In order to understand the impact of New Jersey's standards and assessment policies, this study examined how leaders in six school districts responded to the state's standards and the fourth grade Elementary School Proficiency Assessment, specifically in the area of mathematics. Building on earlier work exploring district responses to testing, this study investigated the relationship between district pedagogy around testing and the will and capacity in particular districts, including physical capital (resources), human capital, and social capital. Data from interviews with 19 district administrators indicated that districts had varying capacity for reform. Districts' responses to standards and testing were heavily influenced by their capacity to support more general reform efforts. In the one district where responses were most consistent with the expectations of state reform advocates, a combination of factors were involved. For example, the human capacity and will were very high, along with growing pressure from parents about test scores, and that all together meant they pursued change that was more systemic and deeper. However, the primary catalyst was teachers' and administrators' own beliefs and understandings of the reform ideas, which was lacking in other districts. (Contains 18 references.) (SM)
Teaching the Test to the Teachers:

*District capacity and policy pedagogy*

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Introduction

Teachers are effected directly by state standards and assessment policies, as they are presented with new expectations for what their students will learn and new mechanisms for determining if students are meeting these expectations. However, much of the impact of these policies is mediated by the outlook of, and decisions made by, district administrators about how to attempt to alter teacher practice in ways consistent with reform goals (Spillane, 1996). Literature on the implementation of reforms has repeatedly shown that local agents interpretations and responses to policy changes have a profound effect on policy impact (Berman & McLaughlin, 1977; Fairman & Firestone, 2001; Spillane & Thompson, 1997).

Supporters of using state assessment to “drive” instructional change suggest that high-quality tests will promote higher quality instruction (Resnick & Resnick, 1992). New Jersey’s Elementary School Proficiency Assessment (ESPA) is a test that relies not just on multiple choice questions, but also on item that expect students to be able to demonstrate more conceptual understanding and explain their responses; this is consistent with some ideas of a “good” test.

In order to understand the impact of New Jersey’s standards and assessment policies, we explore how district leaders responded to the state’s standards and the fourth grade ESPA, specifically in the area of mathematics. Cohen and Barnes, among others, have argued that policy is itself an instrument for teaching and learning (Cohen & Barnes, 1993). Thus, district administrators who are adapting district efforts in response to New Jersey’s standards and the ESPA must determine what their “pedagogy” will be for promoting student learning linked with new state expectations by altering the actions and knowledge of teachers. Building on earlier work exploring district responses to testing (Fairman & Firestone, 2001), this paper explores the
relationship between district pedagogy around testing and the will and capacity in particular
districts, including the physical capital (resources), human capital and social capital (Spillane &
Thompson, 1997). The use of state assessment as an important tool to drive instructional change
relies on multiple levels of the system to respond with substantive – rather than cosmetic –
change. Literature on district reform suggests that district capacity – especially human capital –
may have important implications for how the district level responds to these new demands.

Literature review and conceptual framework

District Responses to Testing

There are a variety of ways in which districts can respond to standards and assessments.
Cohen and Barnes explore the “pedagogy of policy,” or how policy makers have sought
(consciously or not) to “teach” implementers of educational reforms; they conclude that, “the
pedagogy of policy has been didactic and inconsistent” (Cohen & Barnes, 1993, p. 226).
Supporters of standards-based accountability argue that the implementation of aligned standards
and assessments can promote increased student learning (Smith & O’Day, 1991). Districts
developing pedagogy in line with such ideals need to emphasize and support teacher learning
that is consistent with the student learning sought by the standards and assessment. However,
districts can also adopt “quick fixes” through their pedagogy, targeting their efforts in directions
they believe will lead to improved test scores without placing as much emphasis on the
fundamental learning that the tests are designed to promote.

Literature on the district role has primarily focused on reform in general (c.f. Firestone,
1989; Floden & others, 1988; Spillane, 1998b), while literature on the impact of testing has
emphasized teachers’ interpretations and implementation efforts at the classroom level (Fairman
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& Firestone, 2001). Districts must develop or utilize instructional guidance instruments in order to encourage teacher change in response to testing. In terms of general reform efforts, Spillane identifies four “formal channels” used by district leaders to shape classroom teaching and student learning – curriculum guides, materials, student assessment and professional development (Spillane, 2000). In terms of professional development, districts vary in the amount of professional development provided, the depth of content and continuity, and the level of “centralization” of these offerings (Little, 1989). Additional “pedagogical tools” could include using other resources, including altering the role of staff or the use of time, and providing test-specific information to students and parents. The theory underlying standards-based reform suggests that these policy levers should be aligned with one another, and with state standards and assessments (Smith & O’Day, 1991).

The process that districts choose to use in response to testing reflects another set of pedagogical choices. Spillane discusses the value of teacher change and learning that builds on and challenges teachers’ current thinking, and links the use of teacher leaders as central agents in the change process to the development of such learning (Spillane, 2000). The role of teachers in reform efforts is reflected in the tools or policy levers used. As Floden and his colleagues discuss, some districts encourage teacher participation and design policy levers that encourage teacher involvement (i.e. in the district planning process or as teacher leaders), while others focus more on the decisions of district administrators with little teacher input (Floden & others, 1988).

In terms of responses to testing more specifically, Fairman and Firestone found that, in Maine and Maryland, the districts and teachers they studied mostly responded to state standards and assessments by doing more test practice activities in the format of the new assessments and...
adding new topics to the curriculum, rather than focusing on fundamental changes in pedagogy (Fairman & Firestone, 2001).

Finally, it is important to attend not only to what tools are being used in response to testing demands, but whether these tools constitute an overall coherent and consistent strategy, or are merely “piecemeal” changes (Floden & others, 1988; Porter, 1989). As well, in high capacity districts, Spillane and Thompson found that administrators and teacher-leaders, “frequently saw their task as helping their colleagues learn key reform ideas, rather than telling them what the reforms were about and forcing them to change” (Spillane & Thompson, 1997, p. 192). Thus, there was variation in the process of change (top-down versus collaborative with teachers).

Why do districts respond to state standards and testing in different ways?

Research on districts offers some fairly consistent findings on the reasons behind district responses to reform in general, as well as to testing more specifically. The concepts of district will and capacity are particularly useful.

