

The Demands of State Context on Mathematics Materials Selection

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INTRODUCTION

Researchers have long documented that instructional materials matter (Begle, 1973; Schmidt, McKnight, & Raizen, 1997; Tyson, 1997); they affect what teachers teach, and consequently what students learn (Ball & Cohen, 1996; Reys, Reys, & Chavez, 2004). Substantially less is known about how districts choose mathematics textbooks and what factors affect these choices. Curriculum leaders are responsible for improving their districts' mathematics programs, and one strategic choice they may make is to change instructional materials. Those instructional materials can become a critical piece in a district's plan to advance the quality of students' mathematics learning.

The choice of mathematics instructional materials becomes even more critical in these times of increased accountability. The No Child Left Behind (NCLB) legislation and recent state mandates demand greater accountability for students' learning and call for research-based evidence to support the choice of mathematics materials. With measured outcomes in place for students in grades 3–10 – and consequences for under-performance – the need to align with state standards and tests is an increasing concern for districts.

DESIGN OF STUDY

Knowing the influence instructional materials have in the classroom and the need to better understand the selection process, the Education Development Center (EDC) is in the midst of a study investigating curricular decision-making, with particular attention to the selection of mathematics instructional materials.¹ The research questions guiding this work include:

- What processes do school districts use in selecting and implementing mathematics curricula? What factors shape curriculum decisions in K-12 mathematics?
- **How does curriculum selection differ in state-adoption and open-territory states? In what ways do state standards and tests affect textbook decisions?**
- What research do curriculum leaders use and find most useful? How does research influence districts' mathematics selection decisions?²
- What questions about mathematics instructional materials do decision-makers need answered most?

This paper reports on the second of these research questions, paying specific attention to the similarities and differences of such instructional materials selection processes in a variety of state contexts and the impact of state influences, such as standards and tests, on district decisions.

In order to understand the complexities and realities of how districts select mathematics instructional materials, in-depth interviews were conducted with over 150 K–12 mathematics curriculum decision-makers³ representing districts in eight states. This focus on eight states allowed us to develop a picture of the state context within which districts were making selection

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² These particular questions respond to national calls for a broader perspective on the research needed to properly evaluate instructional materials in mathematics (National Research Council, 2004).

³ These curriculum leaders have different titles within their districts, but are typically curriculum coordinators, department chairs, mathematics supervisors, and assistant superintendents of curriculum and instruction.

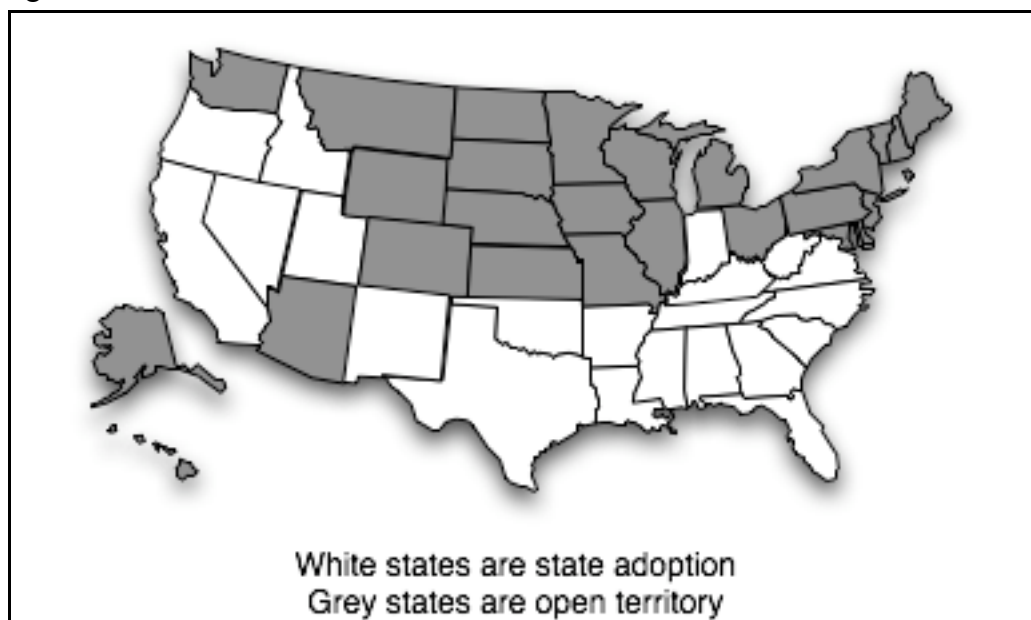
decisions. These states – Colorado, Louisiana, Maine, New York, Ohio, Texas, Washington, and West Virginia – were carefully chosen because we wanted to investigate curriculum decision-making in a variety of state-adoption and open-territory states across the country. For state-adoption states, we also chose those that were actively involved in a selection process or had made a recent adoption of selection materials. Districts selected for interviews within each state reflect a range of characteristics in terms of performance level, geographic region, percent of students in poverty, size, and instructional materials used.

