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“WHAT MAKES YOUR SCHOOL WORK?”  
A QUALITATIVE STUDY OF EIGHT  
MAGNET SCHOOLS

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# “What Makes Your School Work?” A Qualitative Study of Eight Magnet Schools<sup>1</sup>

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**Abstract:** How do magnet schools work? Although they are an important school-choice option (on par with charters, in terms of enrollment), it is unclear what actually goes on in these schools: how do they reduce minority-group isolation? What does theme-based teaching and learning look like in practice? This report answers these questions with findings from a study of magnet schools across the country. Teachers, principals, support staff, and other magnet personnel were interviewed and asked what they believe makes their schools different and successful. They identified five critical features of magnet schools and shared six “take-aways” that, surprisingly, make sense in magnet or non-magnet schools.

## Introduction

While charter schools continue to be the school choice “issue du jour,” magnet schools have been in existence longer (Polikoff & Hardaway, 2017) and enroll a similar share of public-school students: 2.6 million (magnet) vs 2.7 million (charter) in 2015 (U.S. Department of Education, 2016). Magnet schools have also received decades of bipartisan governmental support via the Magnet Schools Assistance Program (MSAP). Established in the 1980s to help reduce minority isolation, support systemic reforms, and ensure equitable access to quality education, MSAP is the only federal program that has racial integration as one of its program mandates (Wang & Herman, 2017).

A reform model this widely implemented and this well funded has naturally inspired a lot of research: What kinds of students attend magnet schools? Do magnet schools reduce minority isolation? How effective are they compared to traditional schools? But a great deal of this work has been conducted “from 30,000 feet,” using test scores and survey data to look at large-scale trends. What is not yet clear is what goes on *inside* magnet schools that sets them apart from traditional schools. We address this gap in the literature by consulting over 30 personnel at eight magnet schools across the country. This study provides an unprecedented

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“insider perspective” on the everyday workings of magnet schools and investigates two research questions:

- RQ1: What do these individuals believe sets their school apart from other schools?
- RQ2: How do these individuals understand the logic of magnet schools?

## Literature Review

Magnet schools resemble traditional public schools in that they are run by local school districts and subject to the same rules and regulations (National Alliance of Public Charter Schools, 2016). Magnet schools funded by the MSAP differ, however, in that they include diversity as a stated purpose and provide theme-based programs designed to attract students from outside the surrounding neighborhood (MSAP Technical Assistance Center, 2017). MSAP grants are provided to establish new magnet schools or significantly revise existing ones, and recipients are required to embrace a magnet theme (which may be instructional, e.g., Montessori), hire quality teachers, provide professional development, and increase parent and community involvement (MSAP Technical Assistance Center, 2017).

### Variation in Magnet Implementation

The present study is informed by the literature on effective schools, particularly the line of research that attempts to understand variation in school effectiveness. While we do not provide a comprehensive summary of this literature, we note several themes that arise frequently in studies of school success: strong leadership, a purposeful approach to curriculum and instruction, support for teachers (including professional development), school climate and culture, and robust parent and community relationships (Barth et al., 1999; Berends et al., 2002; Borman et al., 2000; Bryk, 2010; Cannata et al., 2014; Carter, 2000; Council of the Great City Schools, 2015; Datnow & Stringfield, 2000; Dobbie & Fryer, 2013; Duke, 2006; Fryer, 2011; Furgeson et al., 2012; Kannapel et al., 2005; Knudson et al., 2011; McGee, 2004; Newmann et al., 2001; Picucci et al., 2002; Tuttle et al., 2013; Williams et al., 2007).

When we turn to the magnet literature for magnet-specific practices, we find only a few studies exploring variation in effectiveness. These studies echo the findings above, but they also suggest that there might be another, magnet-specific contributor to school success. Different authors have described it as:

- magnet program “definiteness” (Blank et al., 1983),
- commitment to the magnet theme (Crain et al., 1992),
- depth of the magnet school program (Christenson et al., 2003),
- full implementation of the magnet program (U.S. Department of Education & WestEd, 2004),

- maintenance of the magnet theme with integrity (U.S. Department of Education & WestEd, 2008), and
- fidelity of magnet plan implementation and breadth of magnet school coordination (Wang et al., 2017).

These studies concur that magnet implementation is important, but they are unable to provide a clear picture of what it actually looks like because nearly all of them draw on survey data. Two notable exceptions (U.S. Department of Education & WestEd, 2004, 2008) use case-study methods to identify magnet-specific practices like making the theme visible to visitors, using common theme-vocabulary across grades, aligning themed curriculum to state and district standards, and giving teachers collaborative time for theme-based planning. This pair of studies provides some insight into the construct of “magnet implementation.” However, the construct is sufficiently complex and understudied to necessitate further research that differs, methodologically, in two respects.

First, given the paucity of research on magnet implementation, it makes sense to use a grounded-theory approach to develop an understanding of the phenomenon grounded in participants’ insights, rather than existing literature (Krathwohl, 2009). Those who work in magnet schools are uniquely positioned to report on what implementation actually looks like in context; their perceptions and understandings are valuable sources of information as we navigate this relatively uncharted theoretical territory. Second, in addition to identifying discrete components of magnet implementation, it is important to understand how they fit together—the “logic of magnet,” in other words. This study fills both of these gaps in the literature by listening to teachers, principals, and other magnet personnel as they tell *their* story of magnet implementation.

## Methods

### Site Selection

Our study began with data from nine groups of magnet schools, located in six districts.<sup>2</sup> We use the term “group” to mean a set of magnet schools that received MSAP grants during the same funding cycle. Five groups were funded in 2010; four were funded in 2013. We served as their external evaluator, in partnership with American Education Solutions (AES), Inc., a consulting firm that has strong, long-term relationships with these districts. Our goal was to include one MSAP-funded school from each of the nine groups in order to study implementation practices in a range of contexts across the country. Within each group, we used a two-stage selection process to identify our study schools.

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<sup>2</sup> Some of the schools are situated in a consortia of magnet schools, not a traditional district, but we use the term *district* throughout the article.

