POLICY INNOVATIONS

March 28, 2013

High School Race to the Top

10 Essential Elements for High School Reform and College and Career Ready Success

KnowledgeWorks

College & Career Readiness for Every Student

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EXECUTIVE SUMMARY

President Barack Obama outlined a broad vision for education reform in his fifth State of the Union address, including a commitment to create a new high school reform competition modeled after his signature education initiative - Race to the Top. This competition would encourage schools to partner with colleges and employers to ensure America's high school graduates have the skills to succeed in an increasingly complex workplace. With college remediation rates at record highs and the high-tech skills gap widening, KnowledgeWorks believes the nation's high schools could benefit significantly from this type of competition.

A High School Race to the Top competition must challenge the current education system by empowering education stakeholders to break through traditional barriers to learning. In order to achieve this type of systemic change, KnowledgeWorks believes a new high school competition must include all of our 10 Essential Elements for high school reform. These elements are informed by KnowledgeWorks' groundbreaking research on the future of learning as reflected in our third forecast, Recombinant Education: Regenerating the Learning Ecosystem (Forecast 3.0) and the experience of our subsidiary organizations who serve on the front lines of high school reform.

This paper provides an overview of the 10 Essential Elements for high school reform as well as real-world examples from schools and educators working to implement these innovative concepts. KnowledgeWorks' has also included recommended legislative language at the conclusion of this paper to guide policymakers as they begin to shape the High School Race to the Top proposal.

INTRODUCTION

On February 12, 2013, in his fifth State of the Union address, President Barack Obama outlined his vision for his second term. Under the theme of economic recovery, the President proposed a range of initiatives, spanning from fiscal relief to energy independence. Central to this list was a renewed commitment to education reform with an emphasis on pre-K expansion, college affordability, career and technical education reform, and the establishment of a new effort to reform America's high schools modeled after the Administration's Race to the Top initiative.

> Four years ago, we started Race to the Top, a competition that convinced almost every state to develop smarter curricula and higher standards, all for about 1 percent of what we spend on education each year. Tonight, I'm announcing a new challenge, to redesign America's high schools so they better equip graduates for the demands of a high-tech economy. And we'll reward schools that develop new partnerships with colleges and employers, and create classes that focus on science, technology, engineering and math, the skills today's employers are looking for to fill the jobs that are there right now and will be there in the future.
>
> *President Barack Obama*, 2013
> State of the Union Address

High school reform is not a new concept for the Obama Administration. The President championed a number of initiatives during his first term to dramatically improve the country's lowest performing high schools. Some of these initiatives included billions of dollars for the nation's School Improvement Grant (SIG) program, Race to the Top (RttT), and the Investing in Innovation Fund (I3), as well as waiver relief from the Elementary and Secondary Education Act (ESEA) to help states design flexible systems of support for schools with the highest achievement gaps and lowest overall performance.

While evaluations of these investments are just underway, data on the state of the nation's high schools remains mixed, at best. The 2013 Building a Grad Nation report[1] found that U.S. high schools made significant improvements in graduation rates in recent years, reporting a 6.5 percent increase in the national rate since 2001. The new 78.2 percent rate is attributed to significant improvements in graduation rates among Hispanic and African American populations.

[1]"Building a Grad Nation: Progress and Challenge in Ending the High School Dropout Epidemic," America's Promise Alliance, (February 2013) <http://www.americaspromise.org/~/media/Files/Our%20Work/Grad%20Nation/Building%20a%20Grad%20Nation/BuildingA

Despite these gains, the number of graduating students who place into remedial coursework in postsecondary education is at a record high with 51.7 percent of community college students and 19.9 percent of students enrolled in four year institutions[2] assigned to remediation. The problem repeats itself in our workforce where more than 3.5 million jobs remain unfilled despite 18 million Americans looking for work. This skills gap will continue to grow if nothing is done to better prepare graduates. According to estimates from the Chamber of Commerce, the United States will have up to seven million unfilled jobs by the end of the decade, many of which will fall in the STEM fields of science, technology, engineering and mathematics.[3]

Given these concerning trends, KnowledgeWorks supports the creation of a Race to the Top for America's high schools. Race to the Top has a strong track record of incentivizing widespread reform at minimal cost to taxpayers. There is no question that the nation's high schools could benefit from a similar competition where impact is felt far beyond the few who submit winning applications.

As a social enterprise with more than a decade of experience in high school reform, KnowledgeWorks knows what a successful high school looks like. This paper, which combines knowledge from our recent educational forecast *Forecast 3.0*, *Recombinant Education: Regenerating the Learning Ecosystem*[4] and our work on the ground in more than 20 states and 150 schools, recommends 10 Essential Elements for a High School Race to the Top competition. Together, these elements represent a new vision for education that puts students at the center, empowering them to take charge of their high school, college, and career success.

10 ESSENTIAL ELEMENTS FOR HIGH SCHOOL RACE TO THE TOP

A High School Race to the Top competition must challenge the current education system by empowering education stakeholders to break through traditional barriers to learning. Educators in traditional public schools and public charter schools must feel empowered to design flexible learning environments that align with student interest and learning styles and cultivate the knowledge and skills that ensure a seamless transition from high school to college and career. In order to achieve this type of success, KnowledgeWorks believes a new high school competition must include the following 10 Essential Elements as defined in this paper along with an emphasis in STEM as the President outlined in his State of the Union Address. These definitions were informed by KnowledgeWorks' groundbreaking research on the future of learning as reflected in its third forecast, Recombinant Education: Regenerating the Learning Ecosystem (Forecast 3.0) and the experience of our subsidiary organizations who serve on the front lines of high school reform. KnowledgeWorks' has also included recommended legislative language at the conclusion of the elements to guide policymakers as they begin to shape the High School Race to the Top proposal.

