



# Are Personalized Learning Environments the **Next Wave** of K-12 Education Reform?



The 16 Race to the Top-District grantees take an unbundled approach to learning that may reshape the way instruction is conceptualized and delivered in American schools.

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## Acknowledgments

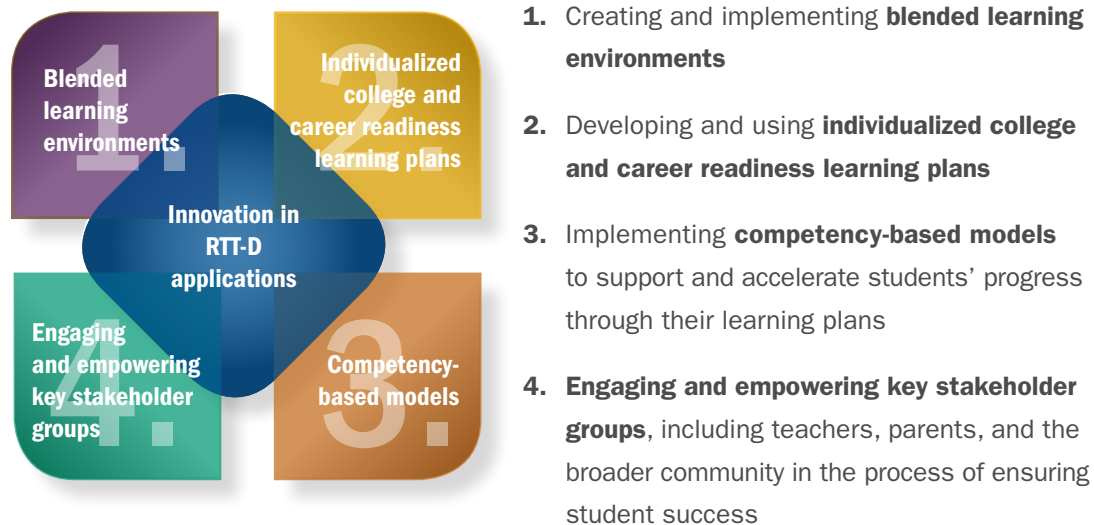
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Launched in 2012, the U.S. Department of Education's Race to the Top-District (RTT-D) grant program emphasizes personalized learning environments—a new approach to understanding how and where education is delivered, how students learn, and the roles of teachers, parents, and the broader community in supporting students' academic success. Although auspicious in scale, the reforms proposed by the first group of RTT-D grantees to create personalized learning environments will challenge every aspect of the traditional school culture, including what is taught, how it is taught, and where it is taught.

This Issue Paper, the first in a new series from American Institutes for Research, examines the successful RTT-D applications to assess and learn lessons from this initial group of pioneering grantees' efforts to implement and scale teaching and learning innovations.

Although many districts and schools across the United States are engaged in reform efforts similar to those proposed by the RTT-D grantees, the work of this first group of local education agencies (LEAs), by virtue of the resources awarded to them and the heightened expectations that are placed upon them, will be the subject of great interest (and scrutiny) by education policy leaders and researchers.

AIR's analysis of opportunities, promises, and pitfalls in the design and development of personalized learning environments is structured around four main activities that emerged as central components of the 16 RTT-D grant applications:



## About Race to the Top

In three rounds of competition conducted in 2010 and 2011, the U.S. Department of Education awarded 18 states and the District of Columbia Race to the Top funds to implement comprehensive reform plans designed to spur education innovation, increase student achievement, narrow achievement gaps, improve high school graduation rates, and prepare students for college and career.

Since the initial competition, the Department has expanded the program's reach and scope, awarding two consortia of states RTT Assessment grants to support the development of assessments that are aligned with rigorous college and career readiness standards and awarding nine states RTT-Early Learning Challenge grants to strengthen the quality of early learning programs in their jurisdictions.

Like the state-level programs, RTT-D grant funds are intended to motivate innovative reforms to positively impact student achievement. The RTT-D program is unique, however, in its direct focus on accelerating locally directed efforts to improve teaching and learning by personalizing the educational environment for students and educators.

### Key Facts About the RTT-D Grant Program<sup>1</sup>

- The first group of RTT-D grantees reflects the growing diversity of America's educational system. These 16 grantees, chosen from more than 370 applications, include 11 local school districts, 3 charter agencies, and 2 consortia. They serve urban, suburban, and rural communities.
- Each grantee received a share of the approximately \$383 million federal dollars set aside for this program. With awards ranging from \$10 million to \$40 million, the grantees have proposed innovative reforms aimed at personalizing education and improving outcomes for all students.

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<sup>1</sup> See Appendix A for information regarding research methodology.

