TRANSFORMING THE CULTURE OF TEACHING AND LEARNING:
Four Race to the Top–District Grantees' Implementation of Personalized Learning
The District Reform Support Network (District RSN) offers technical assistance and resources to grantees of the Race to the Top–District education reform initiative funded by the U.S. Department of Education. The District RSN’s purpose is to support the Race to the Top–District grantees as they implement reforms in education policy and practice, learn from each other, and build their capacity to sustain these reforms.

The District RSN is also committed to sharing lessons learned and promising practices from the Race to the Top–District program with all districts, especially those implementing similar education reform initiatives.
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The U.S. Department of Education funded this study to examine the personalized learning implementation experiences of Race to the Top–District grantees, including their plans to sustain personalized learning environments beyond the time frame of the Race to the Top–District grant.

This report is the second of a two-part study examining implementation actions of four Race to the Top–District (RTT–D) grantees. The U.S. Department of Education issued approximately $500 million to 21 school districts and consortia of districts via Race to the Top–District grants in 2012 and 2013.1 The first report focused on early implementation efforts in Fall 2013.2 This second report examines implementation and outcomes two years later in Fall 2015. Each grantee was visited in 2013 and 2015 to better understand and witness in action the implementation of their personalized learning vision. District leaders, principals, coaches, teachers, and students were interviewed about how teaching and learning has changed since being awarded the grant. In addition, the authors observed classrooms in four or five schools in each district to better understand these changes. Finally, external evaluation reports and annual performance reports submitted by each grantee were reviewed to obtain additional information about the implementation process.

The four grantees were selected from the 2012 RTT–D cohort and include Iredell-Statesville Schools (NC), Miami-Dade County Public Schools (FL), New Haven Unified School District (CA), and Metropolitan School District of Warren Township (IN), as shown in Figure 1. Grantees selected for the study represent school districts in different geographic regions with various approaches to personalized learning. For example, New Haven and Warren Township implemented their efforts in all subjects in grades K-12. However, Iredell-Statesville focused their initial efforts in English Language Arts in middle and high schools. Miami-Dade County—one of the largest school districts in the nation—targeted their efforts at middle school math.3

This report addresses four research questions:

1. What progress have the four grantees made in implementing personalized learning?
2. How has the implementation of personalized learning changed the classroom?
3. What challenges were faced by the grantees in implementing personalized learning?
4. What should other districts consider when implementing personalized learning and how do the grantees plan to sustain personalized learning beyond the Race to the Top–District grant?
### FIGURE 1: CHARACTERISTICS OF FOUR GRANTEES SELECTED FOR STUDY

<table>
<thead>
<tr>
<th>State</th>
<th>Grantee</th>
<th>Race to the Top District Grant</th>
<th>In the District</th>
<th>Participating in Race to the Top–District Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>North Carolina</strong></td>
<td>Iredell-Statesville Schools</td>
<td>$20 Million</td>
<td>36 Schools</td>
<td>15 Middle &amp; High Schools</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20,630 Student Population</td>
<td>9,338 Students</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>45% Low-income</td>
<td>736 Educators</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grades 6-12</td>
</tr>
<tr>
<td><strong>Florida</strong></td>
<td>Miami-Dade County Public Schools</td>
<td>$30 Million</td>
<td>339 Schools</td>
<td>49 Middle Schools</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>355,913 Student Population</td>
<td>11,760 Students</td>
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<td></td>
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<td>73% Low-income</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grades 6-8</td>
</tr>
<tr>
<td><strong>California</strong></td>
<td>New Haven Unified School District</td>
<td>$29 Million</td>
<td>13 Schools</td>
<td>13 Schools</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>12,251 Student Population</td>
<td>ALL Students</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>48% Low-income</td>
<td>624 Educators</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grades K-12</td>
</tr>
<tr>
<td><strong>Indiana</strong></td>
<td>Metropolitan School District of Warren Township</td>
<td>$29 Million</td>
<td>19 Schools</td>
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<td>12,267 Student Population</td>
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<td>Grades PK-12</td>
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INTRODUCTION

Educators are making innovative changes to teaching and learning to better prepare students for college and the emerging job market. One approach educators are embracing is personalized learning, which empowers students with learning opportunities tailored to their academic needs and interests.

Personalized learning emphasizes student-driven instructional objectives, content, pace, and sequencing. Ideally, learning activities are frequently student-initiated, meaningful, and relevant to the learner. A personalized learning classroom likely has many of the characteristics listed in Figure 2 (see following page). Personalized learning often includes the use of technology to facilitate student ownership of learning and to provide tools for individual pacing and more efficient assessments to inform and tailor instruction. Moreover, personalized learning creates an environment that encourages students to graduate on time and master critical areas identified in college- and career-ready standards.

The U.S. Department of Education suggests that successfully implementing personalized learning will “lay the modern blueprint for raising student achievement, decreasing the achievement gap across student groups, and increasing the rates at which students graduate from high school prepared for college and careers.” A critical component of this new model is its emphasis on accelerating student learning in areas of key importance for academic and career success. To that end, the Race to the Top-District program encouraged grantees to use assessments that are already aligned to college- and career-ready standards.

Within the Race to the Top–District grant program, each grantee was allowed to define and create a personalized learning environment unique to their district’s needs. Grantees could incorporate instructional models, such as:

» **Blended Learning**, which refers to learning taking place online and in-person where students have some control over pace, path, or place;

» **Project-Based Learning**, where students learn how to apply knowledge and skills to the real-world by exploring and responding to an engaging question, problem or challenge; or

» **Competency-Based Learning**, which moves away from a time-based system so that students have flexibility in the way that credit can be earned or awarded and allows students to move ahead in their lessons based on proficiency or mastery.

Personalized learning has been embraced by non RTT-D schools and districts across the country and is gaining momentum and interest from additional education agencies. On a national level, over 550 school districts or consortia of districts competed in the two Race to the Top–District funding cycles. Many districts that did not receive funding continued on to implement one or more aspects of personalized learning. While it is still too early to know the national effect of personalized learning, a recent report found greater gains in mathematics and reading in 62 public charter and district schools that implemented some level of personalized learning compared to schools that had not implemented personalized learning.
FIGURE 2: CHARACTERISTICS OF A PERSONALIZED LEARNING CLASSROOM ENVIRONMENT

- Student choice in what, when, where and how to learn
- Student-centered and teacher-facilitated
- Increased collaboration and engagement
- Learning that allows for progress based on mastery, rather than grade level
- Multiple pathways for learning
- Use of technology
- Assessments with real-time feedback
- Real world experiences that increase college and career ready skills
- Student-centered and teacher-facilitated
STUDY OVERVIEW

The four profiled Race to the Top–District grantees began their work to personalize learning in 2013 and have continued their efforts to implement key elements of their approach several years later.

These efforts included ongoing training for teachers, using technology to increase access to instructional resources, restructuring assessments to provide meaningful information, and increasing college and career exposure. The grantees reported that their focus on personalized learning has resulted in a systemic shift in the mindset among teachers, school leaders, and other staff toward engaging and empowering students. Students interviewed during this study’s site visits reported more engagement and choice in their learning since implementation of the districts’ personalized learning approaches. While there is genuine excitement from the grantees about personalized learning, shifting to this new approach has come with some challenges, mostly centered on the time and effort needed to make systemic changes to teaching and learning.

To fully capture the experiences of these four grantees, this study is organized into an executive summary reporting findings across the profiled grantees followed by individual case studies of each grantee. The executive summary describes the continued implementation efforts to personalize learning since the 2013 study, changes in the cultural mindset of the district and how students learn, and challenges faced during implementation. The summary concludes with a section outlining considerations for other school districts regarding initiating and sustaining efforts to personalize learning. A more detailed description of each grantee’s implementation efforts follows the executive summary. These individual grantee case studies outline key implementation actions, changes in student learning, challenges faced, and plans for sustaining efforts to personalize learning once federal grant funding ends.
EXECUTIVE SUMMARY

GRANTEES’ CONTINUED IMPLEMENTATION ACTIONS

The 2013 report documented five common elements of each grantee’s approach to personalized learning: (1) shifting the teacher’s role, (2) enhancing technology, (3) using data and assessments, (4) emphasizing college- and career-ready skills, and (5) renovating physical spaces. Since then, the four grantees have modified or enhanced their efforts to implement these key elements in response to lessons learned. Grantees concluded that the first four elements were crucial to making the shift towards personalized learning and making learning more engaging. There was, however, less agreement about the timing and importance of making significant renovations to classrooms to create 21st century learning environments.

SHIFTING THE ROLE OF TEACHERS

To change the role of the teacher towards a “facilitator of learning” model, where teachers guide students in their discovery of knowledge, each district has used common practices over the years, as shown in Figure 3. These practices include training for teachers that integrate key skills needed to personalize instruction for each student, such as new instructional strategies, technology, digital tools, and assessment data. The training, or professional development, has been offered in a variety of ways: multi-day summer academies, sessions offered continuously during the school year, and repurposing school-wide meetings to focus on sharing resources among teachers and staff.

FIGURE 3: COMMON PRACTICES TO SUPPORT A TEACHER’S SHIFT TO A FACILITATOR OF LEARNING
Learning through observation has been another important aspect of teachers’ professional development related to personalized learning. Districts have encouraged teachers to learn from one another through “instructional rounds” or “learning walks” where teachers observed others’ classroom implementation of personalized learning, at their school or at another school. Teachers have also used online applications to share new practices more broadly with their colleagues by posting videos of activities in their classroom or advice about effective ways that they were personalizing learning for their students. Additionally, each district restructured existing positions or hired coaches that were trained specifically on the methods teachers were expected to use to personalize learning. The coaches gave teachers feedback and support as they experimented with new instructional practices. Teachers repeatedly cited the support of these coaches as integral to helping them change their instructional approach and personalize learning in the classroom.

Another important component of shifting the role of teachers has been building the capacity of school-based leadership to support teachers in this new teaching and learning environment. As the districts have rolled out their efforts to personalize learning, they have modified how they prepare principals to ensure that school leaders fully understand the district’s approach to personalized learning. Districts expanded the role of principals to include them in planning meetings regarding implementation activities, trained them on new instructional strategies, and partnered with them on creating rubrics to observe classes and provide feedback to teachers on how they were personalizing learning. As a result, principals have better communicated what was expected in a personalized learning environment to teachers, staff, parents, and students and have been able to better support the new model at their schools. Moreover, the districts gave principals some autonomy and flexibility in determining how personalized learning would be implemented at their school, for example, by developing an implementation timeline or school-specific professional development.

**USING TECHNOLOGY TO INCREASE ACCESS TO RESOURCES**

Placing laptops and tablets in the hands of students and teachers has given them access to resources that allow students more control and ownership over their learning and facilitated increased collaboration with their peers. While each district utilized technology and digital resources as part of its plan to personalize learning, the use of technology was not a grant requirement.

Before the grant, each district had some laptops or tablets available, but the Race to the Top–District grant enabled each district to distribute devices more widely to students and teachers. As a result, many students had 1:1 access to a device, providing teachers and students with a tool for tailoring learning to individual needs. The districts selected different types of laptops or tablets based on their students’ needs and either provided devices directly to students or to classrooms on a cart. Each of the grantees set different timeframes for distributing devices: Warren Township and Miami-Dade distributed all their laptops in the first year of implementation, while New Haven and Iredell-Statesville gradually issued devices to students and teachers, completing distribution over two school years.

“Having support on the ground is key to making the change to a student-centered classroom successful.”
—District Official
Teachers in all four grantee districts shared how they had increased their use of technology in class, using it in more creative ways as their comfort level with technology increased. Students were conducting research online, collaboratively writing documents, creating multimedia presentations and spreadsheets to track and monitor their scores on assessments, and could “virtually visit” any topic they were discussing. As one high school student said, “the device should be considered a multi-tool rather than a computer.” Students in all four school districts reported that they liked having choices in either using technology or not.

Crucial to using technology has been reliable Internet access and adequate support staff, as well as finding the right online tools to support a district’s curriculum and learning standards. Over the last several years, districts have made investments to upgrade the wireless infrastructure of their schools to support an increased use of technology in the classroom. Such upgrades include additional access points in the classroom and an increase in the district’s bandwidth. Each district also refined its processes to distribute, manage, and repair thousands of devices, which has been important in minimizing classroom disruptions.