The first and most technically complex stage was the estimation of a “magnet effect” for the third and final grant year of each magnet school in the group. We were provided with test score data (for the state test in ELA and math) for all students in the district. We analyzed this data using a within-district quasi-experimental design and two layers of matching. First, each group magnet *school* was matched with two or more nonmagnet comparison schools based on grade span, school size, racial/ethnic composition, percentage of English language learners (ELLs), and percentage of National School Lunch Program (NSLP) participants. The second layer of matching involved identifying comparison *students*. For each group magnet student for whom we had adequate test-score data, comparison students (from the identified comparison schools) were selected on the basis of race/ethnicity, ELL status, NSLP participation status, and previous year’s ELA and math test scores. After matching each group-student with multiple nonmagnet students from multiple nonmagnet schools, we used regression models to estimate the “magnet effect” of the group schools. This produced the magnet effects shown in Table 1.

Table 1

*Magnet Effects in Math and ELA for Group Schools*

District (group)	School	Math		ELA	
		Magnet effect	SE	Magnet effect	SE
1 (2010–2013)	1	0.089	0.072	0.106	0.071
1 (2010–2013)	2	0.120*	0.040	0.248*	0.047
1 (2010–2013)	3	-0.250*	0.081	-0.214*	0.059
1 (2010–2013)	4	-0.397*	0.106	-0.430*	0.082
1 (2013–2016)	1	-0.034	0.081	0.150*	0.068
1 (2013–2016)	2	0.147*	0.062	0.344*	0.059
1 (2013–2016)	3	0.137*	0.055	0.103	0.059
1 (2013–2016)	4	-0.182*	0.077	-0.062	0.090
2 (2010–2013)	1	0.183	0.100	-0.037	0.107
2 (2010–2013)	2	-0.145	0.142	-0.235*	0.102
2 (2010–2013)	3	-0.280*	0.068	0.049	0.066
2 (2013–2016)	1	0.050	0.036	-0.028	0.034
2 (2013–2016)	2	0.164*	0.054	0.223*	0.051
2 (2013–2016)	3	0.152*	0.049	0.097	0.051
2 (2013–2016)	4	-0.175*	0.045	-0.011	0.047
3 (2010–2013)	1	0.079	0.0928	0.071	0.094
3 (2010–2013)	2	-0.038	0.0697	0.097	0.063
3 (2010–2013)	3	-0.021	0.0855	-0.050	0.090
3 (2013–2016)	1	-0.102	0.108	0.158	0.128
3 (2013–2016)	2	0.022	0.086	0.148	0.114
3 (2013–2016)	3	-0.024	0.088	-0.030	0.090
4 (2010–2013)	1	-0.076	0.057	0.053	0.057
4 (2010–2013)	2	-0.066	0.095	0.001	0.097
4 (2010–2013)	3	-0.094*	0.032	-0.026	0.033
4 (2010–2013)	4	0.032	0.032	-0.017	0.029
4 (2010–2013)	5	0.176	0.113	0.094	0.131
4 (2010–2013)	6	0.076	0.083	0.088	0.073



District (group)	School	Math		ELA	
		Magnet effect	SE	Magnet effect	SE
5 (2010–2013)	1	0.079	0.094	0.000	0.086
5 (2010–2013)	2	-0.058	0.071	0.025	0.075
5 (2010–2013)	3	-0.169	0.117	0.099	0.148
5 (2010–2013)	4	-0.020	0.065	-0.022	0.058
5 (2010–2013)	5	0.242*	0.096	0.210*	0.091
5 (2010–2013)	6	0.251*	0.126	0.224	0.132
5 (2010–2013)	7	0.417*	0.192	0.361*	0.153
5 (2010–2013)	8	0.154	0.173	0.020	0.148
6 (2013–2016)	1	-0.278*	0.089	-0.042	0.088
6 (2013–2016)	2	0.126	0.096	-0.013	0.088
6 (2013–2016)	3	0.068	0.071	0.087	0.056
6 (2013–2016)	4	-0.193	0.122	-0.040	0.120
6 (2013–2016)	5	0.070	0.234	0.205	0.195

*Note.* Schools are numbered differently here than in other tables to ensure participant confidentiality. Schools included in our study are highlighted.

\* $p < .05$ .

For each group, we nominated the magnet school with the largest “magnet effect” in ELA and/or math, regardless of whether the effect was statistically significant. The interviews were intended to get more “on-the-ground” perspectives on the value of magnet schools and the factors that might make a difference in their success.

In our second stage of site selection, we took a qualitative approach to complement the quantitative approach above. We sought input on our nominated schools from our evaluation partner and the district magnet director. The magnet specialists at AES had conducted three site visits per year (during each grant year) at all the group schools. The magnet director was even more familiar with the on-the-ground conditions and relative competence of the magnet schools in the district. We asked them to consider whether the magnet schools we had nominated seemed like a good choice for study participation and whether they had any reservations with identifying the schools as relatively the most effective. Their input led us to a final sample of eight schools across six districts. These are highlighted in Table 1.

## Participant Selection

Because we wanted a breadth of perspective on magnet implementation—from day-to-day classroom practices to programmatic differences between schools—we sought to interview

district magnet directors, principals, magnet resource teachers (MRTs), and teachers who were present at the school during the final year of the grant. We were successful with the exception of one principal who arrived after the identified year. At some schools we were unable to find willing participants in all four roles; at other sites, we were able to interview multiple participants in a single role. One school, for example, is situated in a district with two magnet directors, both of whom agreed to participate. For each school, we have at least two and no more than six interviewees. Table 2 shows the distribution of participant by role and schools across our sample. We recruited participants with the help of AES. Participants received \$20 for their time, and our sample was limited to those willing to participate.

Table 2  
*Number of Participants Interviewed at Each Study School, by Role*

Role	Study school								Total
	1	2	3	4	5	6	7	8	
Magnet director	1	2	1	1	1	2	1	0	9
Magnet resource teacher	2	1	1	1	1	0	1	1	8
Principal	2	1	1	1	1	1	1	0	8
Teacher	1	2	1	2	0	1	0	1	8
Total	6	6	4	5	3	4	3	2	33

*Note.* Schools are numbered differently here than in other tables to ensure participant confidentiality.