# Four Approaches to Personalizing Education



## Blended Learning Environments

Central to each of the grantee’s proposals is the creation and implementation of a blended learning environment or a learning model that combines face-to-face, online, and digital instruction. Grantees’ applications emphasize that blended learning models create instructional environments that use the physical classroom as only one of many locations and opportunities to learn, thereby potentially opening new possibilities for engaging students in content that meets their skill development needs but also addressing diverse learning styles and allowing room for students to dig deeper into areas of particular interest.

### Opportunities for Innovation

The blended classroom environment, as discussed in the grantees’ applications, may best be described as “unbundled” such that “the school walls will become so permeable as to be almost virtual” (Coggshall, Lasagna, & Laine, 2009, p. 2). The rapid growth and advancement of technology-based instructional strategies, tools, and courses have facilitated this unbundling of instruction by expanding teachers’ and students’ access to Web- or software-based learning modes (see City, 2010; Mehta & Spillane, 2010).

According to the grantee applications and emerging scholarship regarding the use of blended learning environments and what unbundled approaches to education look like, the teacher is perceived not as a director of instruction but as a facilitator or activator of learning who is responsible for engaging each student in a personalized sequence of instruction that aligns with the student’s skill level, stimulates the student’s interest, and pushes the student to progress to the next level. As illustrated through the following examples and that of the 21st Century Classroom, the RTT-D grantees indicate that their teachers, through the creation and implementation of blended learning, will be able to enhance the physical instructional environment and their abilities to develop personalized and adaptable instructional lesson plans for each student, each day, through the use of tools such as digital learning platforms and multimedia-based resources and materials.

**Digital Learning Platforms.** Fourteen of the 16 grantees describe plans to adopt or expand their use of a digital learning platform or a distinct adaptive instructional software program to help personalize lessons and adapt content and instruction in response to real-time feedback and assessment results identifying students’ academic needs. To facilitate and support “anytime, anywhere” access to the digital learning platform and adaptive instructional software, these grantees intend to provide teachers and students with digital, hand-held,

Web-based learning devices, such as computer tablets or smartphones. Through the use of these devices, the grantee applications indicate that teachers and students will be able to log in to the platform, identify instructional materials and activities that are personalized, and assign and work on learning tasks accordingly, within the school environment or outside of regular school hours.

**21st Century Multimedia.** All grantee applications emphasize that 21st century educational technologies have the potential to broaden students' access to resources not readily available in their local schools and classrooms. These resources provide opportunities for students to pursue content that aligns with their individual interests, that exposes them to diverse cultures and perspectives, and that engages them in authentic learning experiences. For example, the application submitted by **Iredell-Statesville Schools in North Carolina** describes plans to use digital textbooks that combine typical content with audio, video, and multidimensional representation, including inquiry-based learning experiences such as virtual dissections in biology or virtual field trips to Antarctica to study climate change. The use of 21st century multimedia educational technologies also may improve and facilitate the process by which teachers are able to deliver common instruction in essential core content and meaningfully differentiate instruction to meet diverse student learning styles, preferences, and needs.

### The Classroom of the 21st Century

In Warrenton, Indiana, the **Metropolitan School District's** Warrior Mediaplex (an effort launched prior to the RTT-D grant) offers a vision of how classrooms of the future may look. Located in a high school, the center of the Mediaplex provides a wireless lounge, with 72 laptops available for students (or students can bring their own devices). Surrounding the Mediaplex are four innovative spaces:

1. **A simultaneous instruction computer lab** houses 34 student workstations, each with two monitors: one monitor that shows what the teacher is presenting and a second monitor that allows the student to simultaneously replicate the process being presented.
2. **Two collaborative learning studios** are designed to facilitate collaboration and project-based activities. The studios include several computer tables, the surfaces of which are covered with dry erase board to encourage interaction and creativity among students. A 40-inch screen and a video camera in each studio enable students to interact with teachers and peers who can be accessed through Skype and other distance-learning avenues.
3. **A digital viewing room** is set up like a theater, with tiered seating and a podium for the teacher. Students interact directly with the project image on the "wall."
4. **A creative thought gallery**, the walls of which are all dry erase board, is designed to encourage writing, design, and interaction among and between students and the teacher as they engage in the content. In the center of the gallery is a table with 10 computers, providing immediate Internet access.

According to this district's application, the Mediaplex facilitates learning of critical content as well as important soft skills and traits that impact success, including: goal setting, teamwork, perseverance, critical thinking, communication, creativity, and problem solving.

