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The Formalized Processes Districts Use to Evaluate Mathematics Textbooks

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Textbooks are a widely used educational intervention that can affect student achievement, and the marginal cost of choosing a more effective textbook is typically small. However, we know little about how textbooks get from the publisher to the classroom. We use a lens of institutional theory and interviews with district leaders in a stratified random sample of 34 California school districts to investigate the ways mathematics textbook adoption practices vary and predict adoption decisions. We find isomorphic, highly formalized adoption processes in most districts. However, we observe some differences along dimensions of district size, technological interest/infrastructure, and English learner concentration. We recommend states produce and update lists of high quality materials early and often, and that they use a highly rigorous evaluation process. We also recommend states experiment with encouraging similar districts to partner on textbook evaluation and adoption to respond to district demands for information and capacity building around curricula.

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Abstract

Textbooks are a widely used educational intervention that can affect student achievement, and the marginal cost of choosing a more effective textbook is typically small. However, we know little about how textbooks get from the publisher to the classroom. We use a lens of institutional theory and interviews with district leaders in a stratified random sample of 34 California school districts to investigate the ways mathematics textbook adoption practices vary and predict adoption decisions. We find isomorphic, highly formalized adoption processes in most districts. However, we observe some differences along dimensions of district size, technological interest/infrastructure, and English learner concentration. We recommend states produce and update lists of high quality materials early and often, and that they use a highly rigorous evaluation process. We also recommend states experiment with encouraging similar districts to partner on textbook evaluation and adoption to respond to district demands for information and capacity building around curricula.

Keywords: curriculum, textbooks, school districts, teachers, state policy

In recent years U.S. education scholars have called for increased study of the role of curriculum materials, such as textbooks[1], as a potential policy intervention to improve student learning (Chingos & Whitehurst, 2012; Confrey, 2006; National Research Council, 2004). Textbooks have been the primary curriculum material used by teachers since the mid-1800s, and they remain nearly universal in their reach as a policy instrument—nearly all U.S. teachers report using textbooks on at least a weekly basis (e.g., Ball & Cohen, 1996; Farr & Tulley, 1985; Opfer, et al., 2016; Reys, Reys, & Chavez, 2004). Improving student achievement and other desired outcomes through exposure to better textbooks (and other curriculum materials) is an appealing policy intervention; several recent studies show that the choice of one textbook over another, at least in mathematics, can have meaningful effects on student achievement, though we know of no large-scale causal studies on attitudes or other desired outcomes (Agodini & Harris, 2010; Bhatt & Koedel, 2012; Author, 2017). Moreover, it is well-documented that textbooks vary broadly along other dimensions, such as content coverage, meaning that students may be exposed to different content based on the materials used in their classrooms (Schmidt & McKnight, 2012). Differences in access to high-quality curriculum materials are thought to be so important that families in California successfully filed a civil suit against the state Department of Education arguing for regulation of the quality of adopted materials across the state (*Eliezer Williams, et al., v. the State of California, et al., 2000*).

A large body of research describes how textbooks are evaluated and selected at the state level. Another body of research focuses on the ways in which teachers implement the materials

[1] This analysis focuses primarily on textbooks, which we define as any curriculum material that covers a whole year's instruction. Thus, while some districts in our sample use books that are not bound (e.g., EngageNY), we still consider these textbooks. We also sometimes use the term instructional or curriculum materials, which refers to textbooks but also to any other curriculum material a teacher might use (e.g., an individual lesson downloaded from a website).

provided to them. We discuss this literature below. However, there is very little research about the role of the local school district in the textbook adoption process (we are aware of just one unpublished paper focused on school districts by Zeringue, et al., 2010). This is a limitation of the literature because districts are the unit ultimately responsible for which textbooks are adopted and used by students and teachers. Given districts' central role, policy efforts aimed at improving curriculum adoption decisions must understand and account for their processes. The objective of this study is to contribute to the thin literature on how districts choose curriculum materials.

Now is an especially appropriate time to study school district textbook adoptions for two reasons. First, the curriculum materials market is clearly changing. While textbooks remain prevalent, recent survey data indicate that teachers are increasingly using materials such as open education resources, adaptive learning software, and digital textbooks as well (Marple, et al., 2017; Opfer, Kaufman, & Thompson, 2016). While some of these resources are selected by individual teachers, the extent to which district adoption processes constrain or support the use of these non-traditional resources is unclear.

Second, curriculum materials may play an important role in supporting the implementation of the Common Core State Standards (CCSS) and other 'college- and career-readiness' standards. Standards-aligned materials such as textbooks are seen as necessary for providing teachers with consistent messages to successfully implement new standards (Smith & O'Day, 1990). The CCSS represent a shift in both content and pedagogy compared to previous sets of standards (Porter, et al., 2011). We do not know the extent to which districts consider standards alignment in their decision-making about new curriculum materials, or whether this has become more important with the CCSS. In many states, the department of education already compiles a list of vetted, aligned materials, but we do not know whether districts perceive these

lists to be sufficient or lacking, or the extent to which districts have their own processes they use to supplement efforts by the state in this regard.

For our study we interview 34 district leaders in California regarding textbook adoptions. We are interested in understanding the factors that drive the adoption of new materials. Understanding existing textbook adoption processes is essential to crafting policy that can result in better materials in the hands of teachers. A thorough understanding of textbook adoptions may offer leverage for identifying and ameliorating curriculum-related inequities (Bhatt, Koedel & Lehmann, 2013; Kurz, 2011; McDonnell, 1995; Schmidt, et al., 2001). Specifically, we address two main research questions:

1) How do California school districts make decisions about which textbooks to adopt in the core subjects?
2) How do adoption practices vary according to district size, performance level, or other descriptive variables?

We explore these questions with semi-structured interviews of school district leaders. We selected the majority of our districts using a stratified random sample based on three criteria that we expected to be associated with differences in curriculum material adoptions.

Using a lens of institutional theory (Meyer & Rowan, 1977), we find that districts adopt certain isomorphic processes for the selection and evaluation of curriculum materials. These processes include the use of district-specific selection criteria to narrow the field of options, the use of an evaluation rubric or toolkit, and the collection of teacher feedback, typically through the piloting of materials. District processes also vary in some ways; the differences are primarily driven by characteristics such as the proportion of ELL students and a district's technological infrastructure. We also find that small districts are constrained from adopting the elaborate,

formalized processes that exist in larger districts. We find little evidence that any external, objective evaluation source is consulted in most districts (e.g., just 5 of the 34 districts we interviewed considered reviews of materials from EdReports and none report being aware of or using evidence on the impact of textbooks on achievement or other student outcomes).

Our work identifies the state-approved curriculum list in California as a powerful leverage point for affecting which curriculum materials are adopted by individual districts, as districts rely heavily on the list. However, challenges we identify that impede the influence of the state list include (a) some districts lack confidence in the state vetting process, and (b) the timeline of waiting for state lists can be problematic, especially if state assessments are to be rolled out before the state list is approved. Our interviews also reveal clear interest among districts, especially smaller districts, in collaboration during the adoption process. Policy effort to help coordinate collaboration among districts that serve similar student populations and likely have similar needs would help to reduce the work burden for individual districts. It could also lead to improved adoptions by facilitating deeper reviews of the various curriculum alternatives.

Prior Literature

The Impact of Textbooks on Student Achievement

There is a great deal of attention in U.S. schools to improving student achievement and narrowing achievement gaps. Textbooks are seen as one potential intervention to accomplish these goals. There is a large and growing body of research showing that textbooks matter for student learning. One recent experimental study and several recent quasi-experimental studies demonstrate that elementary mathematics textbooks differ in their effects on student achievement. Agodini and Harris (2010) randomly assigned schools to use one of four elementary math curricula. They found achievement impacts as large as 0.17 standard deviations.

Using statewide textbook adoption data, studies in Indiana (Bhatt & Koedel, 2012) and Florida (Bhatt et al., 2013) have shown textbook impacts of similar magnitudes. In our own work, we have analyzed school-level textbook adoption data in California and found that a commonly adopted elementary math textbook raised student achievement by 0.05 to 0.10 standard deviations relative to three other books, and that the achievement effect persisted across at least the first four years post-adoption (Author, 2017). In that study, textbook effects also appeared to promote educational equity, as the impacts were twice as large for students who received free or reduced-price lunch than those who did not. These effects are especially noteworthy because the marginal cost of choosing one textbook over another is often very low (most textbooks cost about the same amount), so the cost effectiveness of this intervention is quite high (Boser, Chingos, & Straus, 2015).