District Will

Several authors have discussed the “will” that is necessary for local agents, including district administrators, to implement change consistent with reform ideas; such motivation is seen in part as the result of the “fit” of district policy with reform ideals (Firestone, 1989; McLaughlin, 1987). Fairman and Firestone argue that individual will to develop new knowledge is similar to professional commitment, and requires some ability to understand the nature of the change sought by the policy (Fairman & Firestone, 2001).

According to Fairman and Firestone, state policy interacts with districts’ and teachers’ will and capacity to influence instructional change (Fairman & Firestone, 2001). They found that
district will depends on some mix of the nature of the state policies (such as stakes or other accountability tools), size of district, governance structure of the districts, and the values of individual administrators. The “will” of district leaders to seek changes consistent with reform more generally is closely tied to their own understandings of reform ideas (Spillane, 1996; Spillane, 1998a). Fairman and Firestone also found that, while some district leaders felt compelled to comply with state mandates, others felt more independent and disagreed with or did not understand the premise of the reforms.

The support of district leaders for reform linked to testing is also likely influenced by other demands on their time and by the level and nature of community pressure to improve test scores. For example, if the district has already committed to implementing certain curricular or testing changes, then administrators may be reluctant to redirect their energy and money when a state policy change comes about (Spillane, 1996). Spillane also notes how, in one suburban district he studied, “community interest in test scores was especially influential in the suburban assistant superintendent’s efforts to make sense of the reforms” (see also Fairman & Firestone, 2001; Spillane, 1998a, p. 50). Fear of embarrassment over public comparisons of districts test scores was one reason that some administrators in Maine and Maryland felt compelled to give more attention to math topics tested by the state or teach test taking skills (Firestone, Mayrowetz, & Fairman, 1997). While administrators’ beliefs about, and understanding of, reform ideas is important, their commitment to change can also be crucial (Spillane & Thompson, 1997).

**District Capacity**

The idea of district “capacity” to support reform, whether in general or specifically around standards and assessments, has been raised by a number of researchers (Fairman & Firestone, 2001; Spillane & Thompson, 1997). Spillane and Thompson focus on three particular aspects of
capacity — physical capital and resources, human capital, and social capital — recognizing that these “capitals” are heavily intertwined (Spillane & Thompson, 1997). Here, we also focus on these three aspects of capacity, but look more specifically at how they are linked to state standards and assessments.

*Human capital.* Human capital in the context of district leadership can be defined as “the knowledge and skills that administrators and teacher leaders command…[along with] the commitment to reform and the disposition to learn” (Spillane & Thompson, 1997, p. 190). Recent research has demonstrated the importance of administrators’ beliefs about teacher learning in overall reform efforts. For example, Spillane highlights how the views of individual administrators on instruction influence their interpretations of state directives (Spillane, 1996; Spillane, 1998a).

These views are particularly important when it comes to the connections between state testing and district leaders’ ideas about reform. Spillane found that some of the districts he studied in Michigan viewed the state assessment as external to their reform efforts (Spillane, 1996). Administrators may value their own locally chosen assessments more than the state’s, which may give teachers conflicting messages about what skills to focus on in instruction. It is also important to note that districts do not necessarily have a cohesive district “vision” related to reform efforts; as Spillane points out, there can be within-district variation in beliefs about reform among key leaders at the district and school levels (Spillane, 1998b).

Spillane and Thompson comment that, in their study, “Invariably we found that the most successful local reformers were knowledgeable about subject matter as well as about current thinking on the teaching and learning of these subjects” (Spillane & Thompson, 1997, p. 192).
The views that district administrators hold may be linked to convictions about teaching based on their own prior classroom experience and training; their individual convictions may be a more powerful influence on decision-making than state policy messages (Spillane, 1996). Spillane notes that, “Work in organizations is also shaped by the particular specializations and professional or occupational identities individuals bring to their work. Individuals in these professional communities share norms, knowledge, perspectives, commitments, and often a language or vocabulary” (Spillane, 1998b, p. 37).

Social capital

Spillane and Thompson found, in the districts they studied, that “social capital in the forms of professional networks and trusting – collegial relations – was instrumental to the creation of the human capital necessary to realize the reform ideas” (Spillane & Thompson, 1997, p. 190).

Networks that bring ideas and support from outside a district, including links with universities and professional organizations, can provide an important resource for district administrators trying to understand reform ideas and determine how to approach district change (Spillane, 1998a; Spillane, 1998b). Spillane comments that, “Professional associations are likely to be important in most medium and large district offices where one is likely to find an array of professional specializations, in subject matter or assessment… Organizational arrangements and professional affiliations help situate local policymakers’ efforts to understand state policy” (Spillane, 1998b, p. 37).

Spillane and Thompson argue that, “developing social capital involves changing the way people relate with each other in order to enable them to achieve goals that could not be possible in the absence of these relations” (Spillane & Thompson, 1997, p. 193). They find that links to formal and informal networks – and the use of those networks – was critical in high capacity...
districts. This was particularly true in smaller districts, where internal human capital was often more limited (Fairman & Firestone, 2001). In this study, all of the districts had access to the New Jersey Statewide Systemic Initiative as one network for building social capital

**Physical Capital/Resources.** Physical capital (which Spillane and Thompson discuss under the heading of “resources”) can include staffing, time and materials (Spillane & Thompson, 1997). Decisions about use of these resources are heavily influenced by a district’s human capital. As well, district size can have an important impact on capacity, as larger district have more resources to draw upon and can have district staff that are more specialized (Fairman & Firestone, 2001).

**Conceptual Framework and Research Questions**

As the above literature review demonstrates, district will and capacity can have an important impact on district responses to reform. In this study, we draw on many of the same ideas to look more specifically at the relationships between will and capacity and district responses to state standards and testing. Specifically, we ask:

*How do districts respond to state standards and testing? What tools and methods do they use to promote change in this context?*

*How does district capacity influence districts’ responses?*

**Methods and Study Context**

**Data Collection and Analysis**

This study involves an examination of the responses to state standards and the ESPA in six districts in New Jersey. This study is part of a larger study that explores the relationship between state testing, professional development and instructional practices in mathematics and science.
The districts were selected through recommendations from leaders at three of the New Jersey Statewide Systemic Initiative Regional Centers. Districts were purposively sampled with the intent of focusing on districts that were actively engaged in math or science reform efforts, and represented a variety of contexts (district size, urban/rural/suburban, and district affluence). Table 1 shows the district characteristics in these areas.