## Potential Challenges

Unbundling education and the use of blended learning models may provide opportunities to engage students in higher level learning tasks that stimulate their interest and motivation to learn, that address diverse learning styles, and that provide resources and content that may not be physically available in the local classroom, school, or community. But other challenges remain:

- Too often, schools make plans for using technology but do not develop plans for how the technology will actually be used and integrated to effectively support the learning and curricular goals (Fishman, Pinkard, & Bruce, 1998; Hew & Brush, 2007; Lawless & Pellegrino, 2007). A **clear vision** for and purposeful use of blended learning models are necessary for improved teaching and learning to result.
- Many grantees will be implementing their projects simultaneously with their state's rollout of the Common Core State Standards or other newly adopted state-specific standards. Although grantees' applications include assurances of **alignment between their digital and Web-based instructional materials and state standards**, the road to undertaking multiple new tasks and strategies at once may not be smooth. Tensions may emerge between state-adopted standards and the teaching methodologies, practices, technologies, and curricula being used in blended learning classrooms.



## Individualized College and Career Readiness Learning Plans

All 16 of the RTT-D grantees' applications indicate that a personalized learning pathway will be developed for each student. As described in the applications, these personalized learning plans will be developed as a collaborative effort involving teachers, parents, school counselors, and the individual student. In most instances, grantees propose developing formal individualized learning plans during students' middle and secondary education years; however, applications of two of the grantees, **St. Vrain Valley Schools in Colorado** and the **New Haven Unified School District in California**, state that every student will have an individualized learning plan, beginning as early as the elementary school years.

### Opportunities for Innovation

Grantee applications contend that individualized learning plans are a critical component in the successful implementation of personalized learning and the effective use of blended learning models. Such plans could, for example, help support teachers' instructional decision making by outlining students' academic strengths, needs, interests, and course requirements, thereby serving as guides for determining when and how to engage students in face-to-face or technology-based instructional activities that best advance their current learning trajectories. The plan development process also may help build students' sense of ownership over their own learning by providing students with more choice and a greater understanding of how their classroom successes link to their college and career goals. Indeed, two primary purposes of the individualized learning plan development and implementation process, according to grantee applications, is to better ensure students' college and career readiness.

**Facilitating College Readiness.** *Dual enrollment* is one strategy seven of the 16 grantees propose for helping students successfully transition into postsecondary settings and accelerate their progress toward their postsecondary degrees. For the most part, these seven grantees had dual enrollment programs established prior to winning the RTT-D grant, but their applications indicate that they will use grant funds to expand their offerings and the number of students served.

According to these grantees, dual enrollment courses can be built into students' individualized learning plans to support the personalization of learning. Grantees propose incorporating dual enrollment courses into their curricular offerings to provide advanced options for students who are ready to move beyond the high school curriculum or to allow learning to occur in alternative environments for students who have become disengaged from the traditional high school classroom. Postsecondary institutions also offer a wide variety of courses that may be of interest to students but are not available at the high school level, thereby potentially



broadening the spectrum of academic content and learning that students have access to and that can stimulate their college-going plans and goals.

*Specialized curricula* serve as another possible mechanism for building the pathway to college. The grant application submitted by **IDEA Public Schools in Texas** states that students in sixth and seventh grades participate in a Kids2College curriculum. According to the application, this curriculum directly informs the development and modification of students' individualized learning plans to help ensure students understand college requirements as well as the college application and preparation process. Then, beginning in eighth grade, IDEA students set individual goals for academic performance and college entrance exam performance. Students also take college readiness exams, the results of which are used to help the students identify academic and career interests and to ensure they take the secondary coursework that will best support their postsecondary degree and beyond goals.

As another example, in **St. Vrain Valley School District**, science, technology, engineering, and mathematics (STEM) content and skills are integrated throughout the K–12 curriculum, with the Skyline High School STEM

Academy providing a complete engineering curriculum for students. The four-year high school curriculum culminates with a 12th-grade senior design class, for which students earn a STEM certificate and are guaranteed admission into the College of Applied Engineering and Science at the University of Colorado, Boulder.

**Facilitating Career Readiness.** Eleven of the 16 grantees' applications describe *extended learning opportunities* for students that included job shadowing, internships, or other work experiences. According to grantees' applications, these extended learning opportunities are meant to provide students with opportunities to apply the knowledge they are gaining in the classroom, to give students a real-world and authentic experience in a field of interest, and to build the soft skills employers are seeking.

### Preparing Students for Success Through STEM

At the Innovation Center at **Colorado's St. Vrain Valley School District's Skyline High School STEM Academy**, students create and work on real-world research and development projects in STEM. The Innovation Center also provides afterschool or summer jobs for STEM students who are hired through an interview process and paid using RTT grant funds. In partnership with IBM, the district will offer a program called P-Tech for students who are not on track for the four-year STEM Academy but who are interested in STEM and earning a two-year postsecondary engineering degree. This program provides a Grades 9–14 model for earning this degree.

