From policy to practice
How competency-based education is evolving in New Hampshire

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EXECUTIVE SUMMARY

In 2005, New Hampshire abolished the Carnegie unit—the core unit around which schools typically measure credit hours. In its place, the state mandated that all high schools measure credit according to students' mastery of material, rather than time spent in class. This policy shift created the first-ever statewide effort to create a competency-based education system.

Competency-based education: An overview

Competency-based approaches stand to support more personalized instruction by ensuring that students can move through material at a flexible pace with the supports they need and without accumulating the gaps endemic to time-, age-, and grade-based promotion policies that govern most school systems today.

According to CompetencyWorks, a high-quality competency-based model is one in which:

1. Students advance upon demonstrated mastery.

2. Competencies include explicit, measurable, transferable learning objectives that empower students.

3. Assessment is meaningful and a positive learning experience for students.

4. Students receive rapid, differentiated support based on their individual learning needs.

5. Learning outcomes emphasize competencies that include application and creation of knowledge along with the development of important skills and dispositions.

Each of the five tenets of a competency-based system requires dramatic changes to traditional teaching and learning.

Implementing competency-based education in New Hampshire: Strategies and challenges

Under the new 2005 regulations, New Hampshire districts were required to create competencies and begin measuring credit in these terms by the start of the 2008–09 school year. Because local control rules the day in the "live free or die" state, New Hampshire's districts and charter schools were free to interpret and implement this mandate as they saw fit. The 13 schools profiled in this paper each demonstrate a distinct approach to competency-based education in their local context.

When the state took schools "off the clock," something interesting happened. Some schools invested deeply in building competency-based models by creating opportunities for students to move at a flexible, personalized pace; providing supplemental content for students who had

fallen behind or wanted to move ahead; and making assessment more frequent and formative, with a focus on demonstrating mastery in real-world examples and settings.

Other schools, however, have remained tethered to time-based practices, such as bell schedules, end-of-unit assessments, and fixed whole-class pacing. Although teachers and administrators at these schools have articulated school-wide competencies, these competencies may not guide curriculum and instruction across all subjects. Students still move through material as a class and therefore still stand to accumulate the gaps in their learning that competency-based models are designed to prevent.

New Hampshire's example demonstrates both the power and limitations of statewide competency-based education policy, particularly in a setting with a strong tradition of local control. The lessons from 13 schools across the state suggest that adopting competency-based approaches is not a quick or easy process, and that it requires new infrastructure, new approaches to teaching and learning, and new tools to deliver content and assess work to allow each student to progress upon mastery.

From policy to practice
How competency-based education is evolving in New Hampshire

New Hampshire has been a trailblazer among states in catalyzing competency-based education at the high school level. In 2005, the New Hampshire Department of Education mandated that all high schools measure credit in terms of mastery of locally selected competencies, rather than by time-based metrics. Removing seat-time from state regulations opened up more opportunities for students to advance upon mastery and for educators to measure student progress in terms of authentic learning, rather than in hours and minutes. Removing regulatory barriers, however, is only half the battle in seeding competency-based schools. As competency-based education policies have come into effect, some schools have embraced competency-based approaches, whereas others have remained tethered to time-based teaching and learning. Implementation of the competency-based model enshrined in New Hampshire's regulations remains a work in progress. This paper looks at how 13 schools in New Hampshire are undergoing the transition to competency-based education.

COMPETENCY-BASED EDUCATION: AN OVERVIEW

In the late 1800s, the U.S. public education system saw a sharp increase in the number of students attending high school, as compulsory education laws and progressive era politics began to take hold. This expansion made college possible for a greater number of students, but also revealed a need for the standardization of high school academic work and criteria for college acceptance. The National Education Association, a labor union supporting teachers and administrators, appointed several committees to formulate a framework for standardizing high school curricula across the country.[1] The key metric around which these committees standardized high school was *time*—the hours students spent in class. The committee members determined that a satisfactory year's work in a given high school subject would require no less than 120 60-minute instructional periods. In 1909, the Carnegie Foundation for the Advancement of Teaching codified this standard as the Carnegie unit, or credit unit, which made time, not student learning incomes, the key metric by which high schools nationwide would measure student performance.

A century later, the stronghold of time-based metrics in education is showing its age; public education officials and others are increasingly striving to move to a system that refocuses on

> Nationally, competency-based education is emerging as a vital component of the larger shift toward more personalized, student-centered education.

results, or learning. This approach is referred to as competency-based (also called mastery-based, performance-based, or proficiency-based) education. In competency-based systems, students advance and graduate upon demonstrating mastery of college and career-ready skills, rather than upon meeting required hours of instruction. Nationally, competency-based education is emerging as a vital component of the larger shift toward more personalized, student-centered education. This shift is grounded in what we know about how students learn: students have different aptitudes and different levels of background knowledge, which means they learn at different paces. A successful competency-based system allows educators to focus on getting individual students to mastery and building learning opportunities that may not involve the same pathway of learning for each student.

Today's dominant time-based alternative to a competency-based system is one in which a student's gaps in understanding stand to persist and accumulate. In his book *Chasing the Rabbit*, Steven Spear, a senior lecturer at MIT, recounts an experience that demonstrates the power of advancing upon mastery rather than according to time-based metrics. While doing research in 1996 as a doctoral student studying Toyota's famed production system, Spear took temporary jobs working on an assembly line at Toyota and one of the Detroit Big Three plants at the passenger-side front seat installation point. At the Detroit Big Three factory, the worker doing the training essentially told Spear, "The cars come down this line every 58 seconds, so that's how long you have to install this seat. Now I'm going to show you how to do it. First, you do this. Then do that, then click this in here just like this, then tighten this, then do that," and so on, until the seat was completely installed.

Spear was quite certain he could do each of those things in the allotted time, given that he had earned a master's degree in mechanical engineering from MIT. But when he tried to install the seat in the car, it would not fit. His trainer had to stop the assembly line and show Spear how to do it again. When the next car arrived, Spear tried again but did not get it right. In an entire hour, he installed only four seats correctly.

One reason why it historically was so important to test every product when it came off the end of a production line like the Detroit Big Three's was that there were typically hundreds of steps involved in making a product, and the company could not be sure that each step had been done correctly. In business, we call that end-of-the-line activity "inspection." In education, we call it "summative assessment."

When Spear went to work at the same station in Toyota's plant, he had a completely different experience. First, he went to a training station where he was told, "These are the seven steps required to install this seat successfully. You don't have the privilege of learning step 2 until you've demonstrated mastery of step 1. If you master step 1 in a minute, you can begin learning step 2 a minute from now. If step 1 takes you an hour, then you can learn step 2 in an hour. And if it takes you a day, then you can learn step 2 tomorrow. It makes no sense for us to teach you subsequent steps if you can't do the prior ones correctly." Assessment, or testing, was still administered, but now it was used as an integral part of the learning process. As a result, when he eventually took his spot on Toyota's production line, Spear was able to assemble his part the first time and every time.[2]

Competency-based education incorporates many of the same intuitive processes that streamlined Toyota's training regimen. In 2011, Susan Patrick, president and CEO of the International Association for K–12 Online Learning (iNACOL), and Chris Sturgis, founder of MetisNet, developed a five-part working definition of high-quality competency-based education. Their collaborative initiative, CompetencyWorks, describes a high-quality competency-based system as one in which:

1. Students advance upon demonstrated mastery.

2. Competencies include explicit, measurable, transferable learning objectives that empower students.

3. Assessment is meaningful and a positive learning experience for students.

4. Students receive rapid, differentiated support based on their individual learning needs.

5. Learning outcomes emphasize competencies that include application and creation of knowledge along with the development of important skills and dispositions.[3]

The implications of shifting away from time-based practices to embrace all five components of this definition are far-reaching. As Spear's experience illustrates, competency-based approaches involve learning at flexible pace with rapid feedback and multiple opportunities to demonstrate mastery along the way. The end result is a more airtight accumulation of knowledge and skills—as opposed to lingering gaps that persist as students move on to the next concept regardless of mastery. But Spear's story also demonstrates the vast differences—structurally, philosophically, and logistically—between time- and competency-based systems. These differences should not be taken for granted, as they reflect the fundamental shifts that must occur for schools and districts to transform into competency-based systems.