### School Characteristics

The distribution of grade levels in our sample is as follows: one elementary, one elementary-middle, two middle, one middle-high, and three high. The magnet themes of the schools include STEM (some schools focused on engineering or information technology, in particular), art, media, language, and communication. The MSAP applications of all but one school in our study describe a commitment to some form of project-based learning (PBL). We will use this term to mean, “a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging and complex question, problem, or challenge” (Buck Institute for Education, 2017). Some schools considered this pedagogical approach to be part of their magnet theme.

The schools in our study range in size from about 150 to 700 students, and the percentage of students who qualify for the National School Lunch Program ranges from 60 to 100. While the racial composition of the schools varies, none are majority White and over half are majority African American or Hispanic.<sup>3</sup> These school characteristics are summarized in Table 3.

<sup>3</sup> These numbers refer to the final year of each school’s MSAP grant.

Table 3

*Characteristics of Study Schools, Including Total Enrollment, Enrollment in the National School Lunch Program, and Racial Composition*

Characteristic	Study school							
	1	2	3	4	5	6	7	8
Total enrollment	145	282	329	397	409	649	665	716
% enrollment in NSLP	61.3	80.3	100	83.3	90.5	84.0	84.5	72.4
% Hispanic	29.0	57.1	65.2	44.9	18.9	75.2	3.9	37.4
% White	48.4	14.1	0	6.4	4.2	3.3	34.1	28.8
% African American	9.7	22.9	34.8	48.7	76.8	14.0	59.7	12.1
% otherwise identified	12.9	5.9	0	0	0.1	7.5	2.3	21.7

*Note.* Schools are numbered differently here than in other tables to ensure participant confidentiality.

## Data Collection

Our open-ended interview protocol (see Appendix) includes five questions (1a, 1b, 2e, 5, 6) designed to elicit data for RQ1; they invite participants to reflect on differences between their school and other area schools or schools where they have worked. Three questions (3c, 3d, 4c) probe for insights into RQ2; participants are invited to reason about the underlying logic of magnet schools, and the relationships among instruction, performance, and student engagement. Because we did not know ahead of time how participants would respond to these questions, the remainder of the interview protocol probes a variety of topics including demographics, the school's magnet theme, instruction, student engagement, resources, leadership, and professional development. This interview design allowed us to use a consistent protocol while still collecting details about the themes that emerged during the interview.

We asked all participants to base their responses on their recollection of the final year of their school's grant.<sup>4</sup> Interviews lasted, on average, 45 minutes. They were audio-recorded, transcribed, and deidentified prior to analysis. Throughout this report, we include quotations, which are coded to indicate the participant's role. We use "MD" for magnet directors, "P" for principals, "T" for teachers, and "MRT" for magnet resource teachers. All quotations reflect participants' interview responses, except where we have redacted identifying information (e.g., the names of participants' colleagues or schools, particular magnet themes, etc.) or made

<sup>4</sup> Because we selected sites based on student achievement data (which was not available until the subsequent school year), we were unable to interview participants immediately after the school year in question. Study preparation and district/IRB approval also had to be in place prior to data collection. For these reasons, interviews about experiences in 2012–2013 were conducted in 2015–2016, and interviews about experiences in 2015–2016 were conducted in 2016–2017.

minor adjustments for readability (e.g., deletion of conversational fillers like “umm,” “like,” or “you know”).

## Analysis

Both of our research questions are exploratory, not confirmatory. Our primary goal was to *uncover* our participants’ perceptions and logic, not to map these onto an existing framework.<sup>5</sup> To this end, we used Charmaz’s (2006) two-phase approach to grounded theory analysis. During Phase 1 (open coding), we used unstructured annotations to keep track of repeated patterns in the data. Based on our understanding of these patterns, we developed a codebook and definitions for these patterns, which we used during Phase 2 (focused coding) to formally code our data. This allowed us to determine which themes were mentioned most frequently and whether they tended to be mentioned by a particular type of participant or at a particular school. This iterative phase of analysis involved several adjustments to our codes to reflect what we observed in the data. These two phases were sufficient to answer our first research question. To answer our second question, we recoded our interviews using causation coding and chain-of-evidence analysis (Miles et al., 2014) to develop a logic model that would unite the themes identified in Phase 2.

## Limitations

During data collection, we did not adapt our protocol for individual interviews, nor did we revise it over the course of the study. This systematic approach ensured that all participants had the same prompts and opportunities to discuss their schools, but it meant we were unable to investigate unanticipated themes when they surfaced. For example, our analysis revealed that participants perceive teacher commitment to be a distinguishing school characteristic. We were able to identify and analyze this critical feature, but our evidence might have been more robust had our protocol included a question about teacher commitment.

At three of our sites, we were only able to interview two or three participants. This puts the representativeness of each school sample at risk: it is possible that those we interviewed have unusual perceptions that would not be corroborated by a larger sample. Our data rely on participants’ recollections which might have been compromised by the 1- to 3-year gap between the year in question and when the interview was conducted. Because participation was voluntary, there might be systematic bias in our sample. During the final data coding and analysis stage, we realized that we were not explicit in our descriptions of these schools. At times, we told the school personnel that their schools were performing well when the effect was not statistically significant. Finally, because some of our questions pertain to school performance and the use of MSAP resources, social desirability bias might have influenced participants’ responses.

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<sup>5</sup> The discussion of findings in this report will show how our study both corroborates and adds to existing theory. But our analysis begins, theoretically speaking, with a “clean slate” and uses an interpretive methodology.

## Findings for RQ1

Open coding generated an initial set of 21 codes that captured participants' perceptions of what makes their school unique. We set aside six of these codes because they related to definitional aspects of magnet schools (e.g., "having a magnet theme sets the school apart") or structural elements of the school (e.g., "the school serves an unusual grade span"). For completeness, we list these themes and their prevalence in Table 4. Participants at five schools believed their school's small size to be an important distinguishing characteristic, suggesting a possible interaction between magnet implementation and total enrollment.