Although teachers have increased their use of technology in class, district officials reported that finding digital content that is the “right fit” (i.e., clearly linked to the curriculum and content standards) continues to be a priority and challenge. Teachers have experimented with a variety of digital content as the development of apps, software, and other online tools has continually evolved. Teachers spoke of the challenges in finding content that allowed them to personalize their lessons and remained affordable. Through this process, teachers in each district have identified digital resources to use in their lessons and regularly shared these with their colleagues. To support teachers in identifying and sharing quality resources aligned to curriculum, district leaders have been developing a more systematic approach such as developing processes for vetting digital content more effectively and creating guides that link digital resources with specific learning standards and goals.

**RESTRUCTURING ASSESSMENTS TO PROVIDE MEANINGFUL INFORMATION**

Grantees have restructured assessments to give more meaningful feedback to students on their progress and actionable information to teachers to personalize instruction. As one district official remarked, “assessments are a joyous pain point,” meaning that while they are difficult to get right, they are the quickest way to change instruction to be more personalized. Districts and teachers re-engineered the types and frequency of assessments that they give to students to assess learning. Assessments include short quizzes given electronically or evaluation conferences with students when they have completed their portfolio of work. Another form of assessment being used is a performance task at the end of a unit, designed for students to apply what they have learned to a “real-world” task that requires in-depth knowledge and peer collaboration to complete.

> Technology is now the tool rather than the lesson. What objective are you going to teach with the technology? —Middle School Principal

"
The districts have also tapped into assessments built into online math and literacy tools, giving students real-time feedback on their progress and what they know. With a better understanding of what students have learned, teachers use the assessment data to adjust student groupings on a more frequent basis for better targeted instruction. As one elementary school principal remarked, “small group instruction isn’t new; it just has not been used efficiently and effectively. Two years ago, small groups just didn’t change as quickly. Now groups can shift more quickly based on student mastery—they are more fluid.” Teachers in all four grantee districts shared how they are also having students track their own progress by documenting and graphing their scores on spreadsheets. One middle school student shared that “most tests are taken online; we get the score right away and graph our results; we learn how much we have improved.”

**INCREASING COLLEGE AND CAREER READINESS EXPOSURE**

Grantees have continually evaluated and adjusted the types of learning opportunities that give students exposure to college and careers. Two grantees have turned to project-based learning as a way for students to gain more “real-world” experiences and develop skills such as critical thinking and collaboration. A number of teachers in New Haven collaborated with district officials to receive training on project-based learning. As a result, 35 teachers in elementary and middle schools have completely switched to a project-based learning classroom where students work in groups to address a content problem or challenge and produce a final project of their choosing. Miami-Dade worked with iPrep Math teachers to develop a bank of projects with a “real world” focus that can be shared with all iPrep Math teachers. The projects were aligned to specific standards to help students develop a greater conceptual understanding of mathematical concepts.

The other two grantees have focused on increasing opportunities within and outside the classroom to learn specific career-related skills or earn high school credits towards graduation. Warren Township continued to develop extended learning opportunities for high school students where they earn credit through internships with local businesses or community organizations. Students cited these opportunities as a great way to gain “real-world” experience and make connections with potential employers. Warren Township and Iredell-Statesville continued to increase the number of virtual courses available to any student, either through classes developed and taught by their own teachers or offered by outside vendors. For example, in Warren Township, the number of students taking online courses increased from 517 to 894 students between 2014 and 2015, and in the 2014-15 school year, 83% of those students earned high school credits.

“Working in groups gives us a glimpse of what it is like to work in the real world.”

—Middle School Student
RACE TO THE TOP—DISTRICT SPARKED CULTURAL SHIFTS AND TRANSFORMED STUDENT LEARNING

Since being awarded the grant, district officials reported a notable change in the mindset amongst principals, teachers, students, and other staff about how teachers should instruct and students should learn.

The districts reported that more teachers feel comfortable taking risks and trying new techniques, or, as one official stated, teachers now have a “freedom to fail.” Teachers have had more opportunities to collaborate with each other and share what they are trying in the classroom. Many teachers shared that these opportunities did not exist prior to the grant. They used the collaboration time in a variety of ways, such as developing common assessments aligned to new curriculum, reviewing student assessment data to plan lessons targeted towards students’ needs, and planning for integrating technology into the classroom to give students more choice. New technology in each of the school districts has also expanded teachers’ ability to collaborate with colleagues across their district by electronically sharing resources and videos of classroom lessons.

Grantees began this transformation as soon as they were awarded the grant and have continued to articulate their vision of a classroom where students are more engaged and in charge of their learning. As one superintendent noted, “the person who does the work is the person who does the learning.”

"Teachers and other staff ask more questions now and don’t just keep doing things because that’s what we’ve always done."
—District Official

The biggest change is student independence and empowerment, and accountability for their work. The students are realizing that the “roof is off;” they are ready to learn on their own and hone in on their curiosity.

—Elementary School Teacher

Despite early resistance to or uncertainty about the new model for learning, teachers and students in all four districts spoke about the shift in control that has begun to happen since 2013. Inspired by the focus on personalized learning, many teachers have embraced instructional practices that increase opportunities for student-driven learning and collaboration. Students have become more empowered in the classroom—taking ownership over their own learning and better understanding their progress. As one elementary school principal commented, “the real effect across the school is that teachers have stepped back so that students are working with each other and teaching each other. It really has been a significant change.” In these districts, technology has been a key tool giving...
students more control, choice, and access to anytime, anywhere learning.

Teachers across all four grantees also reported positive changes in students’ classroom behaviors since implementing their approach to personalized learning. They have seen more engagement across the board, particularly among students who previously struggled academically. Student surveys conducted by Iredell-Statesville’s external evaluator found that students reported demonstrating more persistence when confronted with challenging tasks, increased their knowledge of technology, and increased group collaboration between the 2013-14 and 2014-15 school years. In Miami-Dade, the external evaluator reported that students who participated in the district’s new personalized learning math centers increased both their effort and content knowledge grades between 2013-14 and 2014-15.
CHALLENGES FACED DURING IMPLEMENTATION

Transformational change is difficult, and district leaders understood from the beginning that it would take time and considerable effort to transition to personalized learning.

Grantees faced a number of challenges during implementation: (1) effectively communicating the personalized learning vision to teachers and school leaders, (2) ensuring teachers had adequate support and resources, (3) staggering the roll out of new initiatives to minimize teacher “overload;” and (4) addressing operational issues of managing a large number of devices and providing adequate technology support. Grantees made adjustments to their initial plans for personalized learning to correct course where needed and ensure that implementation continued to progress.

Although district leaders communicated their plans to personalize learning during early implementation, the grantees found that not all administrators or teachers fully understood the district’s vision and goals for personalized learning. For example, during the first year of implementation in Warren Township, officials were not seeing changes in classroom instruction and opportunities for more student choice and control over learning. To address this lack of understanding, the district decided to spend more time explicitly defining personalized learning and hired an external organization to help them develop an approach to use technology and small group rotations for personalization.

Supporting and training teachers in the new model was central to each grantee’s personalized learning vision but in some cases, grantees did not fully anticipate the extent to which they needed assistance. During implementation, many teachers needed support in understanding how to change their role in the classroom as well as assistance accessing curricular and technological resources to better support personalized learning. In all four districts, for example, coaches and facilitators served as conduits between district leaders and teachers by translating and communicating the district’s vision and goals into practical advice and support to teachers. Teachers in these districts spoke highly of the support they received from coaches and facilitators and credited them with helping to advance the initiative. Giving teachers additional resources or time to plan and collaborate has helped, but sustaining that extra planning time will be tested when the grant funding ends.

Each district has been keenly aware of “initiative overload” for teachers and tried to stagger roll out of activities or provided extra support to help teachers handle the sheer volume of information they had to process during implementation. Adding to the challenge of adopting new approaches to learning, teachers said that state accountability requirements inhibit risk-taking approaches in the classroom. As one middle school teacher said, “there is a disconnect between what we are doing in the classroom [to personalize learning for each student] and the standardized test.” Moreover, according to a
district official, the linkage between test scores and evaluation has some teachers fearing job loss and, therefore, afraid to try new approaches.

Technology—a key tool for leveraging resources to personalize learning—has also presented continuing operational and sustainability issues that districts had to address to keep their reforms on track. Each grantee faced challenges managing and maintaining thousands of devices distributed to individual students as well as providing timely technology support to ensure that connectivity, network, or other operational issues did not impede instruction. Grantees addressed these challenges by redefining staff responsibilities to ensure a school-based staff member was available to address technology problems or by hiring additional technicians to resolve specific technology issues. They have also developed systematic processes and gathered feedback from school leaders on the best ways to distribute devices to students at the beginning and end of the school year and identify appropriate spaces within schools to store the devices.

Frequently damaged laptops were another challenge grantees needed to handle. District leaders spoke about the difficulties students and their families faced in paying fees associated with fixing damaged devices. The three grantees that provided laptops directly to students offered insurance to families that they could purchase. Although the insurance would cover most of the costs to fix the devices, district staff reported that many families did not purchase the insurance. Warren Township and New Haven have experienced such high rates of damage to laptops among their middle school students that they have moved to, or are planning to move to, a cart-based distribution system in which laptops are not directly issued to students, with the exception of a “loaner” laptop provided as needed. By making this change, these grantees hope to reduce device damage and minimize disruptions to student learning.
CONSIDERATIONS FOR INITIATING AND SUSTAINING EFFORTS TO PERSONALIZE LEARNING

For districts that may be considering a move to personalized learning, the profiled grantees provide valuable insights into some necessary steps to initiate, implement, and sustain these reforms.

When school districts initiate the planning process, critical first steps include clearly defining a district-specific model of personalized learning and developing an instructional framework that shows what personalized learning means in the classroom. Without this clear vision, it will be difficult to build support for the initiative within the district and among community leaders. Districts should also be prepared to revisit their definition and framework if teachers have difficulty understanding how their classroom should change.

Next, the district should work to outline an approach to transition to a personalized learning environment. This approach should include the key elements needed to make a transformative change in the classroom aligned to the district’s instructional framework. District leaders from the profiled grantees agreed that common elements to a district-wide approach to personalized learning should include:

- Professional development for principals, teachers, and other staff on the new instructional framework;
- Regular coaching from staff trained on strategies needed to personalize learning;
- Deployment of technology to students and teachers;
- Identification of digital resources to encourage collaboration among teachers as well as instructional tools to aid students in mastering content;
- Assessments that provide meaningful information about what students know and what they need to learn; and
- Opportunities to have students work on projects or assignments that have real world connections or applications to everyday life.

Districts should also consider whether they need to make renovations to classrooms and other school spaces to support their approach to personalized learning. Districts may want to begin implementation of personalized learning before investing in significant renovations, as districts may be able to better tailor renovations to the needs of teachers and students.

Another important preliminary step is to identify available funding for the effort. Grantees suggested that districts identify the short and long term costs of each element. Some actions, such as buying new furniture or equipment, were primarily one-time costs while other actions, such as providing continuous professional development for teachers and other staff, selecting and distributing devices, and hiring support staff for instructional and technology needs require ongoing financial support. Districts that want to move to personalized learning should also consider whether they are adequately staffed to support the effort, specifically with coaches to support teachers in using the new instructional framework or technicians to manage and maintain technology. Based on the
experiences of these four grantees, other districts may need to restructure existing positions to align to their personalized learning efforts.

A district should develop a plan for communicating the key elements of personalized learning and the timeline for how and when each element will be implemented. Communicating the plan early and often to key stakeholders — principals, teachers, other staff, parents, students, local elected officials, and business/community leaders — is critical for securing the necessary buy-in to effectively shift toward personalized learning. Among the four districts, there was agreement that rolling out elements slowly and for subsets of schools was preferable to a system-wide roll out of a new approach, particularly related to devices or project-based learning. District officials stated that it is not possible to implement every element simultaneously and the timing of implementing each element will vary based on the capacity of the schools and staff. For example, if a district plans to use digital resources available through the Internet during class time, then it will need to ensure that schools have the wireless infrastructure in place to support widespread use before encouraging teachers to use the online curriculum in class. Additionally, the district will want to consider student access to technology outside of school hours. Because technology was an important part of each grantee’s approach, each profiled district collected a variety of survey data about how, if at all, technology was already being used in the classroom. Two grantees also gathered data through classroom observations about teachers’ instructional practices (i.e. amount of time spent doing whole group instruction versus small group instruction). These data helped guide district leaders in designing training for teachers on their new instructional model and informed expectations for teachers on how often they should use new instructional techniques.