Our analysis of this data has been supplemented by other sources including a survey of the members of the Association of State Supervisors of Mathematics; a series of surveys of curriculum leaders nationally, conducted by our collaborators at Inverness Research Associates; an investigation of state-level documents and websites relevant to materials selection; and a review of the relevant literature. The results reported in this paper describe those findings of our study that are particular to understanding the state context for decision-making and the potential effect of state-level decisions on district selection of mathematics instructional materials.

SETTING THE CONTEXT: STATE-ADOPTION AND OPEN-TERRITORY STATES

Twenty-one states in the United States are “state-adoption states” (Finn, Ravitch & Whitman, 2004), which means that the state approves a list of textbooks from which districts must choose (if they wish state funding) and establishes a timeline for adoption. The remaining twenty-nine states are considered “open-territory states,” which means that the choice of instructional materials is unrestricted by the state, and decisions about funding and timing of adoptions are made locally, at the district or school level. (See Figure 1 for a map of state-adoption and open-territory states.) Below we provide a portrait of state-adoption and open-territory states and the features of each.

Figure 1



State-Adoption States

Statewide adoption of textbooks dates back to the late nineteenth century when some states – many in the south – wanted to make access to textbooks more uniform to address the challenges for transient populations and to standardize costs for districts (Farr & Tulley, 1985).⁴ The primary mechanism by which state-adoption states control textbook selection is by providing state funding for purchase of materials on an approved state list, but that is not the only influence. There are three major ways state-adoption states are influential:

- State-adoption states determine and approve a list of instructional materials;
- State-adoption states dictate the timing of the adoption cycle; and
- State-adoption states provide regulations that local districts must follow.

Below we discuss each of these influences, with related findings from our study, and provide an example of these influences at play in a district selection process.

Limiting Textbook Choice to an Approved List. State-adoption states provide a list of approved textbooks, and if districts wish to receive state funding they must adopt materials from this list. State textbook adoption lists range from offering very few options to offering a wide variety of materials (with almost all publishers who submit bids being approved). For example, the Louisiana 2004-2005 state-adoption list for elementary mathematics provided only four options for districts wishing to adopt materials from a single publisher in grades one through five.⁵ By contrast, West Virginia's 2004-2005 state-adoption list for elementary mathematics offered the opportunity to consider a wide range of materials.

All state-adoption states have in place a process whereby districts can use instructional materials not on the approved state list. For example, in Mississippi, districts are strongly encouraged to adopt from the state list and to follow state guidelines for acquiring textbooks, but they may purchase non-adopted textbooks without approval from the state. However, in most state-adoption states, a district must apply for a waiver to adopt materials not on the list. While some states make this process easy, in most states it is a rather arduous process. In our study, few curriculum leaders in Louisiana, Texas, or West Virginia felt this was a viable option. Of the 49 interviews we conducted in state-adoption states, not one curriculum leader applied for a waiver to use materials not on the list, and no one mentioned it as an option they would even consider.

