Absorptive Capacity in Rural Schools: Bending Not Breaking During Disruptive Innovation Implementation

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Rural schools have repeatedly been subjected to standardizing state and federal education policies that seek to minimize variance in instructional systems and increase the number of college- and career-ready graduates. The Race to the Top policy agenda combined standards-based and accountability-based reforms to meet these objectives and once again subjected rural schools to innovations from outside experts. This qualitative study uses four instrumental cases of rural schools to understand: 1) leadership strategies, and 2) mechanisms and processes of alignment, which allowed schools to maintain high levels of student performance in the face of disruptive policy innovations. The findings of the cross-case analysis identify rural school and district leaders' contingent use of adaptive strategies of buffering, bridging, and brokering. Mechanisms and processes of shared goal setting, ongoing curriculum revision, and teacher collaboration that contribute to the development of coherence supported these strategies. Together, leadership strategies and coherence allow leaders and educators to assimilate, transform, and create new knowledge in ways that provide absorptive capacity and allow for selective implementation of disruptive innovations.

The Race to the Top (RttT) federal grant program combined standards-based and accountability-based measures to create change in state-level education policy, with a focus on increasing college- and career-ready K-12 graduates by increasing standards for students and educators and increasing the use of student assessments for accountability (Coburn, Hill, & Spillane, 2016; Freeman, 2014). Implicit in the name of the grant is the quest to remain competitive in the global economy through human capital development. This policy reflects school reform agendas of providing equitable opportunities for high achievement regardless of ZIP code (e.g., Kornhaber, Griffith, & Taylor, 2014; Rothstein, 2004).

For rural schools, the adoption of the Common Core State Standards and new teacher evaluation policies represent another chapter in the standardization efforts which began in the Progressive Era and have increased since the *Nation at Risk* report (Freeman, 2014; Schafft & Jackson, 2010). This standardization has been implicated in the out-migration of rural youth as curriculum and pedagogy have focused on urban schools and contribute to the preparation of youth for future education and employment not available in local communities (Carr & Kerfalas, 2009; Corbett, 2007). The renewed emphasis on college readiness in the Common Core has the potential to exacerbate out-migration patterns while leaving fewer options for those who choose to stay (Freeman, 2014). The recent political shift in the United States has once again raised questions as to whether the current education system meets the economic, social, and civic development needs of rural communities (Biddle & Hall, 2017).

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To meet the needs of rural communities, and to simultaneously embed young people in their community, many rural scholars advocate for reversing standardization through community partnerships and place-based education, such as using curriculum and pedagogy focused on local geography, geology, ecology, history, and culture (e.g., Gruenewald & Smith, 2008; Hammer, 2001). As such, learning standards and place-based education are often framed as an either/or proposition. However, during the standards-based reforms of the 1990s, Kannapel (2000) argued that standardization efforts and place-based education are not necessarily incompatible, as they often have the same aims: increasing student learning.

Research from the 1990s suggests that variation in rural school capacity determines whether schools are able to integrate standards with other existing practices, including place-based education (Jennings, 1999, 2000; Kannapel, Aagaard, & Reeves, 1999). In addition to variation between rural schools, Jennings (1999) identified differences in the capacity of urban and rural schools to meet external policy demands including: district support, intellectual capacity, and values. More recent research has identified challenges in implementing external policy innovations in rural schools due to limited financial and human resources (Preston, Jakubiec, & Kooymans, 2013). Such variation in capacity is important to understand as previous research on standards-based reforms suggests that their effects depend on how states, districts, and schools implement them (Mathis, 2012).

This empirical study examined what happens when disruptive policies created by "distant experts" (see Jennings, 1999) are put into place by local experts: rural superintendents, principals, and teachers. It uses variation between schools to examine the contexts, conditions, and contingencies of the implementation of disruptive innovations (Cobb, Donaldson, & Mayer, 2013) in a set of rural higher performing, or odds-beating schools (i.e., those with high assessment scores before and after RttT). While Christensen, Horn, and Johnson (2011) used "disruptive innovation" to describe the how market forces could create creative destruction to reverse schools' long resistance to change, we use it to describe high-leverage policies. Cobb, Donaldson, and Mayer (2013) described high-leverage policies as those structured to limit superficial implementation, to resist distortion by those enacting them, and to force schools to change. The combination of standards-based and accountability-based reforms found in RttT created such high-leverage policies by targeting each component of the instructional system (curriculum, pedagogy, and assessment). As such it is more tightly aimed at changing the instructional core while also limiting the chances superficial implementation (Coburn et al., 2016). Previous research suggests that combining policy instruments in ambitious policies aimed at system-level change has a greater chance of reaching teachers and creating desired student outcomes (Cobb et al., 2013; Furhman & Elmore, 1990; McLaughlin, 1990). Such disruptive policies in part meet those ends because they require novel learning and performance adaptation or a combination of affective, motivational, and cognitive changes on the part of teachers to meet new demands (Baard, Rench, & Kozlowski, 2013; Zuckerman, Wilcox, Durand, Lawson, & Schiller, 2017).

While disruptive policy innovations seek to exert pressure on schools to dramatically change, the term "disruptive" is relative, as some organizations are better equipped than others to absorb changes, and some policies align more closely with existing practices within those organizations (Christensen et al., 2011; Cobb et al., 2013; Zahra & George, 2002). This study used a representative but unique sample of odds-beating schools (i.e., those with better than expected student assessment scores based on demographics) to examine how rural district and school leaders reacted to a disruptive policy innovation in ways that prevented performance declines predicted by the literature (e.g., Christensen et al., 2011).We use these schools to develop an understanding of the prerequisites that created absorptive capacity (i.e., an organization's capacity to assimilate, transform, and use new knowledge) and allowed district and school leaders to engage in adaptive implementation by integrating changes into existing practices, rather than engaging in abrupt change. To do so, our study was guided by two research questions: What strategies do rural district and school leaders use to absorb disruptive policy innovations? What mechanisms and processes of alignment facilitate the implementation of disruptive policy innovations in rural schools?

Policy Context

Although New York State (NYS) is home to one of the largest metropolitan areas in the United States, it is also home to one of the largest populations of rural students. Approximately 290,000 students attended a rural school in NYS in 2015-16 (Showalter, Klein, Johnson, & Hartman, 2017). The long history of school consolidation efforts, and resistance to them (Pugh, 1994), have led to a variety of organizational arrangements of rural districts in NYS. Rural schools can be found in combined K-12 buildings with small district office staffs, as well as in larger districts with suburban and exurban schools and robust central office staffs.

The New York State Department of Education (NYSED) applied for and received funds under the federal RttT competition in 2010. As part of the application, state education policymakers adopted, with some revisions, the Common Core State Standards (CCSS); required districts

to develop annual professional performance review (APPR) plans that included state assessment scores, locally developed student learning objective (SLO) assessments, and state approved rubrics for teacher observations; and called for data-driven instruction (DDI).

To support implementation of the Common Core, NYSED hired consultants to develop English language arts (ELA) and math curriculum modules, which were made available in the 2012-13 academic year. Students took the first Common Core aligned state assessments in spring 2013. Together, these policies simultaneously targeted the instructional system of curriculum, pedagogy, and assessment (Coburn et al., 2016; Raudenbush, 2008; Resnick, 2010). These demands followed a short timeline and, as a result, tested the capacity of rural schools to absorb them without experiencing the disruption and performance declines that flourish when schools lack the structures and mechanisms to support change (Lawson et al., 2017; Zuckerman et al., 2017).

Literature Review

Leadership for Disruptive Policy Implementation

Disruptive policy innovations are those that require novel learning and behavior changes to meet demands (Baard et al., 2013; Christensen et al., 2011; Greenhalgh, Robert, MacFarlane, Bate, & Kyriakidou, 2004). As noted above, RttT simultaneously used multiple policy levers to promote change in teachers' and leaders' day-to-day work (Cobb et al., 2013) and required novel learning and behavior change (Zuckerman et al., 2017). As policy moves to practice, several local contingencies influence implementation, including leadership, organizational capacity, and individuals' skill and will to implement change. These contingencies contribute to the extent to which policies are disruptive and to which individuals and groups much engage in performance adaptation to meet change (Cobb et al., 2013).

In particular, superintendents, district leaders, and school leaders play important roles in policy implementation through their commitment to policy aims and through their interpretation, mediation, and moderation of meaning of policy changes in the local context (Bryk, Sebring, Allensworth, Luppescu, & Easton, 2010; Cobb et al., 2013; Honig, 2008). In part, they do so as sensemaking agents, interpreting and passing on policy messages to teachers (Coburn, 2005; Coburn & Russell, 2008; Coburn & Woulfin, 2012). Leaders create structures and mechanisms that support teachers' learning (Coburn et al., 2016).

Among the challenges of policy implementation for district and school leaders is the "too-tight-too-loose dilemma" described by Fullan (2006). Leaders navigate this dilemma by enacting a continuum of approaches. First, leaders can "make it happen," or engage in top-down managerial strategies to develop compliance. Second, leaders can "help it happen," by using facilitative leadership to negotiate shared understandings through social and technical support mechanisms. Third, leaders can take a "let it happen" or hands-off approach that allows innovation to spread in organic, but unpredictable, ways (Fullan, 2003; Greenhalgh et al., 2004).

Of these approaches, "help it happen" involves the greatest degree of collaboration, communication, and trust building among leaders and teachers (Durand, Lawson, Wilcox, & Schiller, 2016; Greenhalgh et al., 2004). Such "help it happen" approaches rely on contingent use of adaptive leadership strategies, including bridging, buffering, and brokering (Durand et al., 2016; Elmore, 2000; Honig & Hatch, 2004), and contribute to the implementation "sweet spot" (Durand et al., 2016; Fullan, 2006).