To make this shift possible, one state, New Hampshire, has created a bold policy framework that requires schools to count high school credits in terms of mastery instead of time. Today, high schools—and even some elementary and middle schools—throughout New Hampshire are undergoing a gradual transformation of implementing competency-based

practices into their classrooms and schools. ***Appendix A*** provides a list of notable reports and books on New Hampshire's competency-based policymaking as well as on various implementation models in New Hampshire and beyond.

COMPETENCY-BASED EDUCATION IN NEW HAMPSHIRE: A CASE STUDY

New Hampshire has one of the longest and most involved histories of K–12 competency-based education in the nation. It began as schools turned their focus to what students would need to know and be able to demonstrate in order to be successful in postsecondary pursuits. Kim Carter, who now heads the Making Community Connections (MC²) Charter School in Manchester, N.H., was one of the earliest proponents of competency-based education in the state. Competency-based education first took hold for Carter in 1991 while she was helping to design a new high school. "Our planning year coincided with the publication of the Department of Labor's SCANS Report, still a valuable document today," she explained. "While I'd been working on personalized approaches before that, 1991 is when the idea of competency- and proficiency-based design became explicit for me."[4]

Not long after, in 1997, the New Hampshire Department of Education (NHDOE) began piloting "competency assessments" in four high schools across the state. The assessments focused on competencies insofar as they aimed to measure not only *what* students knew, but also their ability to apply and demonstrate knowledge across various settings. That pilot expanded to 30 schools by 2003. Beginning in 2004, building on this momentum, the state began convening educators, leaders, and community members to redefine the goals and design of the state's high school system. These conversations led to a new vision for New Hampshire's high schools that focused on creating a more personalized, student-centered system that emphasized real-world applications of knowledge.[5]

As part of this broader reform agenda, in 2005 New Hampshire became the first state to abolish the Carnegie unit. In its place, the NHDOE mandated that all high schools count credits in terms of competencies that students must master.[6] Unlike some states—such as Iowa and Michigan—where seat-time changes must be made by statute, the New Hampshire State Legislature provided the NHDOE with sufficient administrative authority to alter the state's education policy landscape through regulation. The 2005 revisions to the "Regulation Education 306, the Minimum Standards for Public School Approval" (Ed 306)[7] required, among other things, that each school district create its own set of competencies and award credit based on students' mastery of those local competencies.

To maintain this momentum toward a competency-based system for over a decade, New Hampshire Commissioners of Education Nick Donohue, Lyonel Tracy, and Virginia Barry, who served in succession, provided key leadership in adopting and spreading competency-based education. They benefited from the continuous vision of Paul Leather, the deputy commissioner at the NHDOE, who has worked for the state since 1975 and been a consistent champion of competency-based models.[8] ***Appendix B*** summarizes key events over the past decade and a half in New Hampshire's education policy initiatives in greater detail.

Despite this radical effort in the state capital, New Hampshire state policies face the countervailing force of local control. This means that the mandates that the state hands down are typically designed to preserve flexibility in *how* those mandates are interpreted and implemented at the local level. Thus, although the 2005 amendments to Ed 306 mandated that all high schools adopt competencies by the beginning of the 2008–09 school year, there was and still is no enforcement mechanism against schools or districts that did not transform themselves to fully competency-based systems. Moreover, school districts were given enormous latitude to define what competency-based education meant in their particular context. In turn, superintendents have taken advantage of this freedom, and there is little consistency in the implementation of competency-based education throughout the state. "We are the live free or die state. We're all about local control. So frankly, a lot of superintendents don't like the state telling them what to do in their districts," one superintendent said.[9]

This does not mean, however, that state-level, competency-based education policies are fruitless. Of note, these policies have removed barriers to innovation. "I think the advantage we have is that we have much broader policy so that as different schools are talking about doing different things, there's nothing that stops them," said Rose Colby, a competency education expert who consults with the NHDOE.[10]

Moreover, even the stronghold of local control does not always detract from districts asking for help from the state. As Leather explained, "Ever since the deal was cut that we wouldn't have state-level competencies, education leaders have been coming to the state saying 'Why are you making us build our own competencies?'"[11] Today, the state is taking an active role in providing technical support to local districts and schools that are looking for additional support. For example, the state has created recommended competencies in English language arts (ELA) and math and is in the process of creating science and social studies standards as well, all of which are aligned to the Common Core State Standards. To do this, the NHDOE engaged teams of

School districts were given enormous latitude to define what competency-based education meant in their particular context.

practicing New Hampshire educators as well as the appropriate content area state associations working with the National Center for Assessment and the Center for Collaborative Education. In addition, the NHDOE hired 2Revolutions, an education design and consulting firm, to run the New Hampshire Network Strategy, an initiative to connect educators throughout the state so that they can share and build resources in areas such as data collection, performance assessment, and professional development in support of new competency-based models.

Despite taking a more active role in providing technical support to local districts, the state's ability to support districts has received mixed reviews. "The state is supportive in theory. They like the idea of competencies. I don't think they've really thought through what has to happen for those things to be viable," one school leader said. Others have questioned the intelligibility of state-created competencies, particularly as they relate to audiences like students, parents, and legislators attempting to understand the shift to competency-based education. As one educator said:

> Parents and students aren't going to understand what competency-based education is using these [state] competencies. The goal should be to make education accessible to everyone. Also, if you want competency education to get funded [by the state], you need to make it understandable to all legislators, not just the most informed ones.

As education leaders nationwide look to New Hampshire's regulations as a model for competency-based education policy, they should be attentive to New Hampshire's particular circumstances and political dynamics. At the state level, the NHDOE's continuous leadership and broad rulemaking authority explain much of what New Hampshire has been able to accomplish in removing barriers to innovation. A stronghold of local control, on the other hand, poses limitations to how these policies translate directly into practice. Local control might also explain why implementation of competency-based education appears uneven across school systems.

Many schools, however, are working deeply and intensely to catch up to the aspirations of the policies. The following section describes the particular challenges these schools are facing and the strategies they are deploying to make competency-based education a reality on the ground across New Hampshire.

IMPLEMENTING COMPETENCY-BASED EDUCATION: STRATEGIES AND CHALLENGES

As New Hampshire's schools adopt competency-based education, many find themselves in a multi-year transition away from time-based practices. In light of districts' local control, the state's

mandate has led to a range of school models with varying degrees of competency-based pathways available to students.

Based on input from national competency-based education experts as well as New Hampshire state officials who have worked closely with schools to nurture the expansion of competency-based education throughout the state, we reached out to 22 schools in New Hampshire that are working to implement competency-based education and attempting to use technology to support their instructional models. Of those 22 schools, 13 were willing to participate in a one- to two-hour interview with us to share their progress, challenges, and strategies toward implementing competency-based education. *Table 1* provides a brief description of each of the 13 schools surveyed.