Officials in all four districts stated that having strong leadership at all levels has been critical to sustaining systemic change. District leaders had to change the culture of their school system to compel a radical shift in the classroom. Making the shift to personalized learning requires a change in teaching and student learning, and to make that change, teachers need to feel comfortable taking risks or trying new approaches. District officials spoke of “leading from behind” and giving the tools and resources to principals and teachers so that they could be the decision-makers. Each of the four grantees had to recalibrate their approach to building capacity among school-based leaders over the last three years. Because district leaders regularly visited schools and met with school administrators, they were able to identify when principals and teachers were struggling and made adjustments as needed. District leaders also increased the participation of school administrators and coaches in planning and implementation decisions to help build their leadership skills.
FIGURE 4. STEPS FOR DISTRICT-WIDE APPROACH TO PERSONALIZED LEARNING

1 **INITIATING APPROACH**
- Define personalized learning
- Develop instructional framework for classroom aligned to definition
- Identify key elements of district’s approach and develop timeline for rolling out each element
- Identify school and teacher readiness through surveys and observations
- Develop plan for communicating changes
- Identify short-term and long-term costs for each element
- Determine funding source needed for each element & whether current district budget can support

2 **IMPLEMENTATION OF KEY ELEMENTS**
- Implement key elements of district’s approach, which may include:
  - **Shifting Teacher’s Role:** communicate new expectations, deliver professional development on new instructional framework, train staff that will support teachers in new role, provide ample opportunities for teacher collaboration
  - **Technology:** upgrade infrastructure, select device and digital content, distribute devices to students and teachers, maintain devices, address technology issues
  - **Data and Assessments:** review current assessments and data available to teachers on student learning, develop systems to regularly review student data to personalize instruction, select tools that align to curriculum and provide timely information
  - **College and Career Ready Opportunities:** provide students with experiences that develop skills necessary to succeed in college or in a career
  - **Renovations to Physical Spaces:** consider whether current facilities or classrooms are compatible with district approach to personalization
- District and school staff regularly visit classrooms and district staff meet with school leaders to understand challenges faced in the classroom

3 **SUSTAINING EFFORTS**
- Support investment in professional development, staff, technology, and other tools to continue and augment transition to personalized learning
- Continue to build capacity of school leaders to support personalized learning
- Be willing to recalibrate or adjust approach
IREDELL-STATESVILLE SCHOOLS

BY THE NUMBERS
» IREDELL-STATESVILLE (NC)

$20 Million
Race to the Top–District Funding

36
Schools in District

20,630
Student Population

45%
% Low Income Students

OVERVIEW OF DISTRICT’S PERSONALIZED LEARNING APPROACH

In 2012, Iredell-Statesville Schools, located in North Carolina, was awarded $20 million in RTT–D grant funding to create learner-centered environments with customized instruction. To do so, Iredell-Statesville chose to implement blended learning at 15 middle schools and high schools. Iredell-Statesville defines blended learning as “a method for changing the way learning takes place in the classroom where students learn both directly from the teacher in small focused groups and through digital content and projects and by using technology resources.” During initial implementation, each school chose a blended learning model that best met the needs and readiness levels of their school and hired school-based coaches who would support teachers using this model. Acquiring technology was a primary component of Iredell-Statesville's blended learning plan and, by the 2014-15 school year, the district distributed laptops and protective backpacks to every middle and high school student and teacher. While district officials were encouraged by teachers’ use of small groups

Students working in small groups with laptops and teacher conferencing with students

Participating in Race to the Top-District Activities

15 Middle and High Schools

9,338
Students

736
Educators

6 – 12
Grades

Students working in small groups with laptops and teacher conferencing with students
and stations during the first two years, they wanted teachers to be more purposeful in how they were grouping students by using data related to student assessments, interests, and individual choices. District officials wanted to better link blended learning with personalization and communicated their goals as personalized blended learning, where lesson design, content, and data should be combined with digital tools and devices.

The definition of true blended learning is personalization.

—District Official

GRANTEE’S CONTINUED IMPLEMENTATION ACTIONS

Iredell-Statesville’s investment in and commitment to teachers, coaches, school leaders, and technology over the past three years has allowed the district to move closer to personalized blended learning in its middle school and high school classrooms. Although its initiative contained many components, the district has focused on the following key elements: (1) investing in teacher training and opportunities to observe blended learning, (2) building the capacity of school-based leaders and coaches to support teachers, and (3) integrating technology, digital content and data to personalize blended learning.

INVESTING IN TEACHER TRAINING AND OPPORTUNITIES TO OBSERVE BLENDED LEARNING

The district made significant investments in changing the role of teachers by offering ongoing professional development and increased opportunities to collaborate with and learn from each other. During the past three years, the district has used professional development to incrementally build teacher capacity to implement new instructional practices geared toward a blended learning environment. At the start, training focused on increasing teachers’ comfort level with station rotation, learning classroom management techniques, and various strategies for grouping students. In 2013, the district set targets for how often teachers should use small group instruction each week, usually two times per week. By 2015, about 20 percent of teachers were using small group instruction, an increase from two percent in 2013.

Once devices were fully distributed to students and teachers in the 2014-15 school year, there was an increase in training on how to use them and incorporate the technology into classroom lessons. District staff also began to gather feedback from teachers on the types of training that they wanted to receive. Teachers expressed interest in learning more about how and when to differentiate content for students, minimizing student distractions in class, and practical lesson designing to personalize learning.

To accommodate the variety of training needs, year-long professional development plans were developed by schools and customized to meet staff needs and readiness levels. Professional development has been delivered through formal training held during early

Blended learning has changed everything about how I teach.

—Middle School Teacher
Release days for teachers and informally through professional learning communities where teachers collaborate and share ideas.

While many middle and high school teachers have embraced the idea of blended learning, some teachers have struggled to understand what that concept means in their classroom. According to the district’s external evaluator, in 2015 all schools in the district were still “emerging” in their implementation of blended learning in classrooms—as measured by the amount and extent of blended learning activities, focused groups, small groups, and stations. Both district leaders and teachers reported that learning “by doing” or through observation would help them. Since beginning these reforms, the district has structured professional development like a blended learning classroom, where teachers rotate through various stations as part of their training just as students would do in their classroom. Recognizing that they needed to give teachers more opportunities to see blended learning in action, the district created “learning walks,” where teachers observed other teachers using blended learning strategies. Coaches and teachers cited these “learning walks” as a great way to “see blended learning in action.” In addition, the district placed innovative teachers who had successfully implemented blended learning at schools where teachers were not using blended learning as widely. The goal of this effort, called the Highly Effective Educator Team (HEET), was to increase awareness of how to use blended learning effectively. HEET began in 2015 and was designed to recognize teachers with a stipend, enhanced professional development, and conference attendance. The district piloted this model by placing five HEET teachers in two middle schools and one high school and was developing ways to sustain the model post grant.

Building the Capacity of School-Based Leaders and Coaches to Support Teachers

Recognizing the enormity of the shift teachers were making, the district provided on-site support to help teachers refine and improve their teaching practices. To give teachers regular on-site support, the district hired Blended Learning Coaches for each middle and high school in 2013. These coaches, along with principals, participated in the district’s Leadership Academy Week—a four-day Summer training that communicated the goals of the initiative and priorities for the upcoming school year related to blended learning—and then served as the conduit of the information to teachers at their school. During the school year, coaches provided support and guidance to teachers by modeling blended learning.

“Having leaders at the schools who understand the [blended learning] message is critical.”

—District Official

in professional development sessions, assisting with lesson planning, introducing new digital resources, and team teaching when requested by classroom teachers. Teachers and principals repeatedly emphasized the significance of having Blended Learning Coaches as part of the initiative. Teachers at one middle school spoke of their Blended Learning Coach as being “foundational” to the success of blended learning at their school. One teacher stated that “it is critical to have someone here at school that will fix issues very early; if teachers run into a
roadblock then everyone shuts down. The coach comes in and helps with instructional issues."

Over the course of implementation, Iredell-Statesville focused more professional development on school principals, recognizing how integral these school leaders were to supporting teachers and providing school leadership on blended learning. During the first two years of the grant, district officials learned that some principals did not fully understand blended learning and how such a classroom should operate. One district leader commented that “there was also a question of whether or not principals really knew what they were looking for” when they observed classes and gave feedback to teachers who were implementing blended learning strategies. District officials noticed that the majority of feedback focused simply on whether classrooms were using technology, rather than on who was using that technology and how it was supporting a personalized learning environment. To address this issue, principals participated in additional professional development about personalized blended learning and district-wide monthly principal meetings. One principal stated that “coaches and principals receive similar training” and this has strengthened the blended learning model because there is a common understanding of the concepts at all levels; and it “is pretty fluid from top to bottom.” In addition, to help principals better understand whether teachers were using blended learning effectively, the district modified a classroom walk through tool that principals used when they visit classrooms. The tool lists specific elements related to blended learning that principals should document, such as student engagement, student groupings, and how technology is being used to instruct.

INTEGRATING TECHNOLOGY, DIGITAL CONTENT AND DATA TO PERSONALIZE BLENDED LEARNING

The district has focused on integrating technology, digital content, and data into the classroom in order to personalize learning. As part of its efforts, Iredell-Statesville began distribution of laptops to students and teachers at three schools in Spring 2014 and completed distribution to all middle and high school students and their teachers by the 2014-15 school year. Teachers and students have embraced the new technology, with a range of uses in the classroom from working collaboratively through online applications to creating multimedia presentations. Additionally, having more technology available has given students expanded options to take courses online. During the 2015-16 school year, the district developed and offered three online courses to students and was developing 20 additional online courses for students to take in the fall semester of the 2016-17 school year. Students have also participated in 19 different online courses which the district offered through an outside vendor.

 wards. Having a laptop makes it much easier to organize work, easier to get to assignments, and easier to share with peers and with the teacher.

—Middle School Student

District staff have been working to help teachers better integrate technology into lesson plans to further students’ academic outcomes. The staggered distribution process allowed teachers to experiment
with different digital content to use in the classroom. Through experimentation, teachers identified resources that they shared with each other during weekly team meetings or early release professional development days. District officials thought this 'grass roots effort' by teachers was effective in increasing technology use because teachers often were more willing to listen to ideas from their peers. However, the district wanted to create a more systematic approach to using technology within the curriculum and to help students master standards. In 2015, the district created digital resource links in curriculum guides and made them available on the district’s website. They plan to review these links annually. The guides include digital resources that can be used to address specific learning standards and goals. Even with these efforts by the district, some teachers reported feeling overwhelmed by the number of resources and looked to Blended Learning Coaches to provide guidance on which sites could best meet their students’ learning goals. The district has also adopted a learning management system that it believes might help “move blended learning to the next level.” Teachers had the option to use the system in 2015-16 and gave positive initial feedback, stating that it has all the tools teachers need to personalize—adaptive digital content, online courses, assessments with immediate feedback, course grades, and data needed for student groupings.

The widespread distribution of laptops has provided teachers with tools that more efficiently gather data on student learning. According to evaluator surveys, teacher data use increased by 26 percent between 2013-14 and 2014-15. For example, some teachers have used new digital resources—laptops and digital content—to pre-test students on learning standards that give immediate feedback to both students and teachers. These data enabled teachers to assign work to students that addressed their specific needs. Teachers have also created their own online assessments that allow for instantaneous data access and then used these data to intentionally group students. According to a middle school principal, teachers were beginning to feel more comfortable with the data and were “heading in the direction of differentiating and individualizing instruction at the stations.” Having more technology in the classroom has also given students more ownership over their learning. Students were tracking and graphing their data on class assignments, identifying growth and gaps in their understanding, and reflecting on how they could improve.