The study is a comparative case study (Yin, 1994) of six districts, and the primary data used were interviews with district administrators. In total, 19 administrators were interviewed. Of these, 11 were interviewed once, and the remaining eight were interviewed twice. Interviews lasted between 45 minutes and one and a half hours. Following the interviews, tapes were transcribed and district profiles were created. These district profiles, along with the original interviews, were coded using the Nud*lst qualitative data software program, based on themes that emerged through the literature and in the process of conducting the study. Following Miles and Huberman, the coded data was then summarized and placed in data matrices based on the themes utilized in this paper (Miles & Huberman, 1994).

**Study Context**

This study takes place in a single state, New Jersey, where standards-based reform has taken a relatively moderate form. New standards were developed, and tests aligned with these standards have been implemented in grades 4, 8 and 12. The single state nature of the study offers an important advantage for a study of district responses to standards and assessment policies, as all six districts are operating within a somewhat similar external context.

However, New Jersey is also a somewhat unique state, in that litigation linked with issues of finance and educational equity has a significant aspect in some districts. Thus, one contextual
factor that may reasonably be expected to influence both district “will” and capacity for reform is whether or not the district is an “Abbott” district. This set of 28 primarily urban, low-income districts have been identified as high needs through a series of state supreme court decisions. As a result of these decisions, the Abbott districts receive additional funds to improve educational quality, but are also under additional requirements from the state. During the time of this study, the Abbott districts were in the midst of implementing mandatory whole school reform models in their schools – this had substantial implications for a district’s ability to take “district” action, as budgeting and professional development decisions were being substantially shifted to the school level. For the most part, the efforts described here undertaken in the two Abbott districts included in this study (Cedarville and Ridley) reflect district strategies prior to the shift towards whole school reform.

Analysis

Strategies for approaching standards and testing

Responses to standards and testing varied from district to district, both in the “tools” used and how those tools were used (i.e. professional development, assessment, and curriculum change), and the process of creating and supporting district-wide change. Table 2 shows a matrix reflecting the different strategies around tools and process used in the six districts studied.

Tools Used in Change

The six districts we studied approached change linked with state standards and the ESPA in a variety of ways, using tools including professional development, curriculum change, assessment, new resources and changed staffing patterns. Each district used a somewhat
different combination of the tools available, and used these tools in different ways (see Table 3). However, upon closer inspection, we were able to identify a continuum of strategies implicit in the tools selected. On one end of the continuum are strategies that rely primarily on tools intended to raise test scores through “test-prep” activities, such as training teachers to better prepare students to be effective test-takers through exercises, materials and/or assessments designed to make students more comfortable with the test format and context and altering the content of the curriculum to reflect topic areas that are “weak.” On the other end of the continuum are in-depth reform-oriented strategies designed to develop teachers’ content and pedagogical knowledge consistent with the goals of the New Jersey standards.

**Professional development**

Professional development was used in all six districts as they sought to respond to new state expectations. However, the intensity, follow-up and content of this professional development varied considerably. In Newtown, which had the most “test-prep” response, professional development linked to standards and testing was solely provided by outside experts and district staff, and focused on issues such as how to correlate standards with the curriculum. Professional development in this district is primarily “one-shot” workshops, and there is little in the way of follow-up (with the exception of teacher observations, where teachers are expected to have lessons that are linked to the standards). Willis Creek also focused primarily on “test-prep” activities, but supplemented workshops with some classroom follow-up.

In the “combination” category, districts used professional development with a mixture of goals, some aimed to enhance teachers’ knowledge and understanding, and others designed to prepare teachers to respond to specific issues of content and test-taking strategies. These districts required some attendance at workshops, and also offered more in-depth opportunities for professional development.
interested teachers (such as courses for university credit). Ridley, the most “heavy-handed”
district in this area, required teachers to demonstrate classroom use of workshop concepts before
they received all compensation for workshop participation. Sunset is the one district where the
overall response to state expectations has been the most consistent with promoting substantive
teacher learning. Here, professional development in the district’s ongoing, intensive
mathematics reform effort has not been altered considerably in response to state policy, but some
supplemental workshops on standards, ESPA and testing strategies have been added.

Assessment

In most districts, analysis of test scores from the ESPA and supplemental standardized tests
were used to identify areas of weakness and the district’s curriculum or “signals” to teachers
about areas to address were altered to enhance instruction on topics seen as inadequately
covered. In Willis Creek and Newtown, this was the full extent of the use of assessments in
change efforts. Other districts, however, viewed assessment as a richer tool and used this
strategy in conjunction with additional uses of assessment.

Two districts (both low-income “Abbott” districts) were the heaviest users of assessment –
adding both standardized tests and district assessments. In Cedarville, results on district
assessments are tracked at the district level. According to the math supervisor:

We feel that these [tested areas] are the main ideas at each grade level and we try to
monitor the growth the student is making... What we are expecting our teachers to do is,
depending on how the student scores on this, to then start spiraling their teaching. So,
recovering skills so the next time they take it they do better. It is a way to monitor how
we are covering the different strands and how our curriculum is doing. Then, all that data
is sent back to me... Again, it is giving us a way of instant feedback of how things are
going.

Sunset has taken a more “bottom-up” approach to assessment than the other districts. While
the district is giving the Terra Nova test in pre-ESPA years, they are also working to utilize new
teacher-developed classroom assessments that are a part of their overall reform strategy to promote student experience with ESPA-like testing questions and strategies. Teachers, who are being trained in developing alternative classroom assessments, are asked to present them in a format and style similar to those in the ESPA. All of the other districts are also encouraging the use of more open-ended classroom assessments, but not in the systematic or in-depth manner found in Sunset.

**Curriculum and Materials**

In each district, curriculum have been realigned to match the state standards and testing guidelines; the level of revision varied, depending in part on how “reform-oriented” previous versions of the curriculum were. In terms of materials, all of the districts have purchased new materials for mathematics in recent years - in four districts, this has meant new textbooks, while the remaining two (which are moving to non-textbook based math programs) have bought other materials and tools. Newtown and Willis Creek were most focused on test-prep materials; Newtown specifically purchased test-preparation materials used in neighboring districts that had scored better on the ESPA.