Table 1. Descriptions of 13 schools surveyed in New Hampshire

SCHOOLS SURVEYED		
School and location	**Students served**	**Description**
Milan Village Elementary School* Milan, N.H.	Grades K–6, 130 students	Milan Village Elementary School began transitioning to a competency-based (also called "skills-based") approach in 2006, after being categorized as a school in need of improvement. In addition to constructing courses around the skills and competencies that students must master, the school allows students to move through online course material at a flexible pace, based on performance. Starting in 2nd grade, the school provides each student with a laptop and uses academic software and playlists to support student learning and make individual learning pathways available to each student.
Making Community Connections Charter School (MC²) Manchester, N.H.	Grades 6–12, 43 students	MC² is a small charter school that focuses on providing a highly-personalized education to each student. The school has defined academic competencies as well as "habits of mind" that students must demonstrate in order to graduate. Each student moves through the schools' competencies according to an individual learning plan. Students move through these competencies in 4 phases, which are similar to but distinct from traditional grade levels. Many students move faster through some phases than others: some students have completed the 4 Phases in less than four years, while other students take longer. The curriculum is heavily project-based, and students create projects to meet particular competencies in consultation with their teachers. Students also spend a portion of their week in internships in the community, for which they also receive academic credit toward competencies.
North Country Charter Academy Littleton & Lancaster, N.H	Grades 9–12, 49 students	North Country Charter Academy is an alternative high school that serves students who are at risk of or have already dropped out of high school. The majority of the school's curriculum is delivered online through Edmentum, an online course provider. Students engage with this online curriculum at one of North Country Charter Academy's two sites. Students move through Edmentum at a flexible pace with additional face-to-face support from teachers who track each student's progress along the way.

Sanborn Regional High School Kingston & Newton, N.H.	Grades 9–12, 728 students	Sanborn Regional High School was one of the earliest district high schools to shift toward competency-based education, with significant support from competency expert Rose Colby. It uses a competency-based transcript, in which students receive feedback based on their mastery of each competency. The school has also created professional learning communities—groups of teachers across departments that meet regularly, shares expertise, and work collaboratively—to align teachers around a common goal of getting each student to mastery. Students who score below a certain level of mastery have the option to "reassess," or retake an exam, without penalty to get to mastery. The school offers students differentiated supports on an ongoing basis with time set aside each day for catch up or acceleration based on the students' progress.
Manchester School of Technology (MST) Manchester, N.H.	Grades 9–12, 85 students	MST began as a two-year career and technical education (CTE) program before converting to a four-year high school for the 2012–13 school year. As a two-year high school, MST subscribed to competency-based practices prior to the state's required shift in 2008–09. Teachers work together to create school-wide competencies and then design a heavily project-based curriculum to fulfill those competencies. Classes offer multiple learning pathways so that students who move ahead can explore material more deeply. The school also operates a learning lab where students who need additional support or time can receive extra help either online or face-to-face.
Next Charter School Derry, N.H.	9–12, 33 students	Next Charter School opened in the 2013–14 school year with a strong emphasis on personalization and project-based learning. Next adopted the ELA and math competencies created by the NHDOE and then underlaid those competencies with performance indicators—or smaller units of learning within each competency—that students would need to master. Students work on projects aligned to these competencies and performance indicators in groups or individually. Teachers grade students based on which competencies they are able to demonstrate through a given project. Students have the option of revising projects that do not demonstrate mastery or moving on to new projects that address those competencies later on.
Virtual Learning Academy Charter School (VLACS) Exeter, N.H.	Grades 6–12, serving 9,170 individual students with 17,626 course enrollments	Founded in 2007, VLACS was New Hampshire's first statewide, online school. All of VLACS' courses are aligned to the New Hampshire's state competencies and the Common Core State Standards. Students can move through VLACS courses at a flexible pace. To pass a VLACS course, students must demonstrate at least 85 percent proficiency against each course competency. VLACS also provides smaller online modules used for "competency recovery," which consists of targeted lessons to help students master particular competencies with which they are struggling.
Bedford High School Bedford, N.H.	Grades 9–12, 1,328 students	Bedford High School's teaching staff created competencies and has aligned the school's curriculum to those competencies. Students are graded on the basis of course-level competencies; in other words, a given test score will include discrete grades for a student's performance on each competency being assessed. Instruction at Bedford High School is not yet offered at a flexible pace, as students move through courses on a set schedule as a class.

Windham High School Windham, N.H.	Grades 9–11, 45 students	Windham High School is a relatively new high school that was designed to be a tech-rich environment, and it offers the first 1-to-1 laptop program in the state. Although the school has enumerated competencies and aligned its curriculum to those competencies, it does not grade or assess students according to a competency-based model. It also does not allow students to move through the curriculum at a flexible pace.
Belmont High School Belmont, N.H.	Grades 9–12, 445 students	At Belmont High School, teachers designed the school's competencies as a team, but there is still no whole-school policy around competency-based grading or instruction. Some teachers grade students against specified competencies and give students multiple opportunities to demonstrate mastery; whereas others do not grade students against competencies or offer opportunities to retake assessments. Belmont High School offers end-of-semester competency recovery (through VLACS) for students who would otherwise likely fail a given course.
Pittsfield High School Pittsfield, N.H.	Grades 9–12, 171 students	Pittsfield High School is in its second full year of a competency-based curriculum with an emphasis on personalized learning. This year, the school has embedded time for competency recovery every week for students who are struggling to master particular competencies. The school does not offer a flexible pace for most classes, as students still move through traditional courses and grade levels. It attempts, however, to place students in courses on a case-by-case basis depending on both aptitude and teacher-student fit.
Laconia High School Laconia, N.H.	Grades 9–12, 616 students	Laconia High School's staff spent several years developing competencies; all of the school's courses are guided by these competencies, but not graded in a competency-based manner. There are few opportunities for students to "advance upon mastery" because the school is not focused on flexible pacing. Still, the school has structured opportunities for competency recovery during "tutorial" blocks set aside in the weekly schedule. The school was an early adopter of extended learning opportunities (ELOs), such as internships in the community, for which students can receive academic credit. It is also part of the New Hampshire Performance Assessment Network.
Oyster River High School Durham, N.H.	Grades 9–12, 672 students	At Oyster River High School, teachers worked in departmental teams to enumerate the high school's competencies. There is classroom-level engagement in competency-based education at the school, but efforts are not department- or school-wide and courses remain time-based. Although some teachers allow students to move at a flexible pace through course material, this is not practiced across the entire school.

*Milan Village Elementary School is an elementary school but has pursued a competency-based (also called "skills-based") approach for its students in bold and innovative ways. Although it was not subject to the state's mandate for high schools, the school elected to pursue a competency-based model that would allow students to move through material at a flexible pace and is leveraging technology to do this. We chose to include examples from Milan Village Elementary School's work to highlight its particular strategies, even as they apply to younger students.

Although the 13 schools surveyed do not provide a representative sample of statewide progress, the array of models and approaches implemented by each of these schools reflects the strong sense of autonomy that New Hampshire's schools and districts have exerted in the process of complying with the state's mandate. Each school's transition to competency-based practices looks somewhat different.

The five tenets of CompetencyWorks' working definition of a high-quality competency-based model, as discussed on page 3, provide a helpful framework to compare and contrast the variety of strategies that schools in New Hampshire are adopting to actualize the state's vision. The following section takes a closer look at how the 13 schools surveyed are addressing each tenet of this definition. It is worth noting that New Hampshire's reforms preceded this definition, which was codified at a conference in 2011. Understanding how schools have progressed relative to these five elements, however, provides a unifying framework across which to compare these schools as well as a metric for other states to learn from New Hampshire's evolution over time.

1. Students advance upon demonstrated mastery.

According to CompetencyWorks, the first core element of a competency-based approach is that students progress upon demonstration of learning. This could mean that students move on to new concepts or explore existing topics in greater depth.

Of the 13 schools surveyed, five of the schools that are the furthest along in implementing competency-based education—Milan Village Elementary School, North Country Charter Academy, Manchester School of Technology (MST), MC², and Next Charter School—have systems in place that allow students to move through material at a flexible or individual pace as they master concepts and skills.

