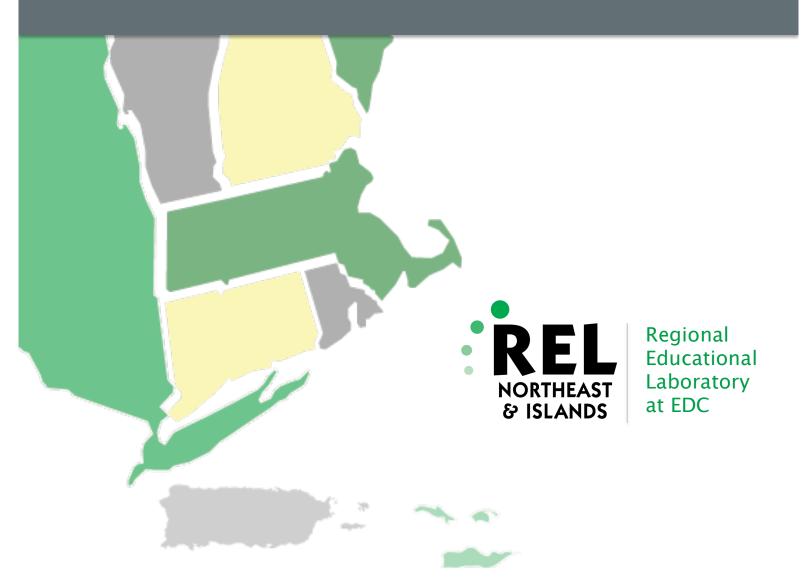# Competency-Based Learning: Definitions, Policies, and Implementation

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REL
NORTHEAST & ISLANDS

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Summary

Many states in the Regional Educational Laboratory Northeast and Islands Region have started to consider and implement competency-based learning as a secondary school reform to increase graduation rates and ensure that students have the skills and knowledge for postsecondary success. In competency-based learning, students demonstrate mastery of a defined set of skills or competencies for each course in lieu of completing credit requirements based on time in class.[1] For example, rather than being required to complete four years of math to graduate, students are expected to meet common learning standards for math, usually established by the state or district. To master the learning standards or competencies, students are given support and additional time as needed. The goal of the reform is to meet students' learning needs more effectively than is done through traditional requirements based on credits and "seat time" (calculated in Carnegie units, developed in 1906 as a measure of the amount of time a student has studied a subject).

Although many states in the REL Northeast and Islands Region have adopted competency-based-learning policies, the reform has not yet been fully implemented in districts and schools in all seven states. Northeast College and Career Readiness Research Alliance members were interested in gathering more information to help member states implement this reform, especially information on how states and districts define the reform and on challenges to implementation and needed supports for successful implementation. Data for this study included legislation and policy related to competency-based learning in all seven states as well as interviews with convenience sample of state, district, and school administrators in three states (Maine, Massachusetts, and Rhode Island). The findings provide information for states to leverage policy change and guidance for how to support districts and schools as they implement this reform.

Several key findings emerged from this research.

Competency-Based Learning Lacks a Common Definition But Has Four Common Elements

No single, agreed upon definition of competency-based learning was found in state and district policies or in interviews with administrators; however, researchers identified four common elements of the reform:

1. Students must demonstrate mastery of all required competencies to earn credit or graduate.
2. Students advance once they have demonstrated mastery, and students receive more time, and possibly personalized instruction, to demonstrate mastery if needed.
3. Students are assessed using multiple measures to determine mastery, usually requiring that students apply their knowledge, not just repeat facts.
4. Students can earn credit toward graduation in ways other than seat time, including apprenticeships, blended learning, dual enrollment, career and technical education programs, and other learning opportunities outside the traditional classroom setting.

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[1] Many terms are used to describe this reform in which students advance after demonstrating mastery, including *competency-based learning*, *proficiency-based learning*, *mastery-based learning*, and *standards-based learning*. For ease of exposition, this report uses the term *competency-based learning*.