**Staffing and time changes**

Making changes in the use of staff and time during the school day can enable districts and schools to offer different types and intensity of instruction, and to enhance human capital to support change. In Newtown, there were no changes in staffing patterns or use of time in response to the state standards and the ESPA. Other districts, including Willis Creek, Hillview and Ridley, made fairly minor changes in staffing and did not alter the school day. Cedarville
had the most substantial staff changes, where three “teacher coordinators” for mathematics were added to the district staff.

In terms of time, Sunset provided additional time throughout the year for mathematics to support the effort to offer more constructivist-oriented instruction. On the other end of the spectrum, Willis Creek’s superintendent explicitly stated that, “two weeks before the test is given, everybody stops functioning and just works on teaching those test skills.” While other districts likely emphasize testing skills in the weeks leading up to the ESPA, this was the most open and explicit allusion to such an effort. One shift reported in many districts, while not formalized through curriculum or official time allocations, was towards instructional times in areas where test scores were weaker (especially language arts and mathematics) and away from areas that are either untested or were district scores were seen as acceptable (often the case with science).

Other tools

There were a number of tools used in addition to those discussed above. Four districts offered additional instructional time, before or after school, or during the summer, to students that were identified as likely to do poorly on the ESPA. Several districts also used observations and administrator “walk-throughs” in classrooms to check on compliance with district policies.

Community links

Making real and substantive change in mathematics instruction, as envisioned in the New Jersey Core Curriculum Standards and the ESPA, could place districts at odds with communities that are more accustomed to traditional approaches to math. The two test-prep oriented districts, which made little substantive change, also did little to explain to parents and their communities
their approach to state initiatives. The remaining four districts used a variety of strategies, including from state-supported FANS (Families Achieving the New Standards) parent workshops, additional sessions for parents on mathematics reform, and one district’s cable access show that offered parents demonstrations on how to help their children with a “new” kind of math homework.

Process of Change

In addition to varying in terms of tools and overall strategies, districts also varied in the process they used to promote change (see Table 4). Some districts emphasized a “top-down” model, consistent with the teacher-driven pedagogy often used by policy makers and discussed by Cohen and Barnes (1993). Others combined district-driven change with a heavier reliance on teachers and teacher leaders to support and design the district response. No district in our sample relied primarily on a teacher-driven response to standards and testing. In at least one district, Ridley, administrators expressed a strong interest in building internal capacity and relying more on teacher leaders, but felt that all but a few teachers were uninterested in playing an active role in district efforts.

As demonstrated here, the six districts in this study used a range of tools to respond to new state expectations around standards and the ESPA, and used those tools in a variety of ways. In some cases, tools were used as a mechanism primarily designed to improve scores, while in other cases efforts were focused more on substantive learning.
Links Between District Will and Capacity and Responses to State Standards and Testing

In order to better understand the strategies used by districts to respond to the New Jersey Core Curriculum Standards and the ESPA, we examined administrators’ explanations of district will, or motivation to change, district capacity (including human capital, social capital, and resources/physical capital), and barriers or perceived barriers to change (see Table 5). Consistent with work by Spillane and Thompson, among others, we found that these different pieces were highly inter-related. While we separate them for analytic purposes, it should be visible throughout that the different aspects of will and capacity are interwoven.

District Will

District will, or motivation to seek change in response to state standards and the ESPA, was connected with both internal and external pressures. Externally, will was largely linked to pressure from the community (especially as reflected through the school board) and parents to improve test scores. Most of the districts, independently of their process of change and tools for change, expressed that test scores are influenced their motivation because of the public image aspect, the pressure from parents who demand better test score and the embarrassment of being scoring lower than expectations.

Community and parental pressure is found in all six districts studied. In New Jersey, DFG (district factor grouping) is a summary of the socio-economic status of a district and can range from A (very low socioeconomic status) to J (high socioeconomic status). DFG is frequently used for comparisons with neighboring districts. For example, in Newtown, an administrator commented that, “Opening day here, in September... the [superintendent] puts the scores up on the overhead and...she supplies all of the scores of all the neighboring “I” districts.”
of districts (Sunset, Willis Creek, Hillview), changing district demographics that are making the districts less affluent and more diverse are adding an additional pressure as administrators must explain if and when scores go down (especially relative to neighboring districts) in conjunction with these changes.

This external parental/community pressure appeared to be stronger in more affluent districts, where comparisons with other districts were frequent. As a Sunset administrator commented, “It’s a wealthy community… In a district like this, we don’t have the luxury of not doing well on standardized tests. It’s extremely important to our parents how well their children are doing in comparison to like districts.” However, middle and lower-income districts are not immune to such pressures. For example, the math coordinator in Hillview commented that, when the test scores were published, the “board just flipped. They really did. The board’s bottom line is test scores.” According to the superintendent, “they [board members] take it very personally when the scores come out comparing [us] with other districts… I had a board member actually shake his finger at me and say, ‘I demand better test scores.’” In the lower income districts, especially the Abbott districts, the external demands comes from a combination of community pressure and concern about greater state involvement (i.e. state takeover, which has happened to three districts).

The demands from outside the district structure were often translated into internal pressure to improve scores, especially from superintendents who must respond to school board questions about test results. As one supervisor in Cedarville commented, “We are very concerned about bringing up our test scores. Our superintendent is very focused. He wants to raise achievement.” District will was clearly elevated by external pressures in these cases. However,
internal pressures/expectations can also influence the level of response to state standards and testing.

Administrators in several districts talked about their support for the thinking and ideas that were the underpinnings of the state efforts. For example, they spoke of using the testing and standards to convince other district officials, teachers and parents of the need to move in more “reform-oriented” directions. However, a number of administrators in districts that used the spectrum of responses to the ESPA raised questions about the validity of this particular test.

The pressure to raise test scores and the desire to move towards content and pedagogy consistent with the standards were somewhat divorced in all of the districts. Thus, all districts used at least some test-preparation or test-besting materials, even though administrators questioned their educational value. Information from other districts about success in raising scores through the use of such materials and strategies provided further support for what administrators saw as educationally questionable practices.