[2] "Remediation: Higher Education's Bridge to Nowhere," Complete College America, (April 2012) <http://www.insidehighered.com/sites/default/server_files/files/CCA%20Remediation%20ES%20FINAL.pdf>.
[3] Oldham, Cheryl, "Answering the Call to Fix the Skills Gap," Institute for a Competitive Workforce, A Program of the U.S. Chamber of Commerce, (February 7, 2013) <http://icw.uschamber.com/blog/answering-call-fix-skills-gap>. (Retrieved February 28, 2013)
[4] "Recombinant Education: Regenerating the Learning Ecosystem," KnowledgeWorks, (October, 2012) <http://knowledgeworks.org/sites/default/files/u1/Forecast3_0.pdf>.

ELEMENT 1: RIGOR & CONNECTEDNESS

Forecast 3.0: Learners will demonstrate mastery of core knowledge and essential skills through performance-based assessments and digital portfolios that represent each learner's unique potential to the world.

Far too many of today's high schools operate in isolation from their local workforce system. This lack of coordination often leads to unprepared graduates and desperate employers who cannot find the talent to fill skilled positions. Policymakers can help address this disconnect by encouraging educators to emphasize rigor and connectedness in school design. This will ensure that students master the knowledge and skills demanded by local employers and help develop relationships critical to successful entry into postsecondary education or the workforce.

Key Policies for Rigor and Connectedness:

- The applicant's plan includes a survey of local labor market trends (where beneficial through partnership with local workforce boards) and an explanation of how those trends informed development of the school model and instructional program.
- The applicant's plan ensures that each educator has a rubric that maps standards to competencies and provides students with clear learning objectives for each lesson so students, parents, and other key stakeholders understand what is expected for success.

The first step to ensuring rigor and connectedness is to conduct a survey of local employers to better understand the needs of the changing workforce. Districts should partner with their local workforce investment board on this undertaking, in the event the community has a high quality initiative in place. They should also consult with the institutions of higher education (IHE) that serve the largest percentages of the district's graduates to improve alignment between the K-12 and postsecondary education system. Educators should incorporate this information into the high school curriculum by designing career pathways aligned to these needs, paying particular attention to the integration of relevant STEM-based instruction and learning experiences. While alignment to the local economy is paramount, educators should also explore ways to connect these pathways to regional, state and even national efforts. In North Carolina, for example, state officials used Race to the Top resources to design a cohort of STEM schools focused on a growth industry or area of opportunity for the state.[5] Schools were grouped into one of four networks by theme: 1) Aerospace, Advanced Manufacturing and Security; 2) Biotechnology and Agriscience; 3) Energy and Sustainability; and 4) Health and Life Sciences. Each network now has an anchor school to model best practice

[5] <http://stem.ncnewschools.org/stem-schools/affinity-networks>. (Retrieved February 10, 2013)

and a cohort of universities, community colleges, business, nonprofits, and government agencies to provide input on curriculum and real-world learning opportunities.

After identifying relevant workforce skills, high schools should develop the foundation for a strong instructional program – a rubric that maps college and career ready standards to competencies and learning objectives. Competencies outline knowledge and skills that can be applied to complex situations regardless of content area. Learning objectives provide the specific tasks a student must complete to demonstrate proficiency. Together, these instructional tools give students a clear understanding of what is expected of them during each lesson. A high quality rubric will also include levels of proficiency for each learning objective so students can track mastery within a particular lesson. Clear expectations of learning will empower students to take control of their educational experience and help them set achievable goals for meeting and exceeding proficiency.

ELEMENT 2: TEACHING AND LEARNING

Forecast 3.0: Educators working in a variety of roles will collaborate with one another and use community and global resources to facilitate engaged learning that ignites students' intrinsic motivation and builds students' core knowledge and essential skills.

The vast majority of teacher preparation programs and professional development programs in the United States fail to equip educators with the knowledge and skills to excel in the modern day teaching environment. The days of direct instruction are numbered as students demand a more customized learning experience and new technologies make it possible to differentiate and amplify instruction. These changing dynamics will lead to an explosion of new teaching roles that will challenge the skill set of today's educator workforce.

A High School Race to the Top Program must incentivize rapid and long lasting change in the country's professional development programs. Applicants should demonstrate a different vision for preparing their workforce that reallocates existing dollars to support a customized learning experience for all educators. Schools should build on this foundation with an aligned educator evaluation process that encourages collaboration and provides real-time feedback so educators can engage in a continuous improvement process throughout the year.

As applicants begin to modernize their systems, they should look beyond the school walls to partners who can help educators build expertise in content area and instructional practice. States like Oregon and New Hampshire have begun to tackle this challenge in a more systemic way. The Oregon Business Education Compact leads proficiency-focused professional development[6] for the state, helping educators respond to a series of state policy changes that support proficiency based learning for credit. Similarly, New Hampshire has begun a statewide dialogue to modernize the state's teacher preparation and evaluation systems. A statewide summit[7] to kick off the conversation spurred the creation of New Hampshire's Institutions of Higher

[6] Business Education Compact, <http://www.becpdx.org/proficiency/training.aspx>. (Retrieved March 5, 2013)

Education Network for 21st Century Education[8] and a network of regional P-20 councils to support alignment of teacher education programs and school systems. The state's commissioner of education is also leading the design of a comprehensive teacher evaluation framework focused on pre-service education, educator induction with mentoring, professional development, and teacher and leader evaluation.[9]

Throughout implementation, schools should foster a culture of collaboration among education professionals. Leaders should ensure that educators meet regularly with their peers to collaborate on content-level lessons, to ensure vertical and horizontal alignment of instruction, and to use formative assessment data and personalized learning plans to continually group students according to proficiency levels, interests, and learning styles. Educators should also have time to collaborate with community partners on the design and implementation of lessons.

ELEMENT 3: COMMUNITY AND BUSINESS PARTNERSHIPS

Forecast 3.0: The learning system will support the development of public-private partnerships and harness social innovations that can expand the array of resources, organizational formats for "school," and opportunities available to all students.

Many of today's high schools have established partnerships with the community to provide expanded learning opportunities through activities such as field trips, community service projects, internships, and collaboration on school projects. While these schools should be commended for forging partnerships beyond their walls, they could significantly expand

Key Policies for Teaching and Learning:

- The applicant's plan includes a description of how it will repurpose professional development resources, including Title II-A of ESEA, to prepare educators to implement the school design and instructional model, including development and implementation of the following: competencies and learning outcomes, evaluation systems that provide meaningful feedback and supports for teachers and leaders , personalized learning plans, strategies to differentiate instruction by learning style and pace, and learning opportunities with community partners.
- The applicant describes how it will ensure a culture of collaboration among professional staff and community partners including time for collaboration across content areas and student proficiency levels.