St. Vrain Valley's efforts to prepare students for its STEM Academy and P-Tech programs begin early in the academic pipeline. A dedicated STEM coordinator supports the integration of STEM into the elementary and middle schools' curricula. In the middle school, the district describes plans to develop a telementoring program through which STEM experts in the field will provide very specific feedback to teams of STEM students developing and working on STEM projects.

In its application, **Harmony Public Schools in Texas** describes a partnership with a nonprofit organization that provides leadership training to underserved youth by placing them in paid internships with local organizations and businesses. Juniors and seniors in high school who apply and are accepted into the internship program receive work experience in addition to year-round professional and personal coaching and mentoring in their fields of interest.

Another strategy to facilitate career readiness is the use of *career cluster models* to engage high school students in coursework consistent with their career aspirations. In the **Carson City School District in Nevada**, these career clusters are implemented in the form of small learning communities in each of the district's high schools. The six career clusters include the focus areas of agriculture, business, family and consumer science, health occupations, informational technology, and trade and industry.

**Project-Based Learning.** Project-based learning is another potentially promising strategy for providing students with authentic learning experiences that support the development of skills attractive to employers, such as teamwork, problem solving, and communication. Nine grantees highlight project-based learning in their applications as a key component of their curriculum. Although project-based learning activities are not uncommon in most classrooms across the nation, some of the examples grantees describe suggest that their students will have more intensive and personalized opportunities to collaborate on real-world problems of local or national relevance than typically might be available. The **Galt Joint Union School District in California** describes a plan to hire a service learning coordinator who will coordinate youth

### Strategies for Building a College-Going Culture

Three RTT-D grantees plan to conduct activities to familiarize students with college campuses and with what it means to be a college student. Harmony Public Schools in Texas organizes student visits to local college campuses to help students acclimate to the college environment and to develop a college-going culture for students. Similarly, **IDEA Public Schools in Texas** and the **Middletown City School District in New York** encourage students to participate in first-hand or virtual college experiences. IDEA offers all students the opportunity to participate in summer college immersion programs at Texas universities. Middletown City School District provides opportunities for students to take college-level courses virtually or on campus through a partnership with Syracuse University.

Some grantees describe mentoring, counseling, and advising programs that help students navigate the college application and financial aid process and identify scholarship opportunities. The **Puget Sound Educational Service District in Washington** proposes using grant funds to expand the University of Washington's Dream Project, a college access and retention program that links college students with first-generation and low-income high school students to provide encouragement, support, and assistance during the college application process. **KIPP DC in Washington, D.C.**, highlights its KIPP Through College program, which helps KIPP DC alumni navigate the application process, access financial aid, connect to summer internships, and develop students' advocacy and decision-making skills.

development and project-based learning related to college and career pathways at the K–8 levels. Under this plan, students in Grades 7 and 8 will work in project-based teams, using their assessed strengths to develop talent and leadership skills and to apply content through purposeful service learning. Service-learning activities will be guided by regional and virtual business mentors from industries such as finance, business, health science, and medical technology.

## Potential Challenges

According to the grantees' proposals, if designed and implemented as intended, individualized learning plans can be tools for promoting instructional alignment with students' academic needs and interests and college and career goals and can help engender a greater sense of ownership and direction over students' learning. However, there may be unintended consequences associated with these plans, and questions, such as the following, should be asked as these initiatives are rolled out:

- What are the implications of asking students to identify and prepare for careers in specific fields early in their academic experiences?
- How will schools ensure that students do not get “tracked” too early into college and career plans that may end up limiting their opportunities or that may not allow for changes in academic and career interests, which likely are inevitable as students experience personal growth and exposure to new content?
- How can educators ensure that the process of developing these plans is meaningful and goes beyond providing students with choices that many students already have, such as selecting electives and enrichment courses or activities or work-study opportunities?



## Competency-Based Models

Tightly linked with grantees' proposals for creating blended and more personalized learning environments and for using individualized learning plans to guide students' academic and career pathways are proposals for new modes of assessment and systems for determining "mastery." All 16 grantee applications include plans to adopt some type of personal mastery system, although to different extents. Some grantee applications suggest that grantees would use the RTT-D grant funds to pilot a competency-based model in select schools or grade levels or would implement personal mastery systems in select subject areas or programs of study. Other grantees propose implementing personal mastery models districtwide, across all grade levels, elementary through secondary.