Although state and district policies and interviews with administrators revealed these four common elements, administrators described a variety of practices for each element. For example, student advancement based on demonstrating mastery sometimes meant that students started on the next lesson or unit within a class, while other times students were placed in classes based on their level of understanding rather than their grade level.

Competencies Were Developed by Aligning Curriculum, Instruction, and Assessment

A review of state policies revealed that most states in the REL Northeast and Islands Region either require districts to adopt competency-based learning or allow them to (meaning that there are no policies that prevent districts from implementing the reform). Across these states, districts must define competencies for each course and establish assessment practices to determine when students have demonstrated mastery. Most administrators interviewed from Maine, Massachusetts, and Rhode Island said they accomplished this through teacher leadership teams and through the allocation of time for teachers to collaborate to develop clarity about competencies and shared expectations and then align curriculum and assessments to the competencies.

Needed Supports for Implementing Competency-Based Learning Include Communication Strategies, Ongoing Teacher Support, and Access to More Research and Models

The common resources and supports needed to help districts and schools implement competency-based learning were identified as the following:

- A clear communications strategy for all stakeholders to establish understanding, acceptance, and support of the reform
- Ongoing support for teachers, including professional development and time for collaboration
- More research and models to help districts guide their implementation and ongoing efforts

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Why This Study?

Many states are looking for secondary school initiatives to increase graduation rates and bolster readiness for college or the workforce. Policymakers and educators are exploring methods where students advance only after they have demonstrated mastery of content rather than after they have spent a certain amount of time in class. For example, many states are eliminating credits, seat time, or Carnegie units as requirements for graduation and replacing them with reforms that require students demonstrate mastery of defined competencies, or competency-based learning.[2] The goal of competency-based learning is to meet the needs of students more effectively than traditional Carnegie unit and credit requirements by ensuring that the student understands the content rather than by measuring the amount of time the student has received instruction in the content area. In addition, clearly articulating the standards or competencies that students must master to graduate would give high school diplomas across districts a common meaning. Advocates of competency-based learning argue that a transparent system focused on learning is expected to increase high school completion rates and improve student readiness for postsecondary success (see Appendix A for a review of the literature on competency-based learning).

Box 1. Key terms

Blended learning. Instruction that combines traditional face-to-face teaching with online and media-delivered instruction.

Carnegie units. A measure of the amount of time a student has studied a subject in class.

Competencies. A set of benchmarks of which students are expected to demonstrate mastery, usually set by states or districts in each subject. For example, a competency in math from the New Hampshire Statewide Competencies that districts can choose to adopt is "Students will demonstrate the ability to use and extend properties of complex number systems (including both real and imaginary numbers)" (New Hampshire Department of Education, 2013). Other competencies related to numbers of quantifying include "Students will demonstrate the ability to reason quantitatively when analyzing, representing, and solving problems" and "Students will demonstrate the ability to analyze and represent vector and matrix quantities in solving problems." As students demonstrate mastery of each competency, they can move on to other competencies.

Competency-based learning. Used in this report to refer to reforms in which students demonstrate mastery of a defined set of competencies in lieu of completing credit requirements based on time in class. Other terms that convey the same meaning are *proficiency-based learning*, *standards-based learning*, and *mastery-based learning* (Appendix A).

Credit recovery. An alternative to course repetition for students who have failed a course needed for high school completion. Programs are often offered via computer software, online instruction, or teacher-guided instruction (small group or one-on-one; Education Commission of the States, 2011a).

Dual enrollment. Students concurrently earning college credits while enrolled in high school.

The Northeast College and Career Readiness Research Alliance (NCCRA), which includes members from Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont, identified a need for more research on competency-based learning to help with

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their college and career readiness initiatives (Box 2). As of early 2015, five of the seven states—Connecticut, Maine, New Hampshire, Rhode Island, and Vermont—had made policy changes to implement competency–based–learning reforms, but only some districts and schools in those states had begun implementation. Alliance members worked together with Regional Educational Laboratory Northeast and Islands researchers to learn more about this reform, including how the reform is defined and the challenges to and needed supports for successful implementation. States in the region can use the findings from this project to gain a common understanding of definitions and terms used across the region and learn from other states as they move forward with their own competency–based learning initiatives and implementation. The findings provide insight for states and districts to inform policy on needed resources and professional development to support competency–based learning implementation.