These schools are using different tools and processes to accomplish this, however. At schools like Milan Village Elementary School and North Country Charter Academy, the students' ability to move at a flexible pace depends largely on technology and online content delivery. For example, at Milan Village Elementary School, teachers have created a full playlist of the entire math curriculum, which is split up into discrete lessons, each of which has a video that the teachers created themselves or found online with examples and explanations on that particular topic. Students have access to this playlist of lessons online, and when teachers assign students to work through the playlists, students move through these lessons at their own pace. This means that within a single classroom, some students might be working on complicated pre-algebra problems, while others are learning fractions. Similarly, students at North Country Charter Academy move through online courses at an individual pace using Edmentum, an online course provider.

Other schools have relied on teachers to structure learning pathways that students can move along at a flexible pace. At MST, teachers tend to monitor student pacing on an individual basis. Students who wish to move faster typically ask their teachers for additional work. Teachers also

assign additional applications of a given lesson to students who are moving more quickly. For example, students in a humanities class could work on lessons involving "strikes as a means of social advocacy" while reading George Orwell's *Animal Farm.* Students who read the work quickly are told to move on to a second George Orwell text, *1984,* and then complete a project based on that novel. MC[2] and Next Charter School use similarly teacher-driven processes to curate each student's pace and pathway. At each, students create projects aligned to particular competencies in consultation with their teachers and progress through these projects at a flexible pace.

Furnishing students with the option to advance upon mastery was one of the challenges that schools still transitioning to competency-based systems cited frequently. A number of the schools surveyed still organize instruction into time-based units. This means that even if a student could move through course material more quickly than his peers, it would not be clear what he would move on to studying once he had mastered a given unit or course load. And although mechanisms for students to move through material more quickly might be in place, students might not be encouraged to do so. For example, at Prospect Mountain High School, students can theoretically master English at any time, but few students embrace this opportunity. Christopher Reeves, an English teacher at Prospect Mountain High School, said that this might be because students are not aware of this option, but also because it requires a heavy lift from students. To demonstrate mastery, English students must create "a pretty hefty portfolio" and demonstrate that they can pass the midterm.[12] In other words, the option to advance upon mastery is treated as a separate project from traditional courses, rather than being integrated into the academic model itself.

But even schools like Next Charter School, MST, and MC[2] that are further along in implementing flexible pacing face challenges. As it turns out, facilitating students "advancing upon mastery" requires a particular infrastructure that many student information systems (SIS) and learning management systems (LMS), decoupled from content providers like North Country Charter Schools' Edmentum, are not built to accommodate. Schools like MST that are attempting to move away from time- or course-based practices are finding that tracking progress in an individualized and modular way remains challenging. As Karen White, the principal of MST, explained, "What's missing is a learning management system because nobody has a competency-based learning management system. We are trying to adapt with the current model and it's not exactly what we are looking for."

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Joe Crawford, the principal of Next Charter School, expressed similar struggles. "The lag in software companies is our reality right now," he said. Because Next Charter School is a project-based school trying to track student progress against discrete performance indicators that are benchmarked against competencies, Crawford and his team have struggled to find software that fits the school's model for tracking student progress. "We have yet to find a tool that allows us to individually assess indicators and attach indicators and artifacts in a patchwork, web-like structure," he said. Next Charter School could not afford to custom-build a system in house, so the staff currently uses Excel workbooks to track progress. These include a summary page for every student outlining that student's credits and then 10 to 15 additional Excel sheets per student.

Another school, MC², does not use an LMS but uses a digital portfolio system called Richer Picture to store student projects and artifacts of learning. Additionally, students track their own progress with daily reflections submitted through an online portal that their teachers and parents can access; for reflections, students consider what they accomplished during their school day and how they are progressing against their goals. The school, however, continues to store different pieces of data in silos because no one program can track all of the progress their students make.

There is a dearth of solutions to fill this gap in the competency-based technology infrastructure market. Deputy Commissioner Paul Leather noted concerns about the lack of infrastructure tools inhibiting the growth of competency-based education:

> The current SIS infrastructure does not support student- or teacher-rich task work leading to successive formative assessments, nor does it connect to summative scoring in a competency-based environment. Several commercial developers are working in this space, but the results are inconclusive to date. It is crucial for this technological support to be in place if we are to expect scaling of personalized competency education.

Some promising new products and efforts are beginning to emerge within the state, however. For example, Justin Ballou and Andrea Ange, a teacher and a media specialist, respectively, at Campbell High School, launched Socrademy, a personalized learning platform that enables students to work on competency-based content focused on their passions at their own pace. The state is also engaged in efforts to meet the technology needs of competency-based systems through its membership with the Innovation Lab Network, a consortium that works across numerous states attempting to build next generation learning systems. Additionally, consultants with 2Revolutions are running a Performance Data System Network within the state's larger Network Strategy, where the firm is comparing a variety of technology tools and integrations across tools that might better support competency-based models.

2. Competencies include explicit, measurable, transferable learning objectives that empower students.

The second part of the CompetencyWorks definition of a high-quality competency-based model describes the creation of competencies themselves. Competencies consist of measurable learning objectives that are shared with students. This transparency can empower students to take responsibility for their learning and align teachers around common learning goals.[13]

The 2005 revisions to Ed 306 required all districts to identify or develop high school course competencies by September 2008, but the mandate to create competencies initially generated confusion across the state. In her book *Off the Clock*, Colby writes:

> What is a competency? How many competencies should a course have? How do you assess a competency? The conversation and buzz about these key questions went on for almost 2 years leading up to the 2008 to 2009 school year deadline for adoption, when the competencies must be put into place… A competency became a self-defined entity.[14]

Although the educators we surveyed tended to agree on the underlying notion of competency-based education, many of them expressed concern that there still was no agreed upon statewide language or philosophy around how to create competencies or the role competencies should play in instructional design. In 2010, in an attempt to create some consistency across districts, the NHDOE published a validation rubric that schools could, but were not required to, use to review the quality and consistency of their competencies.[15] Later, in 2013, the New Hampshire State Board of Education created its own Common Core-aligned ELA and math competencies that schools could adopt.[16]

Although each of the high schools we surveyed has defined or adopted "competencies," the degree to which these competencies are ignored, serve as a guideline, or are the starting point around which teachers and leaders developed curriculum varies across schools. At schools such as MST, Next Charter School, and MC[2], teachers have designed the curriculum in a manner that is directly guided by the school's competencies.

For example, at MST, in most subjects, teachers develop projects first and then determine which competencies students will focus on in each given project. Students are then free to complete the projects in their own way. As White said, "Our teachers are actually developing the curriculum around the competencies."[17] At Next Charter School, teachers wanted to dig more deeply into the competencies, so they broke down each competency into a series of performance indicators. These indicators serve as skills-based, more discrete standards around which teachers design projects and assess student work.[18] In other words, although the state competencies are guiding the school's approach, these competencies are not the smallest building block around

> Teachers from different departments study student data tied to key competencies that students are working on across multiple disciplines.

which teachers' teach and assess.[19] At MC[2], the staff has created two categories of competencies: "Essential Knowledge" (content and skills grounded in academic disciplines) and "Habits" (behaviors and dispositions that cut across academic disciplines). Some foundational essential knowledge competencies must be met early on in students' tenure at the school, whereas other essential knowledge requirements, such as writing, research projects, or physical fitness, are embedded throughout the curriculum. Other competencies can be mastered earlier or later in a students' individual path depending on individual aptitudes and interests.