[7] "A Call to Action: The Summary Report of the Invitational Summit on Redefining Teacher Education for Digital Age Learners," (October 2010) <http://www.nhsummit.org/>. (Retrieved March 5, 2013) [8] "The New Hampshire Board of Education Votes Unanimously to Endorse the Institution of Higher Education (IHE) Network Position Statement," New Hampshire Department of Education (November 2011) <http://www.education.nh.gov/news/2012/ihe-statement.htm>. (Retrieved March 5, 2013) [9] "New Hampshire Task Force on Effective Teaching: Phase 1 Report," New Hampshire Department of Education (October 2011) <http://www.education.nh.gov/teaching/documents/phase1report.pdf>. (Retrieved March 5, 2013)

learning options for students if they also engaged these partners throughout the school design and teaching and learning process.

High schools can begin the process of identifying community and business partners for the school design process by developing an asset map – a visual representation of the skills, people, and organizations that align with the focus of the school. Reynoldsburg High School, outside Columbus, Ohio, conducted a similar process when it decided to partner with the school transformation organization EDWorks to redesign the school into STEM theme based academies in 2009.[10] Educators brainstormed a list of relevant community partners for each academy and then invited them to participate in conversations about the school's design. The response was overwhelming and Reynoldsburg High now boasts a robust list of partners including Mt. Carmel Health System which operates a clinic on site, BalletMet which helps design the fine arts curriculum, and Columbus State Community College which launched an early college high school on campus. Asset mapping is not a new concept. It has been used for years by other industries working to build capacity for social initiatives. The U.S. Departments of Housing and Urban Development[11] and Labor[12] have issued guidance on this strategy.

Key Policies for Partnerships:

- The application includes a partner asset map that details relevant community partners, a description of how the applicant engaged those partners in the development of the school design and instructional program, and the roles that partners will play in the implementation of the grant.
- A description of the expanded learning opportunities that the applicant will provide in partnership with community organizations for credit and evidence of a clear plan for ensuring quality and alignment of these opportunities to college and career ready standards and competencies.

While engaging community partners in the school design process is a critical first step, high schools should also partner with community organizations and businesses in the delivery of credit-bearing experiences. Educators in the Providence, RI school district can serve as a model for redefining traditional school and community partnerships.[13] Through a partnership with the Providence After School Alliance, the district provides students with access to credit-bearing, badge-earning learning experiences in the community. Students in the program may find themselves pitching business plans to local venture capital firms, for example, or earning a

[10] Boss, Charlie, "Reynoldsburg Schools Attracting Rave Reviews, Columbus Dispatch, (October 30, 2012) <http://www.dispatch.com/content/stories/local/2012/10/30/attracting-rave-reviews.html>. [11] "Connecting to Success: Neighborhood Networks Asset Mapping Guide," U.S. Department of Housing and Urban Development, Office of Multifamily Housing Programs, <http://www.hud.gov/offices/hsg/mfh/nnw/resourcesforcenters/assetmapping.pdf>. (Retrieved March 5, 2013). [12] "Asset Mapping Roadmap: A Guide to Assessing Regional Development Resources," Prepared for US Department of Labor, Employment and Training Administration by the Council on Competitiveness, (October 2006) <http://www.careeronestop.org/red/AssetMappingRoadmapGuide.pdf>. (Retrieved March 5, 2013).

badge through a weekend robotics program that represents mastery of an algebra concept. Digital badges are a great way to recognize concrete mastery of a skill or competency from a deeper set of content and learning environments. While these content and experiential-based partnerships are a critical tool for high school reform, school leaders must have policies in place to ensure learning experiences outside of the traditional classroom are of high quality and consistent with mastery of standards, competencies, and learning objectives.

ELEMENT 4: STUDENT VOICE

Forecast 3.0: Self-directed learners will navigate diverse resources and opportunities from an expanded learning ecosystem.

Unlike previous generations, today's youth live in a world where they can access information from a variety of sources, many of which fit in the palm of their hand. Students have grown accustomed to a world where they can customize learning based on their own interests, learning styles, and pace. Yet, many of these students still attend schools where they have no voice in what or how they learn.

Key Policies for Student Voice:

- The school design permits students to choose from multiple interest-based pathways beginning their freshman year, including at least one STEM-based option.
- Students have a choice in how they demonstrate mastery of standards and competencies.

Student voice must be an integral part of a High School Race to the Top program. As educators begin to redesign a school, they must design flexible institutions that take into account student interests throughout the entire design and implementation process. The school should include a variety of interest-based pathways that students may select from at the start of their high school experience. These pathways should be aligned to local workforce needs with at least one focused on STEM education. Smaller learning communities have become an increasingly popular and effective strategy for school improvement. New York City has seen great success with its smaller, themed schools in the decade since it implemented comprehensive high school reform. The district gave every incoming ninth-grade student the opportunity to choose a themed academy, a strategy that has resulted in large, positive gains, especially among students of color.[14]

In addition to the choice of program, educators should work with students on a daily basis to apply their interests to lessons and projects. Although all students must demonstrate mastery of college and career ready

[13] Fleming, Nora, "R.I. Students Gaining 'Badges', Credits Outside School," EdWeek. (February 6, 2013) <http://www.edweek.org/ew/articles/2013/02/06/ 20credits.h32.html?tkn=SOOF9UCbAw%2Ft03G6H3DL%2BMm6m6V%2BtlGnjf%2FS&cmp=ENL-EU-NEWS1> (Retrieved February 10, 2013)

[14] "Reforming Underperforming High Schools," MDRC, (March, 2013) <http://www.mdrc.org/sites/default/files/High_School_Reform_030513_0.pdf> (Retrieved March 15, 2013)

standards, competencies, and learning objectives, they should have a voice in how they demonstrate mastery. For example, a teacher may allow two students to demonstrate mastery of the following standard and competency in very different ways.

