



The purpose of this Learning Policy Center brief is to communicate with districts and schools about the potential challenges and opportunities for sustaining ambitious instructional reforms over time in the face of policy change.

### KEY FINDINGS

English as a Second Language policy mandates “landed on top” of recent elementary mathematics reforms, resulting in no district messages about mathematics and district-wide declines in mathematics teacher learning opportunities.

**PAGE 2**

Some elementary schools managed to sustain teachers’ mathematics learning opportunities alongside ESL mandates by using strategies that created connections and coherence between mathematics and ESL.

**PAGE 3**

Specific strategies that encouraged coherence between mathematics and ESL in one case study school included a consistent, shared vision for mathematics instruction and departmentalized mathematics teachers.

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## Sustaining Ambitious Instructional Reforms amidst the Tides of Policy Cycles

by Julia Kaufman & Mary Kay Stein

Educators and researchers argue that ambitious instructional reforms require sustained, content-based opportunities for teacher learning.<sup>1</sup> However, the current policy environment for instructional reforms is often a shifting sea of numerous initiatives, fragmented intents, and continually changing instructional foci.<sup>2</sup> In this environment, administrators and teachers do not have the time or resources to focus on a single reform program for the length of time that leads to quality instruction. *How can schools and districts answer to the high demands of multiple, sometimes conflicting reforms and maintain those reforms over time?*

The purpose of this brief is to illuminate the potential challenges and opportunities for sustaining ambitious instructional reforms over time in the face of policy change. Drawing on findings from a recent study by Kaufman and Stein,<sup>3</sup> which examines one district’s efforts to implement a reform mathematics curriculum over a three-year period,<sup>4</sup> we highlight how administrative turnover and a subsequent focus on newer policies can quickly destabilize other on-going reforms, including the necessary, sustained support for teacher learning that accompanies those reforms. However, we also discuss how schools can develop strategies that lead to the maintenance of multiple instructional policies and create coherence among those policies. This work provides guidance for both districts and schools that are struggling to navigate the chaotic waters of instructional policy reform and provide the best support for teachers.

The ideas in this brief are guided by recent education research highlighting the need for district leaders to continually negotiate the fit between multiple external demands and their own goals.<sup>5</sup> This line of research encourages districts to provide clear, focused goals for teaching and learning, with the expectation that those goals could guide the creation of “coherence” among the many initiatives occurring within a district. Research in this area is especially important given the present instructional environment where funding and work to increase student achievement depends on gathering support from diverse sources, many of which may provide resources only alongside certain requirements and demands that could drain from or conflict with other programs in schools.

**“Policies do not land in a vacuum; they land on top of other policies”**

The above quotation from Linda Darling-Hammond questions the unspoken assumption often communicated when new major policy initiatives are introduced

within a school district: that those policy initiatives are the only game in town. Our case study in Greene School District<sup>6</sup> demonstrates the opposite: new English as a Second Language (ESL) policies landed on top of recent elementary mathematics curriculum reforms and had a considerable impact. The mathematics reforms had just entered full implementation two years before, and those reforms emphasized students' conceptual understanding of mathematics through lots of small-group work and teacher-facilitated discussions where students explored varying ways to solve mathematics problems. For many teachers, these reforms entailed a new way of teaching and learning mathematics that demanded ongoing teacher learning for both old and incoming teachers.

In recognition of the new mathematics reform curriculum's considerable teacher learning demands, the administration had intended to focus much attention on those reforms for the first three years of their implementation. However, the new ESL policies led to the termination of district messages about the implementation of mathematics reform and sharp decreases in mathematics teacher learning opportunities in the third year of mathematics reform implementation.<sup>7</sup>

To examine the challenges facing administrators who bring new policies into districts and schools, we first describe the major components of the shift in policy focus from mathematics to ESL. The table on the next page cap-

tures the major elements of that shift. As can be seen from the table, considerable reductions in teachers' and administrators' opportunities to learn about mathematics reform occurred in Year 3 of the reform, much in response to policy mandates for more ESL professional development and instruction. These reductions coincided with administrative turnover in the central office: the original district leaders that advocated for the mathematics reform were gone by the third year of mathematics reform implementation. In place of that leadership was a new superintendent and assistant superintendent who strongly supported ESL reforms. As a consequence of these shifts in personnel and policy, school administrators and coaches all reported hearing *no messages about mathematics instructional reforms* in Year 3 of those reforms.