“Technology is now the tool rather than the lesson. What objectives are you going to teach with the technology?”
—Middle School Principal

“Most tests are taken online; we get the score right away sometimes and graph our results; we learn how much we have improved.”
—Middle School Student
# Key Elements to Iredell-Statesville's Approach to Personalized Learning

<table>
<thead>
<tr>
<th>2013</th>
<th>2015</th>
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</thead>
<tbody>
<tr>
<td><strong>Investing in Teacher Training and Opportunities to Observe Blended Learning</strong></td>
<td><strong>Focus on personalized blended learning.</strong></td>
</tr>
<tr>
<td>» Focused on station rotation and classroom management strategies.</td>
<td>» Created opportunities for teachers to observe and learn from other teachers during “learning walks.”</td>
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<tr>
<td>» Collaborated with other teachers on blended learning strategies during weekly meetings.</td>
<td>» Piloted program to highlight and place innovative teachers in schools to support other teachers.</td>
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<tr>
<td><strong>Building the Capacity of School-Based Leaders and Coaches to Support Teachers</strong></td>
<td></td>
</tr>
<tr>
<td>» Hired education firm to assist schools in creating unique blended learning models for each school.</td>
<td>» Allowed schools flexibility to modify blended learning models.</td>
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<tr>
<td>» Principals selected blended learning coaches for each school.</td>
<td>» Began combining blended learning coach position with the existing instructional facilitator position.</td>
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<td>» Coaches and principals attended Leadership Academy Week.</td>
<td>» Coaches and principals attended Leadership Academy Week.</td>
</tr>
<tr>
<td><strong>Integrating Technology, Digital Content and Data to Personalize Blended Learning</strong></td>
<td>» Modified the classroom walk-through tool for principals to use to gather information on blended learning.</td>
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<tr>
<td>» Piloted program to select devices for students.</td>
<td>» Distributed devices to all students and teachers (full deployment in 2014-15 school year).</td>
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<tr>
<td>» Limited distribution of laptops to three schools in Spring 2014.</td>
<td>» Linked digital resources to curriculum guides that are accessible to teachers online.</td>
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<tr>
<td><strong>Changes in Student Learning</strong></td>
<td>» Introduced an optional learning management system.</td>
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</tbody>
</table>

Iredell-Statesville has gradually made strides toward its goal of creating learner-centered environments by investing in teachers and technology and providing students with more choices for learning and greater collaboration with other students and teachers. District officials were optimistic about the progress that schools have been making and reported that the shift to blended learning has occurred gradually, and in pockets throughout the district, over the last three years. Officials reported that they observed teachers making changes to their instructional practices and

> Students are much more engaged and thinking further beyond and deeper than previously.

—District Official
positive changes in students’ engagement in learning. Where teachers were using blended learning, students had more choices and opportunities to collaborate and experienced greater communication with teachers. According to a middle school teacher, students now have the chance to choose how they complete their work and “are talking to each other about what they are learning,” which has been a significant change. Teachers reported that students were tracking their assessment scores and that has increased ownership over their own learning. This has led to greater student engagement and more positive attitudes. Student surveys conducted by the district’s external evaluator found that students reported more persistence when confronted with challenging tasks, increased knowledge of technology, and increased group collaboration between the 2013-14 and 2014-15 school years.

While celebrating the progress that Iredell-Statesville has made towards a personalized blended learning environment, district leaders acknowledged that making this change has not been easy. District officials summed up the current status of blended learning in their schools as “moments of greatness and units of greatness,” but teachers have “not yet crested the hill of blended learning.” District leaders spoke of the multiple challenges that teachers faced in a blended learning classroom with external challenges of meeting state accountability requirements and state legislative changes that were not favorable to public schools. District officials also said that some teachers still struggled to let go of the “watch me and I’ll show you how” instructional approach and move to a gradual “release of responsibility” framework for learning. There has also been reluctance from some principals and teachers to move away from teacher-led instruction and use blended learning. District officials have worked to provide regular support and spent more time in the past year listening to these concerns. The district has continued to work with school leaders to ensure that teachers felt safe to take risks with the blended learning approach and allowed students more control over their learning. Several teachers reported that they have felt supported by principals in taking these risks.

Another challenge was unforeseen costs related to the enhanced technology, including the costs to repair damaged computers, re-image computers over the summer and protect computers from damage. District staff reported that the most common types of damage to laptops were cracked screens and damaged corners. To defer some of this expense, in the 2014-15 school year, the district offered insurance to families; out of roughly 9,000 total students, approximately 300 purchased insurance. The district also purchased backpacks for every student to protect laptops; however, there have been numerous quality issues (including zipper failure, etc.). The district is now on their third version of the backpack and, due to these quality issues, has decided not to provide backpacks post-grant. Instead, the district is considering a couple of different options including piloting a “bring your own backpack” program where students would purchase backpacks that met certain specifications or selling laptop sleeves or hardcover shells to students.

I feel like learning is fun... teachers don’t like to watch us sit there, they really try to make it interactive.
—Middle School Student

CHALLENGES FACED DURING IMPLEMENTATION

Another challenge was unforeseen costs related to the enhanced technology, including the costs to repair damaged computers, re-image computers over the summer and protect computers from damage. District staff reported that the most common types of damage to laptops were cracked screens and damaged corners. To defer some of this expense, in the 2014-15 school year, the district offered insurance to families; out of roughly 9,000 total students, approximately 300 purchased insurance. The district also purchased backpacks for every student to protect laptops; however, there have been numerous quality issues (including zipper failure, etc.). The district is now on their third version of the backpack and, due to these quality issues, has decided not to provide backpacks post-grant. Instead, the district is considering a couple of different options including piloting a “bring your own backpack” program where students would purchase backpacks that met certain specifications or selling laptop sleeves or hardcover shells to students.
The district did not have a coordinated approach to distributing and managing devices on such a large scale at the start of the device rollout and this led to numerous issues, such as determining who would be responsible for keeping track of and ensuring the devices were repaired, where to house devices, and having a process for device re-imaging. Although the district has some technical support staff, it was not enough to support the necessary repairs. As a result, various staff at each school—including coaches, teachers and media coordinators—spent considerable time responding to and solving technical issues. For example, although the library system kept track of devices, quarterly checks were done by homeroom teachers in every school and Blended Learning Coaches often completed work orders to repair laptops—taking away valuable teaching and coaching time. The media coordinator became responsible for tracking devices and repairs, rather than spending time working directly with students and teachers. To address these issues, the district began process mapping to ensure that these tasks and staff responsibilities were clearly delegated, streamlined and understood. Schools would be allowed flexibility to determine which staff members would be responsible for various tasks related to laptop management.

**SUSTAINING PERSONALIZED LEARNING**

District leaders were looking for ways to continue to build on their progress by sustaining their blended learning activities post-grant. The district was committed to moving forward with personalized blended learning, complemented by technological resources. With the high cost to maintain the laptops chosen by the district, the district has been reviewing other sources of revenue to support the continued use of these laptops. District leaders are planning to lease new devices for the 2018-19 school year, using a combination of local funding and revenue from the sale of their current devices. Since there was a lot excitement around the rollout of the laptops and teachers and students have spent a significant amount of time learning how to navigate the laptops, district leaders are hoping to continue using their current type of laptop. Starting over with a new device could have a negative influence on morale and support for the initiative.

The district has taken actions to maintain a school-based coach focused on blended learning—a crucial support for teachers to use blended learning to personalize. Prior to the grant, however, there was an existing coach—called the Instructional Facilitator—who was primarily responsible for supporting teachers on the curriculum and continuous improvement efforts and was not trained on blended learning initially. Although each coach had separate responsibilities for supporting teachers, the district recognized that it could not financially support two coaching positions at each school. As the initiative was rolled out, there were often overlaps in the coaches' responsibilities. As a result of this overlap and looking ahead to sustainability of blended learning post-grant, the district decided to combine these two positions into one position—the Blended Learning Instructional Facilitator (BLIF). Several schools have already made this transition, with the responsibilities of this new position defined by each school, and all schools will make the change by Fall 2016. In addition, the district was rethinking the role of the media coordinator in schools as a partner to the BLIF. The media coordinator could be responsible for many of the technology issues that coaches were spending their time on. These changes would ensure that multiple staff were available at each school to support the blended learning model.
MIAMI-DADE COUNTY PUBLIC SCHOOLS

BY THE NUMBERS
» MIAMI-DADE (FL)

$30 Million
Race to the Top–District Funding

339
Schools in District

355,913
Student Population

73%
% Low Income Students

OVERVIEW OF DISTRICT’S PERSONALIZED LEARNING APPROACH

Miami-Dade County Public Schools received $30 million in Race to the Top–District grant funds to transform mathematics instruction at 49 middle schools into iPrep Math learning centers where learning is personalized for students. The structure of the iPrep Math learning center was completely different than other math classrooms in the district—three teachers (two full-time and one part-time) work collaboratively in a renovated classroom space with 60 students in each class. These teachers plan, co-teach, and use online curriculum and resources to provide students various learning options. During initial implementation, the district designed iPrep Math learning centers that were similar across schools—large spaces with flexible furniture and classroom-based laptops. Each school selected iPrep Math teachers, determined which math classes would be included and selected up to 240 students in 6th through 8th grades to participate in iPrep Math. According to a district official, Miami-Dade’s targeted approach allowed them to use their grant funds to do

Middle school iPrep Math class working on daily assignments
“something really meaningful across the district” and address an area in need of reform—middle school mathematics. iPrep staff have also trained teachers in the district’s digital convergence initiative to more widely integrate technology in English Language Arts at ten middle schools and at 18 elementary schools.\textsuperscript{13}

**DISTRICT’S CONTINUED IMPLEMENTATION ACTIONS**

Since making sweeping changes to math instruction at these middle schools, the district has fine-tuned and enhanced its approach. District officials were pleased with how math instruction had been transformed in the iPrep Math learning centers, but they focused on these key elements to improve the program: (1) ongoing training on the iPrep Math instructional model and other topics, (2) building multiple layers of support for iPrep Math, and (3) using technology and data to personalize student instruction.

**ONGOING TRAINING ON THE iPREP MATH INSTRUCTIONAL MODEL AND OTHER TOPICS**

To ensure that teachers fully grasped the iPrep Math instructional model, Miami-Dade has provided regular professional development for teachers, including summer academies and sessions held during the school year. The length and content of the summer academies has been modified over the last few years. Due to planned decreases in funding allocated under the grant, the length of summer training for iPrep Math teachers decreased from 15 days in the first summer (prior to the 2013-14 school year), to 10 days in 2014, and then 5 days in 2015. Although there has not been significant turnover amongst iPrep Math teachers, the district had to train new iPrep Math teachers in 2014-15 and 2015-16 with fewer days. As a result, the district created a New Teacher Institute with additional opportunities to help them better understand the instructional model and see “iPrep in action” through visits to other iPrep Math learning centers. The district used funds available to pay for substitute teachers so that new iPrep Math teachers could participate in the observations.

“\textit{We usually probe, but we’ll never give them the answer ever. We try to start with what the students know and if they hit a roadblock, we’ll say ‘maybe you should think about this.’}”

\textemdash iPrep Math Teacher

The content of training also changed over time as the needs of iPrep Math teachers changed. The first two years there was a strong focus on the instructional model and modeling personalized learning through the sessions to ensure that iPrep Math teachers understood just how different instruction should be in their classroom. For example, in iPrep Math, students have been expected to learn more actively. During training, iPrep teachers had to explore and solve problems on their own rather than have the training facilitators tell them how to solve the problem. This philosophy carried over to the classroom as teachers guided students and asked probing questions as they worked through assignments.

According to district officials, the district’s adoption of new math standards required a more conceptual understanding of mathematics and a stronger linkage to real-world applications of math. During the third year of implementation, the focus of professional
development shifted to improving teachers’ depth of mathematical knowledge and using project-based learning activities to help students master standards. These changes were made because math facilitators observed that teachers needed guidance on linking projects to learning standards and more training on specific mathematical concepts, such as proportional reasoning and algebra. The district’s online curriculum vendor has provided “content academies” where teachers gain a deeper understanding of these math concepts. Additionally, district officials worked with iPrep Math teachers to create a bank of projects aligned to the new standards.