In state-adoption states, before districts can begin their selection, a state-level committee is appointed to determine the list of approved mathematics instructional materials. These state-level committees are commonly comprised of teachers, supervisors, and administrators from the curriculum area under evaluation (in this case mathematics). This state-level committee then evaluates submitted materials using a set of criteria that includes elements such as mathematics content, integration of technology, and alignment to state standards and grade level expectations. While the specific criteria used varies across state-adoption states, alignment to state standards

⁴ Many critics argue the merits of statewide adoption, believing the process marred by censorship and the textbook market controlled by the largest adoption states. A good discussion of these issues can be found in Ansary (2004), Finn, Ravitch, & Whitman (2004), and Tyson-Bernstein (1988).

⁵ In Louisiana, as in many other state-adoption states, materials are approved for the state list by grade, so it is possible that a K-5 program may be approved for use, for example, in 3rd grade but not in 1st, 2nd, 4th, or 5th grade. In our study, curriculum leaders in state-adoption states expressed great reluctance to adopt materials for a single grade only and in many cases were required by board policy to adopt from a single publisher for grades K-5 and 6-8.

and tests is a significant consideration in all such states. In West Virginia, materials must satisfy 80% of three different sets of criteria to be placed on the approved state list. In Texas, instructional materials that match 100% with the Texas Essential Knowledge and Skills (TEKS) are placed on a conforming list, while those that match between 50-99% are listed on a secondary, or non-conforming, list. The state will pay for books on either list, but if a district chooses a text from the non-conforming list it must have a plan approved to address any gaps.

Determining Timing of the Adoption Cycle. Districts within state-adoption states typically all adopt materials at the same time and on a set cycle determined by the state. Often this adoption is K–12; but it may be split by grade level. For example, Texas selected secondary mathematics materials in 2006-2007 and elementary mathematics in 2007-2008. Adoption of mathematics materials typically occurs every five to seven years; but some cycles may be longer or delayed. For example, until selecting secondary mathematics textbooks in 2007, Texas hadn't had a textbook adoption in ten years. And more recently, significant budget cuts have forced Kentucky to delay their mathematics textbook adoption originally scheduled for the 2008–2009 school year. Delays such as this can leave districts with inadequate or outdated materials and without the means to purchase them (since they generally rely on state funds to purchase materials).

In addition to controlling how frequently districts may adopt materials, state guidelines may also affect districts' timelines during the adoption year. It is not uncommon for states to release these lists in late fall and expect districts to submit selections in early spring. As a result, districts in state-adoption states are often making selection decisions within a short timeline. In our study, we found that some districts start preparing ahead of the release of this list, but are limited in what they can do then by state guidelines (that, for example, limit interaction with publishers). In Texas, the timeline is dictated by when the state releases the list of conforming and non-conforming texts, which for the most recent secondary mathematics adoption was in late November. District selection committees must then make a choice in late February or early March, in order to leave time to obtain board approval and to complete the process by April as required by the state. These restrictions leave districts in Texas, as an example, with three months at most to examine mathematics materials and make their choice.

Providing Regulations about the District-Level Selection Process. Another way state-adoption states influence districts is through policies that dictate particular aspects of the process, including committee make-up, options for piloting, and publisher involvement. These guidelines are generally aimed at establishing fairness to all publishers of materials under consideration and eliminating favoritism; they also ensure the inclusion of various stakeholders in the process. For example, interviewees in our study in Louisiana often referred to Bulletin 1794, the state textbook-adoption policy and procedure manual detailing guidelines to be followed at the local level. In terms of timing, the state requires districts to make a formal adoption of textbooks within six months of the official recommendation. Committees are to include teachers and parents. Committee members must receive training in textbook selection criteria, and be specifically oriented to the state's grade-level expectations and assessments, the voting procedure, and restrictions on interaction with publishers. Other state-adoption states have similar policies and procedures in place, but there is great variation in the existence and the strictness of such policies across states.

Many of the curriculum leaders we interviewed in state-adoption states expressed a sense of obligation to be neutral about the choice of materials throughout the process. Curriculum leaders

who expressed this neutral stance felt it was their professional role to set the process in place and then let the process play out, without influencing the choice itself or even revealing their preference for a particular program or instructional approach. Their role was largely to ensure that the proper procedures were followed and that the committee members all had a voice in the decision. This perspective is, we believe, highly influenced by the policies and regulations provided by the state-adoption states.