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This story of policy shift is likely similar to those in other school districts, in that new state mandates and administrative turnover often lead to a major shift in policy focus away from other relatively young reforms. While elements of these shifts can be intentional on the part of new administrators who

are looking for more effective methods of raising school achievement and strengthening public support, policy shifts are also often a result of state and national policies, like the state mandate for more ESL professional development in the state where Greene is located. That said, as Greene district administration had recognized when planning out three years of focused mathematics reform implementation, reforms with high teacher learning requirements are fragile in the early stages of implementation and demand attention over time to achieve a high level of instruction and student achievement, especially given the high teacher turnover in urban districts.

### **How Can Schools Attend to Multiple, High-Demand Instructional Reforms?**

The focus of this brief is not about how to sustain ambitious mathematics reforms over time, but how to sustain those reforms alongside other, newer policy initiatives that necessarily take some resources and attention away from other ongoing reform programs. In Greene School District, we have demonstrated major district-wide decreases in attention to and support for mathematics curriculum reform over time. *However, importantly, some elementary schools in Greene did much better than others in sustaining teachers' learning opportunities associated with mathematics reforms.* We now turn the focus to one particularly school in Greene School District - which we will



call Trafford Elementary School - that stood far above our other Greene case study schools in regard to sustaining mathematics teacher learning opportunities during the policy shift. Looking at Trafford more closely will provide some ideas for how schools can attend to multiple, high-demand reforms.

Trafford Elementary School was one of our three case study schools in Greene.<sup>8</sup> While teachers at the other

two case study schools reported significant decreases in mathematics teacher learning opportunities from Year 2 to Year 3, Trafford teachers reported no such declines. Additionally, several Trafford teachers and coaches talked about the integration of ESL and mathematics during professional development. No one talked about such integration at the other two schools.

What was happening in Trafford

School District that led to more sustained implementation of mathematics reforms, even alongside considerable demands for ESL reform in a district with large overall decreases in support for mathematics teacher learning? The following factors, which Honig and Hatch (see endnote v) might call “strategies” for “creating coherence” among multiple policies in a school, separated Trafford from the other two schools:

### Timeline (Years 1-3) for Mathematics Reforms, ESL Reforms, and District Leadership

	Year 1	Year 2	Year 3
<b>Mathematics Reforms</b>	<ul style="list-style-type: none"> <li>• Two district-funded mathematics coaches per school</li> <li>• Biweekly school-level mathematics PD</li> <li>• District-wide mathematics learning opportunities for teachers, administrators, and coaches</li> </ul>	<ul style="list-style-type: none"> <li>• Two district-funded mathematics coaches per school</li> <li>• Biweekly school-level mathematics PD</li> <li>• No district-wide mathematics learning opportunities for teachers, administrators, and coaches</li> </ul>	<ul style="list-style-type: none"> <li>• One district-funded mathematics coach in each school</li> <li>• Large and significant decreases in teacher learning opportunities from Year 2 to Year 3</li> </ul>
<b>ESL Reforms</b>	Few structured opportunities for ESL PD	<p>Mid-year state mandate: teachers must take at least 15 hours of ESL PD in the next 18 months</p> <p>District and school-level increases in ESL PD, according to interview reports</p>	<p>ESL as the focus on district and school PD, according to interview reports and observations</p> <p>A requirement for 30 more minutes of language instruction for ESL students in Greene, which leads to a decrease in mathematics instructional time for grades 3-5</p>
<b>Leadership</b>	Strong district leadership for mathematics reform	<p>Leaders supporting mathematics reforms leave the district</p> <p>New superintendent and assistant superintendent are advocates for ESL reform</p>	<p>District director of mathematics departs in September</p> <p>An assistant director of mathematics, science, and social studies is hired in late March</p> <p>A former ESL specialist is appointed as director of curriculum heading all instruction</p>

- A consistent, shared vision for mathematics instruction
- Departmentalized mathematics teachers in schools

In Trafford, both of these factors encouraged the creation of coherence between mathematics and ESL policies.

### *A Consistent, Shared Vision for Mathematics Instruction*

A consistent and shared vision for mathematics instruction can operate as a strategy that keeps school personnel focused on that instruction, even during a policy shift. In our study, the Trafford principal communicated a consistent vision for teaching mathematics at

her school. That vision supported faithful implementation of the reform mathematics curriculum, allowing supplementation only if it was consonant with the philosophy of the reform curriculum. In contrast, principals at the other two case study schools did not consistently advocate for one instructional method regarding mathematics instruction. The Trafford principal also had considerable previous experience with Greene’s reform curriculum, both as a coach and administrator in another district. Such experience may have allowed her to articulate a stronger vision for mathematics instruction than the principals at other schools.