**District Capacity**

The human and social capital in a district, and the resources available for responses to changing state expectations, are heavily dependent on each other. For example, districts with substantial human and social capital are probably more likely to receive grants to support capacity-building because they have people with knowledge of grant availability and the time and understanding needed to successfully seek grants. In turn, the availability of resources, whether through district funding or external funding, can be critical in building capacity.
Human Capital

Human capital, or the availability of individuals who can support change efforts in response to state standards and testing, involves people who are both able to devote time and effort and have the knowledge and understanding necessary to use their energies to move the district in the directions envisioned by state leaders and supporters of standards-based reform. Districts with more “sophisticated” responses to state standards and testing had more human capital. This human capital was at the district level but, especially in the most reform-oriented district, was also throughout the teaching staff.

The two districts that responded to state standards and testing primarily with efforts to increase scores through content changes and test-prep activities had only one person at the district level to support change, and that person was spread across multiple content areas. In both cases, neither the superintendent nor the administrator focused on mathematics had a strong background in the content area. While the most reform-oriented district also only had one district staff person working with mathematics and other content areas, the district staff person in Sunset was highly experienced in the area and had an exceptionally strong and well-trained core of teachers interested in mathematics reform on which to draw. The three larger districts, which all took a multi-pronged attack approach, had district staff focused just on mathematics.

At the level of district administrators beliefs and understandings, two aspects were particularly important in influencing the overall district response: their beliefs about what (if anything) teachers need to learn in order to improve test scores and how they believe teachers are best supported in this learning. In terms of what needed to be learned, district administrators varied considerably. In Newtown, the most test-prep oriented district, the curriculum director suggested that teachers had little to learn; in commenting on his frustration with the ESPA, he...
argued that, for teachers, “It just means pressure and embarrassment and a sense of futility because I think in about 99% cases, they’re doing the very best they can. …and it’s a bit of an anomaly to me why we would do badly [on test scores].” The main changes he described as needed involved teaching strategies – more hands-on work, more use of manipulatives, and more “active learning” – that he did not connect with broader ideas of promoting students conceptual understandings.

Districts with a mixed process of implementation and with a non-exclusively testing pedagogy seemed to have a more coherent discourse about what good teaching and learning is and a better understanding of the standards. In Cedarville, the math coordinator argued that teachers had much to learn; she said that, “the teachers don’t have the content knowledge. They need to know what they’re teaching…Especially when you have to start doing activity-based instructions. [Teachers] really have to have control [of content knowledge].” Similarly, in Ridley, the curriculum director and superintendent felt that teachers need good content-based courses, such as the college-level math education courses they offer in the district. While resources sometimes limited districts’ ability to follow through on administrators’ ideals, but an expectation that teachers’ pedagogical and content knowledge needed to be supported was a necessary (if not sufficient) condition for a more system-wide response to testing in these districts.

In addition to variation in ideas about what teachers need to learn, district administrators also vary in how they think it is best to support and promote teacher learning. In most of the districts, administrators saw a need to “coax” or require teachers to take more responsibility, get more actively involved in district professional development or curriculum efforts, or pursue professional learning (pressure, incentives, or accountability tools needed). This was particularly
true in districts where administrators had a perception of low human capital and motivation among teachers. In these cases, they were more likely to use “carrots and sticks” to promote participation in efforts linked with testing and standards.

In two districts (Newtown and Ridley), administrators were explicit in arguing that teachers learn under pressure, and that this is why they were increasing methods of “control” (i.e. by mandating participation and compliance). District administrators in places where more system-wide changes were sought were more likely to see teacher learning as a long-term process requiring a variety of strategies (including formal professional development, teacher collaboration, and in-class follow-up). For example, an administrator in Ridley argued that, for real change “I really think the only way to do that is over a long period of time. Having a math specialist working with a small number of teachers on an ongoing basis. A privilege that we don’t usually have.”

Social Capital

As in Spillane and Thompson’s study, social capital – both internal and external – was strongly influenced by human capital (Spillane & Thompson, 1997). Overall, in these districts, social capital was necessary to support change efforts, but was insufficient without human and internal social capital in the district that was also supportive of such change and sought external links. The two “test-prep” districts had the fewest external connections around mathematics, and primarily relied on a few external professional development providers and a little assistance from the New Jersey SSI. The three districts that had a “mixed” response to testing and standards all had external partnerships that were supportive of more reform-oriented responses (including more substantial links with the New Jersey SSI); these partnerships provided networks between district staff and district teachers and external reform organizations. Ridley had the most
extensive external networks, drawing in partners from universities, reform organizations and businesses.

While Sunset did not have the number of partners found in some of the other districts (i.e. Ridley), the connections between the district and a local university were very rich and deep. For example, a number of people in the district had done graduate level work at the university with the same faculty and staff who were now coming to support the district's reform efforts. As well, the curriculum director had particularly strong ties with the state and state math organizations.

Social capital involves not only external relationships, but also networks and relationships among those within a district. Efforts such as study groups (Cedarville) and additional after-school time for teacher collaboration (Sunset) provided forums for teachers to share ideas and support. As well, using internal resources such as teachers to provide professional development or support to their peers also enhanced internal social capital. Overall, those districts with more human capital internally used this for professional development and to continue to support district efforts.

Physical Capital/Resources

The availability of resources other than people to support change efforts also varied across these districts. One obvious type of resource is general district funding. However, in our sample, the districts with more financial capacity (higher income "I" districts for instance) did not necessarily pursue reform more aggressively than low or middle-income districts, nor did their administrators and teachers have the will, attitudes, dispositions, or human capacity (knowledge, skills) to pursue reform aggressively on their own. If they were doing "well enough" on test scores, than there may not have been anything prodding them to pursue more substantive...
changes. Only if their test scores dropped with respect to their DFG did they feel embarrassment from the comparison, and feel pressured by parents/school board to change "something", though they seem at a loss to know what to do.

The availability of money in addition to regular funding came primarily from two sources – grants (usually from the government or foundations) and extra funding for the two Abbott districts. The districts that had substantial external funding were also those that had the human capital that could pursue such resources. The Abbott funding was an important asset for those districts; the superintendent in one commented that, “the number one benefit to this school district in this last, I would guess 40 years, has been the Abbott Supreme Court decision.” However, the Abbott money can be a mixed blessing. Near the end of this study, the two Abbott districts were actively implementing one of the court mandates, the adoption of whole school reform models in each school and the shifting of district resources towards school-based budgeting. In the context of district reform efforts, such changes stopped or altered much of the district-level response to standards and the ESPA.