### Opportunities for Innovation

A central component of competency-based or personal mastery systems is the notion that designing courses to meet the pace of the "average" student is insufficient. In a personal mastery system, seat time is not the determinant of whether a student has mastered content. Rather, student progression is based on the pace at which the student is able to move through the activities and learning tasks and gain competency. The intent of *competency-based models* is to halt the cycle of struggling students getting passed through content and grade levels, by virtue of sitting through a course of study, and of advanced students being held back in their abilities to progress due to what may be arbitrary decisions regarding time of study and time spent on activities. If designed and implemented as intended, the grantees assert that competency-based models will identify and allow struggling students to have additional time to access texts, online or digital lessons, or other instructional programs that reinforce the content and skills under study to ensure they have the necessary time to become proficient and be prepared for the next level of instruction. Alternatively, advanced students would have the opportunity to explore a topic of study in greater depth, through various multimedia resources or through flexible enrollment options that allow them to take classes at a higher grade level.

**Accelerated or Extended Learning Opportunities.** The **Metropolitan School District of Warren Township in Indiana** submitted an application that describes plans to provide all students with opportunities that will feature student-directed alternative pathways and that release students from traditional seat-time requirements. This grantee plans to take advantage of recent state legislation that allows students who demonstrate mastery and graduate high school in three years or less to apply their senior year average daily membership funding (valued at approximately \$6,000) to an early college scholarship to help defray college tuition costs. **Metropolitan School District's** application also describes plans to implement promotional markers at Grades 2, 5, and 8. Under this plan, students who are not proficient in the core

instructional areas at the end of these grades will be moved into a 12-month instructional program or midpoint class that is designed to support their progression to the next grade level. Another grantee, the **School Board of Miami-Dade County in Florida**, plans to use its adopted mathematics program at the middle school level to implement a competency-based approach and accelerate student progression.

**Multiple Modes of Assessment.** In addition to grantees' proposals for moving to competency-based or personal mastery models, all 16 grantees describe, in their applications, multiple ways and times at which students could demonstrate mastery. Grantees describe assessment options for students that range from the more traditional options, such as SAT, ACT, or Advanced Placement exams, to the less traditional options, including simulations, digital presentations, and demonstration of course competencies through business partner work experiences or by testing out of otherwise required coursework.

The **New Haven Unified School District** indicates, in its application, that using multiple mechanisms for assessing mastery will help the district more accurately ascertain what students know and can do. The district has developed a grading and assessment task force charged with exploring and addressing inconsistencies across schools, grades, and teachers in how student performance is evaluated. The task force also addresses what the grantee's application states is the too-often weak relationship between students' academic levels, as measured by standardized assessments, and teacher-assigned student grades. The work of the task force will involve developing strategies for better and more accurately assessing student competency and mastery through diverse and personalized means. At the time of application submission, the task force was in the process of carefully considering options for using project-based learning assessments and electronic student portfolios as alternative or additional modes for demonstrating mastery.

### Personal Mastery Versus Seat Time

**The School Board of Miami-Dade County, Florida,** proposes a competency-based approach to advance students in mathematics, facilitated by state guidelines that allow for student acceleration at the middle school level. The state requires middle school students to pass three mathematics courses for promotion to high school, but there is no requirement regarding when students take the courses or how long students take to complete these courses.

Students who are prepared for high school algebra and geometry courses will work through course content and obtain high school credit by demonstrating proficiency on state end-of-course exams. Students can take these exams whether or not they have sat through a formal course.

The model also allows students who are behind their peers to recover lost ground. The district opened four secondary student success centers to provide over-age middle school students an opportunity to advance through courses at an accelerated pace, based on demonstration of competency.

## Potential Challenges

The use of competency-based systems may hold great opportunity for better assessing subject-matter competency and accelerating student learning by removing the traditional constraints of seat time. However, personal mastery models also may lead to potential tensions within the learning environment. The following questions are worth considering:

- What are the disadvantages to progressing students based on mastery alone?
- Should a passing score on a given test allow students to opt out of a year-long course, or is there value in seat time that may be lost, such as the depth and breadth of understanding that results from discussion, reflection, and engagement with content in a sustained way?
- If mastery-based models enable students to complete high school more quickly, will students have the maturity to be successful on a college campus or in a career?

States and local school districts will have to establish minimum requirements for core content coverage or decide which courses or content they are willing to let students test out of without actually enrolling in a course. States and districts will have to balance their desire to support innovation with their obligation to students, parents, and institutions of higher education who trust them to ensure their students are taking courses and receiving the instructional time and support that will adequately prepare them for acceptance into and success in postsecondary degree programs (Hill & Johnston, 2010).



## Engaging and Empowering Key Stakeholder Groups

Academic-based strategies for improving student outcomes often include proposals to maximize the supports provided by teachers, parents, and the broader community. These supports can play a critical role in students' academic development and can contribute to students' social and emotional development, further fostering their readiness and motivation to learn (Morrisey & Werner-Wilson, 2005; Osher & Kendziora, 2010).