BUILDING MULTIPLE LAYERS OF SUPPORT FOR iPREP MATH

To ensure that teachers fully transitioned to the new instructional model, the district provided multiple layers of support for iPrep Math. First, in 2013, the district hired four iPrep Math facilitators who provided regular coaching and feedback to iPrep Math teachers and maintained these positions over the course of implementation to provide consistent support. The facilitators had a portfolio of 12 to 13 schools that they supported each year. Initially, schools were assigned to facilitators based on regional location, however the facilitators changed the model to work with schools where they had relationships with the teachers. According to the facilitators, having a relationship with teachers helped build trust and led to a more effective coaching relationship. During the school year, the facilitators visited each school once every two weeks, on average. During these visits, the facilitators completed a coaching log that documented the type of support they provided. The iPrep Math project director reviewed the coaching logs to see the frequency and types of support provided as a way to monitor the effectiveness of the coaching. Several teachers and principals shared how important the facilitators have been to them as they moved to a new model of instruction. To effectively coach, the facilitators discussed the importance of understanding the instructional model before they could support teachers. To help them fully understand the model, they participated in training and the iPrep Math project director shared videos and research articles about student-centered learning until the facilitators had their “aha moments.”

Building the capacity of principals to support iPrep Math has been another integral aspect of iPrep Math. From initial implementation in 2013, school principals have had flexibility to structure iPrep Math in the way that best met the needs of their school. District staff and principals agreed that having this autonomy was a key element to getting buy-in and ensuring ongoing success. Principals took different approaches towards iPrep Math student enrollment. Some schools have had the same math classes in iPrep Math, which

“Having support ‘on the ground’ is key to making the change to a student-centered classroom successful.”
—District Official
resulted in students participating in iPrep Math just once during their time in middle school. Other principals adjusted which math subject was taught in iPrep Math so as students moved to the next level of math, they could be taught in iPrep Math for multiple years. According to the iPrep Math evaluation, about 39 percent of 6th and 7th grade students in 2013-14 continued to be enrolled in iPrep Math in 2014-15.

Due to the differences in the nature of learning in iPrep Math from other subjects, the district hired two district-level staff to train school-based counselors on the iPrep Math model. Counselors spent time educating parents about the instructional model, the online software and the process for student selection for iPrep Math. Counselors, in collaboration with teachers, held parent information nights to address parent concerns. According to a teacher, parents called when their students struggled and they wanted the students to switch to a traditional math class. Counselors and teachers worked with the parents to help students make the adjustment by improving their time management and organizational skills, which they said was important to being successful because of the autonomy students had in the iPrep Math classroom.

**USING TECHNOLOGY AND DATA TO PERSONALIZE STUDENT INSTRUCTION**

Technology has been a key lever to changing the ways students learn mathematics. One iPrep Math teacher noted that “having computers and laptops has made teachers become facilitators and for students to be more active in their learning.” A key component of instruction in iPrep Math learning centers has been the use of a web-based math software program that aligns to the Florida state math standards. The curriculum was used regularly as part of iPrep instruction in all 49 middle schools. iPrep Math students were expected to have about two and a half hours of instruction each week on it. The software enabled the students to work independently on problems and had a “hint” feature that helped answer students’ questions. The software also had a “skillometer” that provides immediate feedback to students about their mastery of skills as they work on assignments. Students at multiple schools spoke positively about the web-based software and how it allowed them to move through the concepts at their own pace. As one student noted, “sometimes other students fall behind you and you have to wait for them to catch up, but with the software I can go ahead when I’m ready.” Teachers also reported that the web-based software offered students an alternative model for learning concepts and made students more self-sufficient. Principals were expected to use data from the software to monitor iPrep Math students’ progress. The facilitators have worked with principals to ensure they used the bi-weekly reports from the online math software on the number of students completing and mastering units and the total instructional hours. By doing so, the principals had a better understanding of how iPrep Math was functioning at their school.

> Using the math software lets me choose if I want to go ahead or stay on track.
> —Middle School Student

To plan lessons and personalize learning for students, teachers said they have been regularly analyzing student data from the online math curriculum, end
of class “quick” reflection questions, or formative assessments to understand student mastery of concepts—much more so than they did before teaching in iPrep Math. According to one teacher, she “reviews student data on a daily basis and with the [web-based] software I have more data than I did before iPrep.” Teachers also discussed how they use data to form small groups for direct instruction during the class period. According to one iPrep Math teacher, “every day, we have some reflection question to gauge where students are. We look at data to create a lesson. What does the student need help with? What can we do here? And what workshop can we do to help the student get to mastery?” The iPrep Math learning centers have two spaces where teachers can hold workshops with small groups of students. In several iPrep Math learning centers observed, teachers held small group workshops and the remaining students worked independently or in groups. District officials and teachers stated that the extra planning period funded by the Race to the Top–District grant has been critical to give teachers time to review data and plan for personalized learning. One teacher shared “even though we have two planning periods, it’s never enough.”

Because technology has been a core part of the iPrep Math program, the district has tried to promote equitable access to technology, for example by setting up partnerships with local Internet providers to offer discounted service rates to families. Since laptops are classroom-based rather than given to specific students, the district also purchased 20 laptops for each iPrep Math learning center for students to take home. The ability to “check out” laptops to take home will hopefully address equity issues among students that do not have access to computers at home. Some iPrep Math students noted that having a computer available outside of school allowed them to complete assignments in a timely manner. Additionally, iPrep Math teachers gave students access to the iPrep learning center before and after school to ensure that they could complete any online assignments if they did not have access to the Internet at home.
**KEY ELEMENTS TO MIAMI-DADE’S APPROACH TO PERSONALIZED LEARNING**

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<thead>
<tr>
<th>2013</th>
<th>2015</th>
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<tbody>
<tr>
<td><strong>ONGOING TRAINING ON THE iPREP MATH INSTRUCTIONAL MODEL AND OTHER TOPICS</strong></td>
<td></td>
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<tr>
<td>» Fifteen day summer academy for iPrep Math teachers.</td>
<td>» Five day summer academy for iPrep Math teachers and counselors and New Teacher Institute added for first year iPrep Math teachers.</td>
</tr>
<tr>
<td>» Focused on instructional model, team teaching, and using technology.</td>
<td>» Focused on math content knowledge and integrating project-based learning.</td>
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<tr>
<td><strong>BUILDING MULTIPLE LAYERS OF SUPPORT FOR iPREP MATH</strong></td>
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</tr>
<tr>
<td>» Hired and trained iPrep Math facilitators to provide regular coaching and feedback to iPrep teachers.</td>
<td>» iPrep Math facilitators continued to coach teachers and meet with principals to review online math curriculum data.</td>
</tr>
<tr>
<td>» School principals had flexibility to structure iPrep Math in the way that best met the needs of their school.</td>
<td>» Principals continued to have autonomy to structure iPrep Math at their school.</td>
</tr>
<tr>
<td>» Hired two district-level staff to train school counselors on iPrep and how to support the model.</td>
<td>» School-based counselors held parent information nights and other methods to address questions about iPrep.</td>
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<tr>
<td><strong>USING TECHNOLOGY AND DATA TO PERSONALIZE STUDENT INSTRUCTION</strong></td>
<td></td>
</tr>
<tr>
<td>» Renovated existing classrooms into iPrep Math learning centers to create 21st century learning environments.</td>
<td>» Purchased additional 20 laptops for each iPrep Math learning center for students to check out.</td>
</tr>
<tr>
<td>» Distributed 60 laptops and charging stations to each iPrep Math learning center.</td>
<td>» Continued use of online math curriculum and classroom laptops.</td>
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<tr>
<td>» Purchased online math curriculum.</td>
<td>» iPrep Math district staff led effort to train staff on using technology and digital curriculum in English Language Arts at 10 middle schools.</td>
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</table>

**CHANGES IN STUDENT LEARNING**

The cornerstone of Miami-Dade’s personalized learning approach has been the iPrep instructional framework, resulting in notable changes in the way students learn and engage and some positive outcomes in student achievement. Students observed in iPrep Math classrooms started each class period by checking the lesson plan, then choosing an assignment and deciding whether they would work independently or with other students. Students shared that they liked working with their peers because if “you don’t understand what you’re learning, **In iPrep they help us figure it out on our own. In other classes they just give us the answer.**”

—Middle School Student
you can ask someone else." Students also discussed how they enjoyed the balance between participating in teacher-led workshops and working on the math software because, as one student said, "everyone can learn at a different pace." Teachers remarked that students were motivated by the freedom they had in iPrep Math. According to a district facilitator, "the space changed teachers’ perspectives about teaching" and showed students that they could "have fun while learning," because of the freedom and flexibility it encouraged in the classroom. In addition to the positive classroom experience for iPrep Math students, there were promising results from the district’s external evaluation of iPrep Math students’ academic achievement and behavior. For example, the evaluation showed an increase in their content and effort grades between 2013-14 and 2014-15 and that iPrep Math students had higher attendance rates than non-iPrep Math students in both years.

CHALLENGES FACED DURING IMPLEMENTATION

The consistent approach of Miami-Dade’s iPrep Math learning centers has resulted in a shift towards more personalized, student-centered learning in middle school math; however, the path to creating this new environment has not always been smooth. Some teachers were skeptical of the approach and others reported that they still struggled with "letting go of control in the classroom" but that the positive changes in student engagement reminded them of the importance in making this change. District officials stated that they must continually support teachers and provide feedback so that they do not "fall back" into the old model of teaching. They also expressed that this may be particularly challenging because of pressures that teachers feel to meet state accountability requirements and understand the conceptual requirements of new math standards.

In the current iPrep Math model, principals have autonomy to select students and classes each year; however, the district would like to capitalize on the positive gains a student experiences after participating in iPrep Math. Evaluation results have shown that a student who was in iPrep Math for two years had larger academic gains than those who participated for one year. The district was trying to find the right balance between autonomy and encouraging schools to "loop" students through iPrep Math for multiple years.

The biggest challenge for me is ‘letting go.’ I found that having structure in my classroom works for me. With iPrep Math, I had to take a step back and have a little less structure in my class. I struggled a little with that at the beginning.

—Middle School Teacher

The infusion of technology and the operational needs of technology-rich classrooms has also been an ongoing area to address. Greater use of technology in class meant that teachers and students needed someone who could address operational issues related to the technology in a timely manner (e.g., devices not working, trouble logging in). The district designated an IT support technician who worked across several schools and developed a process for teachers to submit requests for assistance; however,
sometimes the response was not timely and affected instruction. In these instances, the iPrep project director or facilitators became de-facto IT technicians to best assist teachers. The district was still developing plans to have enough technicians available to handle issues. Additionally, the district ordered textbooks aligned to the online curriculum and teachers were trained in creating backup lessons and utilizing non-digital tools so that they were prepared for times when technology was not working.

SUSTAINING PERSONALIZED LEARNING

The district has been considering options to sustain the significant progress that it has seen in mathematics instruction through iPrep. The district, and the superintendent in particular, have been committed to using technology to personalize learning, and iPrep Math has been a key part of its efforts to broaden personalized instruction into other subjects and grade levels. One of the most significant investments into iPrep Math was the renovation of math classrooms at all 49 middle schools. These renovations were primarily one-time costs, and the district will be able to fund the small repair costs necessary to maintain them. There were other elements of their approach that have ongoing costs that require attention—district support staff, the extra planning period for iPrep Math teachers, and online software. The district has already identified a way to support staff currently funded by the grant—the project director and math facilitators—through the school system’s operating budget. The district was still assessing how to fund the extra planning period that iPrep Math teachers have each day and the salary for the part-time certified mathematics teacher. The planning period has been critical for iPrep Math teachers because they needed this additional time to review student assessment data and completed assignments to personalize their lessons each day. As it relates to the part-time teacher, the district was considering changing the teaching model to two iPrep Math teachers in each class and fewer students per class (44 students vs. the current 60 students per class) if they cannot financially support the part-time teacher. Lastly, the district was still exploring options to support the online math curriculum and software and develop an integrated dashboard for student data and learning plans. District officials believe that giving students regular access to such information will further improve their academic outcomes.
NEW HAVEN UNIFIED SCHOOL DISTRICT

BY THE NUMBERS
» NEW HAVEN (CA)

$29 Million
Race to the Top–District Funding

13
Schools in District

12,251
Student Population

48%
% Low Income Students

OVERVIEW OF DISTRICT’S PERSONALIZED LEARNING APPROACH

New Haven is a suburban school district located south of Oakland, California that received $29 million in RTT–D grant funding in 2012 to adopt inquiry-based student-centered approaches to learning. The district has focused on developing and implementing more effective learning environments that focus on students taking control of their learning. As a district official said, “the person that does the work does the learning.” To achieve this new approach to learning, the district has embedded the 5Cs of 21st Century Learning—critical thinking, communication, creativity, cultural competence, and collaboration—into its

“ We are asking teachers to embrace a new approach and we are all learning how to do this together.
—District Official

Middle school students work collaboratively and with technology during class
efforts to change classroom instruction. The district’s initial implementation activities included professional development on literacy and mathematical instructional strategies that support personalization, hiring math and literacy coaches, updating their wireless infrastructure, distributing laptops and tablets, and developing a data system for assessment delivery.