Beyond curricular design, some schools have also acted to ensure that teachers agree on what competency-based education means in their schools and classrooms. For example, Sanborn Regional School District attributes much of its success in implementing a competency-based system to its professional learning communities (PLCs) that help align teachers around a common vision. At Sanborn Regional High School, teachers from different departments study student data tied to key competencies that students are working on across multiple disciplines. Beyond providing an opportunity to share practice, Ellen Hume-Howard, the director of curriculum at Sanborn Regional School District, believes that empowering teachers was a catalyst to transforming away from time-based policies. "Once teachers felt stable and comfortable, they knew that it was okay for them to take risks," she said.[20]

At other schools, competencies play a lesser role in guiding curriculum or aligning teachers around a common vision. Some of the educators we surveyed noted that the extent to which competencies guide instruction might be limited by lack of coordination school-wide. At some schools, academic departments have defined competencies, but the school does not use a competency-based report card, so multiple departments may be teaching overlapping competencies. Inconsistency may also appear within departments. Numerous teachers from different schools explained that at their schools, individual teachers decide how they want to engage with competency-based education. As one teacher put it, "Teachers and classrooms are autonomous, almost to a fault." As a result, within the same school building, different departments and even different teachers have different levels of investment in implementing competency-based education. This variation is likely compounded by the fact that there are still differences of opinion about competency education. As another teacher explained, "There's still overall no agreement on what competencies should be. Even within the school building and across the district level, there are differences of opinion." As Sturgis has pointed out, at the most

basic level greater alignment on the meaning of competence could come about by practitioners coming together to define what proficiency on the New Hampshire state standards looks like.[21]

3. Assessment is meaningful and a positive learning experience for students.

The third tenet of CompetencyWorks' definition of a high-quality competency-based system addresses the key role that assessments play in facilitating student learning. Ideally in a competency-based model, students would receive feedback immediately or shortly after assessment occurs. This continuous feedback cycle encourages students to keep returning to difficult concepts and skills until they achieve mastery.

The schools we surveyed deployed a wide range of assessment strategies to provide students with meaningful and efficient feedback that contributes to a continuous cycle of learning. At North Country Charter Academy, for example, students use a self-paced online curriculum called Edmentum and receive supervision and support from face-to-face teachers on an as-needed basis. As such, the school relies heavily on online assessments from Edmentum to gauge gaps in students' understanding and determine when individual students are ready to move on to the next lesson or module. Other schools, like Sanborn Regional High School, administer pen-and-paper tests, but give students multiple chances to demonstrate mastery by offering "reassessment" without penalty—or test retakes—until students have demonstrated mastery of at least 80 percent of the competencies.[22] This, in turn, fundamentally shifts how teachers grade student work. For example, students do not receive "Fs" but instead are given opportunities to revisit the concepts they missed until they are ready to be reassessed.[23]

Next Charter School, in contrast, bases its summative assessments on the projects students create, rather than on pen-and-paper or online tests at the end of a lesson or unit. For example, the students' summative assessment in a social studies unit focusing on U.S. history and foreign policy was to write a letter to President Obama proposing foreign policy solutions in Syria. The letter was intended to measure one competency ("students understand events and actions in the U.S. have impacted other countries") and had to include both an historical account of previous foreign policy strategies, a proposed action, and a rationale and justification for why that proposed action was the best option. Leading up to final projects like this one, teachers use various formative assessments, like short quizzes or less formal inquiry, to gauge students' progress toward mastering various competencies and readiness for their final project. If a student fails to demonstrate mastery, then he has the option to revise his final project, or he can move on and design a new project to address the competency or competencies that he failed to master. [24]

To supplement their own formative and summative assessments, a number of schools—including Sanborn Regional High School, MST, MC², and Milan Village Elementary School—

use the Northwest Evaluation Association's (NWEA's) Measures of Academic Progress (MAP), a computer adaptive assessment test, to benchmark student growth. The schools typically administer MAP assessments to students in the fall, winter, and spring to measure their academic status, irrespective of the grade level at which they are performing. Although these tests do not provide immediate feedback, they help calculate academic growth over time to inform instruction during the year.

As schools design systems and processes to assess mastery and growth on an ongoing basis, they are increasingly incorporating performance assessments in their curricula. Performance assessments are tests that aim to assess students' abilities to demonstrate competencies across various disciplines and focus on the "application" of competencies, rather than on the rote memorization of facts.[25] For example, a student may be able to answer multiple choice math questions, but a performance assessment would test his ability to calculate change in dollars and cents in a sales transaction.

Some schools are designing performance tasks that can be administered through traditional pen-and-paper exams but that require students to demonstrate competency through real-world examples. Designing these tasks requires coordination and benchmarking among teachers. Brian Stack, the principal of Sanborn Regional High School, has written about how these assessments are built and scored at his school. In one particular case, math teachers worked together to design a task, which consisted of an open-ended question prompting students to design a budget for a school dance by using pricing models and accounting for varying levels of attendance. Then, teachers crafted a scoring rubric and field-tested their task and each scored the student work. Next, they agreed upon samples of student work that would act as anchors for each level of their rubric. Finally, they reflected on the process in an effort to refine their performance assessment and their rubric for future use.[26]

Other schools have incorporated a performance-based assessment approach into their curriculum through project-based learning. For example, the Next Charter School final social studies project described above incorporates tenets of performance-based assessment, as students are expected to apply their understanding of U.S. history and foreign policy to a real-world persuasive writing task. At MC[2], students similarly must demonstrate mastery across a variety of project-based settings. To be awarded credit, they must ultimately defend their learning in front of a panel. For a given project, students are expected (and provided support) to communicate their learning through a variety of methods, including, but not limited to, demonstrations, informal and formal reflective writing, informal conversation, and formal presentations.

The state actively supports the development of competency-based performance assessments through the New Hampshire Performance Assessment Network (Network), an initiative of the NHDOE, in partnership with the Center for Collaborative Education (CCE) and the National

Center for Improvement of Educational Assessment (NCIEA), to create a repository of performance assessment items for schools statewide. This work began in 2012 with 20 high schools that were engaged in assessment literacy training, group performance assessment of student work, and development of common performance tasks in ELA and math.

Members of the Network appreciate the role that the state has taken in bringing leaders together to collaborate and share best practices. As one school leader in the Network said, "I give the state a lot of credit; we're small enough that many schools can come to the table…the state provides think tank-like opportunities for districts." The ultimate goal is for the Network to create: (1) a set of common performance assessments that have high technical quality in the core academic subjects; (2) locally designed assessments with guidelines for ensuring high technical quality; (3) regional scoring sessions and local district peer review audits to ensure sound accountability systems and high inter-rater reliability; (4) a web-based bank of local and common performance assessments; and (5) a network of practitioner assessment experts to support districts and schools.[27]

The state is also attempting to develop teacher professional development to empower teachers to rethink the role of assessment in a competency-based model. As Colby noted, this challenge, at the highest level, is about helping teachers rethink the role and format of assessments. "We have to drill beyond the teacher's understanding of how they've used assessments in the past that really isn't appropriate…and then have them adapt to and create tests that are meaningful to the student and then demonstrate mastery," she said.[28] The state is attempting to reshape teachers' relationships to assessment through the professional development network called the New Hampshire Network, a statewide effort to connect educators and administrators through face-to-face and online collaboration.[29]

Federal assessments, however, remain a concern for state administrators who are trying to move away from once-yearly tests regardless of whether a student has reached mastery. As a member of the Smarter Balanced Assessment Consortium (SBAC), one of two multistate consortia awarded funding from the U.S. Department of Education in 2010 to develop an assessment system aligned to the Common Core State Standards, New Hampshire is considering how those tests might better align to a competency-based model. As Leather said, "Can we construct a state accountability system more based on measuring students as they learn, rather than trying to do it on a time-based system?"[30] Whether high-stakes testing could occur in a more "on-demand" manner—when

> The New Hampshire Performance Assessment Network provides districts in the state with think tank-like opportunities to share best practices.

students were ready to sit for the test, rather than once a year—remains an open question as the state implements these tests over the coming years.

4. Students receive rapid, differentiated support based on their individual learning needs.

The fourth tenet of the CompetencyWorks definition of a high-quality competency-based model describes the importance of providing ongoing, just-in-time supports to students as they progress. This may be facilitated through teachers closely monitoring student progress and stepping in to explain concepts or material when students need help. Online-learning modules may also provide additional tutorials to assist students when they are struggling.