- Common Core State Standard - Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.
- New Hampshire (CACES) Sample Competency - Students will understand that through writing for a variety of purposes and audiences they can transmit information and construct and communicate ideas for academic, personal, occupational, and public uses.[15]

The first student might decide to keep a daily journal while reading John Steinbeck's The Grapes of Wrath that chronicles what it might be like for her, a 16 year old, to overcome the trials and tribulations of the character's journey. The second student might prefer to write a script and film a commercial for The Grapes of Wrath, the movie, that illustrates the important elements of the story.

ELEMENT 5: PERSONALIZATION

Forecast 3.0: Learning agents will cultivate their own entrepreneurial skills in using public and private resources to develop customized learning pathways for all students.

The critical difference between today's one-size-fits all high schools and diverse learning communities that boast record student engagement is a commitment to personalization. In these model schools, educators, students, parents, and other key stakeholders work together to design a flexible learning plan for each student. Personalized learning plans (PLPs) serve as the foundation for all teaching and learning decisions in the school. Dozens of states have either passed or are considering legislation to ensure every child has a PLP. Business and education leaders in New Jersey, for example, advocated for the creation of PLPs in 2006 as part of an effort to redesign the state's high schools.[16] Under their plan, every New Jersey student would have a six-year education plan

Key Policies for Personalization:

- The applicant will develop and implement personalized learning plans (PLPs) for each child that incorporate individual interests, learning styles, and postsecondary and career goals.
- The applicant has a plan for engaging students, parents, and community partners that will play a direct role in student learning in the development of the personalized learning plan (PLP).

[15] "Course-Level Competencies: A clarification of the rules regarding Course level Competencies and Grading with recommendations from the NH DoE / NH DoE Update: Clarification relative to Ed 30627: Course Level Competencies and Grading," (September 13, 2011) <http://www.education.nh.gov/innovations/hs_redesign/competencies.htm> (Retrieved March 11, 2013)
[16] Santiago, Katherine, "N.J. students to develop personal learning plan in pilot program at 16 schools," The Star-Ledger, (September 18, 2009) <http://www.nj.com/news/index.ssf/2009/09/nj_students_to_develop_persona.html> (Retrieved February 10, 2013)

that covers their high school experience as well as two additional years of higher education, workforce training, skilled employment or military service. The state launched a pilot initiative in 2009 to study implementation of these plans over the course of several school years.

A high-quality PLP should include real-time information from a rich set of data sources including surveys from students and parents regarding interests and learning styles, data from summative and formative assessments, mastery of standards and competencies, learning experiences outside the traditional classroom, and college and career goals. Forsyth County Schools in Cummings, GA has become a model for personalized learning. With the help of an I3 grant from the U.S. Department of Education, the district has launched a five year program to develop a data system that provides real-time, detailed information on each student's performance. Students will be able to shape their personalized learning plans by logging into the system and selecting from a variety of lessons and activities aligned to college and career ready standards. Students can access activities from their plans at any time of day using iPods, cell phones, or other digital devices.[17] A high school reform program modeled after Race to the Top should ensure that every student has the ability to customize learning with a PLP.

ELEMENT 6: PACE

Forecast 3.0: Learners will draw upon their intrinsic motivation to take responsibility for evaluating available learning opportunities and for co-designing their unique learning pathways with learning agents.

Key Policies for Pace:

- Students have the option to advance upon mastery of student learning outcomes.
- A plan exists to ensure all students achieve proficiency of standards and competencies at a pace equal to a minimum of one year's growth.
- All students have access to accelerated learning options through an Early College High School program or dual enrollment options.

One of the biggest limitations of the traditional high school is it assumes that all students learn at the same pace. This fallacy results in mass disengagement where students who have mastered the day's lesson find themselves bored, while others who need additional support fail to keep up with the instructor's pace. With today's access to rich formative assessment systems, technology, and comprehensive data systems, there is no reason to continue this detrimental practice. High schools must shift away from standardized instruction and cultivate a learning environment where students can progress through learning objectives at their own pace. As students master an objective, they should be free advance to the next lesson. When they require additional

[17] "Investing in Innovation (i3) Grant," Forsyth County Schools (2010) <http://www.forsyth.k12.ga.us/page/253>

time, they should receive personalized support from their educators to ensure they master the necessary material by the end of the school year. This approach ensures that all students receive the support they need to accomplish a minimum of one year's growth in one year's time with the opportunity to advance to more rigorous topics as they are ready.

The Maine Cohort for Customized Learning, a group of five districts in Maine, has become a national leader in student centered learning. These districts have embarked on a collaborative journey to implement competency-based learning models in their schools that permit students to advance at their own pace. District leaders at the RSU-2 Kennebec Intra-District, for example, began the transition to competency-based learning in 2009 when the school board voted unanimously to change the high school grading system to a standards-based reporting system. Shortly thereafter, the district repurposed Title II-A professional development funds to retrain educators in partnership with the Reinventing Schools Coalition (RISC). The district also adopted common measurement topics to help educators evaluate student proficiency and an online tracking system to help educators and students monitor progress. With each additional year of implementation, these districts work together to build and improve on their models to ensure the highest quality learning experience for students.

Under a competency-based model, many students will master standards and competencies at an accelerated pace. High schools must provide these students with access to increasingly rigorous learning opportunities. Partnerships with institutions of higher education (IHEs) are an excellent way to expand course offerings. Schools can either offer dual enrollment courses that give students the opportunity to earn simultaneous college and high school credit, or establish a formalized pathway to postsecondary education through an early college high school (ECHS) program. The highest quality ECHS programs provide students with the opportunity to earn up to 60 college credit hours during their high school experience at no additional cost to the student.[18] In most state higher education systems, 60 credit hours equates to an Associate's degree or the first two years of a college education. Policymakers should ensure that a High School Race to the Top competition provides students with access to these types of high quality accelerated learning options.

ELEMENT 7: TIME

Forecast 3.0: Learners will seek out and work with mentors, peer learning groups, and digital and human learning agents to navigate the array of choices offered by the learning ecosystem.