DISTRICT’S CONTINUED IMPLEMENTATION ACTIONS

Throughout these changes, district officials have stressed the need to “lead from behind” in order to empower teachers to try new approaches to create a student-centered classroom. District leaders have continued to modify their approach as they have gained feedback from principals, teachers, and other staff during implementation. Critical to New Haven’s approach to personalized learning have been the following key elements: (1) focus on linking new instructional approaches with curriculum to facilitate student-centered learning, (2) addition of project-based learning to foster personalization, and (3) new technology and assessment tools to support personalization of learning.

FOCUS ON LINKING NEW INSTRUCTIONAL STRATEGIES WITH CURRICULUM TO FACILITATE STUDENT-CENTERED LEARNING

To facilitate student-centered learning, the district invested in extensive professional development on multiple new instructional strategies. Through this training, teachers were expected to create learning environments in which students, rather than teachers, should be talking 80 percent of the time.

Multiple vendors delivered initial training and focused on mathematics and critical literacy instruction, along with the 5Cs of 21st Century Learning. Cohorts of teachers participated in training beginning in 2013. By 2015-16, almost all teachers had completed training and began using a combination of strategies to create more student-centered classrooms. Teachers in all of the schools visited talked about ways they were incorporating real world skills in their lessons. To help embed more communication in the class, teachers used “talk and turn” which encourages more student talk, and therefore helps spur student engagement and ownership of learning. In one second grade classroom, for example, after every page the teacher read, the teacher asked the children to turn to each other and finish the sentence, “One idea I noticed was…..”

“When students ask questions, I try and throw it back on them so they can figure it out. I’m not a source of information, instead I create inquiry.”

—Elementary School Teacher

The biggest change right now is student independence, empowerment, and accountability for their own work.

—Elementary School Teacher

New Haven received its Race to the Top–District grant around the same time as teachers were implementing Common Core. As teachers became more comfortable with implementing Common
Core standards, district officials observed classrooms and decided to invest more effort in helping teachers link curriculum with instructional strategies to support student-centered learning. As a result, during the summer of 2014, cross district teams of 150 teachers from grades K-12 representing Language Arts, Math, Science, and History and district staff began creating Common Core units. Since 2014, the district has continued to provide training and supported release time, where substitute teachers free up classroom teachers to learn or collaborate during the school day. Specifically, teachers have come together to implement Rigorous Curriculum Design—a model for designing curriculum so that it is aligned with the Common Core while incorporating a 21st Century Learning approach. Teachers and administrators reported that with these changes, there has been greater collaboration among teachers in lesson planning and sharing lessons learned. According to a high school teacher, “the release time for teachers has been the most positive goodwill the district offered as it fosters time for collaboration.”

ADDITION OF PROJECT-BASED LEARNING TO FOSTER PERSONALIZATION

The district took a more targeted approach to personalization by launching project-based learning (PBL) in some classrooms. The district saw PBL as a way to better engage and empower students with choice in what they learned and the presentation of their learning. A team of district staff and teachers worked to develop a plan and timeline for implementation by learning more about project-based learning through visits to other schools and providing PBL training for interested teachers. By the 2015-16 school year, the district had 35 teachers across multiple grade levels with PBL classrooms. At one middle school, the social studies/language arts classes for all eighth graders were a PBL environment. In PBL classrooms, students work in teams on projects centered around a driving question with each team member having a clear role on the project, as shown in Figure 5. These classrooms displayed several key elements of personalization including student choice, collaboration, communication, different paces, and use of technology. As an example, one middle school class was organized around the driving question, “How does one determine what college, technical school, or vocational school would be the best fit?” Students developed “need to know” questions based on the driving question and deeply explored how best to answer these questions. According to the teachers, the project resulted in a large amount of student engagement with students contacting

FIGURE 5: STUDENT DEFINED TEAM ROLES IN AN ELEMENTARY SCHOOL PROJECT-BASED CLASSROOM

<table>
<thead>
<tr>
<th>PROJECT SUPERVISOR</th>
<th>TASK MANAGER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oversees project</td>
<td>Makes sure members are using time effectively</td>
</tr>
<tr>
<td>Focuses group</td>
<td>Keeps track of tasks on a calendar and documents team members’ progress until all tasks are complete</td>
</tr>
<tr>
<td>Ensures all voices are heard</td>
<td></td>
</tr>
<tr>
<td>Communicates with teacher</td>
<td></td>
</tr>
<tr>
<td>Keeps the group positive</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EDITING MANAGER</th>
<th>RESOURCE MANAGER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Takes notes at meetings</td>
<td>Collects and maintains all project resources</td>
</tr>
<tr>
<td>Proofreads writing, slides, and images for grammar, spelling, and citations</td>
<td>Gathers materials and/or supplies for tasks on the project calendar</td>
</tr>
<tr>
<td>Makes sure all sources are reliable</td>
<td></td>
</tr>
</tbody>
</table>
colleges and schools for further information and provided the students with a chance to understand future educational opportunities.

“I like to collaborate with students and hear the other sides of their thinking.”
—Elementary School Student

Students shared that they preferred PBL learning environments because they had a greater degree of choice in the classroom, particularly the variety of ways they could present their learning, as shown in Figure 6. Students in these classrooms also expressed that they feel more engaged and excited about learning and appreciate the control over multiple aspects of their learning. From the perspective of administrators, teachers, and students, PBL classrooms have been a huge success. One administrator said, “The real effect across the school is that teachers have stepped back so that children are working with each other and teaching each other. It really has been a significant change.” Many students said they liked the increased collaboration that accompanies PBL classrooms. For example, students worked together to select how they wanted to contribute to the project, requiring them to negotiate with one another and implement other real-world skills. Through this process, they learned how to navigate conflict; for example, as one middle school student shared, “We learned about disagreeing agreeably, so we would meet in the middle and compromise. We learned about this through videos of people disagreeing, and we would write down what we thought they were doing wrong or right. This is so much more relevant to our lives. We have learned how to work with people we don’t like.” Teachers said they saw huge increases in student engagement, particularly from their lower performing students. One teacher stated that students who previously completed very little work were now doing their homework, collaborating with peers, and expressing excitement over their projects. Teachers attributed this change to the increased level of personal choice which enabled students to show their talents.

FIGURE 6: STUDENT DEFINED OPTIONS FOR PRESENTING THEIR LEARNING IN ONE MIDDLE SCHOOL PROJECT-BASED CLASSROOM

NEW TECHNOLOGY AND ASSESSMENT TOOLS TO SUPPORT STUDENT-CENTERED LEARNING

New Haven has widely distributed new technology and assessment tools to give teachers the means to support student-centered learning. Initially, New Haven had planned to stagger its roll out of new laptops and tablets over three years with all devices distributed by 2016. However, due to demand from teachers and students, the district moved up the distribution timeline. According to district staff, it was...
important to align the timing of the training on using technology with the device distribution. By the end of 2014-15, all 6th-12th grade students had their own devices, every two classrooms in grades 3-5 shared a laptop cart, and every two classrooms in grades K-2 shared tablets.

**“There didn't used to be a lot of technology but now there is and we can collaborate anytime we want.”**

—Elementary School Student

Many of the students and teachers identified technology as a promising component to student-centered learning. Teachers talked about their ability to do more with greater numbers of students because technology helped them scale their lessons. Teachers could create a lesson on a particular math concept, for example, and offer multiple starting points for students to learn the concept, depending on their current level of proficiency. Students said that using technology allowed for a more individualized pace. Another said that technology made it faster for them to find information. The district’s evaluators found significant increases in the use of technology in the classroom since the grant began. District officials say that most of the teachers have embraced the new technology, but the extent to which technology was integrated into the curriculum was still heavily dependent upon the skills and desires of each individual teacher. The district was exploring how more widespread use of technology can further personalize learning. However, one school official added that while technology has been a powerful tool for increasing student engagement, staff were continually looking for ways to balance classroom activities so there was not a heavy dependence on technology.

Tapping into technology to create assessments to personalize student learning has been an ongoing effort for the district. Initially, the district purchased a new data system that allowed teachers to create assessments and to store student data automatically. To encourage use of this system, the district shared reports from the tool with principals and teachers, and teachers were required to use it for progress reports and report cards. Additionally, teachers have been using digital resources to assess student learning and collaborating more to develop assessments. For example, high school teachers have spent more time collaborating to create benchmark assessments and reviewing the data together to understand how they can better instruct each student. In PBL classrooms, individual teachers were developing new content based assessments that focused on both the skills learned and how it could be applied to the real world.
KEY ELEMENTS TO NEW HAVEN’S APPROACH TO PERSONALIZED LEARNING

<table>
<thead>
<tr>
<th>2013</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FOCUS ON LINKING NEW INSTRUCTIONAL STRATEGIES</strong></td>
<td><strong>Implement new curriculum units aligned to instructional strategies and 5Cs of 21st Century Learning.</strong></td>
</tr>
<tr>
<td>» Professional development on instructional approaches in critical literacy and math designed to foster a student-centered approach.</td>
<td>» All K-5 teachers completed training on math and literacy; most secondary teachers completed training too.</td>
</tr>
<tr>
<td>» Hired math and literacy coaches to help teachers with new instructional strategies, curriculum, and technology to support student-centered learning.</td>
<td></td>
</tr>
<tr>
<td><strong>ADDITION OF PROJECT-BASED LEARNING TO FOSTER PERSONALIZATION</strong></td>
<td><strong>Project-Based Learning began in 35 classrooms throughout the district, primarily in middle school and upper elementary grades.</strong></td>
</tr>
<tr>
<td>» District officials encouraged teachers to take risks with their approaches to student-centered learning.</td>
<td></td>
</tr>
<tr>
<td><strong>NEW TECHNOLOGY AND ASSESSMENT TOOLS TO SUPPORT STUDENT-CENTERED LEARNING</strong></td>
<td></td>
</tr>
<tr>
<td>» Updated wireless infrastructure, enhanced Internet connectivity, and selected devices.</td>
<td>» Completed rollout of devices for students and teachers in K-12 and continued technology focused professional development for teachers.</td>
</tr>
<tr>
<td>» Provided some technology focused professional development to teachers.</td>
<td>» Teachers collaborated on developing assessments aligned to the curriculum units developed in Rigorous Curriculum Design.</td>
</tr>
<tr>
<td>» Began developing district wide-approach to assessment aligned to Common Core and student-centered learning.</td>
<td>» District shared reports from their data assessment system with teachers and principals to encourage its use and explored ways to use systems to administer assessments.</td>
</tr>
<tr>
<td>» Purchased a new data system for assessment delivery and results.</td>
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</table>

**CHANGES IN STUDENT LEARNING**

District officials said that the Race to the Top-District grant provided the "necessary jumper cables" to begin making the transition to student-centered learning. Principals and teachers emphasized the importance of having new instructional strategies and technology to enable and inspire the shift towards students having control over multiple aspects of their learning. Furthermore, teachers and students

The teacher is no longer the math authority who holds all the marbles about who is right; now the children are turning towards the math and pulling it inside themselves to determine how it works.

—Elementary School Teacher
expressed excitement about more opportunities and instruction designed to increase college and career readiness. District officials said that despite the extent of recent changes, implementation of personalized learning varied by class and efforts were still needed to support some principals, teachers, and other staff to make a more significant cultural shift towards personalization. Nonetheless, external observation data found evidence in almost all classrooms visited of teachers using the 5Cs of 21st Century Learning, Common Core aligned learning objectives, and collaboration. In the classrooms that used project-based learning to increase student-based learning, 100% of teachers and students showed some to strong evidence of personalizing learning through enhancing student voice, choice, skills, and interests.15

CHALLENGES FACED DURING IMPLEMENTATION

District officials said that the shift to student-centered learning has been slower than they would have liked. One district official said that they have around one-quarter of teachers and staff that need to still “jump onboard with the changes.” Teachers told us that they mostly have embraced this shift but say the number of initiatives has been overwhelming. Disagreements between the district and the teachers’ union over caps on healthcare scaled back opportunities for professional development and teacher collaboration time during implementation due to lengthy contract negotiations. The contract issues have been settled for now; however, there will need to be additional negotiations to ensure collaboration time is available once grant funding has ended. Another issue for the district has been the impact of the new statewide assessments given in 2015. According to one district official, “Two years ago, teachers felt free to innovate and create and teachers were saying that it felt good to be a teacher again. But then, last year we saw the teachers go back to the trenches and that might have been because participation in Smarter Balanced Assessment Consortium began. As a result, the teachers tried to take back ownership of the knowledge [instead of allowing learning to be more student driven].”