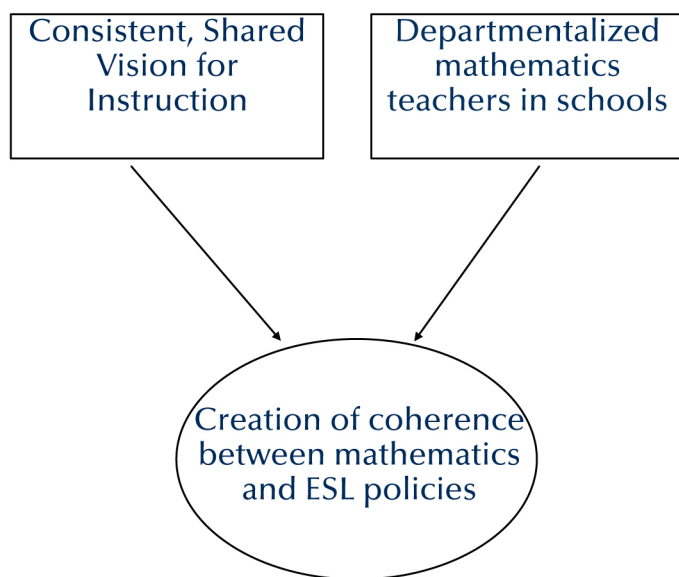
Trafford’s coaches and teachers reported a similar understanding of math-

ematics curriculum reform to what was articulated by the principal, which suggested the presence of clear messages about mathematics instruction despite no policy messages about mathematics coming from the district administration. In contrast, teachers at the other schools reported a lack of knowledge or conflicting understandings about the administrative stance regarding mathematics instruction. In addition, the coaches at these other schools reported some clashes between principal and coach understandings of the coach’s role at the school in Year 3.

### *Departmentalized Mathematics Teachers in Schools*

The recent report from the National Mathematics Panel has noted the need for much more research to understand the impact of full-time mathematics teachers at the elementary level (as opposed to self-contained teachers who teach all subjects).<sup>9</sup> Our findings support that elementary teachers who are departmentalized and focus primarily on either mathematics or literacy can encourage a focus on their subject area even when policies direct attention away from that subject. In Year 3 of our study, three-quarters of the mathematics teachers at Trafford reported that they taught mathematics and not literacy. In contrast, almost 100% of the teachers at the other two case study schools reported teaching in self-contained classrooms where they addressed both mathematics and literacy.

## Strategies and Goals that Created Coherence between Mathematics and ESL Policies in Greene School District





In the case of Trafford, the higher number of mathematics-focused teachers encouraged more mathematics-specific talk both in formal PD and informal talk situations. For example, many of the teachers in Trafford talked about the “math people” and “reading people” breaking into separate groups for discussion about ESL, and this subject-specific focus carried over to teachers’ grade-level meetings and leadership meetings between coaches and administrators. On the other hand, in the schools where instruction was primarily self-contained, PD was often more general, addressing a generic audience across subject areas.

### *Creation of Coherence between Mathematics and ESL Policies*

One could argue that Trafford’s shared vision for mathematics instruction and strong focus on mathematics through departmentalization might favor mathematics reform at the expense of implementing ESL policies. However, our findings demonstrated the opposite: the shared vision for mathematics and departmentalization actually created more openings for connections and coherence between mathematics and ESL. At Trafford, administrators, coaches, and teachers reported working directly with an ESL specialist in the school to integrate mathematics content with strategies for English lan-

guage learners. In addition, the Trafford ESL specialist and teachers spoke about the ESL specialist coming to classrooms to model quality integration between mathematics and ESL. Finally, the Trafford ESL specialist oversaw an ESL team that included - in her words - “two math people.” Thus, Trafford integrated ESL and mathematics reforms in multiple ways.

Most of this press for connections between mathematics and ESL resulted from the presence of departmentalized teachers who focused on mathematics and attended to ESL professional development mandates through the lens of mathematics and not literacy. Also, because everyone at Trafford was on

## Methodology Highlights

This study examined mathematics teacher learning opportunities in one school district during the first three years of mathematics curriculum reform implementation. The study draws from a larger NSF-funded longitudinal project investigating the factors that influence teachers’ reform mathematics instruction and student achievement.