A Portrait of One District in a State-Adoption State. The school district of Willow Creek⁶ provides a typical example, from our study, of mathematics materials selection in a state-adoption state and serves to illustrate the influences described above. With over 50,000 students Willow Creek is a large, urban school district. Mathematics textbook adoptions occur every seven years, based on a statewide cycle. Similar to all districts across the state, Willow Creek is selecting new materials this year with implementation scheduled for the fall. If Willow Creek wishes to receive funding from the state—which they rely on—they must purchase materials from the approved state list. Prior to receiving the state list and in compliance with state regulations, Willow Creek created a committee involving interested teachers and parents and provided training about textbook selection, including guidelines for acceptable involvement from publishers and familiarizing committee members with criteria (provided by the state and by school board policy) they should use to evaluate the materials.

Willow Creek received the state-adoption list at the end of November and had until mid-March to submit a selection to their local school board, which then seeks approval from the state for their adoption. District policy at Willow Creek requires the elementary and middle grades to adopt materials from a single publisher at each grade band. At the elementary level, this means they have four options. The committee attended one of the “textbook caravans” set up by the state to hear publishers speak about their materials. One of the teachers on the committee expressed an interest in piloting but state laws prohibit publishers from sharing class sets of materials prior to purchasing. Using criteria similar to that used by the state-level curriculum committee, the district committee reviewed the materials and after a few meetings voted for their choice. This was a secret vote, which was then tallied by the curriculum supervisor and submitted to the board.

The example of Willow Creek is just one story of how the selection process unfolds in a typical state-adoption state. The twenty-one state-adoption states, do range in their spectrum of materials on the state list, the strictness of polices that affect local adoption processes and the timing of both the overall and district-level cycle. What is clear is that state level decisions have an impact on the mathematics instructional materials districts select, as well as on the design of district processes.

Open-Territory States

Similar to state-adoption states, there is a continuum on which the twenty-nine open-territory states lie. In open-territory states, states neither dictate what materials districts must select nor do they fund the purchase of mathematics instructional materials. Although the state does not provide funding for textbooks, they may provide other resources that affect textbook selection. In fact, there is a wide variation in the role of the state in open-territory states, with some states

⁶ The names of all individuals and school districts have been changed.

having characteristics resembling that of state-adoption states and other states still highly reliant on local decision-making with little or no involvement from the state. Below we discuss how open-territory states differ from state-adoption states in the types of documents provided by the state and in the effect state decisions have on the timing of the adoption cycle, and provide an example of the process in a typical district.

Providing Documents about Instructional Materials. Open-territory states generally do not provide a list of state approved materials, opening up the possibility of a wide range of materials being used across and even within districts. Furthermore the state does not control funding; funds for materials are provided from local district budgets. However, there are a few states that provide textbook lists that may influence district choices. For example, the state of Washington provides an analysis of how various sets of mathematics materials align with the state’s standards. In addition, at the time of our study, Washington legislators had called for a recommended list with required use for underperforming districts. The state of Arizona provides a document that reviews how mathematics materials align with the state’s grade level expectations, for publishers that choose to submit their programs for that process. This list, however, is not meant to serve as an endorsement of any particular program. Ohio provides a list of publishers for use by school districts. This very broad list provides the names of all vendors that have been approved by the state, who agreed to some principles of fair play and also agreed to offer a small discount for materials. The list implies no evaluation of the materials; in fact, Ohio law prohibits the state from interfering in local curriculum decisions.

Affecting the Timing of the Adoption Cycle. Districts in open-territory states adopt independently of one another; districts across the state are not usually adopting at the same time. Adoptions may occur for grades K-12 simultaneously or at varying times for different grade levels within districts. These adoptions may be according to a cycle dictated by district policy, but we found that districts in open-territory states are more likely to have some flexibility to consider materials “off-cycle” if desirable, or to regularly adopt on an “as-needed” basis with no set cycle in place. In our study, availability of district funds to purchase materials or support implementation played a significant role in determining when adoption of materials can occur.

The length of the selection process for districts in open-territory states ranges greatly, with some districts engaging in a multi-year process and others spending less than six months to make a decision. Given the leeway to engage in a longer process, open-territory districts in our study were more likely to incorporate piloting into their process than districts in state-adoption states.