### Opportunities for Innovation

Critical components of all 16 of the grantees' plans are strategies for creating blended learning environments that result in personalized instruction, for engaging parents in their children's education, and for developing community partnerships and networks to ensure students are supported inside and outside of the school walls.

**Job-Embedded Learning Opportunities.** All 16 grantees outline approaches for ensuring educators are prepared and supported in meeting students' personalized learning needs. Beyond providing traditional forms of professional development through workshops and seminars, the grantees' plans for promoting teacher effectiveness and building teacher capacity mirror some of the principles and strategies underlying their approaches to personalizing student learning.

For example, similar to how many grantees intend to offer students real-world learning experiences through internships or project-based learning, the applications emphasize job-embedded learning opportunities focused on authentic problems of practice. All applications include professional learning communities or other forms of structured teacher collaboration as mechanisms for teachers to work together to develop students' individualized learning plans, create assessments for determining student mastery, examine data to monitor students' progress toward mastery, develop instructional materials, or align instructional content with state standards.

Several grantees' plans feature demonstration classrooms for teachers to model personalized learning environments for colleagues within their school or for teachers from other schools within their district. The **School Board of Miami-Dade County's** application, for example, underscores the importance the district places on having a demonstration center embedded within each school participating in the initiative.

**Instructional Coaches.** All 16 grantees describe some form of coaching for teachers—by implementation specialists, personalized learning coaches or facilitators, technology coaches, or instructional coaches—to provide teachers with personalized, on-site support. Although the



focus of the proposed coaching varies across grantees, all grantee applications describe opportunities for teachers to receive individually tailored feedback and support for implementing the district's planned instructional strategies. In numerous cases, grantees indicate that the district would make efforts to align human capital management activities with their grant reforms to identify teachers' individual learning needs and regularly assess teachers' progress in improving their performance. **Iredell-Statesville Schools in North Carolina**, for example, proposes nontraditional staffing approaches as a means for expanding the reach of the most highly effective teachers in the district.

**Strategic Staffing Practices.** In addition to developing teachers' knowledge and skills and providing resources, some districts describe efforts to employ strategic staffing practices to help them capitalize on their most qualified or effective teachers. For example, **Iredell-Statesville Schools'** application identifies several approaches to teacher placement that are designed to expand the reach of the district's highly effective teachers, including the use of teacher rotation, class-size changes, specialization, and multiclassroom leadership. According to the **Middletown City School District in New York**, only teachers who possess advanced degrees in their content areas will be eligible to teach the district's Syracuse University Project Advance courses, which are designed to give students opportunities to engage in rigorous coursework and earn up to 26 college credits while in high school.

**Engaging Parents.** The grantee applications describe activities that intend to not just engage but also build the capacity of and *empower* parents to be "leaders of learning" in their own schools and to their children. For example, with respect to student individualized learning plans, the grantees indicate that parents will be

### Strategic Approaches to Teacher Staffing

The RTT-D grant application from **Iredell-Statesville Schools in North Carolina** articulates several nontraditional approaches to teacher staffing that the district is considering using to extend the reach of its highly effective teachers.

**Rotation Model.** Students rotate between teacher-facilitated and computer-facilitated instruction, which allows the most effective teachers to work with up to twice as many students.

**Class-Size Shifting.** Teachers who are deemed highly effective work with larger class sizes (and receive additional compensation for doing so), and new and developing teachers work with smaller classes as these teachers build their effectiveness.

**Flex Model.** Students spend half of their learning time receiving digitally based instruction, while the most effective teachers work with flexible small groups to differentiate instruction based on need.

**Specialization.** The most effective teachers specialize in teaching the highest priority subjects on a rotating schedule or through flexible student groupings.

**Multiclassroom Leadership.** The most effective teachers serve as lead teachers and work with teachers in other classrooms to improve their effectiveness.

For more information on these models, see [www.OpportunityCulture.org](http://www.OpportunityCulture.org).



collaborators in the development and monitoring of these plans and their children's progress toward meeting key benchmarks and goals. Toward this end, a critical component of each of the 16 grantees' plans is to develop or expand upon current Web-based data management portals to allow parents immediate access to student information, such as attendance, homework assignments, class projects, course grades, and assessment data, as well as other indicators of their children's progress toward their individualized learning plan goals.

**Building Parent Capacity.** However, engaging and empowering parents to meaningfully collaborate with school staff and their children is not possible without first providing parents with the resources, knowledge, and skills necessary to do so. All 16 of the grantees describe workshops or other types of training activities that aim to build the capacity of parents to access and interpret data, to understand the learning pathways that are necessary for promoting college and career access and readiness, or to provide social and emotional supports to promote positive behavior and motivation for learning.