Table 4

*Structural or Definitional Characteristics That Participants Believe Set Their School Apart*

Characteristic	Number of participants who mentioned this	Number of schools where this was mentioned
The school serves an unusual grade span (e.g., a combination middle-high school).	1	1
Other local magnet schools do not serve the school's grade span (e.g., "we are the only elementary magnet in the area").	3	2
The school's racial and/or socioeconomic composition is unusual.	6	4
Having an MRT sets the school apart.	8	5
The school's small size sets it apart.	15	5
Having a magnet theme sets the school apart.	18	8

During focused coding, we condensed our themes and set aside three that were only mentioned at a single school.<sup>6</sup> In our determination of which of the remaining 11 themes were most prevalent, it made no difference whether we defined "prevalent" by looking across schools (i.e., which themes are mentioned by more than a third of participants altogether?) or by looking within schools (i.e., which themes have schoolwide agreement<sup>7</sup> at most of our schools?). Both strategies produced the same five themes, as shown in Table 5. We refer to these throughout the paper as the five critical features of magnet schools. After identifying these critical features, we analyzed how participants described them throughout their interviews. We present our results in the following sections.

<sup>6</sup> These included providing transportation, having a well-developed special education program, and having a long history as a magnet school.

<sup>7</sup> We defined "schoolwide agreement" to mean that multiple participants at the school mentioned this theme.

Table 5

*Functional Characteristics That Participants Believe Set Their School Apart*

Characteristic	Number of participants who mentioned this	Number of schools where this was mentioned	Number of schools where this was agreed upon
Academic Rigor	1	1	0
Change in Staff or Leadership	3	3	0
Consistent Staff or Leadership	4	4	0
Time and Structures to Support Teacher Planning, Mentorship, or Collaboration (e.g., Professional Learning Communities)	2	2	0
Community Partners (e.g., collaboration universities, businesses, industry professionals, etc.)	5	3	2
Technology	7	4	1
School Leadership <sup>a</sup>	13	7	4
Professional Development <sup>a</sup>	15	6	5
Teaching and Learning <sup>a</sup>	15	7	6
School Culture <sup>a</sup>	16	6	4
Teacher Commitment <sup>a</sup>	16	7	5

<sup>a</sup>Identified as one of the five most prevalent characteristics and a critical feature identified and explored in the study.

### Critical Feature 1: Teacher Commitment

Participants emphasized that the commitment of teachers at their school is exceptional. Descriptions of teachers' orientation to their work and students included "absolutely dedicated," "driven," "engaged," "highly motivated," "inspired," "on board," "really focused," "so committed," and "passionate about what we do." This commitment was often discussed in broad terms—for example, "everybody is there to help the kids in every way possible" (MD2)—but when participants gave specific details, they tended to mention working long hours or weekends to plan, collaborate with other teachers, or participate in professional development (PD); taking on an unusually heavy teaching load; being involved in after-school programs; or voluntarily spending their lunch period with students.

One facet of this deep commitment is the relationships teachers cultivate with students, which are understood to enrich students' learning by creating an atmosphere where students feel secure and comfortable talking about their confusion and incomplete understanding. Here

is one student's description<sup>8</sup> of that atmosphere: "We are a very transparent school. When something doesn't—like, when I don't understand something—as a student—I just go up and I'm like, 'I don't understand this. I feel like it would be helpful if we did it again on the board'" (P8). Close relationships also allow teachers to tailor learning experiences to suit individual needs and talents:

Knowing my students as a learner and as a person, I am just seeing lessons talk to me: "Yeah, so-and-so, this is going to be perfect for them." And sometime I do that. Sometimes I target certain students with some lessons.... I really focus on developing that relationship with my students to know where are their strengths and their needs? and what is something that's going to help them or not? (T4)

## Critical Feature 2: School Culture

Many participants pointed to their school's culture as a distinguishing characteristic, and their descriptions tended to center on two subthemes.

### ***Subtheme 1a: Students Value and Take Ownership of Their Learning***

Participants believe that their school culture is unique in terms of the value students place on their own scholarship. Participants described how students take pride in their learning and take it seriously, an attitude that one magnet director attributes to messaging from school staff: "I think the way the leadership and the teachers talked about the school created a little bit greater sense of self-importance among the students and sort of taking themselves a little bit more seriously" (MD7). Other ways of promoting this sense of importance included showcasing student work outside the school; finding opportunities for students to engage with professional, industry, or university partners; and helping students submit their work to state or national competitions.

Participants explained that students' belief in the importance of their learning is often accompanied by a strong sense of ownership, and this is fostered in various ways. At one school, teachers and students decide jointly how to pace instruction and schedule assessments. One principal related that students run their quarterly family conferences. Many participants mentioned that posting learning objectives for each lesson is one way that "students are asked to take more responsibility for their learning" (MD9).

### ***Subtheme 1b: Diverse Student Body Is Highly Integrated***

Participants uniformly described their schools as highly integrated (with regard to interactions among demographically dissimilar students). Most reported that the racial, geographic, and socioeconomic backgrounds of students do not tend to dictate friendships (or romantic interests, in high schools), as reflected in this teacher's description of their students'

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<sup>8</sup> A principal at one of our schools believed it was important for students to be involved in the study, so they invited three students to participate in the interview.

interactions: “They date each other. They don’t really congregate according to race.... And there is no, ‘here is a table of Black kids’ and ‘here is a table of Latino kids.’ It’s never like that. It’s all just everybody—just mashed in together” (T7).

Participants described how their school strategically used heterogeneous grouping (in class rosters, seating arrangements, project teams, advisory/homeroom assignments, etc.) to promote integration. They also explained that students collaborate over shared interest in the theme, and this is a powerful motivation to disregard demographic boundaries. At meetings of one school’s theme-based club, “it doesn’t matter who the student is or where they come from, they are treating each other with respect. They have rotating leaders and everyone shows deference to the leader of the day” (P3). One principal also explained how enrolling across geographic boundaries fosters integration:

I would say—because it’s a very diverse environment, both racially and geographically—it doesn’t have sort of the clique culture that a lot of high schools have. Because so few kids come in here knowing many other kids. And so few kids come in here with friends who live right near them, and things like that.... So the school is a little bit of a separate culture from a lot of the places where kids live. (P5)

While not observed at all sites, participants at two sites attribute their high integration to a schoolwide willingness to have frank discussions about race, socioeconomic status, and inequity: “There’s a difference in our building in a willingness to have really sticky, uncomfortable conversations and to not always have answers and to be able to say, ‘I don’t have all the answers and so we’re just going to try’” (T8).