A Portrait of One District in an Open-Territory State. Millwood School District provides an illustration, from our study, of how the materials selection process typically occurs in open-territory states. Located just outside a large urban city, Millwood is a relatively high-performing district. There, elementary materials have been in place for the past eight years and test scores have increased with the successful implementation of this program. With no set adoption cycle required by either state or district policy, curriculum leaders consider mathematics adoption on an “as-needed” basis. With hopes of improving their middle grade mathematics program and their state test scores, the district is planning an adoption next year for grades 7–8 and intends to closely align the new materials to the state standards.

The first step for Millwood’s curriculum supervisor is to determine which materials to consider; she begins by talking with her counterparts in neighboring districts to find out which programs

have been successful in terms of student achievement and teacher acceptance. She also researches curriculum options online. Using this information, the curriculum supervisor and her committee (comprised of all seventh and eighth-grade math teachers) will put together an initial list of three programs for further evaluation. This committee will then examine the materials, looking for alignment to the state standards, vertical alignment with other grade levels, and the extent to which each program is research-based. Site visits to local schools and opportunities for parents to comment on the materials will also be a part of this evaluation process. Taking into consideration the strengths and weaknesses of the various programs, the committee will discuss which program would best meet the needs of the district. The committee will then reach a decision via consensus and will implement the program in the fall. All in all, the entire process will last a little over a year.

The mathematics selection process in Millwood School District is typical of those described in the open-territory states in our sample. We found it was common for districts to consider the adoption of mathematics instructional materials when dictated by district need, to be greatly influenced by what is being used successfully by neighboring or comparable districts, and to have some flexibility in the design and the length of the selection process.

STATE STANDARDS AND TESTS AS AN INFLUENCE

The state has tremendous influence on local adoption processes and textbook choices. This is obvious in state-adoption states, where state policies dictate what materials districts consider and what elements must be a part of local processes. Yet just as significant in our study was the influence of state-established standards and tests, in both open-territory and state-adoption states. In fact, curriculum leaders described the need to attend to state standards and tests as a major factor in their decision-making about mathematics instructional materials.

In light of The No Child Left Behind (NCLB) legislation and recent state mandates demanding greater accountability for students' learning there is a focus on alignment with standards and tests that our interviewees claimed was not a prominent factors in prior adoption decisions. Most states have released new state standards within the last five years, many of which are substantially different from past documents and offer a greater level of detail (Reys, 2006). The establishment of grade-level testing for grades 3-8 has resulted in the development of specific grade-level expectations. This release of standards coupled with these increased accountability pressures have prompted districts to reexamine whether their current mathematics materials are covering these standards and preparing students for state tests. In our study, we found a range of effects these standards and tests had on mathematics materials selection:

- Districts examine materials to determine their alignment with state standards and tests;
- The release of standards and tests affects the timing of the adoption cycle;
- Accountability for performance leads districts to centralize decision-making about instructional materials; and
- Easily available state-test data facilitates comparisons between districts, and curriculum leaders use that data in the selection process.

Below we discuss each of these effects in more detail and offer illustrations from typical districts in our study.

Aligning Instructional Materials with State Standards and Tests. Across all eight states in our study, curriculum leaders highlighted the importance of choosing instructional materials that aligned with state standards and were consistent with state tests. Mary Wagner, a mathematics curriculum leader in a state-adoption state, described the pressure she feels to select materials that align with state standards and to cover the material on the state tests. Mary noted, “We have a high stakes math test. . . . We’ve got to be sure that the students learn those skills first. Because we’re accountable to kids who don’t graduate from high school as juniors if they don’t pass those tests. And so that’s our—I mean, I have to be honest, that has to get done.” After receiving sample textbooks, the first thing Mary’s selection committee does is look at standards from the state curriculum, and trace them through textbooks to see how each is taught.

District leaders in both open-territory and state-adoption states discussed doing this sort of “alignment check” as part of evaluating materials. This process of checking alignment ranged from a cursory look – ‘Do these materials align with the general direction of our state standards?’ – to a much more detailed analysis of a range of standards and grade-level expectations. Within state-adoption states, some districts relied solely on the state’s approval of materials as evidence of alignment; other districts did a much more detailed analysis to look at depth of coverage of a particular topic (for example, functions) or to look at a mathematics concept that was particularly weak for students in their district (for example, the division of fractions).