Schools in New Hampshire are increasingly setting aside time to provide students with additional differentiated support, often consisting of a daily or weekly class period, to hone in on areas where they are struggling or to move into more challenging work. Sanborn Regional High School has built one period a day into its schedule for students to either catch up on work or advance to new material upon demonstrating mastery. Similarly, at MST, students who are struggling with projects must attend the school's learning lab during a study hall period where they work on predetermined projects and assignments from their courses and teachers provide extra support. In some subject areas, students in the learning lab can also access software tutorials for additional practice exercises.

When students fail to demonstrate competency on interim or final assessments, many schools have created additional windows of time to provide ongoing or end-of-semester support to them. This practice is often referred to as "competency recovery." Although some competency-recovery programs offer students one-on-one instruction with a teacher, the majority offers some form of recovery online through programs like Virtual Learning Academy Charter School (VLACS), Odysseyware, or Nova Net. At Belmont High School, students on the cusp of failing a course at the end of the semester can take VLACS competency-recovery modules at the school's computer lab to receive additional instruction in areas where they are struggling. Other schools have attempted to intervene earlier and more often. For example, Pittsfield High School has embedded time for recovery each week for students who have failed to demonstrate competency on assessments to receive extra help in those areas. This time is designed to prevent students from accumulating significant gaps in their learning over the course of the entire semester.

A number of schools are still working out the logistics of competency recovery and grappling with the reality that different students need different supports. Pittsfield High School's

competency-recovery program gives students the option of moving on to new courses before completing competency-recovery modules to fully master the last semester's work. Although this works for some students, extending the timeframe has proven challenging for students who have fallen behind and are trying to recover and complete material from prior courses while simultaneously enrolling in new ones.

Other schools have found that even daily support or competency-recovery opportunities are still constrained by vestiges of a time-based system. Extra periods for support or time set aside for competency recovery, particularly in schools where recovery modules are only offered on an end-of-semester basis, may be built around the assumption that students have accumulated gaps in their learning. This is the opposite outcome of what truly competency-based systems aim to achieve. To avoid this linear progression, Next Charter School, North Country Charter Academy, Milan Village Elementary School, and MC[2] have all structured their schedules and curriculum so that learning is not something to be recovered, but is simply based on students progressing at a flexible pace through material.

5. Learning outcomes emphasize competencies that include application and creation of knowledge along with the development of important skills and dispositions.

CompetencyWorks describes the fifth tenet of competency-based education in terms of what a competent student can do and that student's ability to acquire and demonstrate knowledge within real-world settings.[31]

Performance assessments, described earlier, are one key effort among schools trying to emphasize the practical application of competencies. Another way New Hampshire has focused on the application of knowledge is through the development of extended learning opportunities (ELOs), which are opportunities for students to engage in projects and activities outside of the traditional classroom and earn academic credit. The NHDOE defines an ELO as the "primary acquisition of knowledge and skills through instruction or study outside of the traditional classroom methodology."[32] ELO's often consist of semester-long internships for which students can receive academic credit. Other examples of ELOs could include independent study, performing groups, community service, apprenticeships, and online courses. According to the NHDOE, a "rigorous" ELO is comprised of four key components: research, reflection, product, and presentation.[33]

> ELOs allow students to engage in projects and activities outside of the traditional classroom and earn academic credit.

Some schools have focused heavily on developing opportunities to acquire and demonstrate knowledge in these nontraditional environments. Carter has long been a champion of ELOs throughout the state. She originally built these outside-of-school learning opportunities at the Monadnock Community Connections School, which operated from 2002–10. Building on that work, MC^2 currently offers students numerous ELOs, or as the school calls them, "personal life experiences." Personal life experiences may include after-school and recreational learning experiences, online courses, community college and continuing education courses, and vocational training such as Fire Explorers, Firefighter Training, or Nurse's Aide training. Teachers and students work together to design individual ELO plans that include clearly identified competencies that the ELO will address, accountability and assessment checkpoints, and teacher and community mentors. MC^2 teachers assess all ELOs and, as with in-school projects, students are expected to apply, document, and defend what they have learned through their experiences outside of school.

Carter's work at Monadnock Community Connections School inspired New Hampshire to pursue a statewide effort to expand ELO programs. This led to the Nellie Mae Foundation, a Boston-based philanthropy, investing in a 2007 ELO pilot program in New Hampshire. The pilot was an effort to support and study best practices among four high schools that were developing and implementing ELOs. One of those four schools, Laconia High School, has leveraged its access to local businesses and put in significant work building relationships with business leaders who can mentor students through a semester of work. To assess student performance on those competencies included in their ELOs, Laconia High School has developed a competency-based rubric whereby students can select at the outset of the program which competencies their ELOs will be designed to meet. Laconia High School is also part of the Lakes Region countywide effort called 200 by 2020, a workforce development partnership aimed at engaging at least 200 businesses in providing a full range of ELOs for Lakes Region students by the year 2020.

Some schools, like Laconia High School and MC^2, have invested significant resources into offering students a full range of ELOs. Developing a robust ELO program, however, may require a heavy lift by schools to establish partnerships with potential hosts for internships or job shadowing programs. This can prove difficult in certain contexts. For example, more rural schools may struggle to create robust ELO opportunities. Belmont High School, which is also part of 200 by 2020, has had a harder time fostering a wide array of ELOs because it serves a small, rural district where there are fewer businesses with which to build learning opportunities. Creating meaningful and varied partnerships in the community appears to be one of the greatest challenges facing schools as they build their ELO programs.

CONCLUSION

The policies that support competency-based education in New Hampshire have created space for school models to innovate beyond century-old practices of measuring progress based on time instead of learning. In this sense, New Hampshire is at the national frontier of statewide competency-based policy and practice.

Still, a number of schools have room to further evolve their competency-based approaches. From a practical perspective, competency-based models appear to be slower to take hold when teachers or communities are not aligned around this new vision of schooling and when pathways for advancing upon mastery have not been established as integral to the school curriculum, schedule, and infrastructure. In such schools, the curriculum may be aligned to competencies, but students are still not necessarily able to move at a flexible pace that reflects their individual abilities and needs. Moreover, some schools appear to be shifting toward providing greater supports, but if supports such as competency recovery are only offered weekly or at the end of a semester, then students still stand to accumulate gaps in their learning. Without a means to advance upon mastery and meaningful just-in-time support, students are not experiencing the individualization that is integral to a fully competency-based model.

Technology infrastructure that would support self-paced advancement poses an additional barrier to implementing a competency-based model. Even those schools committed to creating a learning environment with flexible pacing and numerous pathways for their students to advance along have struggled to find the learning management software and student tracking technology to support their models. As fully competency-based models remain few and far between, the demand for such products may be too small thus far to generate a robust supply of competency-based technology infrastructure in the education technology market.

These are some of the challenges and questions with which the state will continue to grapple as more and more districts move toward fully competency-based models. Still, New Hampshire is witnessing a growing enthusiasm for competency-based approaches in high schools and beyond. As Colby said, "The state rules were really centered around high school. Now that we're into it as far as we are, several districts have looked at expanding competency-based education to K–8."[34]

The evolution of the state's regulatory framework and technical supports over the last decade lend key insights to those states considering moving away from time-based credit systems. New Hampshire's history of reform, continuous leadership, and local control help explain the policy levers available in the state as well as the corresponding variation of school models on the ground. The strategies and challenges that are evolving among school models also provide compelling evidence that competency-based education is not merely a policy shift, but also requires the hard work of designing a wholly new teaching and learning model on the ground.

APPENDICES

Appendix A. Notable reports and books on New Hampshire's competency-based policymaking as well as on various implementation models in New Hampshire and beyond

"Narrative History and Related Documents," New Hampshire Department of Education, http://www.education.nh.gov/innovations/hs_redesign/background.htm (accessed April 4, 2014.).