The **Middletown City School District** is expanding its learning management system with the hope of engaging, empowering, and facilitating parents' involvement in their children's learning and success.

## Empowering Parents

The **Middletown City School District in New York** describes expanding upon its current system to create a more dynamic and collaborative learning management system. This system will leverage social media tools to facilitate communication inside and outside of the classroom by connecting students and parents to educators and learning resources anytime, anywhere. The new system will be accessible in multiple languages, including Spanish, to help increase parent engagement. The district will create "how-to" manuals for parents about how to access and interpret student data and will offer advice for discussing data with their children and their children's teachers. All parents will have access to a computer lab in the school or the community where they can log in to view student data and receive assistance from an educator who is familiar with the system.

The expanded scope and service of the district's college and career center under the grant will provide additional parent information and activities regarding how to support their children in identifying college and career options, going through the college selection process, and selecting options for financial aid. The intent is to help parents better understand how children's educational experiences play a significant role in college and career readiness and, as result, empower parents to play an active role in the education process.

**Community and Business Partnerships.** Several grantees propose community and business partnerships as key components of their efforts to personalize learning and support students and their families. Fourteen of the 16 grantees describe such partnerships in their applications. These 14 districts describe partnerships that are intended to provide a wide range of supports, including those partnerships intended to meet the health and medical needs of students and families, to help ensure family stability, and to more directly facilitate students' motivation and readiness to learn. Although it is not rare for districts across the nation to enlist community and business partnerships, key to the grantees' plans are multiple partnerships through which comprehensive and varied services may be provided.

The **Metropolitan School District of Warren Township** describes a partnership with a community hospital, meant to help students and families receive the medical and health attention necessary to ensure students come to school able and ready to learn. The services provided through this partnership are comprehensive, integrating medical, dental, behavioral, and social health care. The reach of this partnership is maximized through services located at one of the schools, at the community's career center, and through the provision of year-round mental health services available in the school, in the students' homes, or in other mutually agreed-upon places. The **Puget Sound Educational Service District in Washington** describes a partnership with the county housing authority to decrease mobility and rapid rehousing rates for families in the program and to develop a cultural navigators program. Cultural navigators are parents who will be trained in the language and diversity of the school their children attend and who will, in turn, train other parents in their communities in strategies for supporting learning at home, making connections to the school, and serving as parent leaders.

## Potential Challenges

Personalized learning environments encourage new roles and responsibilities for teachers, students, parents, and the broader community. Allowing students to learn and master content at their own pace and providing students with extended learning opportunities to access and engage in content outside of school assume a great amount of responsibility on the part of the students. As the grantees implement these reforms, it will be important to examine how the grantees build the capacity of these key stakeholder groups to take on these new roles and motivate students to extend their learning beyond regular school hours and progress through their coursework and learning tasks.

Regarding the shifting roles and responsibilities for stakeholders, there are number of potential challenges or tensions that may arise as the grantees implement their plans:

- The professional development and teacher capacity-building efforts the grantees propose are extensive and are grounded in research related to effective teacher development practices. Yet, quality professional development is contingent on

a number of factors that may be difficult to control. For example, the grantees propose activities that rely heavily on coaching and teacher collaboration, such as professional learning communities and train-the-trainer models. High-quality coaches may be difficult to locate and recruit. In addition, the implementation of professional learning communities can be inconsistent. These communities also require time and commitment on behalf of the teachers, who may be struggling to balance professional development with the time they need to plan very personalized and individualized lessons for students.

- Teachers already are challenged with learning and implementing new Common Core State Standards or other state-specific standards. To what extent will teachers feel overextended, overwhelmed, or overburdened with trying to create a blended learning environment and integrate new technologies into the classroom, including identifying instructional materials that are appropriate and that cohere with the state's adopted standards?
- The grantees' success in involving and empowering parents relies heavily on parent interest, time, motivation, and understanding of how to access and interpret data. Although the grantees propose multiple training activities in a variety of formats, they still need parents to attend these trainings—and working parents often find it difficult to participate in school-related events. Likewise, effective parent engagement also is dependent on parents' abilities to use and access the technology after being trained.
- Community partnerships will be effective only if the partnering organizations are fully engaged and committed to supporting students and their families and if the district and school leaders can develop strategies for ensuring students and their families have access to and take advantage of the supports that are available to them. Establishing effective community partnerships may require extensive outreach and advertising, including informational sessions or even home visits that outline the services that are available, where and how to locate the services, and the benefits the services engender.