In rural schools, the implementation sweet spot includes the need to develop a middle ground between place-based education aligned to the local community and standards-based reform, as both seek to increase educational attainment of rural schools (Kannapel, 2000). Place-based education seeks to engage community members to provide curriculum and instruction based on local history, geography, geology, ecology, and culture (Hammer, 2001) and is often held up as an antidote to standardizing, top-down reform.

Jennings (2000) argued that implementing state standards need not be "in with the new and out with the old" for rural schools. However, creating a middle ground requires leadership and capacity. Previous studies have identified the importance of shared understandings of external policy reforms and internal goals (Kannapel et al., 1999), which are negotiated by district and school leaders (Coburn 2005; Coburn & Russell, 2008). Approaches to integration of new standards also require teachers to be able to collaborate on content and instruction as mechanisms for integrating new standards into existing practices and leveraging them to support existing place-based curriculum (Jennings, 2000). School leaders play important roles in developing these capacities and supporting collaboration around instruction (Leithwood, Harris, & Hopkins, 2008; Stosich, 2016).

Coherence and Alignment

In addition to issues of leadership, previous research on rural policy implementation identified factors that map onto the concept of "coherence," including shared understandings of how external policy influences support local goals and teacher collaboration (Jennings, 2000; Kannapel et al., 1999). Honig and Hatch (2004) coined the phrase "crafting coherence" to describe the ongoing work of school leaders in integrating external demands of policymakers with local

demands of their communities. For rural schools, this concept is particularly salient as educators and community members often hold different goals than policymakers, which poses challenges for implementation that may contribute to declines in assessment scores (DeYoung, 1995; DeYoung & Lawrence, 1995; Kannapel et al., 1999).

Coherence contributes to school change efforts when there are widespread understandings of the content and purposes of policy change (Honig & Hatch, 2004). Fullan and Quinn (2016) wrote, "When large numbers of people have a deeply understood sense of what needs to be done—and see their part in that purpose—coherence emerges and powerful things happen" (p. 1). Coherence emerges in the minds and actions of individuals and, most importantly, groups (Fullan & Quinn, 2016). Leaders contribute to these shared understandings through two-way communication and shared goal setting (Honig & Hatch, 2004; Lawson et al., 2017).

While coherence emphasizes shared understandings, alignment describes the organizational mechanisms and processes that cross boundaries (e.g., between district and schools, or between classrooms) and allow these understandings to emerge. Such mechanisms and processes include routines for collective goal setting, systemic processes for curriculum revision, creating shared instructional practices, and developing meaningful assessments (Lawson et al., 2017). In turn, these features contribute to the work of aligning instructional systems.

During the implementation of No Child Left Behind's accountability-based reforms, principals of rural high-needs, high-performing schools attributed the alignment of curriculum, instruction, and assessment to their success. Additionally, shared expectations for students and instructional leadership for change contribute to a sense of continuity during school improvement (Bartley & Beesley, 2007). Although not explicitly identified as alignment and coherence, these findings suggest the import of coherence for rural schools.

Absorptive Capacity in Schools

As Christensen and colleagues (2011) argued, schools need the right tools and strategies to integrate disruptive innovations. In the organizational change literature, Zahra and George (2002) identified the ability of organizations to engage in adaptation as "absorptive capacity" and defined it as a dynamic capacity of organizations to generate and use knowledge. This capacity includes acquisition, assimilation, transformation, and use of knowledge. In the education literature, leadership for learning parallels this concept in its attention to the development of schools as learning organizations (Knapp, Honig, Plecki, Portin, & Copland, 2014). Like absorptive capacity, leadership for learning is contingent on local context and state policy climate (Knapp et al., 2014).

Leadership for learning focuses on the ways in which adult learning across multiple roles and organizational levels improves student learning (Knapp et al., 2014). The ability to assimilate, transform, and apply knowledge of policy into practice relies in part on coherence across leaders and teachers (Honig & Hatch, 2004), as well as the cross-boundary alignment mechanisms (Lawson et al., 2017) that provide opportunities for sensemaking (Coburn, 2005; Coburn & Russell, 2008; Weick, 1995) to occur. Taken together, contingent use of adaptive leadership practices, combined with coherence and alignment, contributes to absorptive capacity that allows schools to integrate disruptive policy innovations. For rural schools, absorptive capacity may provide a means to buffer external policy changes by providing opportunities to assimilate and transform new knowledge into existing practices, rather than replacing them with standardized practices. Figure 1 illustrates how leadership combines with alignment and coherence to develop absorptive capacity that mediates the disruptive impacts of external policy innovations.

Methods

This study is part of a larger mixed-methods, multiple case study of 18 elementary and middle schools conducted in New York State. That study used the natural variance of school districts (Coburn et al., 2016) in a sample that allowed for both literal replication and theoretical replication by selecting an equal number of rural, urban, and suburban districts. This design allowed us to conduct analysis within and between these categories to identify similarities and predictable differences (Yin, 2014). Here, we focus on the four rural odds-beating schools, which served as instrumental cases (Stake, 1995), to allow us to answer questions about leadership strategies used by district and school leaders to absorb disruptive policy innovations and the mechanisms and processes of alignment that facilitate such implementation and avoid performance declines predicted by the literature (Christensen et al., 2011).

We focus on rural schools for two reasons. First, in our larger analysis, there seemed to be particular similarities in how rural district and school leaders approached these disruptive innovations—with a focus adapting them to existing practices, rather than technical compliance. Second, New York public schools serve a large number of rural students (Showalter et al., 2017), yet this population is often overlooked in favor of studies of New York City and other urban areas. Similarly, the concepts of alignment and coherence have been examined largely in urban districts (e.g., Johnson, Marietta, Higgins, Mapp, & Grossman, 2015). However, we wanted to understand how

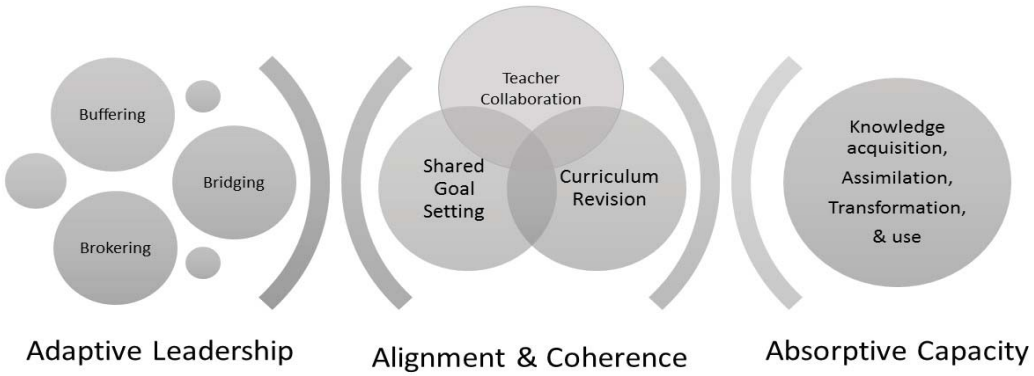

Figure 1. Conceptual framework.

these mechanisms and processes occur in rural districts and schools. While smaller school and district size might suggest greater ease for developing schools as learning organizations and negotiating shared understandings for policy implementation, the literature reviewed above suggests that these efforts require capacity. Such capacity might be limited by smaller numbers of teachers and district staff, as well as a greater number of individuals who take on multiple roles as is typical in many rural schools (Preston et al., 2013; Scribner, 2003).

Sample Selection

The sampling for the larger study proceeded in several stages to identify and purposively sample "odds-beating" schools that achieved above-predicted student achievement outcomes both before and after the implementation of RttT innovations and a comparable group of typically performing schools (Wilcox, Schiller, Durand, Lawson, & Gregory, 2015). First, regression analyses were conducted predicting Common Core ELA and Math assessment scores for grades 3-5 for elementary schools and grades 6-8 for middle schools based on percentages of economically disadvantaged students and English language learners (ELL). Conducted separately for each subject and grade level, the regression results indicated that these two demographic characteristics accounted for between two-thirds and three-quarters of the variation in schools' average student scores. These results are consistent with other research (e.g., Goldsmith, 2011) that shows strong correlations between schools' student demographic characteristics and academic performance.

The focus of our study, however, is on those schools whose students exceed those predictions (i.e., odds beaters) and contrasting them with schools whose students performed as expected (i.e., typical performers). Gaps between actual and expected student performance were assessed for both relative size using z-scores and robustness using one sample *t*-tests (for further details, see Wilcox et al., 2015). Schools with consistently large (i.e., z-score greater than 1) and statistically significant (i.e., $p < .05$) actual-expected gaps were classified as odds beaters and those with small (i.e., z-score close to 0) and statistically insignificant (i.e., $p > .05$) gaps were deemed to be typical performers. This process identified approximately 17% of just over 1,400 elementary and middle schools statewide as odds beaters.

The purposive sampling for the case studies first stratified the two types of schools—odds beaters and typical performers—by locale categories (i.e., rural, suburban, and urban) as defined by the National Center for Education Statistics (Wilcox et al., 2015; NCES, n.d.). Of the approximately 300 rural elementary and middle schools, around 10% were classified as odds beaters, which was a similar percentage for suburban schools and somewhat smaller than for urban schools. To allow comparisons within and between locales, four odds-beating schools (two elementary and two middle) were selected from each category, as were two typically performing schools (one elementary and one middle). The selection process prioritized schools that met state accountability requirements, served more disadvantaged populations, had average or below per pupil expenditures, and represented different regions across the state.