Mariana Haynes, "Strengthening High School Teaching and Learning in New Hampshire's Competency-Based System," Alliance for Excellence in Education, January 22, 2013, http://www.all4ed.org/files/StrengtheningHSTeachingLearningNH.pdf.

Susan Patrick and Chris Sturgis, "Cracking the Code: Synchronizing Policy and Practice for Performance-Based Learning," iNACOL, July 2011, http://www.inacol.org/cms/wp-content/uploads/2012/09/iNACOL_CrackingCode_full_report.pdf.

Chris Sturgis and Susan Patrick, "When Success Is the Only Option: Designing Competency-Based Pathways for Next Generation Learning," iNACOL, November 2010, http://www.inacol.org/cms/wp-content/uploads/2012/09/iNACOL_SuccessOnlyOptn.pdf.

Dan Barrick and Steve Norton, "Student-Centered Learning in New Hampshire: An Overview and Analysis," New Hampshire Center for Public Policy Studies, December 2012, http://www.nhpolicy.org/UploadedFiles/Reports/nelliemae_final1a.pdf.

Fred Bramante and Rose Colby, *Off the Clock: Moving Education From Time to Competency* (Thousand Oaks, California: Corwin, 2012).

"New Hampshire Extended Learning Opportunities Evaluation: Final Report of Evaluation Findings," UMass Donahue Institute, May 2011, http://www.education.nh.gov/innovations/elo/documents/evaluation.pdf.

Appendix B. Timeline of key New Hampshire policy initiatives

1997	The New Hampshire Department of Education (NHDOE) forms the Competency-Based Assessment Workgroup, which consists of groups of educators, administrators, superintendents, college personnel, and community leaders in New Hampshire, to begin the Competency-Based Assessment System (1997–2003). The workgroup identifies 10 competencies for New Hampshire. With coordination from the NHDOE, groups of educators from participating school districts write performance standards for each of these competencies based on the New Hampshire curriculum frameworks.
1998	The NHDOE, using federal School-to-Work monies, sponsors a developmental pilot (1998–2001) in which high schools may participate, through a grant application process, in the design of the state's competency-based assessment method. The pilot process, which begins with four schools and later increases to 14, spurs changes that streamline and refine both the content and the process of applying performance standards to student demonstration of competency.
2004	The NHDOE forms the High School Reform Leadership Group, which consists of educational leaders, school administrators, district administrators, educators, and community members, to articulate the goals and shortcomings of New Hampshire's high school system. The following year, the group publishes " High School Leadership: Preliminary Report," which identifies findings from a series of conferences and focus groups throughout the state and names numerous priorities that make up a student-centered personalized system. Among other things, the report calls for "Student Individual Educational Plans" and proposes that "[t]eachers would be more like facilitators, managers, and assessors of student learning, and students would drive their own learning."[35]
2005	The NHDOE eliminates the Carnegie unit by amending Part Ed 306: Minimum Standards For Public School Approval (Ed 306), which requires local school districts to identify or develop high school course competencies, decide on appropriate ways to assess competency, and define sufficiency (identifying necessary and sufficient evidence for students to demonstrate mastery). The regulations state that by the 2008–09 school year, "[t]he local school board shall require that a high school credit can be earned by demonstrating mastery of required competencies for the course, as approved by certified school personnel." The regulations also define "extended learning" as "the primary acquisition of knowledge and skills through instruction or study outside of the traditional classroom methodology."[36]
2006	In February 2006, Governor John Lynch sponsors a one-day summit on New Hampshire's high school graduation rate where attendees discuss the potential for competency-based and personalized approaches to curb dropout rates. This same year, PlusTime NH receives a federal Safe and Supportive Schools (S3) grant for establishing extended learning opportunities (ELOs).
2007	The NHDOE publishes "New Hampshire's Vision for Redesign," which elaborates on the state's vision for personalized education through efforts including professional learning communities, competency-based education, and ELOs. The NHDOE approves the Virtual Learning Academy Charter School (VLACS) charter. VLACS becomes the first statewide virtual school to offer competency-based online courses and competency-recovery modules. The Nellie Mae Education Foundation issues the New Hampshire Extended Learning Opportunities Planning Grant, which funds a collaborative effort among the state, Q.E.D. Foundation, PlusTime NH, and CACES. Pilot schools in this effort include Franklin High School, Laconia High School, Manchester Central High School, and Newfound High Schools.

2008	According to Ed 306, schools are required to identify or develop high school course competencies, decide on appropriate ways to assess competency, and define sufficiency (identifying necessary and sufficient evidence for students to demonstrate mastery) over the 2008–09 school year.
	The Nellie Mae Education Foundation issues the New Hampshire Extended Learning Opportunities Implementation Grant as a follow-up to the 2007 Planning Grant.
	New Hampshire high schools are a part of an Investing in Innovation (I3) award from the U.S. Department of Education to a 13 school New England NETWORK to support competency-based education.
2009	New Hampshire's charter school law is amended to stipulate that funding for online students follows the student from the resident district to the open enrollment district: "pupil's resident district shall pay to such school an amount equal to not less than 80 percent of that district's average cost per pupil as determined by the department of education."
2010	The New Hampshire State Board of Education approves the Competency Validation Rubric. Because localities were defining their own competencies to comply with the state mandate, this tool helps local districts assess the validity of these local competency frameworks.[37]
	Twenty-two school districts in New Hampshire receive grants for roughly $145,000 each from the Federal Enhancing Education Through Technology Program (Elementary and Secondary Education Act (ESEA) Title II-D) as part of the American Recovery and Reinvestment Act (ARRA) of 2009. Since then, a total of $3.2 million in federal funds has been allocated to New Hampshire schools to develop technology-rich learning environments as part of the state's 21st-Century Classrooms Initiative.
	The NHDOE begins working with the Council of Chief State School Officers (CCSSO), the Stupski Foundation, and the Nellie Mae Education Foundation on advancing innovative approaches to K–12 learning known as "Next Generation Learning," or NxGL. New Hampshire is one of seven states brought together to advance this set of design principles. The other six state include Kentucky, Maine, New York, Ohio, Wisconsin, and West Virginia. These states work together with intensive support from CCSSO, the Stupski Foundation, and others.
	The New Hampshire state legislature passes a Resolution In Support of the New England Secondary School Consortium (NESSC), a pioneering multistate partnership working to foster forward-thinking innovations in the design and delivery of secondary education across the region. The five NESSC partner states of Connecticut, Maine, New Hampshire, Rhode Island, and Vermont work in concert to close persistent achievement gaps, promote greater educational equity and opportunity for all students, and lead their educators into a new era of secondary learning.
2012	New Hampshire receives the Frank Newman Award for State Innovation from the Education Commission of the States (ECS) in recognition of the state's bold competency-based education policies.
	The NHDOE, in partnership with the Center for Collaborative Education (CCE) and the National Center for the Improvement of Educational Assessment (NCIEA), develops a statewide performance assessment system to balance local control with statewide accountability and comparability. New Hampshire Performance Assessment Network's Cohort 1 (2012–13) begins with 20 high schools engaged in assessment literacy training, group performance assessment of student work, development of common performance tasks in ELA and math, building professional learning networks, and leadership for innovation facilitated groups.
	New Hampshire develops state model competencies in ELA and math aligned to the Common Core State Standards and an analysis of the Common Core State Standards that requires a complex performance assessment developed by Dr. Linda Darling-Hammond of Stanford University.
2013	New Hampshire receives ESEA waiver approval.

NOTES

1   Jessica Shedd, "The History of the Student Credit Hour," New Directions for Higher Education, Vol. 2003, Issue 122, Summer 2003, pp. 5–12, http://www.eharvey.org/wp-content/uploads/The-History-of-the-Student-Credit-Hour.pdf citing Arthur Levine, *Handbook on Undergraduate Curriculum* (San Francisco: Jossey-Bass, 1978).