Time is a powerful tool in school design if educators are empowered to think beyond the limitations of the current school calendar, day, and course structure. A high school reform program modeled after Race to the Top must encourage schools to use time in different ways to maximize the school's teaching and learning goals. Many schools have begun to see dramatic results from creative scheduling strategies such as extending the

[18] "Fast Track: Creating a Seamless Transition from High School to College," EDWorks, (2010) <http://edworkspartners.org/fast-track>

school day or year, adding summer bridge programs, implementing a weekly early release policy to maximize professional development time, integrating courses so teachers can team up to provide deeper instruction, eliminating bell schedules, and adding a free period for students to navigate different learning opportunities.

Key Policy for Time:

- The applicant can demonstrate how it will use time differently to enhance the school's teaching and learning goals through the implementation of strategies such as integrated courses, elimination of the bell schedule, flipping the classroom, and free periods that allow students to engage in deeper learning through acceleration or supports.

Some schools have gone a step farther, literally flipping the time students experience instruction and the time they spend on homework. The flipped classroom concept, mainstreamed by the Khan Academy,[19] requires students to use their time at home to watch a teacher's lesson virtually and time in class to work on homework with the direct support of their teacher. This approach maximizes student learning time by providing students access to differentiated instruction when they need it most – while they work to apply concepts presented by the instructor. Many students also benefit from the opportunity to collaborate with peers on homework assignments, empowering them to work together to find solutions. The benefits of this approach are best demonstrated by results at Clintondale High School in the Detroit suburb of Clinton Township.[20] After one year of implementing the flipped classroom approach, the school experienced a 33 percent drop in the freshman failure rate, a 66 percent drop in disciplinary incidents, and graduation and test scores increased. The school even saw a decline in parent complaints dropped from 200 to seven.

ELEMENT 8: ASSESSMENT

Forecast 3.0: Learners will use personal performance feedback from multiple digital data streams to navigate the array of choices offered by the learning ecosystem.

A High School Race to the Top competition must encourage schools to adopt a robust assessment system that takes pressure off the annual mandated summative assessments by incorporating ongoing, embedded formative assessments that help students and educators track performance and adjust lesson plans to ensure mastery. Instant feedback on performance is a critical element of a student-centered learning environment. This information becomes part of the Personalized Learning Plan which educators use to develop daily lesson plans around student

[19] http://www.khanacademy.org/.
[20] Hoag, Christina, "'Flipped Learning' Classroom Model Embraced By Teachers in Schools Nationwide," Huffington Post, (January 27, 2013) <http://www.huffingtonpost.com/2013/01/28/flipped-learning-classroo_n_2567279.html>

interests. Leadership Public Schools, a network of four high-poverty high schools in the Bay area of California, is piloting a classroom assessment and competency tracking system with the potential to significantly impact student performance.[21] The ExitTicket system, which will soon launch nationally, enables students to take short assessments at the end of each school day to measure the student's level of understanding of the day's objectives. Educators can use this information to customize lesson plans for the following day. ExitTicket currently operates as an application that students can download on their mobile phones.[22] Formative assessment tools such as ExitTicket must become an integral part of every classroom.

Key Policies for Assessment:

- The applicant will use ongoing, embedded formative assessments to help students and educators structure daily learning plans.
- Students will have multiple opportunities to demonstrate mastery on summative assessments.

An applicant's assessment system should also provide students with multiple opportunities to demonstrate mastery on summative assessments. Students are at a significant disadvantage when they are asked to demonstrate mastery of standards at the end of the school year even though they mastered the knowledge and skills months earlier. This system too often results in wasted learning time as educators shift to test preparation activities at the end of the school year. Oregon has one of the best state policies on summative assessments. The state permits students to take the Oregon State Assessment (OAKS) test up to 12 times, a maximum of three per year, before the end of the 12th grade. Students can take the high school test as early as the 8th grade if they have had access to the full depth and breadth of the high school content.[23] This provides students with ample opportunity to identify areas of need and work with their educators to customize the learning experience to ensure mastery by the end of the 12th grade.

ELEMENT 9: TECHNOLOGY

Forecast 3.0: Learners will engage with a wide variety of learning tools, resources, and learning formats to acquire and apply core knowledge and essential skills such as collaboration, initiative, global awareness, creativity, critical thinking, and perseverance.

Students use technology in nearly every aspect of their lives, yet most are forced to power down when they walk through the doors of their school. This dated policy not only conflicts with today's culture, it limits student access to a vast world of knowledge. A High School Race to the Top program must incentivize schools

[21] "Leadership Public Schools: Exit Ticket," Full Circle Fund, (2011) <http://fullcirclefund.org/lps.php>
[22] "Know what all of your students are thinking – as if you were Standing over their shoulders, <http://exitticket.org/>
[23] "OR Profile of State High School Exit Exam Policies," Center on Education Policy, (2012) <http://www.cep-dc.org/documents/HSEE2012Profiles/OregonHSEE2012.pdf>

to reverse this policy and adopt blended learning models that combine face-to-face instruction with the use of online learning. The Innosight Institute aptly breaks blended learning models into four distinct categories: 1) the Rotation model which allows students to rotate on a fixed schedule or at the teacher's discretion between learning modalities; 2) the Flex model in which content and instruction are delivered primarily by the Internet with a teacher-of-record on site; 3) the Self-Blend model in which students take one or more courses entirely online to supplement their traditional courses; and 4) the Enriched-Virtual model where within each course, students divide their time between a brick-and-mortar campus and learning through online delivery.[24] Schools that have begun to implement these blended learning models report significant increases in student engagement and performance. Educators also have positive reviews, claiming technology maximizes their teaching capacity and thus their ability to reach more students.

Key Policies for Technology:

- The school design ensures that all students and educators have the opportunity to engage in blended learning.
- The plan provides a description of how the applicant will use funds to invest in technology improvements and training which may include the adoption of a digital learning platform, non-construction building improvements (such as broadband access and electrical wiring), and procurement of hardware and software.