## Conclusion

A personalized approach to teaching and learning requires rethinking the role of the school, the role of the teacher, the role of parents and the community, the structure of the classroom, and the ways that knowledge and skills are imparted and measured. Our review of the 16 winning RTT-D grant applications describes a potential vision for schools and classrooms of the 21st century. In the spirit of the grant program, the 16 grantees propose educational models for teaching and learning that aim to increase equity, decrease student achievement gaps, and ensure college and career readiness for all students by capitalizing on advanced technologies to personalize teaching and learning.

The grantees' proposals suggest that personalized learning environments can increase academic success and college and career readiness when:

1. Students are actively (and interactively) engaged in planning their own learning experiences
2. Students have the flexibility to pursue individual academic and career interests
3. Students can learn and progress through content at their own pace
4. Students are supported at home and in the broader community in reaching their goals

These activities, however, do not occur in a vacuum. Like all districts, each of these grantees is nested within broader social, political, and educational contexts, including state and local policies, laws, and regulations that may facilitate or challenge implementation efforts. Two key challenges are:

- Assuring the commitment, motivation, and capacity of key stakeholders
- Avoiding unanticipated consequences—including tracking and sacrificing rigor for expediency—in efforts to personalize and accelerate student learning

With these cautions in mind, we encourage the education community to closely watch, monitor, support, and learn from the work of these grantees. These grantees may serve as potential reform leaders; however, they cannot fulfill this role on their own. The next step is to examine if and how they are successful in their efforts and what unintended consequences—good or bad—resulted from their activities.

Too often, grant programs such as RTT-D are studied retrospectively. If we are to learn the grantees' lessons and use their experiences to inform and bring to scale efforts nationwide, we must engage with them early and substantively in the implementation process. Working with and alongside these districts offers potential to strengthen efforts to improve the teaching and learning process for all students.

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## Appendix A

### Methodology

A small team of AIR analysts conducted the review of the 16 RTT-D winning applications. This analysis team developed a preliminary set of codes, based on a review of the grant application, each of the grantee's core project components, and literature regarding the components that are necessary for creating personalized environments. Next, the analysts conducted a comprehensive review of the grantees' applications, coding each of the grantee's proposed activities with this preliminary set of codes. After this first review, the analysis team added new codes to reflect prevalent activities that were not adequately captured in the initial code book. The analysts working on this task met regularly to engage in an ongoing dialogue and to ensure a consistent understanding and application of codes. The final phase consisted of cross-case analyses, to identify common approaches across the 16 grantee applications, and illustrative examples of key reform efforts.

## Appendix B

**Table B-1. RTT-D Grantee Characteristics**

Grantee	Grantee Type*	Locale**	Award (in Millions)*	Targeted Number of Schools*	Grade Levels Served*	Number of Students Served*
Carson City School District, Nevada	Local school district	Small city	\$10.0	4	6-12	4,109
Charleston County School District, South Carolina	Local school district	Midsize city	\$19.4	19	PK-12	9,493
Galt Joint Union School District, California	Local school district	Small suburb	\$10.0	6	K-8	3,800
Green River Regional Educational Cooperative, Kentucky	Consortium	Rural	\$40.0	112	PK-12	59,311

Grantee	Grantee Type*	Locale**	Award (in Millions)*	Targeted Number of Schools*	Grade Levels Served*	Number of Students Served*
Guilford County Schools, North Carolina	Local school district	Large city	\$30.0	24	6-8	17,000
Harmony Science Academy (Harmony Public Schools), Texas	Charter agency	Midsize city and large city	\$29.9	36	6-12	12,240
IDEA Public Schools, Texas	Charter agency	Distant town and large city	\$29.2	25	1-7	12,617
Iredell-Statesville Schools, North Carolina	Local school district	Rural	\$20.0	15	6-12	9,321
KIPP DC, District of Columbia	Charter agency	Large city	\$10.0	10	PK-12	3,040
Lindsay Unified School District, California	Local school district	Town	\$10.0	8	K-12	4,074
Metropolitan School District of Warren Township, Indiana	Local school district	Large city	\$28.6	16	PK-12	11,611
Middletown City School District, New York	Local school district	Small suburb	\$20.0	7	K-12	7,000
New Haven Unified School District, California	Local school district	Large suburb	\$29.4	13	K-12	12,719
Puget Sound Educational Service District, Washington	Consortium	Small city, large city, small, suburb, large suburb	\$40.0	261	PK-12	147,085
School Board of Miami-Dade County, Florida	Local school district	Large suburb	\$30.0	49	6-8	11,760
St. Vrain Valley Schools, Colorado	Local school district	Small suburb	\$16.6	8	PK-12	5,757

\*Source: U.S. Department of Education, Individual RTT-D Grantee Applications

\*\*Source: U.S. Department of Education, National Center for Education Statistics



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