While other studies have suggested that small district size can create more challenges for reform (Fairman & Firestone, 2001), it is interesting that the most system-wide response to standards and the ESPA came from one of the smallest districts. In this case, the limitations of a small district staff were overcome by substantial and deep capacity among the teaching staff in an affluent district.

**Administrator-Identified Barriers to Reform**

From the perspective of administrators, the three most commonly mentioned barriers to pursuing change consistent with the standards and state assessments involved teachers, the community and resources. Issues around staffing were mostly raised in the lower-income
districts of Ridley, Cedarville, and Hillview. In these districts, problems with staff quality and teacher turnover were raised by a number of administrators. As well, teacher beliefs and resistance to change were also identified as a barrier to reform. For example, an administrator in Ridley argued that,

> We have problems with our belief system in terms of many of the staff members not having a sense of efficacy about their ability to influence the development of all children towards high standards and the standards-based curriculum. Teachers do not look at our children and, this is a generalization, but it's a large enough generalization to be an issue in our district, teachers do not look at themselves as having the "Right Stuff"... to overcome the social pathology that they attach to the kids and the kids' learning capacity.

For those districts that were pursuing reform efforts that were non-traditional (i.e. a non-textbook based math program), ongoing efforts were needed to demonstrate to parents and the community the value of such an approach. In other districts, including Newtown and Willis Creek, administrators said that they were not pursuing more reform-oriented approaches to mathematics because of anticipated community resistance; using a strategy such as that in Sunset to build parental and community support did not appear to under serious consideration in these districts.

Finally, even in districts where administrators had an understanding of standards and testing consistent with ideas of “standards-based instruction” and described programs they thought were needed to support these ideas, the ability to put into place the programs seen as needed was limited due to financial resources. One interesting finding in this area was that, while low income districts may have administrators that have very high human capacity (an-understanding of the reform ideas and content knowledge, as well as the will to pursue change), they are limited in what they can do because of low teacher will and capacity, lack of financial resources and number of district-level staff. Still, places like Ridley are trying hard to overcome the problem of teacher will by forming partnerships with many outside experts and organizations and
corporations to provide the funding, materials, people, and ideas to help their teachers learn new ideas and strategies. This means, low-income districts may have to do change in a piecemeal way, where as higher income districts that have sufficient will and human capacity can do more systemic change or system wide change.

Discussion

The rhetoric behind using assessment to drive instructional change focuses on the nature of the state testing policy and accountability. However, this paper shows how six districts operating within the same set of state policies responded quite differently. Our findings are consistent with research on district reform (c.f. Fairman & Firestone, 2001; Spillane & Thompson, 1997), in finding that districts have varying capacity for reform, but enhance that literature by focusing on strategies used in responding specifically to state standards and testing. Overall, we found that districts’ responses to standards and testing were heavily influenced by their capacity to support more general reform efforts. In the one district where responses were most consistent with the expectations of state reform advocates, a combination of factors were involved. The human capacity and will were very high in Sunset, along with some growing pressure from parents about test scores, and that all together meant they pursued change that was more systemic and deeper. However, the primary catalyst was teachers' and administrators' own beliefs and understandings of the reform ideas, which was lacking in a district like Newtown.

If district administrators do not have a strong interest in reform and a reasonable understanding of the purpose of the assessment and the types of changes in teachers’ pedagogical content knowledge, then they are unlikely to respond to state expectations in substantial and sustained ways. As well, they must have the financial resources and the social networks and
tools necessary for such change. Administrators need to not only understand reform ideas but also believe that teachers need to engage in substantial learning in order to implement them. While some argue that “teaching to the test” (Resnick & Resnick, 1992) can be a beneficial strategy if the tests themselves are good, the kinds of district strategies consistent with teaching to the test found in this study varied considerably. In keeping with this theme, the will for reform needs to be linked in part to internal “buy-in” or support for state-supported changes, not just external pressures linked with test scores.

Thus, in any income category, the variation in administrators' will and capacity (knowledge and understandings of the reform) and teachers' will and capacity are key to the problem of driving change through testing and standards. In a few cases, a few teachers have helped to move their district toward change by bringing back ideas from professional development experiences. But, in most cases, district leaders needed to communicate a clear goal for moving in this direction and use a combination of pressure and support to move the more reluctant (and usually older, veteran teachers) to make an effort to learn new content and change practice. In the absence of this leadership or understanding, change efforts are really just superficial, where they match up the topics and lingo of the standards to their curriculum documents, but don't really change what and how teachers are learning and the materials they have to use, or provide on-going support.

If state policy makers wish to use assessment as a tool to promote instructional change and, ultimately, enhanced student learning, they need to recognize that how districts interpret and respond to new state policies is an important intervening factor in their efforts. While individual teachers may, through their own independent learning, develop the pedagogical content knowledge promoted by reformers, the support of districts in this area could be a significant asset.
for policy makers. Building district capacity in all its forms may be a critical (although likely not sufficient) mechanism for using state assessments as an effective policy tool.
### Table 1: District Characteristics

<table>
<thead>
<tr>
<th>District</th>
<th>DFG</th>
<th>Size</th>
<th>Grades</th>
<th>Rural/Suburban/Urban</th>
<th>District Administrators Interviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ridley</td>
<td>B</td>
<td>5,000-10,000</td>
<td>K-12</td>
<td>Urban</td>
<td>3</td>
</tr>
<tr>
<td>Cedarville</td>
<td>B</td>
<td>8,000-12,000</td>
<td>PreK-12</td>
<td>Rural/Suburban</td>
<td>5</td>
</tr>
<tr>
<td>Hillview</td>
<td>CD</td>
<td>5,000-10,000</td>
<td>PreK-12</td>
<td>Urban</td>
<td>4</td>
</tr>
<tr>
<td>Sunset</td>
<td>I</td>
<td>1,000-2,000</td>
<td>K-8</td>
<td>Rural</td>
<td>2</td>
</tr>
<tr>
<td>Newtown</td>
<td>I</td>
<td>1,500-2,500</td>
<td>K-8</td>
<td>Suburban</td>
<td>2</td>
</tr>
<tr>
<td>Willis Creek</td>
<td>I</td>
<td>2,000-4,000</td>
<td>K-8</td>
<td>Suburban</td>
<td>3</td>
</tr>
</tbody>
</table>