New Tech Network , one of the largest blended learning providers, partners with public district and charter schools to implement a project-based learning curriculum. More than 120 schools across 18 states and Australia are linked through an online learning management system that allows teachers to design and manage projects for students to access inside and outside the classroom from any web-enabled device. The network recently launched its first series of online courses in early 2013, giving students at participating schools the opportunity to take some of their courses virtually, rotating between classrooms with teacher facilitated instruction and learning spaces on campus where they can access online courses. Digital Learning @ NTN online courses differ from others in design and implementation. NTN is developing and implementing unique project based STEM courses that focus on skills like virtual teamwork, professional accountability, and online communication to prepare students for college and career. The results of New Tech's approach are significant. Students in the network grow 75 percent more in higher order thinking skills between freshmen and senior years than students in other schools, graduate at a rate 6 percent greater than the national average, and enroll in college at a rate 9 percent greater than the national average. Most impressively, NTN students persist in 4-year colleges at a rate 14 percent greater than the national average and in 2-year colleges at a

[24] Staker, Heather and Michael B. Horn, "Classifying K-12 Blended Learning," Innosight Institute, (May 2012) <http://www.innosightinstitute.org/innosight/wp-content/uploads/2012/05/Classifying-K-12-blended-learning2.pdf>.

rate 43 percent greater than the national average.[25]

The transition to digital learning will require an initial investment in the technology and retrofitting necessary to bring current facilities up to standard. Policymakers should ensure that funds are available to applicants to overcome this initial start-up barrier. The New Tech Network includes a set of technology specifications on their website to give schools an idea of the infrastructure needed to implement a blended learning model.[26]

ELEMENT 10: DATA SYSTEMS

Forecast 3.0: The learning system will develop interoperability a cross programs, services, data-scapes, and learning platforms and will ensure that everyone in the learning ecosystem has access to, and the capacity to use, the data needed to make effective decisions about learners.

Most classrooms today operate with a very narrow picture of student learning. They rely on grades, quarterly tests, attendance, and some qualitative data from a parent teacher conference to evaluate performance. These data points are not only limited, but their summative nature makes it difficult for educators and students to make adjustments as needed to ensure mastery of standards by the end of the school year. Fortunately, the education marketplace is on the verge of a big shift that will soon make it possible to develop a rich data set for every learner in the education system. This data set will help educators and other learning partners customize the education experience by giving them access to each learner's academic history, teacher comments, and information on student supports while simultaneously protecting privacy. A comprehensive data system, and its smart and innovative use, is central to the success of a modern day high school.

States and districts have begun to access a number of programs to enhance data access and use at the K-12 level. The database inBloom,[27] which launched in early 2013, was designed to make personalized

Key Policies for Data Systems:

- The school has a data system that includes each student's academic history, teacher comments, and student supports that travel from course to course, classroom to classroom, grade to grade, and school to school, and a high quality plan to use that system in real-time to continuously improve student achievement.
- The school has a data system that integrates data from community partners and a high quality plan to use that system to ensure better alignment across learning experiences and to empower stakeholders to set goals and track progress.

[25] Clark, Krista, "New Tech Network Outcomes 2010-11, New Tech Network, (April 2012) <http://www.newtechnetwork.org/sites/default/files/ntn_resultsdocx.pdf> [26] "NTN Echo Technology Requirements and Recommendations – Public Rev 1.3," New Tech Network, (February 6, 2012) <http://www.newtechnetwork.org/sites/default/files/resources/tech_req_summary_v1.3.pdf>.

learning a reality. The program offers states and districts a secure platform to integrate the data, content and applications previously delivered across multiple platforms. Users of the platform will eventually be able to download from a wide variety of educational applications currently in development by education companies. These applications will help educators track student progress on common core state standards and select learning resources that match student needs. Seven states, Colorado, Delaware, Georgia, Illinois, Kentucky, North Carolina, and Massachusetts have all signed on to use the inBloom database for select districts, while Louisiana and New York plan to use the database for all student records in their state.[28]

Districts can also begin to integrate data from community partners to ensure better communication between educators and partners who facilitate learning experiences outside of the classroom. Strive, a national cradle to career network, piloted this type of database in its flagship site, Cincinnati, OH, in 2009. The data tool, called Learning Partner Dashboard,[29] was co-created with Cincinnati Public Schools to enable district leaders to integrate student-level data from multiple sources including information from learning partners that work with students inside and outside of the school. The database not only provides educators and parents with a holistic view of student learning, it also helps community partners make better decisions about where to invest resources to maximize impact on student success. Strive is in the process of launching a national version of the software called the Student Success Dashboard,[30] which will be available in 2013 to interested districts including the 150 communities working with Strive.

COMPETITIVE PREFERENCE PRIORITY — MULTIDISTRICT REFORM

As pioneers at the school level work to replace outdated structures and ensure that all students are prepared for college and career, districts must engage as true partners in this work. Systemic reform will only happen if all levels of the education system work in tandem to study and replicate effective strategies. A high school reform program modeled after Race to the Top should award competitive preference points to districts that apply in consortia to implement a reform plan that will identify and scale strategies with the greatest impact on student achievement. A consortium of districts can accomplish this through a common implementation plan or one that enables districts to specialize in various areas of innovation. A commitment to sharing and scaling effective strategies will ensure that districts leverage best practice and begin to establish a new foundation for educational excellence.

[27] <https://www.inbloom.org/>
[28] Sims, Stephanie, "Student Database Backed By Gates Foundation Jazzes Tech Startups, Spooks Parents," Huff Post Tech, (March 3, 2013) <http://www.huffingtonpost.com/2013/03/03/student-database-gates-foundation_n_2800684.html?utm_hp_ref=@education123>.
[29] "Cincinnati Learning Partner Dashboard," The Strive Partnership <https://partnerdashboard.cps-k12.org/strive/>.
[30] "Strive Student Success Dashboard," Strive Network, (2012) <http://www.strivenetwork.org/sites/default/files/images/SSD%2520Feature%2520Sheet%2520Rev.pdf>

CONCLUSION

President Obama surprised many education advocates when he proposed the creation of a high school reform program modeled after Race to the Top in his 2013 State of the Union address. Although policymakers have heard calls for high school reform before, the concept has never been considered in the context of a program like Race to the Top. With its strong track record of incentivizing reform, this approach has the potential to redefine the high school experience for countless American students if the essential elements are in place. These students deserve more than the traditional system provides today. They deserve a new system, designed by their voices, and shaped by the groundbreaking innovations that have already begun to transform other industries. Adoption of KnowledgeWorks' 10 Essential Elements for High School Race to the Top is a critical step in making this transformation a reality.