### Critical Feature 3: Teaching and Learning

The third critical feature is the way the magnet theme shapes pedagogy. In particular, participants described two practices of teaching and learning:

- extended, student-directed learning experiences centered on the magnet theme, sometimes culminating in authentic products for real-world audiences (i.e., PBL or variants thereof), and
- integration of the magnet theme into general courses.

These practices often involve cross-curricular planning around the magnet theme (i.e., co-planning by teachers of different subjects) and were frequently described in combination: teachers of general and magnet subjects coming together to plan extended learning projects.

Many participants pointed out that these practices require sophisticated preparation, described by one teacher as “operationally ... very confusing and difficult” (T2). A common belief is that, for some teachers, incorporating student-directed learning experiences means a substantial shift in how lessons are planned and how class time is spent. According to one teacher, this shift “is a real scary thing for some teachers and some teachers had a hard time



letting go of the control of the classroom environment and trusting the kids to actually learn it” (T7). Participants at most of our schools repeatedly underscored that these practices are hard and must be supported. The theme of teacher support will recur at several points below; it is discussed more fully in answer to RQ2.

### Critical Feature 4: Professional Development

Participants perceive that professional development (PD) opportunities make their school unique. They see PD as shifting teachers’ philosophy—“I think that [PD] was really instrumental in changing the teachers’ view of *what is teaching*” (T7)—as well as their facility in theme-based pedagogy. One teacher explained:

I think a lot of our teachers have been able to take some risks and challenges in their classroom and kind of gone outside of their comfort zone because of different strategies, skills that we have been taught through our PD on integrating [the magnet theme] and what that can really look like in your class every day, lesson to lesson. (T4)

Table 6

*Participant Commentary on the Quantity of PD Provided at Their School*

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“Enormous quantities of professional development” (MD1).

“We had so much professional development” (T7).

“We just had a lot of different PD’s—a lot of Saturday PD’s—that a lot of other schools don’t always have” (T6).

“The teachers at this particular school had access to way more professional development opportunities” (MD3).

“We were very rich in professional development” (P3).

“The level of professional development that the teachers had access to ... was huge compared to many of the other regional schools” (MD5).

“The amount of professional development that teachers got to do was amazing” (MRT8).

“There is just so much” (T4).

“We were forced to provide a lot of professional development for teachers” (MRT1).

“We just hit professional development so hard” (MRT2).

“We have a ton” (P2).

“Oh God, we had so much” (MRT7).

“We have gotten a lot of professional development” (T5).

“There are substantial opportunities for professional development” (T2).

“We had professional development on anything you can probably think of” (T1).

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Most participants (across schools and roles) perceived that teachers at their school participate in an unusually large amount of PD (see illustrative excerpts in Table 6). They described some combination of three strands of PD<sup>9</sup> elaborated here and illustrated in Table 7:

- Instruction: developing teacher’s capacity in the two “teaching and learning” practices described in the previous section.
- Technology: developing teacher capacity to use new or unfamiliar technologies themselves and integrate technology into student learning experiences.<sup>10</sup>
- Magnet theme expertise: developing teacher content knowledge of the magnet theme and (for teachers of general courses) connections between the theme and their subject area.

Table 7

*Descriptions of the Three Primary Strands of PD Provided at Study Schools*

PD strand	Description
Instruction	“And so those are the things that came out of this PD time. You know we were able to come up with really great projects and projects that our teachers could collaborate together on or create sort of an interdisciplinary project. Whether it was the math teacher working with the programming teacher. They were all able to walk away with interdisciplinary projects” (MRT1).
Technology	“[The magnet resource teachers] were definitely a support in the classroom when we were all learning how to use this new technology that we never had before. It was really difficult for us to shift from being a school with no technology to now having everything. So they definitely went above and beyond to learn how to use the technology, so that when we did have questions or issues, they would come in to support us” (T5).
Magnet theme expertise	“I felt like our faculty did a really good job of meeting with some career engineers and experiencing engineering.... Like coming up with an idea, building something that’s a prototype, and then testing it, and then revising your work and communicating your ideas—that’s basically the engineering design process.... We could get [students] to do engineering projects and thus teach the engineering standards, but we could also get them to see that the engineering design process is just like the writing process” (MRT2).

<sup>9</sup> We list these strands separately but we found that they often overlapped, especially at schools where technology or a specific pedagogical approach *is* the magnet theme.

<sup>10</sup> This is perhaps not surprising, as the MSAP applications of all schools in our study—even those where technology is not part of the magnet theme—describe a technology-infused curriculum.

One idea that emerged consistently in discussions of PD was that teacher capacity with respect to these three strands varies significantly, thus PD must be differentiated. This might look like graduated expectations for teacher practice or different levels of support:

There were some teachers that I checked in with multiple times a week. Some of it was instruction, some of it was curriculum writing. It was sort of a lot of different—problem solving, classroom management, pieces like that. There were other people that I just did curriculum-writing pieces with. And there were people that I met with probably the least frequently—probably like once a month. (MRT8)

## Critical Feature 5: School Leadership

In our analysis of the preceding four critical features, we observed consistency among all participants. For example, teachers—as a group—had the same understanding of school culture that school principals did. But we did find that different types of participants tended to emphasize different aspects of school leadership. To be clear, the four subthemes we present below were all discussed by all types of participants, but each emerged as the priority of one type of participant.