The four rural odds-beating schools selected reflect the diversity of rural schools in NYS, including geography, economic base, and student populations. This diversity also included organizational configurations: two schools were part of combined K-12 buildings in isolated districts (Spring

Table 1

School Characteristics

	Spring Creek ES	Roaring Gap MS	Eagle Bluff ES	Ruby MS
Enrollment	>500	>500	380-500	<380
Total district enrollment	~1,000	>5,000	~2,000	~1,000
Free and Reduced Price Lunch	>40%	17-40%	>40%	>40%
White	>90%	<75%	>90%	>90%
Per pupil spending	$18-22K	$18-22K	<$18K	<$18K
Z-scores	1.5-1.99	1.5-1.99	1-1.49	>2
Rural designation School	Rural Remote	Rural Fringe	Town Distant	Rural Distant
Rural designation District	Rural Remote	Suburban Large	Rural Fringe	Rural Distant

Creek Elementary School and Ruby Middle School), and two schools were part of larger districts that went through consolidation in the 1940s and 1950s (Eagle Bluff Elementary School and Roaring Gap Middle School).[1] School characteristics are summarized in Table 1 and a brief description of each is provided in the beginning of the findings section.

Data Collection

A research team member recruited identified schools and obtained consent from the district superintendents and building principals. Field teams of three to four university professors and advanced doctoral students conducted two-day site visits at each school and its district office. Each of the authors of this article served as a site leader or co-leader for at least one of the four schools in the study. The elementary school site visits occurred in the spring of 2014, and the middle school site visits occurred in the fall of 2014. All field teams received guidance from team leaders who had normed practices through modeling in the field to facilitate the standardization of data collection procedures on subsequent site visits (Creswell, 2015).

The data collection protocol was designed to facilitate data triangulation (Stake, 1995; Yin, 2014) and included interviews, focus groups, classroom observations, and document collection. Using semi-structured interview protocols (see Appendix A), team members engaged in hour-long interviews with district and school leaders. Focus groups were likewise conducted with teachers, support staff, and other school personnel using a semi-structured protocol. Open-ended questions were used to elicit responses on Common Core and the implementation of teacher evaluation policies, district and school procedures, and perceptions of successes and challenges within the district. Further, classroom observations in ELA and math classes in grades 3-5 (elementary) and grades 6-8 (middle) provided opportunities to engage in data triangulation (Stake, 1995). These observations provided a snapshot of classroom practices. Additional documents were collected, including district vision, mission, and goal statements. Table 2, below, details the types and number of participants at each school.

Data Analysis

Analysis began in the field with teams' drafting memos to capture emerging themes. This process allowed for investigator triangulation through comparison of impressions across team members (Stake, 1995). Next, analysis proceeded through the development of accurate and thickly descriptive cases (Stake, 1995). To facilitate case development, documentary evidence (Freeman, deMarrais, Preissle, Roulston, & St. Pierre, 2007), including transcripts, classroom observation notes, and memos, were uploaded into individual databases (Yin, 2014) in NVivo 10. Team members, who received guidance on the project and training on the coding scheme, analyzed data from each school using an a priori scheme derived from the study's lines of inquiry (Miles & Huberman, 1994). Examples of this coding scheme can be found in Appendix B and in the technical report (Wilcox et al., 2015). From this coding, each team member developed a case study, which was shared with the site visit leader to ensure accuracy. Each case study was then member-checked by the superintendent and principal, and inaccuracies were reconciled in the final case study report (Creswell, 2015; Yin, 2014).[2]

The second phase of analysis proceeded deductively (Miles, Huberman, & Saldaña, 2014) as the research team

[1]Schools have been given pseudonyms to maintain confidentiality.

[2]Several of these case studies are available at http://www.albany.edu/nykids/64499.php

Table 2

Participant Counts

	Spring Creek ES	Roaring Gap MS	Eagle Bluff ES	Ruby MS	Total
District Administrators Interviews	2	8	2	1	13
Building Administrators Interviews	1	2	1	1	4
Teacher Focus Groups/ Participants	6/14	3/7	7/22	4/8	20/51
Support Staff Focus Groups/ Participants	1/3	1/4	1/3	1/2	4/12
Classroom Observation	3	5	6	5	19

reviewed each case study. This approach allowed each of us to bring our unique perspectives as educational researchers in school leadership, educational policy, and curriculum and instruction. In addition to our professional perspectives, several members of the research team had experience as current or former members of rural communities in New York and neighboring states. This diversity of research team members contributed investigator triangulation (Stake, 1995). Analytic discussions were followed by the extraction of code reports by each a priori category using the matrix query function in NVivo 10, which facilitated the comparison of data across schools (Yin, 2014).

The third phase used inductive approaches to create a matrix to capture themes evident in the data across schools (Miles et al., 2014). The themes identified were informed by theory as well as grounded in data, supporting theoretical generalization (Freeman et al., 2007). As team members continued to review the data, they used triangulation procedures to verify evidence across multiple sources (e.g., superintendent interviews, teacher focus groups, and documents) to determine the extent to which a particular theme was evident in each case (i.e., source triangulation). This process was similar to axial coding in that the purpose was to relate codes and categories of them to each other (Corbin & Strauss, 2014). This analysis was recorded in a matrix to facilitate comparisons across schools. Next, team members shared their findings across the lines of inquiry to identify relationships among the themes both within and across each of the cases (i.e., researcher triangulation). Overall, multiple methods were used to enhance the credibility of the multiple case study analysis, including source triangulation, researcher triangulation, and member checking (Creswell, 2015; Stake, 1995; Yin, 2014).

Findings

Before presenting the cross-case analysis, we provide a description of each school to ground the findings. Additional information on each school can be found in our previous publications and reports (Durand et al., 2016; Lawson et al., 2017; Wilcox, Lawson, & Angelis, 2017; Zuckerman et al., 2017).

School Contexts

Spring Creek Elementary School. Spring Creek Elementary School is part of a small district in the predominately rural Southern Tier, which is characterized by declining population and shuttered factories. The district draws students from an area of nearly 300 square miles. Reflecting regional economic decline, over 40% percent of Spring Creek students qualify for free and reduced-price lunch. However, the per pupil expenditures fall in the midrange of elementary schools in the state. Like many rural schools in New York (Johnson et al., 2015), the vast majority of students at Spring Creek are White.

Spring Creek shares a building with the secondary school and the small district office, made up of a superintendent and a teacher on special assignment who serves as the curriculum coordinator. The superintendent was relatively new to the district at the time of the study and reported that she hoped to bring a new focus to academic achievement to the district: "The overall priority of my entire leadership will be to improve student learning and academic achievement, and that's where I want to leave my mark." The superintendent defined success for students as "doing well in college and not needing remedial courses" and "find[ing] employment that they love and can be successful in." Leaders and teachers expressed a shared understanding of how to meet these goals: hard work, differentiation of instruction, provision of remediation and enrichment in flexible groupings, and the use of data to drive instruction.

Eagle Bluff Elementary School. Eagle Bluff Elementary School is part of a consolidated district in the Mohawk Valley that draws students from rural areas,

towns, and cities across an area of 130 square miles. Not far off the interstate, the area is home to dairy cattle and feed crops and is a tourism destination. Like Spring Creek, Eagle Bluff has limited ethnic diversity and over 40% of students qualify for free and reduced-price lunch. Despite a per pupil expenditure that is on the low end for the state, Eagle Bluff's district office includes a superintendent, an assistant superintendent and several directors.

In terms of district mission, the superintendent stated, "The district aspires to be valued as a district of distinction by our community." She explained that this means examining the community values and "position[ing] our students and our programs to be able to exemplify that." She reported the district's belief system is based on the idea that "all children can and will learn. And that it is our responsibility to make sure they do." As part of this belief system, the superintendent reported, "Our goals are for students to be successful in whatever they [choose], both academically and socially, so that they are positioned to be able to explore or pursue whatever options they would like to after high school." She described those options as two-year or four-year colleges or success in the workforce, and she highlighted the desire to create life-long learners: "If they go to work and when they're 30 decided they would like to go to college, they would be able to do that at that point." Across the district, leaders and teachers saw their roles as serving the community and creating well-rounded young people, which was evident in reports of hands-on learning projects—such as fifth grade students' developing a revitalization plan for a local amusement park, a maple market, and greenhouse projects—and a writing curriculum developed from conversations with recent graduates and the help of a local college.

Roaring Gap Middle School. Like Eagle Bluff Elementary, Roaring Gap Middle School is part of a large, consolidated district. It is located in the Finger Lakes region, and the district includes rural farming communities and a suburban area that reportedly provides increased tax revenue from big box stores. This additional income is reflected in the relatively high per pupil expenditures and relatively low proportion of students who qualify free and reduced-price lunch. Unlike many rural schools in NYS, Roaring Gap serves a diverse student body, with more than a quarter of students identified in racial and ethnic groups other than White. Administrators reported that this diversity is due to the increasingly global representation of the faculty and graduate students at a local university. This diversity was proudly represented by the flags of many nations that line the school's entrance and is evident by the presence of a full-time ELL teacher in the school.