### **The data we drew upon for this brief includes:**

- Survey data for over 450 teachers across the district for both Years 2 and 3 of the study;
- Interviews with district administrators, as well as principals, mathematics coaches, and teachers at each of three case study schools (chosen through purposive sampling) in each of the three years of mathematics reform implementation

For our analysis, we employed a case study design at two different levels: we used a holistic design to examine overall patterns across the district in regard to the district policy shift; then, we utilized an exploratory embedded case study design to compare teacher learning opportunities, instruction, and the factors that influenced opportunities and instruction in three case study schools.

As mentioned in the body of this brief, “teacher mathematics learning opportunities” takes into account teachers’ survey reports, as well as descriptive evidence from interviews regarding 1.) formal mathematics professional development, including coaching, grade-level meetings, and professional development meetings; and 2.) informal opportunities teachers have to talk about mathematics with their colleagues, coaches, and administrators.

the same page regarding mathematics instruction, such connections between ESL and clearly articulated mathematics policies were more likely. At the other case study schools, no talk about integration between mathematics and ESL was observed. Additionally, communications with the ESL specialist at either school in regard to mathematics instruction were not apparent. Instead, administrators and coaches talked about minimal or no attention to mathematics as a consequence of the new focus on ESL, which was strongly connected to teachers' literacy instruction.

## Conclusion and Recommendations

The findings of our study present two interconnected stories and two sets of recommendations for districts and schools looking to maintain current ambitious instructional reforms while at the same time turning attention and resources to new initiatives. One story focuses on how new ESL policies at Greene School District led to large district-wide declines in support for teachers implementing recent elementary mathematics curriculum reforms. In this story, the declines in mathematics reform support at the district level can be at least partly attributed to a new district administration's emphasis on ESL and the absence of district leadership for mathematics in the third year of mathematics reforms. Both of these factors played some role in creating a void regarding policy messages about mathematics in the third year of mathe-

matics reforms. Additionally, as an unintended result, ESL discussions were limited to focusing on literacy and not mathematics in two of our case study schools.

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***Our findings support that elementary teachers who are departmentalized and focus primarily on either mathematics or literacy can encourage a focus on their subject area even when policies direct attention away from that subject.***

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### District-Level Recommendation:

*New district administrators should do a careful assessment of ongoing reforms in order to strategically plan for the introduction of new policies. That assessment should include consideration of how policies fit into a district's comprehensive vision for school reform, as well as how intended and unintended consequences of implementing multiple reforms could undermine both new and old policies.*

Without some strategic planning and prioritizing regarding the many programs and policies within a school district, district administrations cannot send clear and consistent messages to schools about those programs and policies. Thus, they leave schools in the position of making decisions about reform priorities when schools may have uneven resources to support one priority or another. In the case of Greene School District, Trafford was

## Summary Policy Recommendations

1. New district administrators should strategically plan for the introduction of new policies, considering both how policies fit into a district's comprehensive vision for school reform and how intended and unintended consequences of implementing multiple reforms could undermine both new and old policies.
2. District administrations can support policy initiatives across subjects by appointing district-level subject-matter experts who are expected to develop a cohesive instruction program together.
3. Schools should also develop intentional strategies that aid in the integration of multiple policies, encouraging subject-matter experts - teachers and/or coaches - to talk together about the implementation of instructional policies and potential linkages among those policies.



able to maintain mathematics reforms alongside ESL reforms. However, other schools either could not or did not.

#### **District-Level Recommendation:**

*District administrators can support policy initiatives across subjects by appointing district-level subject-matter experts who are expected to develop a cohesive instruction program together.*

In the case of Greene School District, the ESL reforms could have provided the ideal opportunity for subject-matter experts to develop a more cohesive instructional program, given that any subject matter could be “plugged into” the ESL lesson planning formats emphasized in professional development. In other cases, such an easy fit might be more elusive. However, those who have taught and know subject matter deeply are in the best position to understand how other subject areas might impact their own subject area of expertise. They are also in the best position to collaborate with others in order to help envision and enact a more holistic instructional program, regardless of what instructional reforms are involved. Strong communication and collaboration among district-level subject matter specialists can therefore enable districts to give clearer messages to schools about all policies and support schools that are struggling to maintain multiple reforms at once.