The precise reasons why textbooks differ in their effects on student learning is not known. One hypothesis is that it is differences in textbook content that matter. Researchers have found evidence that textbooks themselves do vary in their cognitive demand and alignment to the standards (Author, 2015). There is also variation in the content covered both within grade levels and within subjects (Schmidt & McKnight, 2012). Another hypothesis is that some textbooks are easier to implement or come with more effective professional development. The evaluation performed by Agodini & Harris (2010) suggested that differences in teacher training were correlated with textbook effects, for instance. While more research is needed to understand mechanisms, it is quite clear that textbooks can affect student learning at scale. Of course it is also important to understand the degree to which textbooks and other curriculum materials affect other desired student outcomes—e.g., engagement, interest in the subject area. To our knowledge, non-test outcomes have not been evaluated in the large-scale causal literature.

Textbook effects on student achievement also have important equity implications. Differences in textbook quality were a central component in the *Eliezer Williams, et al., v. the State of California, et al.* civil case, in which the plaintiffs—over one hundred California students—argued that the state failed to provide equitable access to high-quality instructional materials. The settlement of the Williams case included allocation of additional funds for instructional materials in low-achieving schools, indicating that equitable access to high-quality materials is a matter of importance to both families and the courts.

State Textbook Adoptions

The first wave of research on curriculum materials rose in the 1980s and focused on the state-level textbook adoptions practiced in 22 states (e.g., English, 1980; Farr & Tulley, 1985; Follett, 1985; Tulley, 1985; Tyson-Bernstein, 1988). Adoption committees composed of educators and laypeople were implemented to evaluate the large numbers of textbooks available to local districts. The intention of the adoption committees was to conduct a meaningful study of alignment between curriculum materials and state standards, indicating to local districts that the approved materials satisfied the expectations of state guidelines. This was thought to not only ease the burden on local districts (evaluating curriculum materials requires time and human resources) but also to provide consistency in the quality of materials used in districts.

Researchers studying state-level textbook adoptions have been overwhelmingly critical of the process and claim that it 'perpetuates mediocre textbooks' (Farr & Tulley, 1985). This work argues that textbook publishers, trying to sell their books to the largest possible number of classrooms, write material that appeals to multiple sets of (often conflicting) state standards. As a result, the content of materials is broad but not deep and is largely determined by the standards adopted in the largest states, California and Texas (e.g., Bowler, 1978; English, 1980, Finn &

Ravitch, 2004). Publisher efforts to appeal to the needs of many states and many standards have historically resulted in textbooks described as "an inch deep and a mile wide" (Porter, 1989; Schmidt & McKnight, 2012).

A second wave of textbook research arose in association with the implementation of standards-based reforms, particularly the No Child Left Behind Act (NCLB). Curriculum materials are considered an important dimension to successful standards-based reforms, but teachers need materials that consistently reinforce the standards (McLaughlin, 1990; Smith & O'Day, 1990). Some scholars have expressed concern that NCLB—and the pacing guidelines and scripted lessons that it generated—negatively affected the quality of textbooks (Finn & Ravitch, 2004; Reys & Reys, 2006; Schmidt & McKnight, 2012). Publishers rushed to print books aligned to the new standards, but critics argued these volumes sacrificed quality to appeal to a broad market (e.g., Finn & Ravitch, 2004; Schmidt & McKnight, 2012). Furthermore, state adoption committees lacked the time to adequately evaluate materials, the training to use evaluation measures, research-based information about textbooks, and foundational knowledge of education research and pedagogy (Stein, et al., 2001).

School District Adoption Processes

As noted in the introduction, a prominent hole in the extant research literature is with respect to the role of school districts in evaluating and adopting new curriculum materials. We know of only one unpublished paper on this topic. Zeringue and colleagues (2010) analyzed legislative documents and interviewed over 150 K-12 district leaders in eight states. They identified four phases of a typical adoption cycle: preparing (forming committees, developing rubrics), narrowing (reviewing standards, sampling other districts), evaluating (using rubrics and piloting), and deciding (conducting a formal teacher vote or committee decision). The five

factors that mattered most to district leaders in making a final decision were alignment, anticipated level of teacher buy-in, evaluation of "quality" of materials, information from additional sources such as neighboring districts, and the advocacy of curriculum leaders for a specific program.

We aim to build on the Zeringue et al. (2010) study to both expand on the very thin evidence base on this important topic and update our knowledge base for the present era. Many states are moving away from formal statewide textbook adoptions (Gewertz, 2015). California—historically cited as one of the two states most influential to textbook publishers (e.g., English, 1980)—now follows an 'advisory' model, where the state Department of Education publishes a list of approved materials, but districts are not required to adopt from that list. The traditional understanding of a state adoption might be disrupted by more flexibility at the district level. Districts also have access to an unprecedented variety of curriculum resources (e.g., digital textbooks, collaborative online sharing platforms such as Teachers Pay Teachers and the Google Suite for Education, open education resources), and new tools and information are available to aid decision-makers in the adoption process (e.g., the Achieve the Core toolkit, independent evaluations from EdReports and the What Works Clearinghouse). Finally, there is no evidence to date on district adoption processes post-CCSS. These standards reflect a different content focus and level of cognitive demand than the standards previously adopted in most states (Porter et al., 2011).

Theoretical Framework

We use a lens of institutional theory (Meyer & Rowan, 1977) to study textbook adoptions in the context of organizational behavior and policy. Meyer and Rowan argue that formal organizational structures arise from a desire for institutional legitimacy. Organizations (such as

school districts) may adopt standard organizational structures to build legitimacy, particularly for practices that lack inherent objectivity (such as evaluating the quality of curriculum materials). Institutions look to one another to inform their practices, creating a tendency for institutions—especially those with similar characteristics—to adopt isomorphic organizational structures.

Examining textbook adoptions through this lens, we expect school districts to adopt broadly similar organizational structures and processes to evaluate and select curriculum materials. Based on prior research, we expect these processes to include a) formal personnel, such as Assistant Superintendents of Curriculum, to lead the selection and implementation of materials, b) committees of teachers to analyze the available materials and make an adoption recommendation, c) some sort of 'objective' or quantifiable measure to determine quality of materials, and d) approval by parents and/or school boards. We expect these ceremonial structures to be more elaborate in larger, more bureaucratic districts. We explore this factor by using enrollment size as one of the criteria in our sampling.

Research does not provide a consensus on what good curriculum materials look like, or even how to define or measure quality. Elaborate practices to evaluate curricula give the illusion that school districts know what they are doing and have the capacity to spend public dollars wisely. Traditional public schools are also being challenged with increasing competition from online, hybrid, magnet, private, and charter schools. We expect this competition to encourage traditional public schools to look to one another in developing complex evaluation and adoption processes. Our interview questions are designed to probe each district's process, characterize the roles of actors involved, and detail the steps taken to reach a formal decision. Our use of a stratified random sample allows us to compare and contrast processes across institutions that share similar characteristics. We are also interested in the potential involvement of external

stakeholders, who might be engaged in district adoption processes to enhance legitimacy through authority (Weber, 1947). Our interview questions probe on the roles of the important players outside of the traditional public school, such as community members and textbook publishers.

Institutional legitimacy provides a framework for examining differences in districts that choose to adopt textbooks from the state-approved list versus materials that have not been approved. Since the state changed its laws in 2013, California school districts have more control over the books they purchase (under the previous state policy, districts could only use state textbook funds to purchase on-list books). The state's list of approved textbooks is now merely advisory, meaning districts can choose any materials on or off the list, although if they select off-list materials, they must submit documentation that the materials meet the California standards. This process may be burdensome for districts, so we expect districts that adopt off-list materials to have resources that enable them to complete the additional documentation.

While districts have more flexibility in adoption decisions than in the past, our data show that the majority of districts still adopted on-list math books as of 2015-2016. This may reflect districts' trust in the California approval process, although it also makes sense that districts would continue to adopt from the state-approved list to increase the appearance of legitimacy because textbooks on the list have a degree of formal legitimacy that off-list books lack. This legitimacy is potentially important when districts present their chosen books to school boards and parents. We sampled districts based on whether they reported adopting an on-list or off-list book in the most recent mathematics adoption cycle, in order to probe whether processes or structures differed systematically between schools making these different decisions.