As part of a larger district, Roaring Gap enjoys the support of a robust district office. The superintendent is joined by an assistant superintendent of curriculum and instruction, directors of each content area, and a director of professional development, among others. The central office staff works with principals, coaches, and teachers to support the district's focus. The superintendent stated the main priorities of his 16-year tenure have been to shift from a "loose confederation of schools" to a unified district and to increase math and ELA achievement. The superintendent viewed the Common Core standards as a way to do that. He stated, "When [district leaders] talk about the Common Core, we see a set of learning expectations that are being driven to this is what kids need to know, understand, be able to do, to be successful in college and careers." He continued, "These are not new ideas," referencing the math standards, the emphasis on science, technology, engineering, and mathematics, and the push in ELA to use evidence from texts.

Ruby Middle School. Ruby Middle School shares a building with its district's elementary and high schools in a small, isolated community in the rolling, wooded hills of the North Country. Previously, the district was home to a strong milling industry, but participants reported that graduates can no longer "walk across the street to a great job in a mill." Recent capital projects were aimed at increasing the school's sports and arts offerings to be more attractive to military families at a local base. Over 90% of students at Ruby are White, and over 40% of students qualify for free and reduced-price lunch. Ruby's per pupil expenditures are on the low end for the state. The district central office consists solely of the superintendent, but she reported she considers the three building leaders as district administrators.

The superintendent reported the district's vision over the past 35 years has been "academic excellence…. We've always had high expectations for our children, and we've always worked towards achieving that." The superintendent also reported, "The culture that is here is that we don't rest on our laurels, but we keep looking at the data and the kids and wondering, 'How do we help them, how do we do better?'" She reported that while state assessments are important, they are not the sole focus of their measurement of success:

> We're always cognizant of [the state assessments]. We look at that and we want to know if we're measuring up locally and if we're measuring up against the state norm. That's always important to us. But that's not the end all, be all because that's a snapshot on a day.

The superintendent continued, noting that teachers are "always working on curriculum here." This curriculum includes reportedly strong vocational and agricultural programs, as well as an emphasis on college readiness. Participants reported most families now envision at least

some college for their children, and college readiness has become part of the district's strategic plan. Teachers saw their role as preparing students for credit-bearing courses in the high school: "We're like their building block, so they can be on the right track, so they can graduate on time and find a good job and enter the college they want or whatever path they find."

At Ruby, this commitment to academic excellence and ongoing curriculum revision was challenged by a recent budget crisis, in part due to previous financial mismanagement and in part due to a new property tax cap, which limited the district's abilities to raise local funds despite decreases in state aid. As a result, participants reported a 25% reduction in the numbers of teachers and staff, including all the instructional coaching positions. Despite having more preps and more teachers with classes in the middle and high schools, leaders remained committed to ensuring teachers had time for grade-level team meetings.

Cross-Case Analysis

This multiple case study examined two related research questions: (1) What strategies do rural district and school leaders use to absorb disruptive policy innovations? and (2) What mechanisms and processes of alignment facilitate the implementation of disruptive policy innovations in rural schools? Our cross-case findings, presented below, are organized around the themes identified in the analysis. To varying degrees, leaders in our study engaged in (1) the contingent use of adaptive strategies of brokering, buffering, and bridging and (2) put in place mechanisms and processes of alignment that support continuity, including collaborative goal setting, ongoing revisions to curriculum, and teacher collaboration. These findings are summarized in Table 3. Although not every leader engaged in all strategies or mechanisms, adaptive leadership and alignment appeared to create a sense of coherence within each of these schools that allowed them to absorb disruptive innovations while maintaining a focus on their local goals, local needs, and local curriculum and instructional practices.

Contingent use of adaptive strategies. The rural district and school leaders in this study used three adaptive strategies to reduce disruptions to their organizations from the RttT policies: buffering, bridging, and brokering. Each is described in detail here.

Buffering. The first adaptive strategy observed was buffering. Leaders' buffering strategies protect teachers from undue stress during disruptive changes (Honig & Hatch, 2004). We observed buffering across all four schools, most frequently regarding new APPR teacher evaluation plans. These strategies included positive messaging about teacher evaluation, framing APPR as a support for professional growth, maintaining previous teacher evaluation plans, and creating APPR plans to that directly support district priorities.

At Spring Creek Elementary, the superintendent reportedly led positive messaging about APPR. Their principal credited these messages with getting teachers on board with new observation practices and reported that the superintendent said, "We need to grab this and get control of it before it takes control of us." The principal continued,

> [The superintendent] was proactive rather than reactive. She got everybody on board. We would have staff development days and she would talk to them all. She would say this is a change and it can be tough. We really believe you have to hear a message over and over many, many, many times for it to become part of your psyche. She just kept saying over and over again, this is change, it's just change, it will be fine. We're going to get through this together. We had the union on board and the teachers on board and just did it.

This principal identified the importance of early and frequent communication with teachers to allay fears and generate buy-in for the development of a new teacher evaluation plan.

At Ruby Middle School, the principal reported using a similar communication strategy, noting administrators served as "peacekeepers" in expressing to teachers that "this isn't any different than what you normally do. It is just on paper now. So just keep doing what you're doing." In turn, teachers reported APPR had not changed their practice, with one stating, "Personally, I don't think it has changed what I do very much." Similarly, at Eagle Bluff Elementary, teachers reported positive messaging about APPR, with one stating:

> I think we got the message in this building at least, "Everybody relax, everybody just hold on." Because people were panicking everywhere. But the principal was saying to us, "Just relax, you're doing what you need to do. Don't worry about it, don't worry about it."

Teachers reported that the principal was able to reassure them in this way because of the superintendent's support. At each of these three schools, administrators' communication strategies appear to have protected teachers from the pressure of meeting external mandates, as well as providing encouragement that limited potential negative backlash.

At Roaring Gap Middle School, district administrators and the principal did not communicate just to reduce fear: they reframed APPR as a tool for professional growth. For example, a district leader reported working to "take APPR

Table 3

Findings Summary

	Spring Creek ES	Roaring Gap MS	Eagle Bluff ES	Ruby MS
Adaptive Strategies				
Buffering	X	X	X	X
Bridging	X	X	X	X
Brokering	X	X	X	
Alignment Mechanisms				
Collective Goal Setting		X	X	X
Curriculum Revision		X	X	X
Teacher Collaboration	X	X	X	X

and the whole system from just being a compliance issue for teacher evaluation and transforming it into a vehicle for professional growth." This work included developing rubrics for feedback conversations that district leaders reported using when engaging in walkthroughs with principals and discussing feedback strategies. At the building level, the principal focused on professional growth through his own personal goal of building trust with teachers so they could "hear feedback." This report reaffirms that how and what administrators communicated appeared to set the tone for implementing the new teacher evaluation plans.

In addition to communication strategies, district leaders at two schools made efforts to buffer teachers by emphasizing continuity over change in implementing the new teacher evaluation plans. At Ruby Middle School, the superintendent took efforts to maintain continuity of previous evaluation systems, including the retention of the teacher evaluation rubric that had been chosen to best reflect teachers' strengths. At Eagle Bluff Elementary, the superintendent worked to maintain previous practices while developing a plan that supported district priorities. She reported a robust evaluation plan had been in place prior to APPR, based on professional standards for teachers and other staff. Rather than start from scratch, the assistant superintendent reported "running [policy changes] through our system." The superintendent reported this process began by "read[ing] those regulations over and over and over." As a result, she determined that they could create a district-wide student learning objective based on a recent writing curriculum revision as the local assessment measure. While she acknowledged a legal responsibility to meet state mandates, she also prioritized an APPR plan that would not damage teacher collaboration:

> I did not want us to have a system that would pit one teacher against another or that would have teachers focusing more on their own individual score. Then it would have the potential to destroy the collaborative system that we had. Because we all share in the responsibility in the success of these kids and I didn't want anything to interfere with that.

The superintendent of Eagle Bluff highlighted the importance of buffering to protect teachers from undue stress, noting that when dramatic change occurs, "People get whipsawed and then they get frustrated, and they just say, 'I'm going to close my door and teach.'" Buffering appeared to reduce such negative teacher reactions at all four schools.

Bridging. The second adaptive leadership practice that we observed was bridging, or reaching into the environment for new resources to meet goals (Honig & Hatch, 2004; Kannapel et al., 1999). This strategy appeared to be dependent on existing resources and capacities to meet the demands of the Common Core State Standards, the APPR, and data-driven instruction. Leaders at each of the four schools engaged in bridging to varying degrees.

Despite a somewhat higher per pupil expenditure than other schools in this study, the superintendent at Spring Creek Elementary reported financial limitations of local taxes that had remained flat or decreased over much of the last decade. As a result, the superintendent faced difficult decisions in allocating resources to support RttT implementation. Despite this challenge, the district reproduced the state education department's curriculum modules for teachers as part of a top-down decision to implement these scripted lessons in ELA and Math. Of the four schools, at Spring Creek there appeared more limited evidence of a strong instructional system prior to RttT, and this expenditure appeared to support working toward their goal of creating an aligned instructional system. At the time of the study, district leaders reported soliciting feedback on implementation and that teachers would be looking for a new text series. The district also purchased computer software that provided assessment capacity and differentiated activities for students. Teachers and the superintendent identified this resource as a key driver for both differentiating instruction and high scores on the Common Core aligned assessments.

Like Spring Creek Elementary, Roaring Gap Middle School had a somewhat higher per pupil expenditure. However, we observed more limited evidence of bridging in terms of curricular materials. Instead, we saw a greater focus on using internal capacity of a more robust central office staff, including the district's own curriculum units and common assessments that "come out of our program office," as well as the central office staff's work to "integrate the [standards] expectations into our district curriculum."