The second story in this brief involves how one school within Greene - Trafford Elementary School - moved

against the district trend and managed to sustain mathematics curriculum support for teachers while at the same time attending to the new ESL policies. Trafford’s story offers guidance to schools that are struggling to maintain reforms that they consider important, even in the face of little district support for those reforms. In Trafford, coherence between ESL and mathematics reform policies, as well as teacher support for both policies, was enabled by two particular school-level strategies: a shared vision for mathematics reform and mathematics-focused teachers in the schools. While these strategies are specific to the particular policy environment at Greene, they speak to the importance of schools having strategies that encourage coherence among policies and thus enable more sustained support for teachers across policies and programs.

#### **School-Level Recommendation:**

*Schools should work to develop intentional strategies that aid in the integration of multiple policies. As with our district-level recommendation, schools should specifically consider enlisting subject-matter experts - teachers and/or coaches - to talk together about the implementation of instructional policies, which can encourage linkages among those policies.*

School principals who are knowledgeable about the curriculum and instruction at their school are best positioned to facilitate these discussions among

subject-matter experts and help communicate the implementation of all policies to teachers.

**Administrators may regard the maintenance of instructional reforms across subject areas like juggling many balls at once. At some point, some balls will be the center of attention while others will be in the air, unexamined. This brief makes the case that instructional reform might be best seen as a jigsaw puzzle. With the right strategies and goals, the separate pieces of this puzzle and separate areas of reform can fit together to make a coherent whole and a vision for implementation across instructional policies and programs. By making sure that instructional experts are present in districts and schools, and by encouraging communication among those experts, districts and schools are best positioned to work towards strategies and goals that integrate multiple instructional policies and sustain them.**



## Footnotes:

<sup>1</sup> Among others, two of our recent LPC brief writers - Richard Correnti and Christian Schunn - have both made that argument.

<sup>2</sup> See, for example, Hatch, T. (2001). Incoherence in the System: Three Perspectives on the Implementation of Multiple Initiatives in One District. *American Journal of Education*, v109, n4, pp. 407-437, or Stokes, L. (1997). Short-Term Policy Support for Long-Term School Change: A Dilemma for Reform-Minded Practitioners. *Journal of Education Policy*, v12, n5, pp. 371-384.

<sup>3</sup> The findings reported here are largely based on Kaufman, J.H. & Stein, M.K. (Accepted). Teacher Learning Opportunities in a Shifting Policy Environment for Instruction. *Education Policy: Methodological details of this study are reported on page 5 of this brief.*

<sup>4</sup> For this brief, a “reform mathematics curriculum” is one that reflects the tenants originally set forth by the National Council for Teachers of Mathematics. Such curricula challenge students to make sense of new mathematical ideas through explorations and projects, often in real contexts.

<sup>5</sup> See Honig, M.I. and Hatch, T.C. (2004). Crafting Coherence: How Schools Strategically Manage Multiple, External Demands. *Educational Researcher*, v33, n8, pp. 16-30 and Newmann, F.M., Smith, B. (2001). Instructional Program Coherence: What It Is and Why It Should Guide School Improvement Policy. *Educational Evaluation and Policy Analysis*, v23, n4, pp. 297-321.

<sup>6</sup> Pseudonyms are used for district and school names in this study.

<sup>7</sup> Our discussion of “teacher learning opportunities” takes into account 1.) formal professional development (PD) hours in mathematics reported by teachers in surveys administered in each of two years and 2.) informal PD opportunities occurring when teachers talked to others about mathematics, again reported by teachers in surveys as the number of times they talk to others (including teachers, coaches, and administrators) about mathematics.

<sup>8</sup> Four case study schools were originally selected from Greene School District as part of the larger study. However, one of those schools was eliminated from this analysis because data from key principal leadership sources at the school was missing, thus preventing a full understanding of how leadership impacted teacher learning opportunities.

<sup>9</sup> See National Mathematics Advisory Panel. (2008). *Foundations for Success: The Final Report of the National Mathematics Advisory Panel*. Washington DC: U.S. Department of Education, p. xxii. [Available online at: <http://www.ed.gov/about/bdscomm/list/mathpanel/report/final-report.pdf>]

The mission of the **Learning Policy Center** is to foster high quality learning environments for both students and professionals in public schools. Toward that end, we aim to infuse into policy decisions high quality, timely research on effective teaching and learning and on school, district, and policy conditions that support their improvement. **The Learning Policy Center** utilizes the rich talent pool of the University of Pittsburgh School of Education, the Learning Research and Development Center, the Institute for Learning and other regional assets to connect high quality learning research with education policy decision-makers.

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