Test-based accountability measures add another layer of policy context to local district decision-making, including decisions about the curriculum materials that will help districts meet

accountability standards. State-level accountability measures meaningfully affect school policies and practices (Figlio & Loeb, 2011). We therefore expected that accountability measures would affect the formal structures and processes used by districts to make curriculum decisions, even though California has dramatically relaxed accountability in recent years (the state took a year off from administering assessments during the Common Core transition and has not used formal school accountability measures since 2013-14). We use student achievement levels (average math achievement)—a proxy for the threat of accountability and the urgency to improve school performance—as our third criterion in our sampling.

Background

The data for this project are nested within a larger, ongoing study of curriculum material adoptions in five states. We have collected data on adopted materials (title, adoption year, and grades used) in math in these states. We have linked these data with demographic and student achievement data to investigate questions about the equitable distribution of high-quality materials, the impact of specific textbook series on student achievement (Koedel et al., 2017), and trends in the usage of materials.

In California, one of the five states in our study, we have been able to collect information on adopted textbooks due to a condition of the *Williams* case settlement mentioned above. The plaintiffs, representing students and families in low-income schools, argued that the state was providing insufficient oversight over how resources were allocated to students. The state of California now requires every public school to publish information about the quality and availability of their textbooks on the yearly School Accountability Report Card (SARC) online.

While the SARC textbook data are a rich source of information for our quantitative work, they are not without their challenges. For instance, there is substantial variation in the quality and

completeness of the SARCs. In many cases, schools only report the publisher of a textbook (many publishers produce multiple series), and in other cases, schools only report using 'sufficient' materials. Additionally, the SARC data tell us nothing about the extent to which teachers actually use the materials listed, nor about how district decisions were made.

At the beginning of a textbook adoption cycle, the California Department of Education (CDE) publishes a call for materials, and publishers can choose to submit materials to be evaluated for state adoption. Materials are evaluated by a trained committee using an evaluation toolkit provided by the CDE. Historically, textbook adoptions have occurred on a 6- to 8-year cycle, with district funding for instructional materials following a state adoption. Recently, the restrictions on categorical funding in California have been relaxed, and now districts may choose materials from the state-approved list or may purchase any other materials provided they meet the requirements of the state standards. The most recent list of approved math materials was published January, 2014, although some schools began adopting Common Core-aligned math materials as early as 2012 (and thus did not have the list as a resource). However, most districts waited until after the state list was released to make a decision, with the majority adopting during the 2014-15 or 2015-16 school years.

Methods

Sampling

Our larger research project focuses on the selection, implementation, and achievement effects of curriculum materials. The goal is to deepen our understanding of effective materials and how they end up in teachers' classrooms. We recognize, however, that merely producing research on textbook effects on student achievement will do little to improve the quality of materials in classrooms if such information does not matter in adoption decisions. Thus, we seek

to understand the evaluation and adoption process itself, to learn how information on textbook quality—measured by impacts on achievement or other desired outcomes--might be used in the adoption process. In California, textbook adoptions occur at the district level; our research design is based on the idea that district leaders in charge of curriculum adoptions can provide insight into the factors that matter most in evaluating and adopting materials. We conducted semi-structured interviews with district leaders in public school districts across California from fall of 2015 to spring of 2017. By fall 2015, approximately 60% of public school districts had officially adopted a Common Core-aligned math curriculum in grades k-8 (approximately ages 5-14), and by spring 2017, that number had risen to nearly 100%.

We restricted our sample to traditional public schools in California to reduce the variation in curriculum adoptions related to school type. We excluded charter schools, alternative schools, online schools, etc. because they are exempt from some of the accountability requirements that traditional public schools must meet. We focused our interviews on mathematics for both conceptual and practical reasons. First, math textbooks are used more widely than textbooks in other subjects (e.g., Opfer et al., 2017) and the existing literature on achievement effects has also focused on mathematics. Second, the period of our study was right after the state put out an approved math textbook list, so it was an appropriate time to study math adoptions. That said, in some districts we spoke to, the most recent adoption was in another subject (usually English language arts), so we talked about that adoption instead. In all districts, we probed on the extent to which adoption processes varied across subjects, and we found no evidence that it did.

We identified districts using a stratified random sample at the school level, although interviews were conducted with district leaders, so in essence we sampled districts with probability proportional to the number of schools they had. We chose three sampling criteria on

which to stratify. The first criterion was a categorical variable identifying the type of mathematics textbook adoption based on the SARC data.[2] Adoptions were categorized as (1) from the 2014 California approved list, (2) not on the California approved list but still 'Common Core aligned', (3) not Common Core aligned (i.e., still using a book from a prior adoption), and (4) not listed on the SARC (e.g., unclear titles, missing data). This allowed us to capture variation across districts related to their choice of adopted materials. Our second criterion was a school size indicator (either above or below the median student enrollment in California). We used school size as one of our criteria because we suspected it might be related to our theoretical framework of institutional theory (e.g., bureaucracies differ according to district size). Our third criterion was an achievement measure at the school level (either above or below the state median performance on the most recent state mathematics test). We chose achievement as a sampling criterion as a proxy for accountability pressure. We expected that test-based accountability might affect districts' adoption processes.

We categorized schools according to these three criteria, sorting them into 16 possible cells (four textbook types, two sizes, two performance levels). We used random number generators to sort schools within each cell, and we began recruiting from the top of the list in each cell, replacing only as needed. Our goal was to include interviews with district leaders from exactly two districts representing schools in each cell. We used district websites to identify the person most directly responsible for curriculum and instruction in each selected district. We were looking for individuals with a title such as Assistant Superintendent of Curriculum and

[2] We classify a book as 'Common Core aligned' if the publisher indicates such, even though many such claims of alignment may be inaccurate (Polikoff, 2015).

Instruction, although in smaller districts this person could work as a principal or even teacher at an individual school (see Table 1 for more information about our final sample).

Individuals were contacted via email and asked to participate in an interview about curriculum materials adoptions with an incentive of an Amazon gift card. If an individual declined or did not respond after three attempts, the district was replaced by the next randomly selected district in the cell. If an individual indicated that someone else in the district was more responsible for textbook adoptions, we targeted that person instead. We continued contacting districts until we had two interviews for each of the 16 cells in our sampling criteria. In total, we contacted over 100 districts before we satisfied the sampling criteria, yielding a response rate of about 30 percent. We added to our sample district leaders from two of the largest districts in California, giving us a final sample of 34 districts. These two interviews were included purposively to account for the variation in district size in California; proportionally there are more small districts than large districts, and we wanted to offset a skew toward smaller districts in our interview data.

Data

We developed our interview protocol to reflect both the extant literature on textbook adoption and the theoretical framework described above. We asked district leaders to describe the overall process of vetting and selecting curriculum materials in their district; the role of teachers, parents, and other stakeholders; the influence of textbook publishers; the quality of materials and how quality is evaluated; alignment of materials to the Common Core State Standards; and implementation of materials once adopted. The interview questions were iteratively edited by the research team and were grounded in the context of Common Core math standards. The full interview protocol is available upon request.

The district leaders who participated reflect the diversity across California districts. In many districts there is one person who oversees the adoption of new curriculum materials. In larger districts, there may be two or more people in charge. For example, in one district, we spoke to the person in charge of K-5 (age 5-11) curriculum materials adoptions and the person in charge of 6-8 (age 12-14) adoptions. However, in the smallest districts, the person in charge of curriculum adoptions might be the superintendent (who might also be a principal and a teacher), or in one case, a third-grade teacher. Based on our sample, the job of supervising curriculum adoptions has a high turnover rate; more than half of our respondents had been in the position for less than three years.

Threats to Validity

There are at least two threats to validity we think are important to note. First, while we intended to select schools based on an entirely random stratified sample, we did purposefully include two districts to capture variation in district size. We think the inclusion of these two large districts, the largest in our sample, is important to reflect the diverse nature of California districts. Considering our theoretical framework of institutional theory, we thought it particularly important to include districts serving large numbers of students with layers of bureaucracy and multiple personnel responsible for the adoption of curriculum materials. In any case, the results we describe below do not meaningfully differ if we exclude the two largest districts.