### Table 2: Types of District Responses to Standards and Testing

<table>
<thead>
<tr>
<th>Tools Used in Change</th>
<th>The Process of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>District-Driven</td>
<td>Combination of district and teacher leadership</td>
</tr>
<tr>
<td>Primarily test-preparation/ “test-besting”</td>
<td>Newtown, Willis Creek</td>
</tr>
<tr>
<td>Combination of test-prep and system-wide reform</td>
<td>Hillview, Ridley, Cedarville</td>
</tr>
<tr>
<td>Primarily focused on system-wide reform</td>
<td>Sunset</td>
</tr>
</tbody>
</table>
Table 3: Tools used in District Responses to Testing

<table>
<thead>
<tr>
<th>District</th>
<th>Overall Use of Tools</th>
<th>Professional Development</th>
<th>Assessment</th>
<th>Curriculum and Materials</th>
<th>Staffing and time changes</th>
<th>Other Tools</th>
<th>Family/Community Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newtown</td>
<td>Test-prep oriented</td>
<td>One-time workshops focused on ESPA content and connecting content with curriculum</td>
<td>District using NJPASS, an “ESPA look-alike” in pre-ESPA years. Scores analyzed for areas of content weakness</td>
<td>Curriculum aligned with standards, more centralized at district level Purchase of new textbooks aligned with standards and ESPA and “test-prep” materials</td>
<td>None</td>
<td>Before school program for students identified as likely to score low on ESPA Extra-curricular activities cut to focus on testing</td>
<td>Parents asked not to go on vacation during the week the ESPA is given</td>
</tr>
<tr>
<td>Willis Creek</td>
<td>Test-prep oriented</td>
<td>Workshops on ESPA focused on what content areas to focus on prior to test. Some classroom follow-up by district staff and external experts.</td>
<td>Terra Nova analyzed to determine content areas to be covered in more depth prior to the ESPA</td>
<td>Curriculum previously aligned with NCTM standards, minor adaptations made for state standards Purchase of new textbooks aligned with standards and some “test-prep” materials</td>
<td>Move to two content-oriented supervisors instead of one assistant superintendent. Explicit use of time immediately before testing for preparation</td>
<td>After school program for students identified as likely to score low on ESPA</td>
<td>Website with curriculum available to community</td>
</tr>
<tr>
<td>Hillview</td>
<td>Mixed</td>
<td>Extended ESPA workshops, focused on both substance and “test-prep” activities More in-depth math courses available in-district, and math supervisor offers demonstration lessons for teachers</td>
<td>Terra Nova scores analyzed to determine content areas to be covered in more depth</td>
<td>Curriculum aligned with standards – topics emphasized in ESPA specifically covered in 4th grade District moving away from textbooks in mathematics, materials purchased</td>
<td>One elementary teacher placed on “special assignment” to assist in standards/testing related work across content areas</td>
<td>Additional out-of-school time for students identified as likely to score low on the ESPA</td>
<td>Many parents nights on math issues, FANS workshops, and cable show demonstrating how parents can help students with new kinds of homework</td>
</tr>
<tr>
<td>Ridley</td>
<td>Mixed</td>
<td>Some teachers participate in on-going voluntary professional development with follow-up. Compensation for external workshops requires that teachers demonstrate ideas in classroom. District beginning turnkey training on NSF-approved, non-textbook based math curriculum.</td>
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<td>NIPASS used in pre-ESPA years, new Standards Reference Exam in grade 4, and district assessment three times a year as well. Tests used to diagnose and evaluate. &quot;Proctors&quot; used to avoid teacher &quot;cheating.&quot;</td>
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<td></td>
<td></td>
<td>Curriculum aligned with standards. District focuses on one content area at a time Purchase of non-textbook based math curriculum.</td>
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<td></td>
<td></td>
<td>Staffing changes resulting from whole school reform. Encouraging teachers to develop leadership capacity.</td>
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<td></td>
<td></td>
<td>Administrative staff &quot;walk-throughs&quot; of classrooms to check for compliance</td>
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<td>Sessions for parents on standards, ESPA rubrics. FANS workshops, but poor attendance/involvement by parents.</td>
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<tr>
<td>Cedarville</td>
<td>Mixed</td>
<td>Mandatory on-going workshops focuses on developing content knowledge in tested areas. In-class support/modeling/follow-up provided by teacher coordinators. Focus on support on low-scoring schools. Teacher study groups around reform effort. Some teachers participated in extensive summer workshops on math content knowledge.</td>
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<td></td>
<td></td>
<td>Terra Nova and ESPA scores analyzed for weaknesses. District assessments linked to ESPA given frequently in 3rd and 4th grade and tracked by district office at student level. Teachers expected to &quot;recover&quot; skills</td>
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<td></td>
<td></td>
<td>Curriculum regularly adapted in response to standards, testing, and analysis of test scores New textbooks and manipulatives purchased, along with test-prep materials</td>
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<td></td>
<td></td>
<td>Three teachers hired as “teacher coordinators” in mathematics to provide professional development and in-class support</td>
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<td></td>
<td></td>
<td>After school program for students identified as likely to score low on ESPA</td>
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<td></td>
<td></td>
<td>Some parental outreach, including FANS workshops</td>
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<tr>
<td>Sunset</td>
<td>System-wide reform</td>
<td>Primary emphasis of professional development on adoption/implementation of NSF-approved, non-textbook based math curriculum, but some additional workshops on standards/ESPA and testing strategies. Teachers, district staff and external experts all engaged in provision of professional development.</td>
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<td></td>
<td></td>
<td>Terra Nova offered in pre-ESPA years. Teachers are working to do more alternative classroom assessment so kids can get better at following the directions and doing bigger multi-step problems such as found in the ESPA.</td>
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<tr>
<td></td>
<td></td>
<td>Curriculum aligned with standards Purchase of non-textbook based math curriculum.</td>
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<td></td>
<td></td>
<td>Mathematics has extended time No significant changes in staffing, except that some teacher leader roles created to help provide teacher workshops and parent meetings.</td>
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<td></td>
<td></td>
<td>District pulled back from inclusion policy in order to see impact on test scores of more “pull-out” work with students in special education</td>
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<tr>
<td></td>
<td></td>
<td>FANS workshops, meetings on district math curriculum and testing, parent visits to classroom to do math work with students.</td>
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</tr>
</tbody>
</table>
Table 4: Process of Change in District Responses to Testing