Unlike Spring Creek, there appeared to be a strong instructional system in place in Roaring Gap prior to RttT, and the superintendent reported working for nearly two decades to implement a "well-defined, guaranteed curriculum" that serves to "consistently make sure anchor standards will be addressed and assessed." While he supported the standards themselves, he strongly voiced resistance to implementing the curriculum modules developed by the New York State Education Department: "As soon as you talk about adopting the modules, you're talking about a school district that's allowing an external party to dictate to it what is good instruction."

Although they largely relied on internal capacities, district administrators at Roaring Gap looked to external resources to implement change in the areas of teacher evaluations and data-driven instruction, including the use of Candi McKay's *You Don't Have to Be Bad to Get Better* to develop a framework for principal feedback conversations and Paul Bambrick-Santoyo's[3] work to develop a rubric for data driven inquiry.

Eagle Bluff Elementary and Ruby Middle School had the lowest per pupil expenditures of the schools in this study, and we observed more limited and cautious bridging in terms of acquiring new resources. At Eagle Bluff, administrators and teachers reported that printing the lengthy state-developed curriculum modules for teachers was cost prohibitive. Instead, they were made digitally available to teachers on the district's server. Additionally, district leaders took a cautious approach to purchasing curriculum materials. According to the math coordinator, a new math series was purchased only after teachers had a chance to determine for themselves which texts aligned to both the district's curriculum and the Common Core.

At Ruby, teachers identified new assessment software to support data-driven instruction. However, as one teacher reported, "We weave new ideas and strategies into what we already do." Teachers were observed using literature anthologies from the 1990s and reported repurposing old resources, such as math textbooks, in new ways to meet the rigorous demands of the Common Core. Although not directly related by leaders to the recent budget crisis, the superintendent stated,

> I have held off purchasing because I don't know that there's a really good book out there that teaches the Common Core, and I don't want the school to pour all its precious money into a set of textbooks that isn't right.

A teacher suggested, "I think that some of the problem is that the materials [aligned to the standards] have not been made yet."

District resources and capacity appears to be related to their ability to engage in bridging. Like Ruby Middle School, Spring Creek Elementary had limited district capacity to support implanting RttT. However, unlike Ruby, Spring Creek had resources that could be diverted meet new demands (Damanpour, 1991). At Eagle Bluff Elementary and Roaring Gap Middle School, greater district capacity appeared to support change from the inside. While both engaged in limited bridging, leaders at more fiscally constrained Eagle Bluff expressed a sense of caution and need to get instructional materials right the first time.

Brokering. The third adaptive leadership strategy observed was brokering, or two-way communication across the district with the purpose of creating shared understandings (Durand et al., 2016; Elmore, 2000). Brokering contributed to understandings of how the new standards would support local goals and efforts to integrate Common Core into local curriculum. We observed brokering in three of the four schools and provide examples below.

Although school and district leaders at Spring Creek Elementary engaged in top-down implementation of state-developed curriculum modules, the curriculum coordinator reported, "With the philosophy of adopting, we quickly went to *adapting* to meet student needs." Teachers and administrators reported a sense of trust in teachers to use their professional discretion to do so to support district goals of differentiated instruction. The principal reported the standards provided a means to accomplish this as they pushed teachers to try new things. Similarly, at Eagle Bluff Elementary, the superintendent reported negotiating with teachers about integrating the Common Core to the district's curriculum:

> What I said to the teachers was, what do you need, how much time do you need, how do you want to go about this? In other words, do you want release time, work after school, do you want to focus it just on the summer because you've got kids and there's always this balance of how much time can people take out of their classroom and still feel

[3]McCay's 2013 text provides insight on teacher evaluation procedures predicated on formative assessment, moral courage, and Carol Dweck's conception of a "growth mindset." Bambrick-Santoyo's 2010 text, *Driven by Data* provides a framework for using assessments to drive instruction and aligning the instructional system of curriculum, instruction, and assessment.

> like they're doing their work. I don't dictate how that's to be done, I said the CCSS are here, let's take a look at these and see where are we in terms of what we need to be doing and where are the gaps. So, they started looking at that and made the adjustments in the curriculum.

Not only did the superintendent seek teacher input on the gap analysis, but also allowed them to decide when and how to engage in this work.

Like Spring Creek, administrators at Eagle Bluff allowed teachers to use discretion as to how to implement the new standards and conveyed a sense of trust in their messaging to teachers. Similarly, at Roaring Gap Middle School, teachers reported that administrators did not just tell them they were implementing the standards but explained why the new standards were good for kids. One teacher reported, "I love that we've raised the rigor," and a special education teacher stated, "In my mind [the Common Core] kind of leveled the expectation of that playing field—of the playground that we're all on. I think it is great. I really do. I think it gives us a common target, a common goal to work towards." Due to sensemaking on the part of leaders, teachers appeared to embrace the new, more challenging standards as a way to create excellence and equity.

Brokering strategies often complemented buffering when applied to APPR, as leaders worked to create shared understandings of local purposes for teacher evaluation. Participants reported two-way communication during the development of APPR plans. For example, at Roaring Gap Middle School, a district administrator reported collaboration between the teachers' union and district leadership:

> We have a very collaborative approach to it [APPR] when it comes to working with the teachers' association and the district and the leadership staff. They made sure it was a very collaborative process and they built off the strengths that were there already. Obviously, complying with the state regulations, but also trying to incorporate the district culture into that and I think there has been a real attitude of professional growth.

This quote illustrates the importance of communication and brokering between groups, as well as the importance of continuity in the face of change.

Brokering also occurred as principals and district leaders implemented the plans at the school level. For example, as quoted above, the principal of Spring Creek Elementary reported messaging on the part of the superintendent as bringing teachers and the union on board with the APPR plan. In turn, teachers reported some frustration with the use of state assessment scores in the APPR mandate. However, they embraced the use of observations, with one teacher stating, "I feel like we should be evaluated on how kids improve through the year." In part, teachers' acceptance of observations may be linked to the fact that district leaders were required to create a team that included teachers to choose an observation rubric. However, for grades with state ELA and math assessments, there was less latitude in how these student scores figured into teacher evaluations. Thus, when administrators were given the latitude to negotiate with teachers, they were able to gain increased buy-in.

Although we identified brokering strategies at Spring Creek, Eagle Bluff, and Roaring Gap, we saw little evidence of this strategy at Ruby. In part, this may be due to the more decentralized approach to implementing the standards via grade-level teacher teams. We did, however, see evidence of some two-way communication between leaders and teachers. For example, at the time of our visit to Ruby, administrators reported the need to revisit the APPR plan based on teacher and principal feedback during the first year of implementation.

Alignment mechanisms. In addition to buffering, bridging, and brokering strategies that served to craft coherence in the face of disruptive innovation (Durand et al., 2016; Honig & Hatch, 2004), we also identified three mechanisms and processes of alignment that supported such coherence: collaborative goal setting, ongoing curriculum revision, and teacher collaboration.

Goal setting. At three of the four schools, participants reported collaborative goal setting mechanisms and processes. At Eagle Bluff Elementary, teachers and leaders alike referred to the district goals as "cascading goals," which start with the board and the superintendent and flowed into each school. The superintendent described seeking stakeholder input to set goals, such as focus groups with recent graduates who identified writing as an area of weakness. In turn, the superintendent sought input from the faculty of a local college to develop new goals and curriculum in this area.

From the district goals, participants described how each building leader worked with their site-based leadership team (SBLT) to align building goals, including solicitation of feedback from each grade-level team. The principal reported that the resulting goals are "a true document from all of us" and are "that much more real because it is ours." This ownership was apparent in teachers' discussion of the alignment of their classroom goals to these building level goals. Teachers also often referenced the district's vision and mission statements in conjunction with goals, highlighting the social-emotional components that they believed needed to be in place to support instruction. Together, there seemed to be a sense that district leaders, building leaders, and teachers had a shared purpose.

At the other schools, we observed similar components of this cascading goal-setting strategy. At Roaring Gap Middle School participants reported stakeholder input and alignment between district and building goals. The superintendent reported,

> What we do each year is go through the process of very careful diagnostics. I do it with the board through a community forum with the school administrators. We have gatherings of stakeholders and basically we go through the state of our district.

The principal reported that these board goals would become a template for the school improvement plan, and the assistant principal explained, "One of my jobs is to take the building goals and the district goals and try to make them happen in the classroom." Additionally, teachers then choose one of the priority areas annually for their teacher evaluation plan. Like Eagle Bluff, leaders and teachers at Roaring Gap appeared to have a shared understanding of district priorities.

At Ruby Middle School, a strategic plan is developed in collaboration with stakeholders every five years and results in a series of goals that teachers referenced on their classroom walls. The superintendent reported "shared decision making" has been "a real plus for us." As a result, teachers reported being on "the same page" and seeing their role in the district's college and career readiness goals as "developing the building blocks" and providing the knowledge and skills kids need to "graduate on time and find a good job and enter college if they want." Further, the principal reported, "the district comes together as a family," around the shared purpose of being "there for the kids." Together, these statements also indicate a shared sense of purpose.

However, at Spring Creek, while we observed a shared sense of what the principal described as "a family environment" and a culture of using student data, there was less evidence of collaborative goal setting processes as contributing to increasing shared understanding of purpose and ownership of goals.

Curriculum revision. Participants described ongoing processes of curriculum revision at three of the four schools. The most boundary-crossing example of curriculum revision occurred at Eagle Bluff Elementary, where the superintendent reported this "in-house" work proceeds "iteratively," reflecting that "learning isn't static and what we're asked to do and what we're preparing kids for isn't static," and "we need to have a system that will allow us to evolve." These comments reflect an understanding that schools have been asked to change in the past and must be prepared to do so in the future.