A second validity threat in our study is with regard to bias associated with who chose to respond to our invitation. It is possible that the district leaders who responded (or the districts they represent) differ in either observable or unobservable ways from the district leaders who did not respond. An analysis of district demographics, size, and urbanicity (available upon request) suggests the participating districts are heterogeneous in their characteristics and do not

meaningfully differ on observable characteristics from those that did not agree, but it may be that they differ on unobservable characteristics or that the district leaders themselves differ in some way. While our work therefore represents a wide range of California districts, generalizations to all districts in the state or districts or schools in other states or countries should be made cautiously.

Analysis

We analyzed our interviews in NVivo software using a combination of *a priori* and emergent codes (Creswell, 2009). We began with a predetermined set of codes that reflected the general topics and questions raised in our interview protocol. Two independent raters coded each interview using these codes for coarse-grained analysis. Raters then discussed their findings, noting similarities and discrepant events in the coding process, using these findings to create a more fine-grained set of emergent codes. The raters then re-analyzed the data in an iterative process using the emergent codes. The coders used a data matrix to capture the frequency of certain elements of the curriculum materials adoption process (Miles & Huberman, 1994). The data matrix allows for visual representation of the important elements. Each row represents one case or district, and each column an element of the adoption process that occurred across multiple sites (e.g., forming a committee; attending a county publisher fair). The data matrix allows for a tabular representation of a large set of qualitative data with long responses. Each cell in the table represents the presence or absence of the adoption element, or in some cases, a quote illustrating the process.

Results

The purpose of the interviews is to understand the processes involved in the evaluation and adoption of mathematics curriculum materials. District leaders describe similar processes of

evaluating and adopting materials, which we attribute to institutional isomorphism. Between-district differences in evaluation processes exist largely because of specific district characteristics, namely the percentage of ELL students, district size, and access to technology. Small districts are particularly constrained from adopting the legitimizing ceremonial practices seen in larger districts due to lack of personnel resources.

Our interviews suggest the adoption process in each district is broken down into two main stages: an initial 'winnowing' phase that narrows the pool of potential textbooks, and an evaluation stage that includes a closer look at select materials. Within both stages, we see evidence of districts adopting isomorphic practices, as well as differences attributable to individual district characteristics. Table 2 contains illustrative quotes and details from five districts in our sample. We use the same numbering scheme for the districts in Table 2 as in Table 1 for convenience. We refer to these example districts and others to describe our results.

Winnowing: The Process of Narrowing the Pool of Potential Textbooks

Isomorphism in the winnowing process. Districts do not have time to evaluate every program on the list of CDE-approved curricula. District leaders also recognize quickly that certain programs will not meet the needs of their students and can be excluded from evaluation. The CDE approved seven series for elementary mathematics, fifteen series in middle grades, and ten titles for Algebra 1. Every district leader we interviewed identified selection criteria based on the needs of the district that were used to narrow the pool of viable candidates. The selection criteria are generally easily observable characteristics – examples include ELL accessibility or a digital platform – that enable districts to quickly limit the number of textbooks to a manageable number (usually two or three) to evaluate in depth. The winnowing phase is usually completed by district personnel with at most a small subgroup of teacher leaders.

The general process for winnowing the viable candidates looks similar regardless of district size, though district leaders in larger districts feel different constraints from those in small districts. In the small District 3, a committee of subject-area specialists and teacher representatives from each grade examined state-approved materials at the county office of education[3]. They used a state-created rubric to reduce the number of potential textbooks that would be piloted in schools. In District 34, the largest in our sample, the process was similar, except that the committee included six district-level administrators, two district-level instructional leaders, and coordinators focusing on both special education and multilingual/multicultural education. Table 2 contains illustrative quotes and information about the adoption process, including the influence of the state-approved list and the specific members of the evaluation committee. The districts are ordered from largest (District 34) to smallest (District 6). Looking across the row describing the involvement of committee members, we see that the larger districts more purposefully select individuals representing specific interests, such as special education teachers and coaches in charge of math departments.

Even in districts that do not adopt off the state list, the process is similar. In a mid-sized district (District 13) that eventually adopted an off-list book, the process began by bringing in publishers of both on- and off-list materials to make short presentations to teacher representatives, resulting in the selection of two books for piloting based on evaluation against a rubric. The only exception we found to this general structure was in the two districts that decided to create their own units of study rather than adopting an existing book; in these districts, the

[3] California is divided into 58 regional county offices of education consisting of elected officials. County offices oversee operations of multiple districts, performing administrative and managerial tasks related to curriculum, budget, professional development, and alternative education placements.

decision to create units of study came from district leadership and preempted any examination of available books.

Heterogeneity in the winnowing process. There is also heterogeneity in the processes that districts use to narrow the field of possible textbooks. Some of these differences are related to the criteria that we used to stratify our sample, while other unexpected differences appeared in our coding. The three main differences we saw in the winnowing process were 1) the choice to limit evaluations to CDE-approved books or to consider off-list materials, 2) the timing of the adoption, and 3) the influence of certain district characteristics (in particular, a high proportion of ELL students and a reliable technology infrastructure).

Our sampling criteria included an indicator for the type of material adopted (on-list or off-list) because we expected that districts adopting off-list materials might have different evaluation criteria and processes than districts adopting on-list books. In general we did not find that the winnowing processes differed between these two types of districts; what differed were district leaders' attitudes toward the state-approved list. Some district leaders expressed the opinion that materials on the state-approved list were fully aligned to the standards and thus represented an adequate selection set in order to make the first cut.

> The state review takes into account the articulation between the grade levels, whether it has enough content on each of the standards. I mean that's the purpose of the state review. (District 30)

In contrast, in districts that decided to evaluate off-list materials, leaders often cited concerns about the quality and rigor of the CDE evaluation process. Five district leaders explicitly described concerns that the CDE evaluation 'set the bar too low,' meaning that the criteria were not rigorous enough. For example, a District 31 leader who participated in the statewide adoption

process said, ‘At the state level, it was all about [the standard] being there, not necessarily the quality of how it met the criteria…. it was more like a checklist.’ Many other district leaders implicitly suggested the CDE rubric was inadequate for judging alignment because they found it necessary to complete another alignment evaluation in the district.

Another factor that varied across districts was the timing of the decision to start the adoption process. Some districts decided to adopt materials early, when the first editions of CCSS-aligned textbooks were published (i.e., before the state even put out a list). For these districts, the most pressing consideration was getting materials aligned to the new standards into teachers’ hands.

> [The teachers] were desperate to use the materials because moving to the Common Core they hadn’t taught that before. We had a lot of training in the Common Core, and what the standards were, and what they looked like and what you were supposed to teach. It’s the how to that’s kind of missing. At least the materials gave them a how to, and it gave them a road map, so that they weren’t just trying to figure it out on their own. (District 3)

But districts that adopted materials in the early years of the Common Core rollout had a limited selection. Publisher materials were scant, and the state approved list was not yet published.

Many districts intentionally waited to adopt materials that were state-approved or simply better aligned, often noting that publishers rushed getting their books to meet the strict timeline for CDE approval. One district leader felt that, ‘at the time when materials were coming out, back in the beginning days of Common Core, they were just retooled versions of the old

standards' (District 25). We heard a variation on this refrain from 19 districts—publishers had simply 'slapped a new cover on an old book' and labeled it CCSS aligned.

> …we looked at math materials, and we were very disappointed in what we saw. Most of the publishers had just taken the regular programs and thrown in a couple of Common Core words … but there was no real change in the instructional materials and there was no evidence that there was a true understanding of what the difference was between CCSS and the old CST standards. (District 33)

While some district leaders regretted the adoption decisions that had been made during an early adoption, leaders in districts that adopted late were generally happy with their decision to wait for better materials.

> We tend to be a district that adopts at the end of the cycle rather than the beginning, because we really wanna take our time, and we're a district that does not feel like the textbook drives our instruction…. It's a resource for implementation of the standards. (District 22)

They also used the opportunity to gather information from other districts that made the decision to adopt early.

> Then we have the ability to let a district adopt, and then talk to the teachers. Call 'em up on the phone say, 'You've had it for the year, how did you like it?' Currently, we're looking at that with language

> arts, and everybody jumped into something called [textbook title][4], and now we're starting to see people wishing they'd got [a different textbook]. (District 6)

In short, the perceived preparedness of publishers to provide materials aligned to the CCSS was a theme in many of our interviews. Leaders were hesitant about investing time and money into an adoption process if none of the materials were adequate, and some districts forewent adoptions altogether until materials had been vetted by other districts.