Summary Chart: 10 Essential Elements for High School Race to the Top

Element	Traditional School	Forecast 3.0	Policy Solutions
Rigor & Connectedness	School is not aligned with workforce skills or postsecondary and graduates require significant remediation.	Learners will demonstrate mastery of core knowledge and essential skills through performance-based assessments and digital portfolios that represent each learner's unique potential to the world.	• Local labor market trends and feedback from local IHEs guides development of school design. • Each educator has a rubric that maps standards to competencies and provides students with clear learning objectives. • Students, parents, and other stakeholders understand what is expected for success.
Teaching & Learning	Teachers engage in direct instruction and are unprepared for explosion of new teaching roles.	Educators working in a variety of roles will collaborate with one another and use community and global resources to facilitate engaged learning that ignites students' intrinsic motivation and builds students' core knowledge and essential skills.	• Customize PD to prepare teachers and leaders to be instructional guides. • Teacher and leader evaluation systems offer feedback and supports. • Culture of collaboration across content and proficiency level.
Partnerships	School operates in isolation from community.	The learning system will support the development of public-private partnerships and harness social innovations that can expand the array of resources, organizational formats for "school," and opportunities available to all students.	• Asset map identifies partner roles in school design and instruction. • Students can earn credit through expanded learning opportunities. • Plan exists for evaluating quality of expanded learning opportunities.
Student Voice	Students follow a program developed entirely by the school system.	Self-directed learners will navigate diverse resources and opportunities from an expanded learning ecosystem.	• Students can select from a variety of interest-based pathways, including STEM. • Students have a choice in how they demonstrate mastery of standards and competencies.
Personalization	Students taught as one large group.	Learning agents will cultivate their own entrepreneurial skills in using public and private resources to develop customized learning pathways for all students.	• Every student has a Personalized Learning Plan that includes learning styles, interests, and goals. • Students and parents provide input in these plans.
Pace	Instruction is designed for one learning pace.	Learners will draw upon their intrinsic motivation to take responsibility for evaluating available learning opportunities and for co-designing their unique learning pathways with learning agents.	• Students may advance at mastery of standards and competencies. • A plan exists to ensure all students meet proficiency of standards and competencies at a pace equal to a minimum of one year's growth. • All students have access to accelerated learning options.
Time	School follows the factory model of schooling.	Learners will seek out and work with mentors, peer learning groups, and digital and human learning agents to navigate the array of choices offered by the learning ecosystem.	• Creative use of time in school schedule enables students to engage in deeper learning through acceleration or supports.
Assessment	Assessments are used to rank not guide.	Learners will use personal performance feedback from multiple digital data streams and dashboards to inform their own learning and development.	• Ongoing, embedded formative assessment helps students and educators structure PLPs. • Students have multiple opportunities to take the summative assessment.
Technology	Technologies transforming other industries are obsolete in education.	Learners will engage with a wide variety of learning tools, resources, and learning formats to acquire and apply core knowledge and essential skills such as collaboration, initiative, creativity, critical thinking, and perseverance.	• Students and educators have the opportunity to engage in blended learning. • Building improvements and procurement policies ensure effective access and use of technology.
Data Systems	Data only captures a fraction of student learning.	Learning systems will develop interoperability across programs, services, data-scapes, and learning platforms and will ensure that everyone in the learning ecosystem has access to, and the capacity to use, the data needed to make effective decisions about learners.	• Data system includes mobile records of student academic history, teacher comments, and supports. • Data system integrates data from community partners to ensure better alignment across learning experiences. • Data are used in real-time to continuously improve student achievement.

Essential Elements for High School Race to the Top Recommended Legislative Specifications

10 ESSENTIAL ELEMENTS FOR HIGH SCHOOL RACE TO THE TOP
RECOMMENDED LEGISLATIVE SPECIFICATIONS

A. PURPOSE

The purpose of this program is to award competitive grants to local educational agencies (LEAs) (including public charter schools that are LEAs) to establish a coherent vision for reform that empowers students at one or more high schools in the LEA to be college and career ready upon graduation through a comprehensive effort that includes each of the 10 essential elements of high school reform.

B. APPLICATION

The Secretary shall make competitive grants to LEAs (including public charter schools that are LEAs) to carry out the purpose of this Act. Each LEA that applies for a grant under this Act shall apply at such time and include such information as the Secretary requires. As part of such application, an LEA shall include a description of how the agency will incorporate each of the 10 essential elements in the program funded under this Act. Such application may be made for one or more high schools served by the LEA.

C. 10 ESSENTIAL ELEMENTS OF REFORM

An LEA submitting an application shall describe in its application, the following:

1. Rigor and Connectedness

The extent to which the LEA has demonstrated evidence of -

a) Meaningful engagement with local business leaders to identify and analyze local labor market trends, including a description of how the LEA incorporated the analysis into its proposal to ensure alignment with the needs of the local workforce.
b) Meaningful engagement with local institutions of higher education that serve a significant percentage of the applicant's graduates, including a description of how the LEA incorporated the analysis into its proposal to ensure alignment with the local postsecondary system.
c) A rubric that aligns college-and-career ready standards to the competencies necessary for students to master the critical academic content and skills to be college and career ready upon graduation.
d) A plan to ensure all students receive clear learning objectives for each lesson so students, parents, and other key stakeholders understand what is expected for success.