2   Steven Spear, *Chasing the Rabbit: How Market Leaders Outdistance the Competition and How Great Companies Can Catch Up and Win* (New York: McGraw-Hill, 2008).

3   Chris Sturgis, Susan Patrick, and Linda Pittenger, "It's Not a Matter of Time: Highlights from the 2011 Competency-Based Summit," iNACOL, July 2011, p. 6, http://www.inacol.org/cms/wp-content/uploads/2012/09/iNACOL_Its_Not_A_Matter_of_Time_full_report.pdf.

4   Email correspondence with Kim Carter, December 5, 2013.

5   "High School Leadership: Preliminary Report," New Hampshire Department of Education, March 2005, http://www.education.nh.gov/innovations/hs_redesign/documents/prelim_report.pdf.

6   "Part Ed 306: Minimum Standards for Public School Approval," New Hampshire Department of Education, 2011, http://www.education.nh.gov/legislation/documents/ed306-2011.pdf.

7   These rules implement the NHDOE's rule-making responsibilities as defined in Chapter 186 of RSA Title XV, including defining the minimum curriculum and educational standards for all grades of the public schools. See "Part Ed 306: Minimum Standards for Public School Approval," New Hampshire Department of Education, 2011, http://www.education.nh.gov/legislation/documents/Ed3062014minimumstandards.pdf.

8   Interview with Steve Kossakoski, August 20, 2013. In Kossakoski's words, "All along Paul Leather has been there to push the competency piece through three commissioners." Leather also credits the ongoing work of Mariane Gfroerer and Roberta Tenney at the NHDOE.

9   Some interviewees are not identified by name throughout the paper to protect their privacy.

10   Interview with Paul Leather and Rose Colby, August 30, 2013.

11   Interview with Paul Leather and Rose Colby, August 30, 2013.

12   Interview with Christopher Reeves, September 24, 2013.

13   "Detailed Definition of Competency-based Pathways," CompetencyWorks, https://sites.google.com/site/competencybasedpathways/home/understanding-competency-based-approaches/definition (accessed April 4, 2014).

14   Fred Bramante and Rose Colby, *Off the Clock: Moving Education From Time to Competency* (Thousand Oaks, California: Corwin, 2012).

15   For more on New Hampshire's competency-validation rubric, see "FINAL: Course Level Competency Validation Rubric," New Hampshire Department of Education, September 15, 2010, http://www.education.nh.gov/innovations/hs_redesign/documents/validation_rubric_for_course-level-competencies.pdf.

16   To date, only a handful of the schools surveyed—Windham High School, VLACS, and Next Charter School—have chosen to adopt state-created competencies, and it remains unclear whether more schools will begin to migrate toward using them in the future. Although state-created competencies could be seen as diminishing local control, some leaders have voiced enthusiasm for some standardization of competencies statewide as well as concern about the current inconsistency of competencies across districts.

17   Interview with Karen White, September 16, 2013.

18   Email correspondence with Joe Crawford, February 6, 2014. Next Charter School uses the state's ELA and math competencies. Performance indicators detail a subset of applications of these competencies. For example, for a competency, such as "Writing-Narrative: Students will demonstrate the ability to effectively apply narrative strategies for variety of purposes and audiences. ELA.I.2," some performance indicators include, "CREATE Engage and orient the reader by setting out a problem, situation, or observation, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events. ELA.I.2.1" and "APPLY Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters. ELA.I.2.2."

19   For an overview of Next Charter School's curriculum, see "Curriculum Framework: Next Charter School," Next Charter School, July 17, 2013, https://docs.google.com/document/d/16eJUf6Q4BZ_GMmVJrJmX_YquKYtUiAXxQ1YEGfVeKMw/edit (accessed April 4, 2014).

20   Interview with Brian Blake and Ellen Hume-Howard, September 2013.

21   Email correspondence with Chris Sturgis, March 23, 2014.

[22] Of Sanborn Regional High School's policy to limit reassessment based on 80 percent mastery, Principal Brian Stack wrote: "One of our biggest limitations is that we don't allow students to earn more than 80% on a reassessment. If we are to truly measure student learning, we can't engage in practices that limit student grades." See Brian Stack, "Reassessments and Retakes: A Necessary Part of a School-Wide Grading Policy," CompetencyWorks, October 21, 2013, http://www.competencyworks.org/2013/10/reassessments-and-retakes-a-necessary-part-of-a-school-wide-grading-policy/ (accessed April 4, 2014).

[23] This paper does not describe grading policies at each school in depth. For a comprehensive review of current competency-based grading policies, see Chris Sturgis, "Progress and Proficiency: Redesigning Grading for Competency Education," iNACOL, January 2014, http://www.competencyworks.org/wp-content/uploads/2014/01/CW-Progress-and-Proficiency-January-2014.pdf.

[24] Interview with Joe Crawford, October 4, 2013.

[25] According to the Educational Testing Service—a nonprofit that designs, administers, and scores assessments in K–12 and higher education—a performance assessment is "a test in which the test taker actually demonstrates the skills the test is intended to measure by doing real-world tasks that require those skills, rather than by answering questions asking how to do them." See "Glossary of Standardized Testing Terms," Education Testing Service, http://www.ets.org/understanding_testing/glossary/ (accessed April 9, 2014).

[26] Brian Stack, "Quality Performance Assessments Are Trending at Sanborn and in NH," Sanborn Regional High School Principal's Blog, March 10, 2014, http://srhsprincipalsblog.blogspot.com/2014/03/quality-performance-assessments-are.html (accessed April 9, 2014).

[27] For more on the state's network approach, see "The New Hampshire Network Strategy: Reflections and Looking Ahead," 2Revolutions, Summer 2013, http://www.2revolutions.net/news/NH_Networks_Data_Report.pdf.

[28] Interview with Paul Leather and Rose Colby, August 30, 2013.

[29] For more on the state's network approach, see "The New Hampshire Network Strategy: Reflections and Looking Ahead," 2Revolutions, Summer 2013, http://www.2revolutions.net/news/NH_Networks_Data_Report.pdf.

[30] Interview with Paul Leather and Rose Colby, August 30, 2013.

[31] "Detailed Definition of Competency-based Pathways," CompetencyWorks, https://sites.google.com/site/competencybasedpathways/home/understanding-competency-based-approaches/definition (accessed April 4, 2014).

[32] "Extended Learning Opportunities," New Hampshire Department of Education, http://education.nh.gov/innovations/elo/index.htm (accessed April 24, 2014).

[33] Mariane Gfroerer, "What is a 'good' ELO?," New Hampshire Department of Education, http://www.education.nh.gov/innovations/elo/documents/ResearchReflectionProductandPresentation.pdf.

[34] Interview with Paul Leather and Rose Colby, August 30, 2013.

[35] "High School Leadership: Preliminary Report," New Hampshire Department of Education, March 2005, http://www.education.nh.gov/innovations/hs_redesign/documents/prelim_report.pdf. "New Hampshire's Vision for Redesign: Moving from High Schools to Learning Communities," New Hampshire Department of Education, 2007, http://www.education.nh.gov/innovations/hs_redesign/documents/vision.pdf.

[36] "Part Ed 306: Minimum Standards for Public School Approval," New Hampshire Department of Education, 2011, http://www.education.nh.gov/legislation/documents/ed306-2011.pdf.

[37] The competency validation rubric is still in use today, see "FINAL: Course Level Competency Validation Rubric," New Hampshire Department of Education, September 15, 2010, http://www.education.nh.gov/innovations/hs_redesign/documents/validation_rubric_for_course-level-competencies.pdf.

About the Institute

Acknowledgements

About the author

JULIA FREELAND is an education research fellow at the Clayton Christensen Institute, where her research focuses on innovative policies and practices in K–12 education. Prior to joining the Institute, Julia worked at NewSchools Venture Fund. She holds a JD from Yale Law School and a BA in Comparative Literature and Latin American Studies from Princeton University.