A final factor affecting the winnowing process is the constraint imposed by district characteristics. The two most influential characteristics we observed were the percentage of English language learners and the technological capabilities of the district. One leader of a district with a high proportion of ELL students felt that there were only two programs with sufficient ELL support on the state list. These were the only two programs that were evaluated in that district. Technology also arose as an important selection criterion in materials adoptions. Districts without a reliable technology infrastructure (bandwidth, one-to-one devices, etc.) felt they could not adopt a curriculum with a heavy digital component. In contrast, some districts were so heavily invested in technology that they only considered heavily digital programs. However, district leaders felt ambivalent about the available technology from major publishers and only wanted to invest in technology that was meaningfully articulated with the standards.

> Then the other thing we're looking at is how is technology used in the program. Is it stand-alone? Is it embedded in a way that guides students to purposely use the technology during the learning process, or is it a

[4] Textbook titles and publishers have been blinded in district leader quotes to ensure anonymity. District textbook adoptions are available in Table 1.

> separate thing? Does it allow the teacher to turn the whole process over to the kids, and the teacher doesn't really get involved, or is it a collaborative process and an ongoing—in other words, is it very purposeful? (District 33)

Evaluating: The Elaborate Process of Selecting a Textbook

Isomorphism in the evaluation process. Once district leaders have winnowed the pool of potential materials for adoption, the evaluation process begins. Every district leader interviewed, regardless of district characteristics, described some sort of evaluation criteria—quantitative, qualitative, or both—using data collected from multiple sources who had viewed the materials. The processes vary in complexity and formality, but the same basic principles apply across districts. Districts form adoption committees composed of teachers, content-area experts, school leaders, and district personnel. The committees evaluate two or three potential curricula using some sort of agreed-upon criteria to represent 'quality.' Measures of quality reflect the needs of the district rather than an objective definition of high-quality textbooks, because there is no consensus on what makes a curriculum high-quality.

Some districts have the ability to pilot materials, and in nearly all districts teacher input is the greatest factor in the adoption decision. The local school board gives a final seal of approval once materials are selected, but the school board did not overrule a decision in any of the districts we interviewed (the school board votes are seen as pro forma). Again, Table 2 contains examples of the evaluation process from five diverse districts. The table highlights district differences in the core features of the evaluation process.

Heterogeneity in the evaluation process. While the basic process is the same across districts, there are some important differences, and almost all of these occur predictably along the

dimension of district size. Small districts lack the resources of larger districts, limiting their ability to pilot and evaluate extensively. While larger districts typically have complex evaluation rubrics and criteria in place, small districts do not rely as heavily on ceremonial, legitimizing processes due to resource constraints. Small districts are also limited by the amount of time it takes to conduct evaluations and pilots, the cost of long-term evaluations, and the ability to communicate and negotiate with publishers. In larger districts there is usually a district employee that specifically leads the evaluation process, but smaller districts do not have someone in this role. They rely on principals, superintendents, and teachers to oversee the selection of curriculum materials. In an extreme case, in a small district with only two elementary schools, a third-grade teacher became the self-selected person in charge of curriculum adoptions because there was no one else to fill the role. Table 2 includes illustrative examples of the differences between small and large districts at all stages of the evaluation process.

In large districts, one or more committees of district personnel usually lead the evaluation, including instructional coaches and representative teachers selected by the district. Smaller districts typically do not have personnel to specifically handle textbook adoptions and instead involve all or most of their teachers. Table 2 shows examples of the makeup of adoption committees. Note that larger districts might use committees at two separate stages, and teachers are only involved in the final stage.

One surprising finding was the influence of the county office of education in formalizing and facilitating the evaluation process. All districts rely on the county office of education as an intermediary between the state and local levels, but the county office serves a different function depending on district size. In larger districts, the county office organizes publisher fairs, adapts the CDE evaluation rubric for easier use, and conducts trainings and professional development.

In smaller districts, the county office facilitates collaboration among other small districts in the area (in some cases, the county office even facilitates a county-wide textbook adoption, which small district leaders say is necessary given the high student mobility in these mostly rural areas). Smaller districts tend to have such a small number of teachers that professional development is difficult without collaboration with nearby districts. Small districts also have more leverage with publishers if they purchase materials collectively. Examples of the role of the county office of education are evident in the quotes in Table 2. District 32 uses the county office's toolkit as an evaluation resource, while District 6 relies on the county office as a means of connecting to other districts. Lacking the resources to bring publishers to their small, rural district, the district leader instead gathers information at county meetings.

The central element of the evaluation process is the rubric or other tool used to rate the 'quality' of materials. Definitions of quality vary by district and reflect the needs of the district's unique student population as well as the resources available to the district. These procedures also make the process more efficient and manageable: middle school math textbooks can be over a thousand pages long, and there is simply not enough time to evaluate an entire volume closely, let alone multiple volumes. Therefore, rubrics and other quantifiable, objective evaluation criteria are necessary to legitimize the process of attempting to measure quality of a textbook.

Some districts use measures such as the textbook's index or scope and sequence as crude indicators of alignment to the standards. The CDE publishes an alignment toolkit to aid district leaders in their evaluations, but the district leaders we interviewed said this tool was too long and dense to use in its entirety. Instead, they relied on evaluation rubrics adapted by the county, online tools, or internally developed alignment tools. Other districts use processes like curriculum mapping, standards tracing, or highlighting the essential standards:

> We look through, obviously, the appendix…and find that there are the standards in there. Then …we choose multiple standards to do a… standards trace…. [I]n the index, they'll show the standard and then what pages it's addressed on….Then you go look. You start seeing, how is that standard addressed? As you look at it, you find out, is it fully addressing that standard? It's a pretty arduous process, but it's one that's worthwhile. (District 11)

This district leader makes the important point that examining alignment is a challenging task, but it is one that is performed out of necessity in districts that do not think the CDE's evaluations are adequate. The formalized process of evaluating alignment internally lends a legitimacy to the evaluation criteria and is used to justify the adoption of one textbook over another. Not all districts have the capacity to complete an internal evaluation, so the processes used reflect the capabilities and the context of the district. Table 2 illustrates the variation in formality of evaluations across districts. The two larger districts prioritized objective and quantitative measures of 'quality,' using tools like a checklist of criteria to meet the needs of all students. In the smallest districts, leaders often did not use any formalized tool for evaluating materials. Instead, all teachers involved in the use of the materials under consideration had a chance to look through them.

Leaders from some districts talk about the flow and the feel of the text. 'The only way to know is to use it,' said one principal-superintendent-teacher in a small, rural district (District 6). This district leader described the context of the school and the limitations of a textbook adoption:

> [It's a] little tiny school [where] everyone wears a lot of hats. Everyone is—the lady that has the second/third grade room is the department head of second grade, and third grade, and etcetera. We can't pilot. We can look at what other districts

> are doing easily, whenever we get together with co-teachers from different schools, and say, 'What are you doing?'

Lacking a rubric, one leader told us, 'I think it's just a matter of getting it in your hand and kind of looking at it and seeing if it's gonna be what's gonna be good for your kids or what they're gonna get the most benefit from. It's kind of subjective' (District 7). Small district leaders did not feel hindered by the lack of formal adoption criteria. In smaller districts, leaders also feel comfortable letting individual teachers use different curricula for different groups of students depending on their needs. In the smallest districts that we interviewed, teachers have fewer than ten students in a class, and that could include multiple grade levels. In districts of this size, students essentially have individualized learning options because teachers have the flexibility to do that.

In the end, the formalized evaluation procedure does not reliably work to select the highest quality materials. The procedure does try to find the program that will appeal to the largest number of teachers with the least amount of disruption. District leaders describe how ultimately, it comes down to a teacher vote. The guiding principle is to find a curriculum that meets consensus.

> We're gonna have to come to consensus on something. …
> Consensus doesn't mean that it's everybody's favorite curriculum.
> It means that on balance, after discussing, everyone decides they
> can live with it—that it's the best choice for the majority of the
> people given the criteria that you're looking at it and all the factors
> that you're considering. (District 9)

In some cases, one dominant group of teachers could sway others' opinions. In some districts, teachers wanted the program that was most familiar to them, even though district leaders did not think it was the highest-quality option. Thus the formalization and legitimization of the evaluation process does not necessarily lead to the best choice.