### ***Subtheme 5a: Leaders Work Closely With MRTs (Emphasized by MRTs)***

The close working relationships that school leaders form with MRTs are seen (particularly by MRTs) to be key. Principals see their MRTs as valuable assets, describing them as “instrumental” (P4), “really pivotal” (P3), “awesome” (P6), and “a significant part of success” (P5). These relationships are supported by MRT presence on leadership teams and constant communication (often multiple times throughout the day). Principals (especially those with a nonmagnet background) seek and take advice from MRTs, endorse them as building leaders, and rely on them as experts in magnet-specific curriculum and teacher development. Here is one MRT’s description of their relationship with their principal:

He supported us pushing into grade-level teams or just having grade-level team meetings, and doing full-blown professional development with the full faculty. He supported us in a way that I am sure that the other principals did not support.... He took cues from us—because he was a first-year principal at that point—he took a lot of cues from us about what he should require of teachers. (MRT2)

### ***Subtheme 5b: Leaders Prioritize the Magnet Theme (Emphasized by Magnet Directors)***

Many participants, magnet directors especially, value the way their school leader is “highly committed to the magnet themes” (MD1) or “fully on board with the theme” (MD9). And principals discussed assembling leadership teams that are equally dedicated to the theme. This administrative buy-in is seen as contagious, as this MRT explained: “I would say the trickle-down effect of that was that the teachers also bought in.... You know—we actually had the

themes going. The kids were aware of the themes. The kids could talk about the themes intelligently” (MRT2).

What does “prioritizing the magnet theme” look like? Participants explained that when principals face decisions that involved competing priorities, the theme wins out: “She has not prioritized testing over magnet; she has not prioritized the standard district curriculum over magnet” (MD4). Leaders support theme implementation by establishing schoolwide or individualized programs of professional development and (for leaders with instructional expertise) by coaching teachers directly. Leaders who prioritize the theme understand that magnet implementation cannot occur without adequate time for teachers to plan and collaborate; they allot (and protect) time in the school’s schedule for both. One teacher explained, “They made sure that there was always dedicated time for this planning, and there were always opportunities for teachers to be involved and work together on grade levels—whether it be coverage or making time after school to do this” (T5).

#### ***Subtheme 5c: Leaders Shape Student Culture (Emphasized by Principals)***

School leaders themselves talked most about their role in shaping school culture, specifically student culture. They take obvious pride in their close relationships with students, describing how they welcome students before school, greet them by name in the hallway, correspond individually with them via email, and are—in the words of one principal—“in classrooms all the time ... to the point where teachers and kids just didn’t react. I would go into a class and they’d just say, ‘okay, [principal name] is in the classroom’” (P7).

In addition to building relationships with students, leaders help define “how students [see] themselves and [see] the school” (MD7). This involves underscoring the goal and importance of student learning by spending time in classrooms, talking to students about their work, and promoting the school in the community. It also involves establishing clear expectations for behavior and respect, implementing schoolwide discipline structures, intervening to support teachers with classroom management, and counseling disruptive students.

#### ***Subtheme 5d: Leaders Support Teachers (Emphasized by Teachers)***

All types of interviewees discussed support for teachers, but this aspect of school leadership is especially important to teachers, who described how their principals respect them as professionals and facilitate their work. They explained that trust from their principal is essential to their implementation of the magnet theme:

I think what I mentioned before was the trust. Like, “We’re learning about inquiry-based learning, these are the strategies. These are the things you can do, try it out. I trust you. As an administrator, I trust *you as a teacher*. Try it out. If it works, great. But share. And if not, let’s brainstorm and see how we can make it better.” (T3)

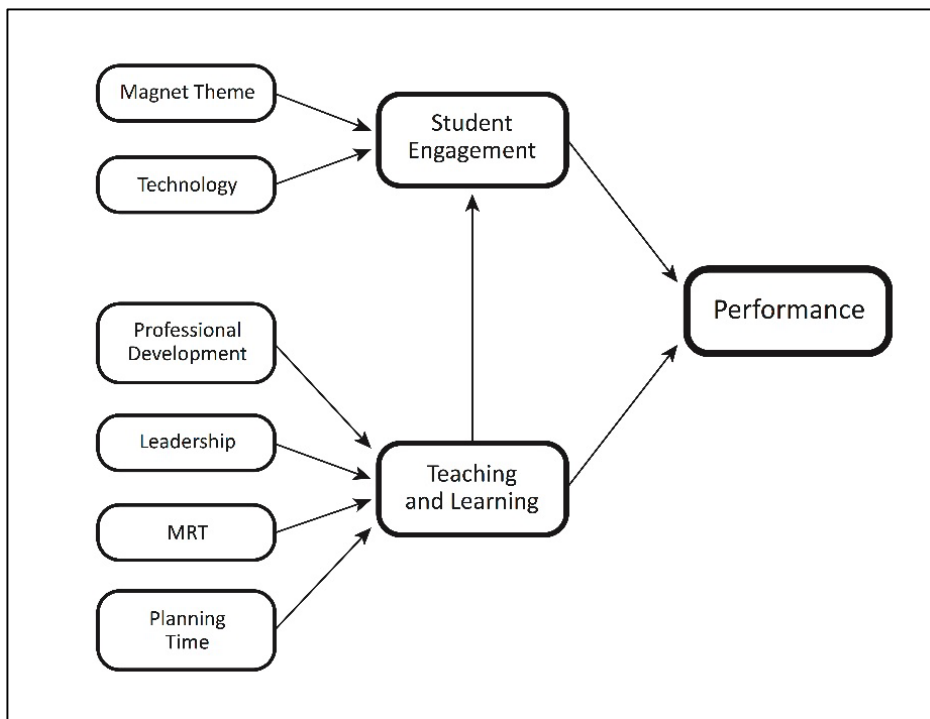
Some principals understand teacher support to involve protection. A few described acting as a buffer between teachers and parents (or between teachers and district officials, in one case), but many more described the importance of establishing a schoolwide culture of respect for their teachers. Several teachers believe this type of support to be a prerequisite to magnet implementation. One teacher explained, “You’ve got to have support—strong administrative support—for your decisions in the classroom in regard to classroom management, because you have to have classroom management before you can even begin to teach [the magnet theme]” (T2).