At Eagle Bluff, the content area K-12 teams engaged in curriculum revision to integrate the Common Core. A support staff member described the resulting curriculum as the "Common Core Plus." This statement reflected continued commitments to character education, as well as curricular content and skills that teachers felt were essential even if they did not align with the new standards. This curriculum revision was supported by ongoing meetings of teachers in grades 5-8, who worked to align the elementary curriculum and instructional practices with the middle school. A district leader reported that this collaboration ensures "the teachers are talking the same language." This practice also suggests attention to the need to maintain internal coherence even during times of change.

While teachers worked on curriculum revisions at Eagle Bluff, at Roaring Gap Middle School district content area directors and others reported carrying out this work. The superintendent referred to this work as "filtering" the new standards and state-developed curriculum modules through existing curriculum:

> We implement them and then we analyze them and look at which aspects of these units do we think will help our kids be more successful and then we incorporate them into our *district* curriculum. And those we don't, we throw away. That's what our instructional office does.

These comments highlight the desire to maintain existing curriculum and reject elements of the standards or curriculum modules that did not fit with the district.

Notably, both Eagle Bluff Elementary and Roaring Gap Middle School are part of larger districts and had significantly more support from district leaders. Among the two schools in smaller districts, we observed less coherent and collaborative approaches to curriculum revision. At one extreme, leaders at Spring Creek Elementary took a more top-down approach to implementing the scripted curriculum modules. Although teachers and leaders reported latitude to adopt them, there did not appear to be a coherent effort to align curriculum within the district. At the other extreme, individual grade-level teacher teams at Ruby Middle School took primary responsibility for curriculum revision. The Ruby superintendent reported that she considers teachers the experts on curriculum, and grade-level teams had the primary responsibility for adapting the existing curriculum to integrate the Common Core. The superintendent explained:

> We didn't adopt the modules and we've never adopted any of the state curriculum. We've always looked at the standards. We've always adopted the standards of whatever's been expected, but we've always had the teachers write their own curriculum, and so whatever the rigor that's expected is what we used and we've taken whatever we've needed

> to put into what we've always done—in other words, we don't throw the baby out with the bath water.

She also reported encouraging teachers to "make sure you're familiar with [the modules], take whatever you think is beneficial and throw the rest away." Teachers reported having been "given a lot of freedom" in instruction and curriculum development and not being forced "to use the modules unless they are enhancing our curriculum." Although less structured, Ruby's approach to integrating the standards into the existing curriculum, much like those at Eagle Bluff Elementary and Roaring Gap Middle School, highlighted continuity balanced with the need to meet new state standards.

Teacher collaboration. Lastly, at all four schools, teachers reported collaborating around issues of instruction and curriculum in their grade-level or content area teams. At Roaring Gap Middle School, content area coaches worked with teachers on data-driven inquiry and developing action plans to improve instruction. As one district leader reported, the state's data-driven instruction mandate provided an impetus for professional development to improve these processes to focus on not only doing analysis of student work, but also creating "action" and "follow up in the classroom." In this way, the new state policy appeared to strengthen existing teacher collaborations. A teacher at Roaring Gap also reported the importance of such teacher collaboration in implementing the new standards: "It wasn't just leadership at the top. There was leadership from other teachers." Similarly, at Spring Creek Elementary, teachers reported using the data wall to inform their collaborative planning. At Eagle Bluff Elementary, teachers reported that grade-level teams worked on aligning curriculum and sharing instructional practices.

Teachers at Ruby Middle School also reported the importance of grade-level team meetings for looking at student data and improving curriculum and instruction. The collaboration of grade-level teams at Ruby is particularly notable as the faculty and staff had recently been reduced by 25% due to budget cuts, increasing teachers' course loads. Administrators appear to have recognized the importance of teacher collaboration and protected this time.

Discussion

The four rural schools described in this study provided instrumental cases (Stake, 1995) of rural schools that implemented RttT policies in ways that avoided declines in performance. Our findings illustrate that contingently deployed adaptive leadership strategies combined with mechanisms and processes of alignment contribute to absorptive capacity, which in turns facilitates selective, and even resistant, approaches to disruptive policy implementation. This relationship is illustrated in the theoretical framework (Figure 1) and discussed below.

First, district and school leaders engaged to varying degrees in three adaptive leadership strategies: buffering, bridging, and brokering. Such strategies contribute to coherence and are necessary when there are no straightforward, technical solutions, such as simultaneous implementation of policies aimed at changing the technical core of schooling through teacher and school leader behavior change (Baard et al., 2013; Durand et al., 2016; Elmore, 1996; Heifetz, Grashow, & Linsky, 2009; Honig & Hatch, 2004). In particular, leaders in three of the four districts described their use of these strategies as filtering or running changes through their systems to implement elements that were appropriate and useful in the local context. In these ways, district and school leaders actively controlled and shaped the flow of information and knowledge about policies to teachers (Coburn 2005; Coburn & Russell, 2008). Further, these leaders were careful to adapt to local needs by considering the school community and increasing buy-in through transparent communication (Lawson et al., 2017)

Leaders' contingent deployment of these strategies appeared to depend on existing capacities and perceived needs to meet each demand of RttT (Durand et al., 2016). In particular, we saw buffering strategies used to protect teachers from undue stress around teacher evaluation, while bridging strategies were used to procure new curriculum materials, depending on existing curriculum and financial resources. Leaders used brokering to develop shared understandings of policies and generate teacher commitment to change. These adaptive strategies allowed leaders to look beyond mandate compliance and instead use components of the policies to provide new knowledge to meet local goals.

Second, we observed mechanisms and processes of alignment that further supported the coherence created by adaptive leadership strategies (Zuckerman et al., 2017). The most salient of these tools were collaborative goal setting, ongoing revisions to curriculum, and teacher collaboration. As a result, teachers, school leaders, and district leaders held common understanding of goals and individual and collective responsibility and the purpose of change (Fullan et al., 2016). In particular, shared goal setting served to create mutual understandings of policies and their implementation in the local context (Elmore, 2000; Honig & Hatch, 2004). Such understandings are especially important in rural communities for implementing change as well as increasing student achievement (Kannapel et al., 1999). These mechanisms and processes also contributed to the development and maintenance of internally consistent instructional systems and continuous improvement strategies (Blanton & Harmon, 2005; Bryk et al., 2010).

In addition to creating coherence, these mechanisms

and processes contributed to absorptive capacity by providing opportunities for teachers to engage in knowledge assimilation, transformation, and application (Zahra & George, 2002). However, these opportunities alone are insufficient to engage in such learning. They require the ability of teachers to engage in joint inquiry that focuses explicitly on instruction, student work, and based on new curricular standards and related instructional shifts improvement (Stosich, 2016). Moreover, trust and the interrelatedness of individuals, often described as a sense of family by participants, contribute to change efforts (Daly & Finnigan, 2016; Lawson et al., 2017). When these conditions are right, mechanisms and processes of alignment provide strong organizations that allow leaders to "help change happen" (Greenhalgh et al., 2004) by running it through their system.

Together these findings suggest the importance of sensemaking (i.e., the social processes of developing shared understanding in context; see Corburn, 2001) and crafting coherence (i.e., the ongoing process of balancing internal and external demands; see Honig & Hatch, 2004) as two key factors that create absorptive capacity. Such capacity is important for all schools to maintain business as usual and avoid performance declines while executing change. However, our findings affirm Hatch's (2009) assertion that it takes capacity to build capacity for change. While such capacity may be related to financial resources, we observed absorptive capacity schools with higher and lower per pupil expenditures. This finding reflects the importance of developing leadership capacity and capacity of teachers to engage in the ongoing work of coherence and curriculum revision. For rural schools with limited financial resources, developing these capacities may be particularly important (Blankton & Harmon, 2005; Preston et al., 2103).

Limitations

The findings of this study are constrained by several limitations. First, data collection proceeded over a short period. As a result, our data provided only a snapshot of each school and limited our ability to trace policy implementation over time and to observe changes in leader and teacher behaviors. Second, while interviews provide valuable insight, they do not provide the same attention to micro-processes of implementation (Coburn, 2006) as observational data. Third, as the schools in this study were selected for special characteristics, they do not represent the full range of rural schools in NYS, let alone across the United States. For example, rural schools in NYS are, on average, have among the highest per pupil expenditures in the country (Showalter et al., 2017). This fact may limit the transferability of our findings due to the importance of resource allocation in policy implementation (Malen et al., 2015).

Conclusion and Implications

Recently national attention has turned to the quality of rural schools (Biddle & Hall, 2017). Based on this trend, rural schools are likely to be subjected to future standardizing state and federal education policies that seek to minimize variance in instructional systems and increase college- and career-ready graduates. This focus on human capital creation suggests continued detachment from place as youth seek economic opportunities to match their education (Freeman, 2014). The 2015 Every Student Succeed Act (ESSA) reinforces assessment for accountability, even as it shifts decision making to the state level and broadens the measures of accountability.

The findings of this study suggest that when rural district and school leaders engage in adaptive strategies and create strong mechanisms for alignment, they can develop absorptive capacity. Absorptive capacity allows district and school leaders to negotiate demands from outside experts and desires of the local community to selectively filter disruptive policy through their systems. In doing so, they assimilate only what is useful for their local context and transform existing knowledge about instruction and curriculum to meet demands without abandoning locally developed practices. In this way, absorptive capacity allowed schools to resist external parties dictating to them. Absorptive capacity also allowed them to maintain what they identified as the strengths of their own curriculum and instructional programs, rather than as one superintendent stated, "throw the baby out with the bathwater." As such, absorptive capacity may help rural schools resist the negative impacts of a college and career agenda identified by Freeman (2014) and the associated erosion of rural communities (Carr & Kefalas, 2009).