Discussion

We used interviews to gain an understanding of how districts make decisions about the adoption of curriculum materials in the Common Core era. We used a stratified random sample, augmented with two large, purposefully selected districts, to obtain diversity in characteristics we thought would be associated with adoption decisions, based on prior literature and theory. Using the lens of institutional theory, we expected to find that districts would adopt elaborate ceremonial practices to formalize and legitimize their textbook adoption processes. We see that this is largely the case. The level of formality and the measures used for evaluation vary by district. Larger districts tend to employ the most elaborate, multi-layered, and 'objective' approaches to curriculum materials evaluations. These districts use multiple levels of committees to make selection decisions, including individuals representing many groups of stakeholders. Larger districts also divide the function of the curriculum leader into multiple roles; e.g., with separate individuals responsible for adoptions in each grade band. In these large districts only a small proportion of individuals have a voice in the evaluation of curriculum materials.

In smaller districts, the ceremonial processes for curriculum adoptions still exist, but they are less formalized. In these districts, individuals in charge of materials adoptions usually perform multiple other roles within the district, such as superintendent, principal, or teacher. Furthermore, all or most of the educators who will use the adopted materials have a potential voice in the adoption. In small districts, the measures used tend to be less quantifiable and more

based on the 'feel' or 'flow' of the materials, or other subjective measures. These districts are also more constrained by material and personnel resources, such as piloting challenges and difficulty in getting professional development support from publishers

Research suggests that American textbooks are often lacking in quality and poorly aligned to standards (Finn & Ravitch, 2004; Polikoff, 2015; Schmidt & McKnight, 2012). Some independent agencies such as EdReports provide evaluations of curricula, but these reports may not be available before a district makes an adoption decision and may not be used even if they are available (for example, only five of the districts we interviewed mentioned EdReports when we asked about external sources of information). Moreover, even district leaders who consulted EdReports lamented the small number of programs that were rated as being sufficiently aligned to the CCSS. In the absence of objective measures of quality, the state list often guides district selections, and district-level evaluations of curriculum materials take on an air of legitimacy through rubrics and processes that provide a proxy for 'quality' in textbooks. What constitutes quality for one district might not for another. The institutionalized procedures used for evaluations reflect local context and needs. Factors such as district size, access to technology, student demographics, perceived teacher buy-in, and the textbook's appearance are all proxy measures for quality. District leaders gather information from other sources--usually nearby districts with similar characteristics--when their adoption timeline gives them this flexibility.

One measure of quality, alignment to the Common Core, is met with skepticism from district leaders. Leaders overwhelmingly expressed the feeling that textbooks, especially in the first years of Common Core adoption, were nominally but not substantively aligned to the standards. Interestingly, the ceremonial processes in place at the state level—the evaluation procedures meant to ensure alignment—are inadequate in the eyes of many district leaders.

Multiple district leaders noted that the criteria for approval on the CDE adopted materials list was setting a low bar to measure alignment, and most districts conduct some kind of internal alignment analysis. Still, these internal alignment analyses are typically superficial and the large majority of districts end up choosing from the state list.

Accountability measures did not matter to districts in the ways we predicted. We expected to hear district leaders in low-performing districts describe different processes than those in high-performing districts; however, we saw no clear pattern. The one place accountability came up in our interviews was in smaller districts, where leaders often said they were less concerned about the pressures of accountability, because the state did not interfere with them. These findings were surprising because research on curriculum use during the No Child Left Behind era indicates that accountability was a factor in how districts consider and use curriculum materials (e.g., Booher-Jennings, 2006; Finn & Ravitch, 2004; Jacob, 2005). District leaders did express a need for materials to be aligned to the CCSS, and they also noted that they wanted materials that correlated with the types of questions on the upcoming accountability tests, but these answers did not differ systematically based on district performance levels.

District leaders in California are balancing many changes: in the resources available to them, the pedagogical strategies demanded by new standards, increasing numbers of English language learners, new state testing and accountability regimes, and students and teachers with differing levels of comfort with technology. They often receive conflicting sets of demands from the state, county, teachers, principals, students, and community members. They are charged with leading the selection of the best materials for their diverse students. As one district leader explained:

> How do I navigate all those choices—the need to really come up with a really good working structure for adopting the curriculum that will be politically savvy and bring in all the groups and get buy-in and get people moving in the direction that's really the best teaching … and really get instruction moving in a way that's benefiting all of our kids in our district. Just getting there is daunting when I have to figure out how can I quickly figure out the framework when [it's] like 1,000 pages. (District 9)

Given the challenges associated with selecting curriculum materials, and all of the external pressures, it is perhaps not surprising that district leaders turn to isomorphic and ceremonial practices to make decisions. While the elaborate processes do not predict differences in materials adoptions, the processes seem to be important for establishing the legitimacy of the ultimate selection.

Implications for Policy

Our interviews suggest several implications for policymaking around the issue of curriculum materials adoptions. One takeaway is that teachers represent a majority opinion in textbook evaluations. However, nearly all of the district leaders in our sample felt that resource constraints limited the ways in which teachers could meaningfully contribute to the textbook evaluation process. In order to make informed decisions, teachers need training on the standards themselves, then on the measures used to evaluate textbook alignment and quality. Many district leaders mentioned that the lack of high-quality teacher professional development around textbook evaluations was the biggest obstacle in the adoption process. A recommendation based

on our study is that textbook adoption cycles build time for teachers to be trained in the standards and evaluation criteria.

This recommendation is supported by research on the role of teacher professional networks in successful implementation of new policies (e.g., Coburn, et al., 2012). Coburn and colleagues (2012) studied the role of teacher professional communities as social networks and found that networks with strong ties, interactions, and teacher expertise were associated with sustainability of new pedagogical strategies, even as administrative support weakened. We expect that sustained professional networks on the evaluation of textbooks—building internal expertise and affording multiple opportunities for interaction—can support the textbook evaluation and adoption process. Such professional learning may also support more effective curriculum implementation, though we did not study implementation here.

Another theme in our interviews was the need for high-quality, reliable, independent information about textbooks. Over half of our interviewees questioned whether CCSS-aligned textbooks were authentically aligned to the content and pedagogy of the standards. A few interviewees expressed interest in learning about the results of our achievement-based efficacy research, and we are planning to follow up with a report on our findings. There is undoubtedly interest in other criteria or outcomes as well, including the representations in the books and the impacts on non-test outcomes. Policymakers could heed the request for better information by providing clear, concise, actionable, and relevant information about the textbooks along as many dimensions as possible. This is also an area where organizations promoting policy-relevant research and dissemination can contribute. To be sure, educators will still seek the professional autonomy to make the best decisions for the children they teach (Yeigh et al., 2017), but

providing more, and more trusted information can help them make more informed decisions. States are well positioned to provide this information.

District leaders also described how they used local networks to discuss curriculum efficacy with other nearby districts. Policymakers at the state or county level could facilitate and promote information-sharing between districts with similar characteristics to make this process more efficient. One of the surprising findings was the importance of the county office of education in textbook adoptions, driven in part by districts' interest in collaborating with each other. Beyond relying informally on county offices to facilitate collaborations, interventions that are more proactive in fostering this type of behavior merit consideration. For example, consider a group of ten small districts with similar student populations. Although each district individually might lack the resources to devote considerable staff time to the adoption process, an intervention that provided a relatively small amount of centralized money could be used to support a cross-district team to evaluate curriculum materials. Such an intervention would reduce redundant work and potentially provide a deeper understanding of curriculum choices to participating districts, contextualized appropriately for the collaborative.

We conclude that there are opportunities to help districts make more informed decisions about textbook adoptions. These largely revolve around the state providing clear ratings of textbook quality as early as possible, and encouraging districts to collaborate where appropriate. Recent work in Louisiana suggests that state's efforts to get better materials adopted is paying off, with more districts adopting top-tier math and English language arts materials (as rated by the state) and more teachers demonstrating knowledge of the standards (Kaufman, Thompson, & Opfer, 2016). Still, we expect that without forced centralization there will always be a great deal of district-to-district variation in adoption choices. And without more evidence about which

materials work, why, and for whom, districts will continue to be hampered in their ability to make these critical curricular decisions.