On an operational level, the district is still working to integrate the technology within the curriculum to personalize learning. There are still teachers who have yet to use technology to personalize instruction. Several high school students shared that the use of technology in the classroom was sporadic and heavily dependent on the comfort level of each teacher. District officials said that because of the varied technology backgrounds of their teachers, training has been difficult. As a result, the district began personalizing technology training for teachers, and they have received positive feedback from teachers regarding this approach. The district also said that more work is needed in the area of assessments. For example, many of the assessments were still taken on paper because students were unable to access the Internet during computer based assessments. Teachers said they often faced difficulty finding time to analyze assessment data and incorporate instructional changes in response to data.

A lack of technology use has been partially affected by issues with device breakage and an unreliable network. The district was exploring how to manage the problem of device breakage, particularly at the middle school level where each student has a laptop. They were considering shifting the middle school
to a classroom-based system so that the devices stay at school; they think they have enough extra devices to loan to families who do not have devices at home. While the district has some technical support staff, it has not been enough to keep up with the necessary repairs. The district also had to designate a staff member at each site to be responsible for tracking devices and repairs. Students did not have a device during the repair period, and there were limited laptops available to loan to them; thus, it impacted their ability to work on assignments in class. Additionally, the district wanted to continue some upgrades to infrastructure, particularly as their network was not always reliable at the school sites.

**SUSTAINING PERSONALIZED LEARNING**

New Haven district officials felt positive about their ability to sustain personalized learning because of a reliable stream of bond funds. New Haven’s Board of Education asked voters to issue the district a $125 million bond in November 2014 to modernize facilities, infrastructure, and technology. The bond passed and the district plans to use a portion to purchase devices to sustain the technology for 8-10 years in 2-3 refresh cycles. The district’s biggest financial sustainability challenge will be underwriting its commitment to professional development, teacher release days, and coaches because they feel these components are essential for supporting the new focus on student-centered learning. The district said they tried to build internal capacity for training from the beginning by having coaches and key teachers pass on their training and experience in future training sessions. In addition, they intend for teachers doing project-based learning to lead future PBL professional development.

The district started to explore renovations to schools to make them 21st Century Learning environments using funds from the November 2014 bond. They were looking at research about the best way to structure or layout classrooms. They planned to use bond funds to support modernization in three schools and boost technology infrastructure across all of the schools. One of the co-superintendents said, “We hadn’t planned initially that we needed the changes in physical space, but now, we desperately feel like we need it and the teachers are asking for it.” He added that they were happy they did not make changes to their physical infrastructure a few years ago because now they have a better feel for their needs. For example, district officials highlighted the need for desks with charging stations, different classroom layouts that complement student collaboration, and spaces that inspire students, such as maker spaces.
METROPOLITAN SCHOOL DISTRICT OF WARREN TOWNSHIP

OVERVIEW OF DISTRICT’S PERSONALIZED LEARNING APPROACH

Warren Township, located in Indianapolis, Indiana, received $29 million in RTT-D grant funds to implement personalized learning district-wide while increasing student engagement, collaboration and self-directed learning. The district made many initial investments to create classrooms that they had hoped would meet their goals. Early implementation actions included creating curriculum units aligned to new state standards, distributing devices directly to students in grades 7-12 and to each classroom in grades PreK-6, and renovating high school classrooms.

“Everybody is a learner and deserves a personalized approach.”

—District Official
and middle school libraries into learning spaces that encouraged collaboration and increased student engagement. Since initial implementation, the district has modified its approach to incorporate blended learning as the core instructional practice to personalize student learning. According to a district official, Warren Township adopted a personalized learning belief that applies to teachers as well as students: “Everybody is a learner and deserves a personalized approach.”

Warren Township’s reflective approach towards implementation has put them on the course of enduring changes in the classroom that will lead to a collaborative, engaging, and self-directed experience for students. In the first year, Warren Township officials implemented many efforts, but they were not seeing the changes in classroom instruction that they wanted. District officials spent time more clearly defining the characteristics of a personalized learning environment by asking themselves and their staff, “What does personalized learning look like?” Through a site visit to Middletown City School District, another Race to the Top–District grantee, the district observed how its teachers were using blended learning to redefine the classroom and personalize student learning. Following this visit, the district hired an external organization to help develop a comprehensive plan for the district to use blended learning—where teachers use station rotation and small group instruction in tandem with digital content aligned to the curriculum. The district embedded blended learning within its district framework to better communicate how blended learning would be one of its tools to increase student achievement. (See district framework and components of personalized learning.)

As part of the process of moving to blended learning, district leaders gave teachers more “voice and choice” in their own professional development to model how blended learning could be used to personalize learning in their classrooms. Through these experiences, district officials recognized that schools had staff with varying levels of readiness or willingness to implement blended learning. District leaders also realized that personalized learning may look different for high schoolers than it does for elementary or middle schoolers. To address this, the district grouped schools into three cohorts with a staggered implementation over two school years beginning in 2015. All district schools began a discovery phase in July 2015 where staff observed non-district blended learning schools, explored an online playlist of resources, and teachers began to experiment with new practices in the classroom. The first cohort of five schools implemented blended learning in their classrooms in January 2016 and the remaining schools, including the only high school in the district, will spend more time in the discovery phase before implementing in the 2016-17 school year.

DISTRICT’S CONTINUED IMPLEMENTATION ACTIONS

During the past three years, the district has implemented a number of changes to move towards personalized learning. The district’s approach to achieve a more systemic change in student learning has continued to focus on these key elements: (1) supporting teachers’ use of new instructional practices through professional development and coaches, (2) effective integration and management of technology, (3) revising assessments and using digital content to better personalize student learning, and (4) increasing extended learning opportunities.
Some of the best professional development has been meeting with similar grade level teachers at other schools.

—Elementary School Teacher

SUPPORTING TEACHERS’ USE OF NEW INSTRUCTIONAL PRACTICES THROUGH PROFESSIONAL DEVELOPMENT AND COACHES

To fundamentally change how students would learn, the district has provided ongoing professional development and coaching to teachers. Initially, much of this training focused on a revised curriculum and using technology; but in 2015, the focus changed to using blended learning practices to personalize student learning. In the district, blended learning classrooms were based on the “core four”—data driven decisions, small group instruction, integrated digital content, and student reflection. To help teachers adjust to the new strategy, training focused on mastering the use of small group instruction and then beginning to use the other three components. Key to helping teachers better understand how to use blended learning to personalize instruction, the district redesigned its professional development to model how a personalized learning classroom should function. For example, professional development must include 60 minutes of collaboration time that is “completely personalized” in that teachers choose what they work on. Teachers reported that the collaboration time has helped as they experimented with new strategies because they used the time to reflect on what was working and not working. Additionally, schools have shifted away from whole-group staff meetings to “just-in-time approaches focused on skills development.”

Blended learning training has been complemented by the district’s approach to classroom management in its Culturally Responsive Positive Behavior Interventions and Supports (CR-PBIS) program. In 2013, district and school staff designed strategies that outlined student behavioral expectations and, in 2014, began training teachers on using these strategies. By 2015, CR-PBIS had been fully implemented and district staff stated that everyone had the same expectations for behaviors in the classroom and a “common language.” District staff believed these strategies have led to positive changes in student behavior and a decrease in suspensions and expulsions in 2014-15.

In addition to professional development, district officials felt that regular feedback was a necessary component of teacher support as they begin using new instructional practices. The district significantly restructured the purpose of existing coaches to align with the focus on blended learning and to ensure that these positions could be sustained post-grant. In the first year of the grant, Literacy Coaches worked with teachers on curriculum content, and classroom teachers served as e-learning mentors to support the integration of new laptops and tablets. In 2015, the Literacy Coach position was replaced by the Instructional Specialist position and the e-learning mentor stipend was discontinued. The Instructional Specialist was designed to be an expert on
instructional practices rather than content and staff had to apply for the position, and some former literacy coaches were selected. The Instructional Specialists participated in separate professional development on how to effectively coach and on the blended learning model. Instructional Specialists reported that the coaching training was transformative and helped them “understand their job was to help teachers think reflectively versus providing the answers.” Moreover, Instructional Specialists have found that working collaboratively with each other has helped them learn more about what they can do to support teachers in using blended learning. To aid in this collaborative process among Instructional Specialists, the district created three district-wide learning coordinators to ensure a systematic approach to professional development and coaching.

**EFFECTIVE INTEGRATION AND MANAGEMENT OF TECHNOLOGY**

Sustained investments in effectively integrating and managing technology have led to increases in student engagement and collaboration in the classroom. Early distribution and training for teachers on using technology in the classroom resulted in a gradual change from using the computer to simplify processes to designing tasks that were more creative and engaged students more fully. One teacher reported that if she did not have technology now, she would be “lost;” just two years ago, she only taught a few Smart Board lessons and took attendance on her computer and now she has become an “inquiry-based teacher and has used technology to make learning more creative and fun.” The past two years have also been a growth period for students as they now see devices as an “individualized instructional tool,” rather than a form of entertainment. Students were conducting research online, collaboratively writing documents online, creating multimedia presentations and spreadsheets to track and monitor their scores on assessments, and could “virtually visit” anything they were discussing. According to a high school teacher, technology has made class more collaborative because if students do not have an answer, they can look it up using their laptop rather than the teacher telling them the answer and this “piques their curiosity.”

Throughout the implementation period, the district has modified its operations to effectively manage the distribution and maintenance of devices. To increase the efficiency of distribution, the district has integrated the process of distributing 4,000 laptops to high school students with the distribution of class schedules at the start of school. The district identified a place to store devices at each school and hired ten

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“Because of technology communication is much easier, kids are more accessible to us and we’re more accessible to them.”
—High School Teacher

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“EFFECTIVE INTEGRATION AND MANAGEMENT OF TECHNOLOGY”

Sustained investments in effectively integrating and managing technology have led to increases in student engagement and collaboration in the classroom. Early distribution and training for teachers on using technology in the classroom resulted in a gradual change from using the computer to simplify processes to designing tasks that were more creative and engaged students more fully. One teacher reported that if she did not have technology now, she would be “lost;” just two years ago, she only taught a few Smart Board lessons and took attendance on her computer and now she has become an “inquiry-based teacher and has used technology to make learning more creative and fun.” The past two years have also been a growth period for students as they now see devices as an “individualized instructional tool,” rather than a form of entertainment. Students were conducting research online, collaboratively writing documents online, creating multimedia presentations and spreadsheets to track and monitor their scores on assessments, and could “virtually visit” anything they were discussing. According to a high school teacher, technology has made class more collaborative because if students do not have an answer, they can look it up using their laptop rather than the teacher telling them the answer and this “piques their curiosity.”

Throughout the implementation period, the district has modified its operations to effectively manage the distribution and maintenance of devices. To increase the efficiency of distribution, the district has integrated the process of distributing 4,000 laptops to high school students with the distribution of class schedules at the start of school. The district identified a place to store devices at each school and hired ten
staff to clean and service all laptops and tablets each summer. The district had an IT help desk prior to the grant but hired two additional technicians to manage service calls. Unforeseen damage to laptops required the district to rethink its approach to device selection and distribution. The high rate of breakage among students in grades 7 and 8, and an inability of parents to pay for the repairs, resulted in the district changing to classroom based distribution of laptops for this age group rather than direct distribution to the student. The district also had to purchase new laptops for the incoming 9th graders in 2015-16 because the original devices were in such poor condition. To determine what model to buy, the district compared battery life and purchased four different models and tested their durability through real-life experiences such as dropping devices on the ground. District officials reported that the new models did not damage as easily as those purchased in Summer 2013.