Based on our findings, we identify four implications for rural district and school leaders. First, deep knowledge of policy mandates and existing systems and resources helps district and school leaders to engage in bridging strategies to pull new resources from the environment to identify those that meet local goals (Kannapel et al., 1999). This strategy is particularly important as many rural districts face limited budgets, necessitating cautious approaches to purchasing new "aligned" curriculum material.

Second, deep knowledge of mandates supports rural district and school leaders' contingent use of buffering and brokering strategies to control the flow of information and knowledge to teachers. Close attention to the mandates allowed leaders to "filter" demands through existing systems, implementing the aspects of the policies that helped schools and districts to meet their own goals, and ignoring the rest.

Third, rural school and district leaders must attend to developing and maintaining mechanisms and processes of alignment, even in the face of declining resources. In

particular, opportunities for collective goal setting provide a focus on the needs of the local community. Further, collective goal setting contributes to shared understanding of purpose and shared responsibility that support a sense of coherence that and allows for course corrections to meet demands of policy changes without whipsawing teachers.

Fourth, when these mechanisms and processes focus on curriculum revision and instructional improvement, they provide teachers with ongoing opportunities to assimilate and translate new information into existing local knowledge about students and the community.

In summary, this study suggests when rural leaders and teachers attend to knowledge of external policy, along with their internal capacity, resources, and coherence and alignment of instructional systems, they can more readily absorb disruptive policy innovations by bending, not breaking. By engaging in adaptive leadership strategies and developing mechanisms of alignment, the district and school leaders of these four schools illustrate how to develop resiliency that allows rural schools to use what is relevant, and discard what is not, by incorporating into their systems policies that allow them to avoid being whipsawed by disruptive innovations.

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Appendix A

Interview Protocols and a Priori Coding Schemes

District Superintendent

Note: Questions in **bold** are priorities.

Introduction:
Hello, I am _____ from the University at Albany's School of Education, and we are conducting a study of your improvement strategies.
Thank you for taking time to help us with our study. With your permission, I am going to ask you a series of questions and listen to your answers. All answers are confidential, and your identity will not be revealed.* This interview should take about_____minutes.
Before we can begin, I need to go over a few things:

1. We would like to tape record the interview to make sure that we have accurately captured the information you are providing. If you prefer that we do not tape record, that is all right, too.
2. If you do grant us permission to tape, you may ask at any time that we stop the recorder. And if you are reluctant to continue the interview at any time, let me know, and we will stop.
3. Before we can start, I must have your consent in writing (provide form if interviewee has not brought one with him/her and be sure all relevant areas completed).

Interviewer: _____

District Interviewee(s) Name/Title: _____

1. **How long have you been the superintendent here?**
   What attracted you to this district?

2. **What is the vision for this district?**

3. **Does the district have a mission statement? [If so, how does it relate to the vision?]**

4. **What are the goals for the district?**
   How are your goals created?
   Who is involved in the creation of goals?
   How are goals evaluated and who is involved in evaluating them?
   Are school goals related to district goals? If so, who is responsible for aligning them?

5. **What is your philosophy of leadership?**
   What messages do you strive to convey about how people should act?
   How do you communicate these messages?

6. **How do you define success?**
   What are the things you need to do to achieve success?
   What is your recipe for success?

7. **In your view, what are the most important and urgent improvement priorities for your district?**
   Have these priorities changed over the past two years?
   Who decides what the priorities are?
   How are priorities evaluated and who is involved in the evaluation?

8. How are new principals selected? What qualities do you look for?
   How do you determine their school assignments?
   What do you hold principals accountable for?
   Do you make any efforts to retain good principals?

9. How are new teachers selected? What qualities do you look for?
   How are teachers selected for different schools, grade levels, or subject area assignments?
   Do you make any efforts to retain good teachers?

10. **How are decisions involving <name of school> made?**
    Is the principal included in these decisions?
    If there is a conflict or difference of opinion on improvement priorities at the school, how is it resolved?

11. **How are decisions about instructional programs or practices made? For example, does the district adopt the state's curricular modules, particular textbooks, or instructional models? [examples if needed: sheltered language instruction, project-based learning]**
    a. **How does the district proceed with implementation of selected programs/approaches?**
    b. **Is implementation different for students with special needs, such as ELLs, gifted and talented, special ed?**
    c. **How do you evaluate the effectiveness of new programs or practices?**
    d. **MIDDLE SCHOOL ONLY: How do you ensure consistent levels of rigor across multiple sections of the same course (Ex. Algebra1)?**
    Are there district mandates for instructional programs?
    Who is involved in making decisions about instructional programs or practices?
    How are instructional programs and practices evaluated? How often and by whom?

12. **Was implementing the CCLS a big change for your district and <name of school>?**
    How? If not, why not?

13. **To what do you attribute students' performance on the CCLS- aligned assessment at <name of school>?**

14. Has the implementation of the CCLS changed the school's (name) curriculum and instruction?
    What kinds of resources or support have been offered to facilitate these changes?
    What outcomes do you want from these changes?
    How will you evaluate or assess these changes?

15. **How are students with special needs- ELL, special ed, gifted and talented- supported in your district?**
    What programs/practices/policies are in place for these students?
    Who is involved in developing these programs?
    How are the programs evaluated?
    How are parents involved?

16. **What is your process for making adjustments in resource allocations?**
    Example
    How have resources been allocated to align curriculum and instruction to the Common Core?

17. **Does your district office develop its own working relationships with parents and guardians?**
    Who is responsible for establishing and maintaining them?
    What outcomes do you want from these relationships?
    Are these efforts successful?

18. **Does the district office develop its own working relationships with community agencies and local businesses?**
    Who is responsible for establishing and maintaining them?
    What outcomes do you want from these relationships?
    Are these efforts successful?

Because this study is focused on how educators are responding to changes such as the CCLS and APPR, do you have any other comments to share regarding your districts' approach?

Thank you.

END

School Principal and/or Assistant Principal Interview

Note: Questions in **bold** are priorities.

Introduction:
Hello, I am _____ from the University at Albany's School of Education, and we are conducting a study of your improvement strategies.
Thank you for taking time to help us with our study. With your permission, I am going to ask you a series of questions and listen to your answers. All answers are confidential, and your identity will not be revealed.* This interview should take about __ minutes.
Before we can begin, I need to go over a few things:

1. We would like to tape record the interview to make sure that we have accurately captured the information you are providing. If you prefer that we do not tape record, that is all right, too.
2. If you do grant us permission to tape, you may ask at any time that we stop the recorder. And if you are reluctant to continue the interview at any time, let me know, and we will stop.
3. Before we can start, I must have your consent in writing (provide form if interviewee has not brought one with him/her and be sure all relevant areas completed).

Interviewer: _____

School Interviewee(s) Name/Title: _____

1. **Please restate your name and position and how long have you been working in this school.**
   What attracted you to this school?

2. **What is your vision for this school?**

3. **Does the school have a mission statement? [If so,] How does it relate to your vision?**

4. **What are the school goals?**
   How are goals created?
   Who is involved in the creation of goals?
   How are goals evaluated and who is involved in evaluating them?
   Are school goals related to district goals? **If so, how?**

5. **What is your philosophy of leadership?**
   What messages do you try to convey about how people should act and interact?
   How do you communicate these messages?

6. **How do you define success?**
   What things do you need to do to achieve success?
   What challenges do you face in achieving success in this school?
   How has your definition of success changed at all since the implementation of the new APPR system?
7. **To what do you attribute students' performance on the CCLS- aligned assessment at <name of school>?**
   Does the level of success differ by student subgroup (e.g., African-American, Hispanic/Latino, English learner)? And if so, what do you attribute this to?
   Do you use any special strategies or tools to provide leadership for CCLS-related implementation and professional development? Describe.

8. What is your philosophy regarding middle school education?

9. **What qualities do you look for in teachers at this school?**
   How do you decide what grade levels and subject areas teachers should be assigned to?
   What efforts do you make to retain good teachers?

10. **What kinds of professional development have you received and from whom?**
    Are your own needs for professional development being met?
    [If mentoring is mentioned] - Please describe it.

11. **What would you consider to be high-quality classroom instruction?**

12. How has your impression of high-quality instruction changed since the implementation of the CCLS if at all?
What rubrics or guides do you use to assess whether instruction is high quality? Please describe how these are used.
Are there any instructional strategies that are mandated or strongly encouraged?
If so, what are they? Who was involved in deciding on these instructional strategies?
How were these decided upon?

13. Have you changed your approach toward curriculum and instruction as you implemented the CCLS? If so, how?
What outcomes do you want from these changes?
How have you assessed the impacts of these changes?

14. How is instructional support provided to teachers in this school?
Can you provide examples of the types of support?
How often does this support happen?

15. How are instructional programs selected in this district?
Who is involved?
What are the criteria for selection?
Are the programs mandated or strongly encouraged by the district?
How are programs evaluated?

16. Has the APPR process changed your approach to evaluating teachers and their instruction? If so, how? If not, why not?
How have you proceeded with APPR implementation?
How is teacher performance evaluated? What observation protocols have you used?
How does your assessment of instruction vary depending on teacher specialization (e.g., content area specialist [MIDDLE SCHOOL ONLY], ESL, special education)?
How are resulting data communicated and used?