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Table 1

District Characteristics and Adopted Math Textbooks for District Leader Sample

District	Interviewee	Enrollment	Achievement level	Adopted Math Books	Adoption Year
1	Superintendent	Small	low	Eureka Math	2015-16
2	Superintendent-Principal and Math Teacher	Small	high	Math Expressions(K-5); Big Ideas(6-8)	unknown
3	District Superintendent	Small	low	enVision	unknown
4	Superintendent	Small	low	Houghton Mifflin(K-5); Pearson Prentice Hall, California series(6-8); CPM Algebra Connections(8)	2015-16
5	Superintendent of 2 districts	Small	high	enVision(K-5); Big Ideas(6-8)	2014-15
6	Superintendent	Small*	low	My Math(K-6); CPM(7-8); Edgenuity (supplemental)	2014-15
7	Third Grade Teacher	Small*	high	Eureka; My Math; Singapore Math; Big Ideas (6-8)	unknown
8	Director of Curriculum Instruction and Assessment	Small*	low	i3 by SRA	2013-14
9	Director of Curriculum and Instruction	Medium	high	GO! Math (K-2); enVision(3-5); CPM(6-8)	2014-15
10	Assistant Superintendent	Medium	high	Engage NY(K-5); Utah Math(6-8)	2014-15
11	Coordinator of Curriculum, Instruction, Assessment, and LCAP	Medium	high	Math in Focus; Glencoe; Pearson CA Algebra 1	2014-15
12	Assistant Superintendent of Educational Services	Medium	high	Swun Math (K-5); Glencoe (6-8); Houghton Mifflin Integrated Math (7-8)	2014-15
13	Director of Curriculum Instruction and Assessment.	Medium	low	Pearson Investigations(K-5); CPM(6-8); enVision (supplemental)	2014-15

14	Associate Superintendent of Educational Services	Medium	high	GO! Math	2014-15
15	Director of Curriculum, Instruction and Assessment	Medium*	high	My Math	unknown
16	Director of Curriculum and Instruction	Medium*	high	Math Expressions(K-5); Big Ideas(6-8)	2015-16
17	Assistant Superintendent for Curriculum and Instruction	Medium*	high	enVision	unknown
18	Assistant Superintendent for Educational Services	Large	high	Engage NY	2015-16
19	Director of Curriculum and Instruction	Large	low	Eureka(K-5); Carnegie Math(6-8); internally developed units of study	2014-15
20	Director of Curriculum and Instruction; Director of Secondary Education (grades 6-12)	Large	low	enVision; Pearson International Math	2015-16
21	Assistant Superintendent of Elementary Education	Large	low	Engage NY(K-6); CPM 6-8	unknown
22	Director of Preschool/Elementary Education	Large	high	Math Expressions	2015-16
23	Assistant Superintendent of Educational Services	Large	high	My Math	2015-16
24	Director of Curriculum	Large	high	enVision; Bridges in Mathematics; McDougal Littell; Holt	2014-15
25	Assistant Superintendent of Education Services	Large	low	My Math(K-6); McGraw-Hill California Math(6-8);McGraw-Hill Pre-Algebra(7)	2015-16

26	Assistant Director of Elementary Education	Large	low	MyMath; Glencoe California Math	unknown
27	Chief Academic Officer	Large	low	Carnegie	2014-15
28	Director of Curriculum and Instruction	Large	high	Math Expressions; SpringBoard	2014-15
29	Executive Director for Curriculum and Professional Development	Large	low	teacher-created units of study	2014-15
30	Deputy Superintendent for Educational Services	Large*	high	enVision; GO! Math; ST Math (supplemental)	2015-16
31	Director of Curriculum and Instruction	Large*	low	Eureka; Springboard (supplemental)	2014-15
32	Assistant Superintendent, Curriculum & Instruction - Pre-Gr. 5	Very large	high	Math Expressions(K-5); GO! Math (6-8)	2015-16
33	Executive Director, Secondary Education	Very large	high	units of study	unknown
34	Elementary Math Coordinator	Very large	low	My Math	2015-16

Note. District names have been blinded. Small districts have < 1000 students; medium districts have 1000-10,000; large districts have 10,000-50,000; very large districts have >50,000 students. Book titles in bold are on the state-approved list. Adoption year is the most recent adoption year for any district K-8 mathematics textbooks; some listed books may have been adopted in earlier years.

*These districts only serve elementary and middle school students.

District Number	34	32	28	3	6
District Size (Student Enrollment)	Very Large (50,000 or above)	Very Large (50,000 or above)	Large (10,000-50,000)	Small (1,000 or fewer)	Small (1,000 or fewer)
Interviewee	Elementary Math Coordinator	Assistant Superintendent of Curriculum & Instruction (Pre-Gr. 5)	Director of Curriculum and Instruction	Superintendent	Superintendent/Principal/Teacher
Committee Members	First review committee: • 2 coordinators from Division of Instruction and • 6 representatives from "local" districts • Coordinator of special education • Representative from multi-lingual/multi-cultural education Second review committee: • Teachers • Union representatives • Administrators	First review committee: • Educators and district employees Second review committee (25 people): • Teachers • Principals • Spanish immersion teachers • Special education teachers • Technology experts • Teachers on special assignment	First review committee: • Teacher from each site • Director of elementary and secondary education • Union representative • Assistant superintendent of instruction • Program manager • Secondary ELA coach Second review committees (organized by grade groups): • Grades K-5 • Grades 6-8 • Algebra 1	• Reading or math specialist • Representatives from each grade group	None (all teachers involved in selection)
Role and Perception of the State-Approved List	*"We were instructed to select off the state list by our Chief Academic Officer... We were not allowed to select anything that was not on the state list. The state does the adoption. We do the selecting. We made the cut to I believe 6 programs from the initial list of 12 to 15."*	*"We were told in the toolkit training that we either selected from the list, or we came up with an alternative approach...but it would need to meet all the requirements as set forth by the state. The time that it would take to do that, to basically develop our own curriculum, was astronomical....We know that if it's state-approved, that it's been vetted to make sure it teaches the standards."*	*"The director…of assessment and accountability....looked at what's [on the state adoption list]….From there we will bring it back to our committee first, cuz there may be seven/eight books on there, but it doesn't have a technology part…We try to look at just three textbooks…so we're not looking at eight of them in depth."*	*"We went through that entire process [of evaluating materials on the state-approved list] for math and when we got down to decision making time, there was not a textbook that was that met the toolkit requirements Common Core aligned. What the committee determined was most of them were just a makeover of what the publishers had done in the past and they really weren't dramatically different. They really weren't conceptionally based. They really weren't aligned to the Common Core in a meaningful way."*	*"There used to be harder deadlines as to when we would have to buy, but right now, because of the roll-out of Common Core--and also because the adoptions used to be every ten years, now they're every six, seven years--we can wait. We can sit and watch, and see what happens....[A]nother factor for adopting, from a small school's point of view, is we have the ability to use a bigger bag of tricks...a bigger set of curriculum."*
Publisher Involvement	None until books are adopted (publishers provide non-mandatory teacher training)	*"The committee determined which program types to pilot, and then examined, at a big curriculum fair, all the different publishers that were state-approved, and then walked away from that fair with…finalists to be considered for the pilots. Then we had those finalists come to the district office and present to the committee….From there, we selected two….to pilot...We were looking at—there were probably four or five from the fair that we had come and actually present to us."*	*"We went to a book fair, curriculum fair, at our county office. Publishers are there....[T]he publishers from the potential texts being reviewed were invited to do a presentation for each group….[W]e give a whole day devoted to publishers talking about what's in front of us, the curriculum—they do a very good job. They go through all the components and they give us the foundation we need, in order to then dive deeper into the curriculum, to make the right decision."*	*"The publishers were involved in that they...have publishing fairs. We don't hold one here because we're so small, but they hold them in the valley. We send our team to the publisher's fair."*	*"We don't get the reps up here....We sometimes encounter those people down at the county seat, when we have our monthly meetings of all the superintendents. It's rare when we'll see what the city school sees, where they'll have four or five different publishers to look at all the material. We rely on seeing what circles through....After everybody's started—when the piloting's beginning to wind down, and a couple of districts are adopting, that's when we'll take notice, and say, 'Who likes what?'"*