2. Teaching

The extent to which the LEA has demonstrated evidence of -

a) A plan to repurpose professional development resources, including Elementary and Secondary Education Act Title II-A funds to:
    (i) Support educators in the development of competencies and learning objectives aligned to college and career ready standards including how to frequently measure student progress toward proficiency;
    (ii) Support educators in the effective implementation of a personalized learning environment including the development and implementation of personalized learning plans based on students' current knowledge and skills, college and career ready standards and competencies, academic interests, and optimal learning approaches;
    (iii) Support educators in the development of strategies to differentiate instruction based on each student's academic needs to ensure all students are challenged academically and graduate on time and college and career ready; and
    (iv) Support in working with community partners in the development of the school design, instructional model, and curriculum.
b) A plan to improve teachers' and principals' practice and effectiveness by using feedback provided by the LEA's teacher and principal evaluation systems, including frequent feedback on individual and collective effectiveness, as well as by providing recommendations, supports, and interventions as needed for improvement; and
c) Changes to practices, policies, and rules to create a culture of collaboration for professional staff and community partners including frequent time for collaboration across content and student proficiency levels.

3. Partnerships

The extent to which the LEA has demonstrated evidence of -

a) Meaningful engagement with community stakeholders in the design process including a visual representation that details how each stakeholder engaged in the process and the roles that each stakeholder will play in the implementation of the grant;
b) A plan to expand learning options available to students through partnerships with relevant community organizations, including opportunities for students to earn credit that counts toward the state's high school graduation requirements; and
c) A plan for how the applicant will ensure that credit-bearing opportunities outside of the classroom and in partnership with community stakeholders are of high-quality and align to college and career ready standards and competencies.

4. Student Voice

The extent to which the LEA has a high-quality plan to -

a) Provide each student with the opportunity to select enrollment in an interest based pathway before the start of his or her first year of school, including a description of all available interest based pathways, and evidence that at least one is designed to prepare students for success in Science, Technology, Engineering, or Mathematics (STEM); and
b) Give students the opportunity to demonstrate mastery of standards in multiple comparable ways based on their academic interests and optimal learning approaches.

5. Personalization

The extent to which the LEA has a high-quality plan to -

a) Develop and implement a personalized learning plan for each student that will include -
    (i) A personalized sequence of instructional content and skill development designed to enable the student to achieve his or her individual goals and ensure he or she can graduate on time and college and career ready;
    (ii) Frequently updated individual student data that can be used to determine progress toward mastery of college and career ready standards and competencies;
    (iii) Personalized learning recommendations based on the student's current knowledge and skills, college and career ready standards and competencies, academic interests, and optimal learning styles;
    (iv) Individual postsecondary and career goals including information on relevant postsecondary opportunities, financial aid, relevant careers, and career services.
b) Engage students, parents, and community partners who will play a direct role in student learning in the development and implementation of the personalized learning plan to ensure each student remains on track to graduate college and career ready.

6. Pace

The extent to which the applicant has practices, policies and rules that facilitate individualized student learning pace by -

a) Giving students the opportunity to progress and earn credit based on demonstrated mastery of standards and competencies, not the amount of time spent on a topic;
b) Holding educators accountable to ensuring that all students are on track to graduate on time and proficient in college and career ready standards and competencies; and
c) Giving students who master college and career ready standards at an accelerated pace access to more rigorous learning options including dual enrollment courses or participation in an early college high school program.

7. Use of Time

The extent to which the applicant has a high quality plan to -

a) Organize the school schedule, calendar, or instructional time differently to maximize student learning gains and personalize the learning environment so students have expanded options to pursue their academic interests and optimal learning styles both inside and outside the classroom; and
b) Maximize the time that educators have to collaborate on professional development activities including analysis of formative assessment data, the development of daily lesson plans, and strategies for helping students advance through a learning progression at their own pace.

8. Assessments

The extent to which the applicant has demonstrated evidence of -

a) A high quality plan to implement an ongoing, embedded formative assessment system that will help educators and students personalize daily learning objectives to ensure students are on track to graduate college and career ready; and
b) Policies to ensure students have the ability to demonstrate mastery of college and career ready standards and competencies at multiple times including for summative purposes.

9. Technology

The extent to which the LEA has a high quality plan to use technology to improve the achievement, academic growth, and college and career readiness of students by -

a) Supporting the effective implementation of a pervasive technology-rich environment which includes blended learning opportunities that combine online and teacher-based instruction;
b) Ensuring that educators and leaders have access to technology-based content, resources, and tools that help personalize instruction as well as the training to use them effectively;
c) Ensuring that all students, particularly at-risk and low-performing students, have equitable access to digital tools and software used by educators to deliver high-quality curriculum, instruction, and assessments;
d) Using digital tools to enhance the curriculum by connecting students with local businesses and community partners; and
e) Making improvements to school facilities to maximize technology access and effectiveness including non-construction building improvements such as broadband connections and electric wiring.

10. Data Systems

The extent that the LEA and school have the infrastructure to support personalized learning by -

a) Ensuring the use of interoperable data systems that include human resources data, student information data, budget data, instructional improvement system data, and data from community partners that captures information on student learning and supports;
b) Ensuring that each student has a mobile electronic student record that includes historical academic achievement information, teacher comments, and information on student supports;
c) Using information technology systems that allow parents and students to export their information in an open data format and to use the data in other electronic learning systems (e.g. electronic tutors, tools that make recommendations for additional learning supports, or software that securely stores personal records; and
d) Ensuring the use of interoperable data systems that increase alignment between in school and out of school learning experiences in a way that respects student and educator privacy.

D. COMPETITIVE PREFERENCE – MULTIDISTRICT REFORM

In making awards under this part, the Secretary shall give priority to applications which include a high-quality plan to adopt the 10 essential elements across multiple LEAs and a clear process for identifying and scaling the strategies with the greatest impact on student achievement. Such strategies may include implementing shared services or establishing specialized districts of innovation.

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KnowledgeWorks

ABOUT KNOWLEDGEWORKS

KnowledgeWorks is a nonprofit organization dedicated to advancing personalized learning that empowers every child to take ownership of their success. With nearly 20 years of experience exploring the future of learning, growing educator impact and working with state and federal policymakers, our passionate team partners with schools and communities to grow a system-wide approach to sustain student-centered practices so that every child graduates ready for what's next.