17. How is student performance monitored? How are the resulting data used?
    a. *Describe any assessments other than the state level standardized testing.*
    b. *How frequently are students assessed?*
    c. *How are assessments developed or chosen in this school?*
    d. *How are assessment materials evaluated?*
    e. *How are data evaluated and used?*
    f. *Have you noted any impacts of data use and instruction? Please describe.*

18. Supplemental academic support services programs or plans (e.g., AIS, ESL):
    a. *What supplemental academic support services plans are in place for struggling students? Please describe.*
    b. *What supplemental academic support services are in place for gifted students? Please describe.*
    c. *How do you determine when supplemental academic support services are necessary?*
    d. *How are decisions about academic support services made? At the district or school level?*
    e. *How do you evaluate the effectiveness of supplemental academic support services?*

19. How do you develop relationships with parents and guardians?
Who is responsible for establishing and maintaining relationships?
What outcomes do you seek from these relationships?
How would you describe the overall quality of the relationships between the school and parents/guardians at this school?

20. Does your school have any formal partnerships with community agencies and local businesses?
What outcomes do you seek from these partnerships?
How do you evaluate the effectiveness of these partnerships?

21. Please describe any formal organizational structures or programs that help students transition from one school to another (e.g., Pre-K to kindergarten, 5th grade to middle school; OR into middle school, into high school).

22. Are there any other special features of your school that you would like to share?

Thank you.

END

Mainstream Content Teacher Focus Group

Note: Questions in **bold** are priorities.

Introductory script for focus groups:
Hello, I am _____ from the University at Albany's School of Education, and we are conducting a study of improvement strategies in schools around the state. Thank you for taking time to help us with our study. With your permission, I am going to ask a series of questions and listen to your answers and discussion. No one will be identified by name, and no one but the people in this room will know what you said. This discussion should take about an hour and will cover several broad topics including the Common Core Learning Standards and the new APPR system.
Before we can begin, I need to make sure that everyone has signed a form consenting to take part, including—if no one has any objection—consent for us to tape record the session so that we can accurately capture the information you are providing. [Provide the form and be sure they sign in both places: they are (a) willing to take part and (b) willing to be taped. You and/or assistant will need to check all forms to be sure that no one objects to taping—and to be sure everyone has agreed to participate.]

Interviewer: _____

School Interviewee(s) Names/Titles: _____

1. Please state your positions and the number of years you have worked here.
   (What attracted you to this school?)

2. **How would you describe the culture of this school?**

3. What are the goals of the school?
   How are goals created?
   Who is involved in the creation of goals?
   How are goals evaluated and who is involved in evaluating them?
   Are school goals related to district goals?

4. **MIDDLE SCHOOL ONLY:** Does your school have a special philosophy regarding middle school education?
   Do you do anything special to increase or improve college and career readiness? If so, how?

5. How do you define success?
   What are the things you need to do to achieve success in this school?
   What are the challenges to achieving success in this school?
   How well do you feel the district and school support you in achieving success with your students?

6. **To what do you attribute this school's level of success on CCLS-aligned assessments?**
   Does the level of success differ by student subgroup (e.g., African-American, Hispanic/Latino, English learner) and if so, what do you attribute this to?

7. **To what extent do you feel you have enough and appropriate resources to achieve success for your students?**
   For example, do you have support from the Board of Education, parents, the community? How has this support been fostered?
   Do you have enough access to technology, supplies, time to achieve success for your students?

8. **What would you consider to be high-quality <elementary or middle level> classroom instruction?**
   Where did these ideas come from?
   How are these instructional strategies aligned with CCLS?
   What do you think contributes to high-quality instruction?

9. **Are there any instructional strategies that are mandated or strongly encouraged? If so, what are they?**
   Are there any tools or rubrics used to guide you in the use of these strategies?
   Who was involved in deciding which strategies would be used?
   How were these decided upon?
   Please describe any training or support that you received to implement these strategies in the classroom.
   Who provided the PD and to what extent has that PD been useful or effective?

10. **How do you plan for instruction?**
    What kinds of tools, rubrics, or materials do you use?
    Who decides on what tools, rubrics, or materials are used?

11. **Have approaches toward curriculum and instruction changed with the implementation of the CCLS?**
    a. ***If so, who determined what changes would be made?***
    b. ***How were you supported to make those changes?***
    c. ***What outcomes do you seek from these changes?***
    d. ***How will you evaluate or assess the impacts of these changes?***
    e. ***How do you determine that content is rigorous enough? Do you use any rubrics or guides to assess the level of rigor? What do you do to increase rigor?***

12. **Has the APPR process changed your approach to curriculum and instruction? If so, how?**
    What has been your experience with the APPR implementation?

13. Has the APPR process changed your approach to assessing students? If so, how?

14. **How do you monitor students' progress?**
    What rubrics or guides do you use to discuss student performance? Please describe how these are used.
    What assessments other than state level standardized tests are used?
    How frequently are students assessed?
    How are assessments developed and by whom?
    How do you evaluate the assessment material?
    a. **How are the resulting data used?**
    b. **What kinds of information do you receive about your students' prior educational or life experiences before you begin working with them?**
       Who shares this information with you? When?
       How do you share performance and other information (e.g., social/emotional) with [middle or high] school teachers and staff?

15. How do you engage students in learning?
    Do you think the students in this school are engaged?

16. **Do you have opportunities for collaboration in this school? Describe**
    What is the focus of your collaboration?
    How is collaboration supported and sustained? By whom?
    What outcomes do you expect from these collaborations?
    How do you evaluate these collaborations?

17. Are supports in place to assist students' transitions <into Kindergarten? into middle school? into high school>?
    Who is responsible for them?

18. Are there any other things that I should know about your school that you would like to share?

Thank you.

END

Appendix B

Example Codes

Name	**Description**
Alignment	Alignment between school and district, district and school. Coherence
Collaborative trust	Relational trust
Collaboration	Shared responsibility, collaboration, working together, plcs
Communication	Instances of communication between school and district, district and school, within school, to parents and community
Curriculum coherence common core implementation	General - do not fit in other curr child nodes e,g, curriculum choices; common core implementation - responses - adoption procedures
Curriculum Curriculum or instructional programs	Curriculum and associated programs; e.g., Reading first; literacy collaborative; types and process of adoption
Curriculum Common core fidelity-integrity	Cccs implementation fidelity/integrity
Curriculum Common core penetration-saturation	CCCS implementation penetration/saturation into the classroom
Curriculum Common core staff clarity-commitment	Staff clarity, coherence, commitment/buy-in,
District	General - do not fit in other district child nodes
District Cradle career	Cradle-to-career system building at the district level ; preparing students to be college and career ready; human capital development; local economic and/ or community connections
District Improvement plan	Improvement plans district-wide
District Resource allocation-monitoring	Adoption and implementation of innovation strategies, supports- district. Grants and other sources of resources at the district; comments on district resource use
District Vision mission values goals	District vision, mission, values goals
Data Data systems and use	General - do not fit in other data child nodes
Data Data interventions	Instances of data being used to make decisions and interventions from data- ais, rti, ddi
Data Data processes	Mechanisms to use evidence when deciding on particular interventions (e.g., ais); school or district decision making processes
Data Data systems	District level and school level data systems, including their relations; monitoring and eval systems used by individuals, teams, plcs
Leadership	General- does not fit in other leadership child codes
Leadership District admin	Superintendent, district administrators- types of leadership, descriptions of leadership, perceptions of leadership
Leadership Parent & community	Parent leadership within school or district. Community leadership

Appendix B (continued)

Leadership School admin	Principal, school administrators- types of leadership, descriptions of leadership, perceptions of leadership
Leadership Teacher	Teacher leadership, perceptions of leadership
Organizational redesign	General - do not fit in other organizational redesign child nodes
Organizational redesign Adaptations to population	Organizational redesign and student and family populations being served
Organizational redesign Efficacy	Efficacy; perceived organizational support or organizational readiness for change
Organizational redesign Innovations	Perceived/announced innovations and expansions that alter the conventional, stand alone, industrial age school
School	General - do not fit in other school child nodes
School Accountability	Accountability mechanisms, both external and internal - both compliance-oriented and voluntary
School Resource allocation-monitoring	Resource allocation and evaluation monitoring- school
School School-improvement plan	Improvement plans (absence or presence) at school level connection of school improvement plan to district improvement plan
School Vision-mission-values-goals	School level vision, mission, core values/expectations, goals, culture or climate, priorities
School innovations	Adoption and implementation of innovation strategies, supports, and resources at school
Workforce development stability remodeling	General - do not fit in other workforce development stability remodeling child nodes
Workforce development stability remodeling Collaboration	Collaborations – vertical; between support staff, specialists, mainstream teachers
Workforce development stability remodeling Deployment innovations	Teacher, principal, and student support staff deployment innovations
Workforce development stability remodeling Evaluation	Strategies to prevent teacher isolation as well as provide social supports and instructional resources
Workforce development stability remodeling Professional development coaching mentoring	Professional development, coaching mentoring
Workforce development stability remodeling recruitment and retention	Teacher, principal, and student support professional retention; years of service; turnover
Workforce development stability remodeling Remodeling	Workforce remodeling (e.g., plcs, school community teams, day school/after school joint staffing)
Workforce development stability remodeling Supports	Strategies to prevent teacher isolation as well as provide social supports and instructional resources
Workforce development stability remodeling Selection	Qualities sought in teachers and administrators; reasoning behind selection of staff