Toolkit/Rubric	*"We choose an assessment instrument that we then adapted for our use. It was the Chief State School Officer's Rubric. We edited it, turned it into an Excel document that would allow us to tally easily, and then used that as our rubric for making the cut. "*	Developed by county office of education based on state toolkit	*"[T]he evaluation of the materials is based on five different components: (1) alignment with content standards; (2) program organization; (3) assessment; (4) universal access to include English learners, special education and gifted and talented education; (5) instructional planning and support."*	*"[T]he state framework comes out, and then publishers write to the criteria in the state framework. Then so the toolkit is based on the criteria in the state's framework."* [Adapted by the Curriculum and Instruction Steering Committee]	None
Training	*"We met with our local district math coordinators to go through [the evaluation rubric] and literally do a training on it before we entered into the review process, which took about a week of eight to ten hour days."*	*"[O]ur committee was trained by the county in what the toolkit is and what the process is."*	*"They reviewed the current math data... They evaluated the new math framework, consisting of information on metacognition, the eight mathematical practices, and modeling types for mathematics. They also... reviewed and discussed the publishers' criteria or what was developed for publishers to assist in writing new math textbooks. Also... they participated in the Smarter Balance Training Test, in order to orient teachers at that time, cuz that was first year of SBEC, in order to orientate them to what the new assessments were going to look like."*	*"[T]he county facilitates bringing together a team of teachers from every such district and they go through training of the toolkit. Then, once they're very familiar with the toolkit, and what to look for in the textbook, then they start looking at the text."*	None
Evaluation Process and Criteria	*"We broke into grade level specific groups. We had each grade level specific group look at least at two publisher resources.Then we took all those rankings and compiled them. [My partner] and I did the initial cut on the alignment of the lessons to the standards just in a very simple counting the lessons, matching it to the standards, finding a percentage. Everything else was done by the coordinator teams, anything that was evaluated from the rubric....We're looking not only at English learners, but our standard English learners, our special education students, our gifted students, at our population of disadvantage socioeconomically, foster youth, particular concerns for things like achievement gaps....I'll have to say the minimal bar set by the state was really low....[O]ne of the things that ranked very high...was the amount of assessment choices available to the teacher."*	*"The key pieces that we were—I believe these are directly from the rubric. There was a balance between informational literary text, clearly articulated support for foundational skills, scaffolding for all learners. There are like 10 different pieces that we evaluated for both programs. Then teachers shared pros and cons….The next is that it allows differentiation for all learners so that it's rigorous, but there's scaffolding opportunities to provide all kids with access to the materials. That it provides for intervention opportunity as well as extension. That it integrates content areas. For example, science and social sciences, art, etc. that's integrated because elementary teachers have a difficult time finding blocks of time every single day to teach all subjects. Really, one of the last factors that we intentionally don't let drive it is price because we intentionally—we were even told by the county in the toolkit, you do not even ask what the price is of the programs, and that should never come into the conversation."*	*"[T]he teachers shared out their findings from their evaluations of all potential texts, regarding how well the texts introduced and supported the California State Standards…. [T]heir evaluation on assessments…both formative—so quizzes, quick checks, chapter tests, and also summative SBAC-like tests were evaluated for thoroughness. [They also evaluated] universal access, intervention, English learner support, use of the manipulatives, the ease of the material, and the overall impression."*	*"The things that are really important to our district are alignment to the standards. Not just a superficial alignment to the standards, but to be really, really connected to the standards. What we find when we look at textbooks is that sometimes they say that it, the lesson addresses a particular standard, but when you look at it carefully, you can see how well or how deeply it addresses that standard....In our district, we have a larger EL population than a lot of other districts in our county, so the EL materials [are] really important. What kind of an intervention is embedded in the material....[Y]ou'll pick certain standards and you look at those standards across different publishers. If there's let's say five publishers...you'll pick RL3.1, then you look at how well they cover that standard across all the different publishers."*	*"[T]he only way is to use them. Then they tell you, 'I hate this,' or, 'I like this.'… There were still problems with [the previous curriculum], just technical problems. Misspellings and things like that, a couple of wrong answers here and there, and if you didn't know 'em, you would get that uneasy moment when they would say, 'Teacher, the book is wrong.' That's just a hard one to get past. We're finding problems with every—all the printed curriculum. You get one of those, it's a real show-stopper. You lose all your credibility—you lose all your credibility as a teacher, and then the curriculum loses credibility, especially when you have a parent sitting at a parent-conference going, 'Let's go to Problem 12, Lesson 4,' and you go, 'Oh, god, that's wrong, we steer everybody around it.' They go, 'I'm a taxpayer. I'm paying a lot of money.'"*

Piloting	None	*"We selected an even balance of primary and upper grade teachers….We made sure that every site was represented. … We separated it into equal periods of time. 35 full instructional days each. The exact same number of instructional days, same amount of training for each program, etc….[F]ollowing the suggestions in the toolkit, we had the pilot teachers come together after the last pilot was over. Came together and followed a process of sharing all of their input on both programs, pros and cons, and then worked to develop consensus following a consensus procedure that is supported by our union. Each grade level individually tried to come to consensus on which program to recommend."*	None	*"There's a repository of text that are...in a different county that's got a bigger space. They all go down there. They start looking at the text. They compare them to the criteria in the toolkit, and then they make a recommendation for the three or four—usually two or three, sometimes four print publishers. Then, at the school level, we order those. Then they're piloted."*	None *"Little tiny school that everyone wears a lot of hats. Everyone is—the lady that has the second, third grade room is the department head of second grade, and third grade, and etcetera. We can't pilot....In our district, we pay attention to what other districts are doing. Districts who pilot a book...Sometimes they may pilot one, and not like it, so another year goes on where they pilot a second book. If we tried to do that with our four teachers, it would mud up the process of teaching children, right?"*
Adoption Decision	*"We went through a rigorous process to rank eligible programs based on local district and central district first cuts, then teacher committee with administrators and union representative second cuts, and then we presented the ranked list to the board. The board then voted to select the first ranked program."*	*"For grades K through three, there was clear consensus for one program, and in grades four through five, they could not come to consensus....The findings from the teachers then went to the committee. The committee, as per the toolkit, is the tiebreaker if grade levels are not able to come to consensus....The committee's recommendation was to adopt two programs....That's never been done before in the district's history, to do a split adoption....It now goes to our...Instructional Materials Review Committee....We have board members on that committee. We have principals. We have community members. We have teachers....That committee now is looking at all the materials, considering the recommendation of the committee."*	*"They come back for the last meeting….[E]ach individual member had the choice to vote for one of the three texts or to continue an additional year using the current program."*	*"There's a facilitator through all of this but it's really about teacher discussion more than it is administrative discussion….We have gone with the committee's recommendation...since I've been here, for ELA and for math."*	*"On the site council, we have five stakeholders—community stakeholders, sometimes parents, sometimes grandparents. They get a chance to look at it, but I notice that they kinda glaze over when we show 'em some giant curriculum with three, or four books, and we're showin' the online stuff…[I]t's hard for them to even imagine that half your curriculum is out on the Cloud. They don't even know what the Cloud is."*
Technology	Not a factor in evaluation	*"Both of the programs that we're recommending for adoption have digital supplemental materials. We are not adopting digital textbooks...because of the access issue. As a district, we do not have the funding to provide equitable support to all the sites. At some sites, we would have to buy hundreds...of devices to allow kids access to digital textbooks, whereas at other sites, we would probably need to buy five, because families would just bring your own device....[T]he funding formula provides us with very minimal funding from the state. We simply just cannot pay for the devices that would be necessary to go digital."*	*"[S]ome textbooks were removed...for the following reason. The program ...was 100 percent digital, so we cannot do that here.We're not equipped to do 100 percent digital….[W]e saw a really great curriculum when we were at one of the county curriculum fair. Unfortunately, it was 100 percent technology. To me that's the biggest obstacle right now. We as a district are not at capacity where we can handle curriculum that is 100 percent technology…[O]ur obstacle is our technology infrastructure….We're not a one-to-one district…[W]e have computer carts. Some schools may have 5 carts with 30 computers and …teachers have to schedule time to use them, which is very difficult."*	*"[W]e always purchase a technology component."*	*"[W]e just adopted...one of the many online, all-encompassing [programs]—and I'm hoping that our eighth graders will leave [the traditional textbook], and go straight to [the online program's] version of math. Which would be an interesting thing for the publishers, because they're gonna quit selling books... 'cuz everybody's online."*