Many of our curriculum leaders also described an alignment process that occurred after they had selected materials. This check for alignment served to determine the order that units or chapters should be taught, and what supplemental materials would be needed to address any gaps between the selected materials and the grade-level expectations set by the state.

Our data suggests that this consideration for alignment provided some curriculum leaders the leeway they need to consider a particular type of program. Some interviewees described their state tests having more open-ended questions and being more investigative in nature; this change in the nature of the tests served as a reason they used with their districts to consider more progressive materials, such as *Investigations*, *Everyday Mathematics*, or *Math Trailblazers*. Yet other curriculum leaders shared stories of the state curriculum swinging back towards a more practice-oriented nature. Sadie Thomas, a curriculum leader in an open-territory state, explains what this looked like in her district.

So, for various reasons, we weren’t really satisfied with it [a progressive curriculum]. We still keep it as a reference, because it still has a lot of great investigations in it, and a lot of great ideas. But for a standard curriculum for the high school, we wanted something that parents could look at and understand how to help their kids, and something that had a lot more practice for kids who need practice. So, when our state changed its curriculum anyhow, that was a good opening for us to get a new textbook.

Changing the Timing of the Mathematics Adoption. For districts in our study, a change in state standards or tests often resulted in a need to hurry up or delay their previously scheduled adoption of mathematics instructional materials. Some of our curriculum leaders reported that they were unable to change materials in response to concerns of a mismatch between current materials and state expectations, because they lacked the necessary resources and felt they must wait until the scheduled cycle when funding was more accessible. However, other curriculum

leaders were able to react a bit differently and seek out the necessary resources to move up their adoption and begin looking at new materials. Districts also shared experiences of how a scheduled adoption was postponed because they were anticipating changes to the state standards and didn't want to adopt materials that might not ultimately align with these documents.

Moving to Centralized Decision-Making. Our data suggests that the pressures of accountability, testing, and alignment to standards is resulting in districts moving toward more centralized decision-making. In our study, this was most obviously evident in districts that historically allowed schools (or even teachers) to make independent decisions about which materials to use; many of those districts now require a common set of materials to be used across all schools. This phenomenon was also evident in the many districts that hold teachers accountable for what content they are teaching through pacing guides and curriculum maps; offer common unit and yearly assessments; and work to establish a coherent program across K–12. Rob Ashton, a curriculum leader in an open-territory state, talks about his district's move to centralized decision-making at the district level.

We have been a district in “academic difficulty” since the designation was created. And part of the reason that we were there was because schools made those decisions locally. Every school had a different reading program. Every school had a different math program. There was no accountability. We could not organize, strategically, professional development, and so we decided that the district would manage the instruction in the district.

Since the district was being accountable for our rating, we needed to be accountable for the programs we were to implement. And so we changed that at the district. Five years ago we said that we would decide on the core programs in reading, math, science and social studies, what those materials would be. And we would be able to, then, better support the professional development that went along with that. And then we could do our own in-house assessments to see how well students were doing, and then we could make schools accountable for the implementation.

Curriculum leaders across our study are using upcoming adoptions to create consistency and coherency across their districts. This allows them to know that teachers across the district are using materials that more closely align with state standards and test requirements. It also allows them to provide professional development that links closely to the materials being used and strengthen accountability throughout the district.

Using Achievement Data to Make Comparisons. In our study, district leaders in open-territory states discussed the use of achievement data provided by the state to see how comparable districts were performing. Curriculum leaders turned to this data when thinking about materials selection, to investigate questions such as: What are comparable districts that are outperforming us using for materials? Where do the scores for other districts using same the program “top out?” Have the scores for other users of a particular program increased? They also contact local users of a program they are using or considering using to investigate questions like: What are other users of *Everyday Mathematics* using for middle school? What did they do to support implementation? District-to-district communication such as this is much more useful to district leaders in open-territory states, because (unlike state-adoption states) districts are not all

selecting materials at the same time. For example, a school district in the state of Washington considering the use of the Glencoe middle school program can find other school districts in the state that have already adopted those materials; they can look at their state test scores; contact the district with questions, and consider a site visit to see the program in action. In Texas, as in the other state-adoption states, all the districts adopt at the same time, so it is nearly impossible to find a district in your region that already has experience with those materials. In open-territory states in our study, this type of district-to-district communication was common, and facilitated by the easy availability of statewide achievement data for comparisons. In state-adoption states, this type of district-to-district communication was minimal or non-existent.