## Findings for RQ2

We gathered evidence for our second research question by analyzing the causal connections participants made as they discussed how their school works. Collectively, these patterns of reasoning suggest the logic model presented in Figure 1. To be clear, no single participant articulated this model in its entirety; rather, it depicts an aggregate understanding. If each participant’s logic were drawn on a clear sheet of plastic, Figure 1 is the result of stacking all 33 sheets. In the sections below, we elaborate on the arrows in the figure.

Figure 1

*A Model Depicting Participants’ Understanding of the Logic of Magnet Schools*



## Student Engagement Explains the School's Performance

Many participants believe “there is that level of success because there is the interest” (MD2) and they explained that when students are interested, they remain on task and present fewer behavior problems that might jeopardize their learning. One magnet director explained, “When kids are excited in what they’re doing, they’re less likely to do things that will take them away from that learning” (MD8). This engagement is understood to promote not just learning of thematic content, but general content as well: “It makes sense that they’re performing better because they’re interested in the material—even in the classes that you wouldn’t think they would be” (MD3).

## Practices of Teaching and Learning Explain the School's Performance

The second way participants accounted for their school’s performance was the nature of teaching and learning at the school. Participants believe that students learn more effectively when they make connections between content areas, and they explained that a theme-integrated curriculum encourages these connections:

When you give a specific theme to a school ... it’s going to give all teachers in the school a focus for what they’re teaching and how they’re teaching it. So absent a theme, absent an integrated approach, the teachers are left on their own to pick ideas that they may be interested in, to identify books they may be interested in.... All research will show that when you integrate, student outcomes are better than when students are just getting something in ELA, getting something in math, and there is this disconnect in the way that they learn. (MD4)

Participants also believe extended, interdisciplinary projects lead to better learning. One explanation for this effect is that collaborative planning ensures complete coverage of the curriculum: It prevents scenarios where each teacher assumes another teacher is covering a particular topic, but in reality no one is. Another explanation is that these projects give students a sense of schoolwide support and accountability: “[Students] know the entire time that they’re on this project, their entire team of teachers is supporting one project” (P5).

## Technology Explains Student Engagement

When prompted for anecdotes about student engagement (interview question 4a), nearly half of the participants shared stories that involved students’ keen interest in technology. They often expressed ideas similar to one principal’s observation that “A lot of times, the kids get more engaged in learning what they’re supposed to be learning because they’re able to do technology or related projects” (P4). Participants described how grounding student learning in technology “made things even more engaging” (T1), “heightened their interest” (T4), “make[s] them want to focus” (MD8), etc.

## The Magnet Theme Explains Student Engagement

Many participants also understand engagement to derive from innate enthusiasm for the theme: students are interested in learning that involves the theme because they see the theme as important, personally significant, or relevant to their career paths. Some participants pointed out that for some students, theme-infused content is simply easier to learn: “There are some students who really connect to that [theme] piece of it—that’s how they understand and that’s how they obtain the information” (T3).

Participants explained that students’ innate interest in the magnet theme deepens their engagement, not just in theme-specific learning (e.g., becoming proficient in coding or film editing), but also in general subject-area learning that incorporates the theme. One magnet director describes this as “hiding” the general content behind the theme and explained:

If students are interested in [a theme-based project], they are going to be more engaged in how to write [for that project], which we can hide: we are actually learning how to write, period. Grammar, subject-verb agreement, flow ... all the elements of writing are within the [theme-based project] ... and they are not even realizing they are learning—basically—English grammar. (MD3)

## Practices of Teaching and Learning Explain Student Engagement

Many participants attribute student engagement to the nature of teaching and learning at their school. They perceive student-directed learning to be important: “As long as teachers are teaching with student-centered kinds of activities, students can’t help but be involved” (P1). And they believe that students engage more deeply when their learning involves authentic end products or real-world audiences. One principal described how this works at his school:

[Students] have multiple opportunities during their time in the school to work with people out in the world. So when you’re getting ready to present to the city council—or when you’re getting ready to host folks in your classroom—or when you’re going out to the back of the school and doing water-quality tests on the brooks and streams where your brothers and sisters and nephews and nieces play ... you’re going to be far more engaged in that work than if you’re filling out a worksheet. (P7)

Participants also believe that when student learning is project-based and draws on multiple content areas, students tend to be more engaged because they have multiple ways to engage with the learning. In the words of one teacher:

[PBL] allows for engagement because if a student is not necessarily a great reader but they’re strong in math, or they’re strong in building, it works to their advantage because it always allows them to have some kind of way to be creative with what they are good at. (T5)

## Teachers Are Supported in Four Ways

As participants related teaching and learning to the school’s performance, they underscored the importance of four kinds of teacher support: professional development, leadership, the MRT, and dedicated planning time. Because the first two of these are critical features of the school in their own right, they were discussed above. We discuss the others here.

The range of MRT responsibilities that participants report is summarized in Table 8, where we see that a primary function of the MRT is to promote theme-based curriculum and instruction. Participants described how MRTs develop teacher capacity (primarily through individual coaching and group PD) and support teachers with day-to-day implementation (helping them develop theme-based projects or lessons, suggesting thematic resources, etc.). Regardless of whether technology is officially part of their school’s theme, many participants value the MRTs’ work to help teachers integrate technology into learning experiences. And several teachers and MRTs brought up the importance of basic technology support; anecdotes like the following were commonly shared: “I had the pen break for my board ... and [the MRT] was able to get everything fixed the very next day. And that plays a huge role.... You need the technology to work. If it doesn’t work, it’s really hard to complete your job” (T1).

Table 8  
*Roles of the MRT, as Described by Participants*

Role	Number of participants who mentioned this	Number of schools where this was mentioned
Assist with classroom instruction	3	3
Analyze student data	3	3
Recruit students/Advertise the school	5	3
Establish relationships with thematic experts or industry professionals	10	7
Act as a liaison with professional development providers	12	6
Handle administrative dimensions of the MSAP grant (submitting reports, documenting compliance, approving purchases, etc.)	13	6
Support theme-based curriculum and instruction	28	8

Many believe that project-based or theme-infused teaching (especially if it is unfamiliar) requires ample prep time, both individually and in collaboration with other teachers. Teachers explained the importance of dedicated time in the school schedule for collaborative planning.