REVISING ASSESSMENTS AND USING DIGITAL CONTENT TO BETTER PERSONALIZE STUDENT LEARNING

The district has revised its approach to assessment to ensure that teachers and students gain necessary information to improve and personalize instruction. In 2013, the district created three-week units aligned to the state’s new standards that included pre- and post-unit assessments. The district learned from teachers that these assessments took an inordinate amount of time to complete and were not allowing time for deeper learning, critical thinking, and collaboration during class. To address these concerns, the district and its teachers created nine-week instructional units with a culminating performance task. This task was designed for students to apply what they have learned to a “real-world” task and required an in-depth understanding of what they had learned and peer collaboration in order to complete the task.

Assessments are a ‘joyous pain point’ meaning that while they are difficult to get right, they are the quickest way to change instruction.

—District Official

I like the confidence boost when I learn right away whether I got a question right or not.

—Middle School Student

Digital content has been integrated into classrooms since devices were distributed system-wide in 2013, which has given teachers other ways to assess learning and has increased the availability of real-time data. Having multiple online tools has allowed teachers to set goals about what students should learn and then monitor progress using the assessments built into the tools. One elementary school teacher discussed how digital content has "transformed the job because I can pull the data in two minutes and I can address the feedback and make immediate changes to the day’s lesson." Teachers noted that using these data has also been integral to the formation of small groups for targeted instruction. Students appreciated the immediate feedback from using some of the tools. To have a more intentional process for identifying digital content that is the right
“fit” for the district, the district tasked an existing staff member with the responsibility of vetting digital content and working with vendors. The district was still developing the specifics of the process, but had discussed vetting content two times per year and assessing the cost, systems needed to support the content, and licensing terms before making a final decision.

**INCREASING EXTENDED LEARNING OPPORTUNITIES**

Warren Township has a long history of providing college and career readiness experiences through the Walker Career Center connected to the high school. The grant allowed the district to expand extended learning opportunities (ELOs) for high school students and increase the number of virtual courses offered. Students select an ELO that aligns to their interests and they gain experience outside the classroom that counts as high school credit. A number of these students worked for Frontrunner, the school’s media production and video editing company. Frontrunner was initially funded by the grant but was designed to be self-sustaining by charging clients for use of their studio, equipment, and services. For students to participate in Frontrunner, they must complete required coursework and apply for the program. Students spoke positively about the “real-world experience with connections to future employers” they gained. Other ELOs have been developed through student or business interest with local construction companies, software firms, and banks.

To offer another path to receiving high school credit and give students a chance to work at their own pace, Warren Township piloted three virtual courses in January 2014. Later that year, the district expanded the number of courses offered to give students more options in how they learned and accommodate growing interest in virtual learning. Between 2014 and 2015 the number of students taking online courses increased from 517 to 894 students. In the 2014-15 school year, 83 percent of these students earned credit hours for courses taken online. While much of the student work can be completed on their own time, students still had to meet with teachers regularly to ensure they stayed on track. According to district officials, the virtual courses have also enabled students at risk of expulsion to continue to earn credits and stay on track to graduate.
KEY ELEMENTS TO WARREN TOWNSHIP’S APPROACH TO PERSONALIZED LEARNING

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| **SUPPORTING TEACHERS’ USE OF NEW INSTRUCTIONAL PRACTICES THROUGH PROFESSIONAL DEVELOPMENT AND COACHES** | » Professional development for teachers focused on technology and new curriculum units.  
  » Designed behavior expectations and began implementation of strategies to improve classroom management.  
  » Selected e-learning mentors to support use of technology.  
  » Existing literacy coaches supported teachers’ use of new curriculum units. | » Professional development for principals, teachers, and coaches focused on blended learning.  
  » Continued implementation of behavior management program. |
| **EFFECTIVE INTEGRATION AND MANAGEMENT OF TECHNOLOGY** | » Distributed laptops to all students in grades 7-12 and laptops or tablets to K-6 classrooms.  
  » Teachers began using laptops or tablets in classroom. | » Changed laptop distribution in grades 7-8 to address high damage rates among these students. Laptops distributed to classrooms and not directly to students.  
  » Teachers' use of devices became more creative and engaging.  
  » Scaled back laptop distribution to grades 9-12. |
| **REVISING ASSESSMENTS AND USING DIGITAL CONTENT TO BETTER PERSONALIZE LEARNING** | » Digital content adopted by individual teachers.  
  » Created 3-week curriculum units and assessments aligned to new state standards. | » Created a process for selecting digital content.  
  » Changed to 9-week curriculum units with culminating performance task. |
| **INCREASING EXTENDED LEARNING OPPORTUNITIES** | » Created extended learning opportunities (ELO) for high school students to gain “real world” experience and earn credits outside of the classroom.  
  » Selected a virtual learning provider and piloted three courses. | » Continued offering ELO to high school students.  
  » Expanded virtual course offerings as another option for students to earn credits. |

**CHANGES IN STUDENT LEARNING**

Through experimentation with blended learning strategies, district officials reported that they were beginning to see real changes in how students were learning due in part to a mindset shift happening amongst staff. Many staff stated that the district has created a culture where taking risks is encouraged and some amount of failure is expected. Administrators frequently tell teachers to roll up their sleeves and “get dirty” trying new ways to teach. A principal of a grade
5/6 school shared that he is “giving teachers a lot of autonomy to try things and figure out if they work.” Warren Township’s approach was helping teachers meet kids “in the way they learn, how they learn, and how it’s best for them.” As a result, teachers stated that they have adjusted how they plan for class from detailed lessons for multiple weeks to lesson outlines that can be easily adapted based on what students need to learn that day. As one middle school teacher noted, “we are letting go of the traditional style by not spoon-feeding the answers to students but allowing them to know the objective and explore ways to learn and share what they have learned.” The use of new teaching approaches has led to greater student motivation to learn according to district staff. Teachers and other staff regularly noted that the combination of changes in classroom instruction and greater use of technology has increased student engagement in the classroom. Students spoke about how they are allowed to collaborate more than in previous years. As one 6th grade student stated, “our teacher told us we were allowed to talk. In the past, we got in trouble for talking.”

“Teachers have freedom and flexibility to make mistakes and learn with the students.”
—Middle School Teacher

CHALLENGES FACED DURING IMPLEMENTATION

Since 2013, the district has implemented multiple initiatives, which can be overwhelming to staff. District officials reported that they have spent a lot of energy “maintaining enthusiasm and momentum” for these initiatives. While a new culture of risk-taking and trying “new prototypes” for teaching has begun, there were some teachers who were having trouble stepping outside their comfort area. District staff also had to deal with misperceptions among some teachers that digital content was replacing them. To help make teachers more comfortable in the changes to student learning, district officials tried to continually communicate about new approaches, build buy-in, and provide constant support. District leaders stated that they regularly visited schools and worked with school leadership to support implementation of activities. District officials noted that they have been searching for the right balance between pushing hard enough to see change, but not so hard that staff morale was negatively impacted which could cause other issues like teacher turnover.

Preparing students for learning in a new way was, surprisingly, something else the district needed to address. Teachers spoke about how they assumed students were well versed in technology because most have cell phones or access to technology at home. However, teachers discovered that students did not know how to use devices in the ways that educators intended, such as using them to organize files, create spreadsheets and hyperlinks, or searching the Internet for educational purposes, since their cell phones mostly focused on using apps. In addition to teaching students how to use the device, teachers initially spent a lot of time providing digital citizenship lessons, monitoring students’ activity on the Internet, and other efforts to ensure that students stayed on-task. By the third year of grant activities, teachers said that students exhibited less off-task behaviors, in part because students saw laptops as a “learning tool.”
While Warren Township was only in the very beginning of implementing small groups and station rotation during the Fall 2015 site visit, teachers said that it could be more difficult to use small groups in the middle grades (7th and 8th) than at the elementary level (K-6th). The reasons for this were unknown at that time, but could be due to shorter class periods, harder to manage student behaviors, or teachers finding it harder to let go of control.

District officials noted that blended learning within their district-wide approach to personalization may have to look different for high school students. They mentioned it may instead include more choices in classes, flipped classrooms, and learning opportunities outside the classroom. Additionally, there were no instructional specialists at the high school level; instead, department chairs were expected to provide training and support to teachers. Due to these factors, the high school was in the third cohort for blended learning implementation and was only starting the process with its English Language Arts department. District staff hoped that the extra time before implementation and piloting with one subject area would better inform widespread implementation in the high school.

**SUSTAINING PERSONALIZED LEARNING**

Warren Township officials stated that they would have been unable to make the changes at the scale they have made them without federal grant dollars.

The district intentionally developed a plan for personalized learning that could be supported for five years post-grant; therefore, they limited the number of new positions funded under the grant. There will be a few positions that will need to be shifted to other funding pools and others they may not be able to sustain, but officials have been considering ways to restructure existing positions to accommodate the responsibilities for any positions that are eliminated.

An important decision the district made was to restructure the job description of existing coaches so that they could support teachers in using blended learning to support personalization. The district also planned to use the vetting process for digital content purchases to ensure that fiscally responsible choices will be made in the future.

District officials noted that sustaining a 1:1 laptop initiative has been difficult, but they believe it is a critical component for the high school and will find ways to maintain this in the long-term. The district planned to use capital funds to support it in the future, once the five-year post-grant period ends.

Overall, district officials recognized that there was more work to be done to fully implement blended learning but felt they had a solid foundation for this work in the future.
LOOKING FORWARD

The federal Race to the Top–District grant program provided these four grantees the “jumper cables” to start system-wide changes in how students learn, as noted by one district leader. District leaders, teachers, students, and parents have expressed excitement about the changes and innovations that are happening in the classroom. Students, in particular, shared stories of how much they have enjoyed increased opportunities to collaborate with their peers, to move at a faster pace through their work, to explore new places or ideas through increased access to technology, and, in general, to learn in a way that they had not before. Much has been asked of teachers to change how they operate their classrooms, but teachers across the four grantees expressed a new level of energy about their profession.

Eager to continue the transformation in how students learn and teachers teach, each of the four grantees have made, or are making, plans to sustain their efforts to personalize learning within their operating budget or have identified external sources of funding as grant funding ends in the coming years. District leaders spoke unequivocally of their commitment to move forward with personalized learning and that returning to the previous way of learning would not be an option. The recent passage of the Every Student Succeeds Act by the federal government adds new opportunities for states to have flexibility in designing and implementing innovative activities to improve student learning, such as developing their own approach for measuring student progress or funding professional development to improve classroom practice. As school leaders and teachers across the country prepare students for the future by helping them meet challenging academic standards, the experiences of the Race to the Top–District grantees offer insights into how school districts can personalize learning in their classrooms to transform student learning, and the challenges they may face. Furthermore, grantees’ innovative changes show promise for engaging and motivating students by harnessing their interests and expanding their opportunities for life-long learning and success.
END NOTES

1 More specifically, the Department of Education awarded grants to 16 applicants in December 2012 and to five applicants in December 2013.


3 Iredell-Statesville encouraged schools to use blended learning in all subject areas but the district emphasized English Language Arts in the first few years because a review of reading readiness data showed decreases in both 6th and 9th grades. Miami-Dade targeted its efforts at middle school math (called iPrep Math) because district officials felt major reform was necessary to improve math comprehension in middle school.


9 In the earlier study of these grantees’ implementation actions, there is a "considerations" section that includes specific questions that should be answered as it relates to each of these elements. District officials reflected on their actions since that first year and reported that those questions are still important for other districts to use as they guide their planning.

10 Iredell-Statesville's RTT–D grant included nine middle schools, four high schools and two non-traditional middle-high schools.

11 During 2014-2015, the district’s external evaluator conducted a fidelity study of implementation across four components: Individualized Student Learning, Student Transition Activities, Professional Development, and Data Driven Decision Making. Quality, dosage, reach, and reactions were measured based on survey data, classroom observations, classroom walk-through data, focus groups, among other data.

12 The North Carolina Department of Public Instruction signed a statewide contract to provide negotiated pricing to local educational agencies in the state for one year.

13 For more information about this initiative: http://digital.dadeschools.net/.

14 The district selected a laptop designed to be used primarily while connected to the Internet.


18 The district selected a laptop designed to be used primarily while connected to the Internet.
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All statements and conclusions, unless specifically attributed to another source, are those of the authors and do not necessarily reflect those of the other organizations or references noted in this report.