This type of district-to-district communication where districts look at comparable data and discuss program use with neighboring districts also has the potential to lead to trends in material use. Despite the potential for a huge variation in material use in open-territory states given that there are no official state lists, these trends can lead to the narrowing of programs being used and what districts may consider. In our study, districts in Ohio report using the same few programs despite having the opportunity to adopt a much broader range of instructional materials. This is especially true at the elementary level where *Everyday Mathematics* was not only considered by a majority of the districts interviewed but then selected. The prevalence of *Everyday Mathematics* use in part might be connected to the proximity of the developers at the University of Chicago and the availability of professional development and consultants to lead that professional development. However, it also seems to be the result of a bit of a snowball effect in which districts are using it more because they hear of neighboring districts using it and having some evidence of success with it, in terms of test scores rising.

CONCLUSION

There are multiple ways states influence district selection of mathematics instructional materials. As one might expect, the policies and restrictions state-adoption states impose do make a big difference in what materials are selected and how the selection process unfolds. The typical selection process in state-adoption states in our study was more procedural, more driven by teacher committees, and more likely to encourage the curriculum leader to play a neutral role in the choice of materials. The typical district in open-territory states was still likely to include a committee of teachers as the primary decision-making body, but also to include a more active role for the curriculum leader, to take advantage of data and advice from neighboring or comparable districts, and to time their adoption process in response to particular district needs. What united state-adoption and open-territory districts in our study was their almost universal focus on aligning with the state standards, tests, and grade-level expectations for which they are accountable. Alignment with the state standards was a major factor in the selection of materials but also drove the timing of adoptions and the degree to which adoption decisions are centralized within a district. Understanding this role of state context as an influence on the mathematics selection process is critical in these times of increased accountability, where districts are looking to materials selection as a way to improve their mathematics program and ultimately increase student achievement.

REFERENCES

- Ansary, T. (2004). The muddle machine: Confessions of a textbook editor. *Edutopia*, 2, 30–34.
- Ball, D. L., & Cohen, D. K. (1996). Reform by the book: What is—or might be—the role of curriculum materials in teacher learning and instructional reform? *Educational Researcher*, 25(9), 6–8, 14.
- Begle, E. (1973). Some lessons learned by SMSG. *The Mathematics Teacher* 66(3), 207-214.
- Farr, R., & Tulley, M. A. (1985). Do adoption committees perpetuate mediocre textbooks? *Phi Delta Kappan*, 66, 467–481.
- Finn, C. E., Ravitch, D., & Whitman, D. (2004). *The mad, mad world of textbook adoption*. Washington, DC: Thomas B. Fordham Institute.
- National Research Council. (2004). *On evaluating curricular effectiveness: Judging the quality of K-12 mathematics evaluations*. Washington, DC: National Academy Press.
- Reys, B. J., Reys, R. E., & Chávez, O. (2004). Why mathematics textbooks matter. *Educational Leadership*, 61(5), 61–66.
- Reys, B. J. (Ed.). (2006). *The intended mathematics curriculum as represented in state-level curriculum standards: Consensus or confusion?* Charlotte, NC: Information Age Publishing.
- Schmidt, W., McKnight, C., & Raizen, S. (1997). *A splintered vision: An investigation of U.S. science and mathematics education*. Boston: Kluwer Academic Publishers.
- Tyson-Bernstein, H. (1988). *A conspiracy of good intentions: America's textbook fiasco*. Washington, DC: Council for Basic Education.
- Tyson, H. (1997). *Overcoming structural barriers to good textbooks*. Washington, DC: National Education Goals Panel.