the partnership by the previous administration of Charlton Green, but by using the available data strategically to tell the story of disruption at the school, the consequences of that disruption for students’ current learning, and the positive development that had recently occurred even in the face of uneven predicted outcomes for the current Year 6 students.

The strategic framing process involved in this aspect of the relationship between schools was not one of relational diffusion, the direct translation of repertoires of collective action, but one of *mediated* diffusion. Mediated diffusion is evident in the efforts of the lead school to adopt the framing of data inferred from external requirements and to devote energy towards enabling Charlton Green to appropriately interpret and respond to that framing (Givan et al. 2010, p. 10). However, the intense focus on an improvement narrative came at the cost of securing internal coherence around the uses of data to improve instruction (Honig and Hatch 2004; Hoogland et al. 2016). Rather than supporting data-informed professionalism, the local policy of school-to-school partnership at this point in the relationship amplified the pressure on teachers to align with external expectations in order to ensure the institutional survival of the supported school.

Conclusion

The detailed analysis of the early stage of a school-to-school relationship reveals how the framing of professional practice is regulated by the institutional conditions in which schools are operating, and not singularly the organizing processes through which repertoires of action are translated from one setting to another. The UK Department for Education promotes school-to-school collaboration as a means of “helping [teachers] to learn from one another and from proven best practice, rather

than ceaselessly directing them to follow centralised Government initiatives” (Department for Education 2010, p. 8). It is expected that this professional translation of practice, coupled with greater autonomy for schools within a frame of high-stakes accountability, will yield improvement. The early experiences of the Gateway to Learning Primary Schools Trust and the relationship between Edgware Close, as lead school, and Charlton Green, the supported school, make clear that the regulation of professional practice depends in large part on the demands on the school as a result of its positioning within the wider system.

This study reported on the initial stages of school-to-school development. The relationship will no doubt evolve over time. For this inter-organizational partnership to result in the kinds of changes envisioned by the Department for Education as well as by proponents of data-based decision making, the lead school would need to find means of working with the supported school not only in framing an external narrative of improvement but also in developing internal capacity to nurture a culture of inquiry. Such a development might only come about if the system itself, including local authorities and the state, held a more expansive view of the inter-organizational relationship and its possibilities, and calibrated external accountability requirements to the relationship and to conditions in the supported school. Promising initiatives in this vein include greater emphasis on “polycentric accountability”, an approach that devolves evaluative responsibilities to the network of affiliated schools (Janssens and Ehren 2016).

The use of pupil data in school-to-school support is a cornerstone of the current English government’s educational policy, with England at the vanguard of this approach and other national systems closely watching the English experience. Strategic framing offers a useful lens to understand the manifold connections between espoused policy around school-to-school development and what actually happens between and within schools as a consequence. The framing of data-informed decision making, in particular, illuminates the processes of mediation through which lead schools perform the interpretive function once held by local educational authorities. By tracing the path of mediated diffusion as this research has done, strategic framing offers a way of identifying the functional “middle layer” of the system of schooling at a time when the unitary power of school district or local educational authority is waning. The new middle-layer provided by school-to-school support, distinct from the hierarchical structure of the traditional local authority–school relationship, nonetheless appears to function in ways that can promote even more finely-attuned allegiance to centrally-mandated outcomes. Research connecting the micro-processes involved in school-to-school development with the macro-processes of structural reform in education is limited. Such research is essential to exploring how centralized control and accountability might be calibrated most effectively with local autonomy and professionalism.

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