<table>
<thead>
<tr>
<th>District</th>
<th>Overall Process of Change</th>
<th>Description of process of change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newtown</td>
<td>District-driven</td>
<td>Centralized effort by district staff, using external experts, to change content taught to be more consistent with the ESPA and to improve students' test-taking skills. Administrators say they've sought to involve teachers more, but that teachers have been relatively uninterested.</td>
</tr>
<tr>
<td>Willis Creek</td>
<td>District-driven</td>
<td>Teachers involved in curriculum and staff development committees, but process orchestrated and operated by district staff. Heavy reliance on external experts.</td>
</tr>
<tr>
<td>Hillview</td>
<td>District-driven</td>
<td>District staff have driven change efforts, but have sought to have some teacher involvement through participation in curricular revision. Primary reliance on district staff and outside experts as “teachers” of standards and test-linked changes</td>
</tr>
<tr>
<td>Ridley</td>
<td>District-driven</td>
<td>Strong district pressure on teachers from district staff, and primary reliance on district staff and outside experts. Use of multiple university and corporate partnerships for funding, curriculum materials, and professional development. Some effort to develop teacher leaders.</td>
</tr>
<tr>
<td>Cedarville</td>
<td>Combination of district and teacher leadership</td>
<td>District initiated, but teachers actively involved in curriculum revision (committee meets frequently with external expert). Teacher coordinators an important aspect of response to standards and testing. External experts used, but conscious effort to develop internal expertise.</td>
</tr>
<tr>
<td>Sunset</td>
<td>Combination of district and teacher leadership</td>
<td>District emphasis currently on test scores along with general reform, but district staff and teachers all heavily involved in reform efforts that are consistent with ESPA and standards, but preceded the implementation of state standards and the ESPA. Ideas for moving to non-textbook based curriculum originated through teacher involvement in graduate coursework in math education and NCTM standards. Some use of external experts and university partnership, but most of the work initiated and carried out by teachers supported by principal and district curriculum director.</td>
</tr>
</tbody>
</table>
Table 5: Districts’ Approach to Reform and Will and Capacity

<table>
<thead>
<tr>
<th>District</th>
<th>Motivation</th>
<th>Human Capital - Availability</th>
<th>Human Capital – Beliefs about how teaching needs to change</th>
<th>Social Capital</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newtown</td>
<td>Parent and community pressure for improved test scores</td>
<td>One district curriculum coordinator who covers all subject areas (background is not in mathematics or science)</td>
<td>Focus on need for more active learning</td>
<td>Working with other districts in consortia to provide professional development and minor connections with New Jersey SSI.</td>
<td>Main reliance on internal district funds</td>
</tr>
<tr>
<td>Willis Creek</td>
<td>Pressure to raise scores from within district and community.</td>
<td>One content supervisor who covers math, science, music, etc. – her background is in elementary education, not mathematics</td>
<td>Emphasis from multiple district staff on teaching strategies and real life examples and a shift away from “rote memorization”</td>
<td>Some connections with other local districts and minor connections with New Jersey SSI. A couple teachers sent to external workshops.</td>
<td>Main reliance on internal district funds</td>
</tr>
<tr>
<td>Hillview</td>
<td>Strong pressure from parents and school board. Pressure for more general reform from expectations in mathematics community.</td>
<td>Math coordinator active in state associations. Teacher on “special assignment” who helps prepare other teachers for state testing in all areas.</td>
<td>Math coordinator describes desirable teaching as focusing on problem-solving and manipulative use, as well as lessons that include more traditional approaches</td>
<td>Connected with local university through New Jersey SSI.</td>
<td>External funds through SSI and other government support.</td>
</tr>
<tr>
<td>Ridley</td>
<td>Pressure to raise scores from community and superintendent. Pressure for more general reform from expectations in mathematics community.</td>
<td>Director of Curriculum and superintendent that have strong background and interest in mathematics. Some teacher capacity, but limited (according to district staff). Superintendent former math teacher.</td>
<td>For reform, director of curriculum says, “teachers should be looking to have the students construct their own understanding of what is going on.”</td>
<td>District administrators have strong concerns about teachers' content knowledge in mathematics and see need for long-term, intensive professional development.</td>
<td>District and some teachers have made significant efforts to link with outside partners, and has an extensive list of partners in multiple areas that schools and teachers can (and do) call upon.</td>
</tr>
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<tr>
<td>Cedarville</td>
<td>District superintendent very focused on raising scores, even though district fairly high relative to other districts with comparable demographics. Pressure for more general reform from expectations in mathematics community.</td>
<td>Well-trained math supervisor combined with math teacher coordinators who provide classroom support.</td>
<td>Math supervisor emphasizes need for active learning and learning linked to real life applications</td>
<td>Emphasis on increasing teachers' content knowledge because of belief that lack of knowledge is a barrier to improvement.</td>
<td>Math supervisor active in state math organizations. Multiple teachers and district level staff have been actively engaged with local university through New Jersey SSI.</td>
</tr>
<tr>
<td>Sunset</td>
<td>Pressure to maintain high scores in context of changing district demographics (district is becoming much larger, somewhat less affluent and more ethnically/racially diverse). Strong reform effort in mathematics has supported those aspects of ESPA that are consistent with district effort.</td>
<td>Curriculum director highly trained in mathematics and strong connections with state. Some teachers very highly trained in mathematics</td>
<td>Learning that may use manipulatives, etc., but focuses on developing students understanding of conceptual ideas and ability to reason mathematically.</td>
<td>Curriculum director believes teachers need to learn more content and different ways of teaching. Teachers need intensive training, opportunities to collaborate on “real work” with other teachers.</td>
<td>Strong connections with university faculty in mathematics education through New Jersey SSI. Teachers included in building of social capital through links with outside providers and time for internal networking/support.</td>
</tr>
</tbody>
</table>
References


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