Several participants pointed out that the amount of PD required by the MSAP grant makes this planning time even more critical. In the words of one MRT: “We had to just have that collaborative time. Like, ‘Okay, here is the new learning that we did last week. Now what is that going to look like at our content level or our grade level?’” (MRT1).

## Discussion

Our goal in this study was to understand magnet implementation as perceived by school and district personnel. We organized our research along two lines: the features that set apart magnet schools and the logic that accounts for their performance. We found five critical features that our participants believe make their schools unique: teacher commitment, culture, practices of teaching and learning, access to professional development, and school leadership. We also identified a model that illustrates the perceived logic of magnet implementation, including the following beliefs:

- school performance is a result of student engagement and practices of teaching and learning,
- student engagement is a result of intrinsic interest in the magnet theme and opportunities to learn with technology, and
- supports for practices of teaching and learning include professional development, leadership, the MRT, and dedicated planning time.

## Corroboration of Existing Literature

If we step back for a moment from the magnet context, our study echoes much of what we already know about effective schools in general. For example, four of our five critical features correspond to four of Bryk’s (2010) five “essential supports for school improvement.” Our explanation of “culture” suggests Bryk’s “student-centered learning climate.” Where we discuss, “practices of teaching and learning,” Bryk talks about a “coherent instructional guidance system.” Our findings about “access to professional development” are similar to Bryk’s description of a school’s “professional capacity.” And both studies identify school leadership as essential. Our participants did not emphasize Bryk’s fifth element, “strong parent-community-school ties,” and Bryk’s findings do not include our “teacher commitment.” Despite minor differences in conceptualization (e.g., Bryk’s “professional capacity” is broader than our “professional development”), the degree of overlap is striking.

The nature of PD in our study’s magnet schools also appears to align with what we know to be effective from the existing literature. For example, interviewees described high-dosage, long-term programs of PD (Darling-Hammond et al., 2009) that focused on content-specific pedagogy (Desimone et al., 2013) and were differentiated according to levels of teacher fluency (Antoniou & Kyriakides, 2013).

## Understanding Existing Literature in a Magnet Context

Insofar as our study reinforces existing research, it suggests a valuable, if simple, conclusion: Magnet schools work for many of the same reasons nonmagnet schools work. But the study does more than just affirm what we know about school improvement and PD. It also shows how these (and other) well-established principles of best practice play out in a magnet context, and how the design of magnet schools helps advance these practices. We discuss four of these practices below.

First, we know that professional development is more effective when it is embedded in practice (Cobb et al., 2003) and teachers are coached through implementation (Knight & Cornett, 2009). Magnet schools achieve this through their MRTs, who provide onsite, ongoing professional development including coaching.

Second, Barnes (2011) and others have shown that cross-curricular connections facilitate student learning. In magnet schools, multisubject, project-based learning experiences centered on the theme serve as a focal point for cross-curricular connections. Additionally, instruction is theme-based, even in general classes, and this facilitates learning connections across different subjects.

Third, it has been shown that students' engagement and ownership of their learning are important to performance (Headden & McKay, 2015; Skinner & Pitzer, 2012). By design, magnet schools organize learning around a theme students find intrinsically interesting, and theme-based or project-based learning fosters student ownership of learning.

Fourth, we know that collaborative planning among teachers improves student outcomes (Ronfeldt et al., 2015) and requires sufficient time (Akiba & Liang, 2016). Our participants explained how time is protected in their school's schedule for teachers to collaboratively plan multisubject, project-based learning experiences.

## Future Research

This exploratory study provides valuable evidence about the practices of magnet schools, but it was subject to a number of previously noted limitations. In order to validate the results presented here, future research must expand on the present study in two directions.

First, a larger scale, comparative study is needed to determine whether the critical features and logic model we identified reflect the perceptions of personnel at magnet schools more generally—perhaps our findings are specific to our eight-school sample. This study could also investigate whether project-based learning is common in magnet schools or whether its prevalence in our sample is coincidence.

Second, now that we have a sense of what may be the important features and logic of magnet schools, more focused work is needed to dig deeper into these aspects of implementation. Rather than using grounded theory to cast a broad net, this work would begin

where the present study ends, specifically investigating the critical features and logic model we identified. Such focused work could paint a richer picture of magnet success and provide both practitioners and policymakers with guidance for creating and sustaining effective magnet schools.

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## Appendix: Teacher Interview Protocol

This is the interview protocol used for teachers. Slightly different versions were used for principals, MRTs, and magnet directors. For example, MRTs were not asked about student engagement (because their interactions are mainly with teachers and administrators). Magnet directors were not asked about the role of the MRT (given their distance from the day-to-day workings of the school), but they were asked about the connection between the theme and school climate (because we thought their perspective might give them unique insight).

1.
  - a. What sets apart \_\_\_\_ from other schools in your area?
  - b. What sets apart \_\_\_\_ from other magnet schools in your area?
2.
  - a. Tell me a bit about the school's demographics.
  - b. How integrated is the school as a whole?
  - c. Does this vary classroom to classroom? What does it look like in your classroom?
  - d. How do you perceive the interactions between racial groups among students? Do any anecdotes/stories come to mind?
  - e. How does racial integration/interaction here differ from other schools where you've taught/worked?
3.
  - a. Tell me a bit more about the school magnet theme.
  - b. How/why was it chosen?
  - c. How does it shape/direct instruction?
  - d. Do you think your school's performance would be different if the theme were different?
4.
  - a. How engaged are students in your school's classes, especially during the magnet units?
  - b. Any stories come to mind?
  - c. Does the magnet theme affect student engagement, as you see it?
5. What resources are available to students here that you have not seen in other schools in the district and other magnet schools in the district?
6. What resources are available to teachers here that you have not seen in other schools in the district and other magnet schools in the district?
7. Tell me a bit about the Magnet Resource Teacher, his/her role, and how you interact with him/her.
8. Tell me a bit about the administration, their role, and how they interact with teachers here.
9. Tell me a bit about the professional development offered to teachers here.





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