Box 2. History of competency-based learning in the REL Northeast and Islands Region

Movement toward competency–based learning in the REL Northeast and Islands Region started in 2003 when Rhode Island, the first state to include demonstration of competency in state graduation requirements, responded to pressure and support from businesses and higher education institutions to ensure that high school diplomas indicate that students have the skills and knowledge needed for success in college or career.

New Hampshire, in its 2005 revision of minimum standards for graduation, required mastery of competencies to earn credit. Maine and Vermont offered state policy waivers allowing students to earn credit or graduate through competency demonstration rather than seat time. In 2007 and 2008, state education administrators from Connecticut, Maine, New Hampshire, Rhode Island, and Vermont, working through the New England Secondary School Consortium, identified *proficiency–based graduation* (its term for *competency–based graduation*) as one of three high–leverage strategies to increase graduation rates, decrease drop–out rates, and increase the percentage of students enrolling in postsecondary education.

In Maine, only one in three high school graduates scored at or above the competency level in both math and reading in grade 11 on a 2010 state test, and the percentage of students meeting competency varied greatly across schools (Silvernail, Walker, & Batista, 2011). These findings motivated school administrators to seek alternatives to the Carnegie unit model in Maine. In 2012, Maine passed legislation requiring that districts implement competency–based learning.

Research Questions

The findings in this report respond to the following research questions:

- How is competency–based learning defined in state and district policies in the REL Northeast and Islands Region?

- How is competency defined by the states and districts within the REL Northeast and Islands Region? What are the requirements for demonstrating mastery of competencies that lead to credit toward graduation?

- What are the perceived barriers and facilitators for implementing competency–based learning in states and districts?

The study team reviewed state legislation and education policies related to competency–based learning and graduation requirements in the seven northeast states in the REL Northeast and Islands Region. In addition, the team interviewed state administrators in Maine, Massachusetts, and Rhode Island. They also interviewed district or school administrators in these states who had implemented competency–based learning and those who had considered but not yet implemented it. District or school policies related to competency–based learning were reviewed

for each participating site (see Box 3 for a summary of the data and methods and Appendix B for more detailed information).

For this study, a district or school was considered to have implemented competency–based learning if the site had a formal policy for at least six months that allowed students to earn credit for at least some content (not necessarily all content for graduation) by demonstrating mastery of the content. This definition was intentionally broad to capture the different implementation phases of districts and schools. Nonimplementers included districts or schools that had voiced an interest in this reform and had taken steps to investigate it (e.g., reviewed the competency–based–learning policy with state, district, or school board members; applied for a waiver; or expressed interest to state or district administrators) but had not yet implemented it, either because they had ruled it out or because they were still planning to implement it. While both implementers and nonimplementers were included in analyses to increase variation in the results and get a clear understanding of challenges to implementation, results revealed no differences between the two groups across any of the themes identified (see Appendix B for list of codes and themes). Thus, findings for these two groups are presented together throughout the report.

Box 3. Data and methods

State legislation and policies related to competency–based learning for each of the REL Northeast and Islands Region states were reviewed to gain a better understanding of the range of state policies in the region. The first review was conducted in 2012, and the latest revision was completed in late fall 2014 (Appendix D). Based on these reviews, Northeast College and Career Readiness Research Alliance members, who represented all seven states, helped select three states—Maine, Massachusetts, and Rhode Island—for the interview sample frame that would yield relevant data and represent the range of state policies. In these states, a total of 14 districts and schools were selected (as described below), and their policies were reviewed as well (see Table B1 in Appendix B). All of the data, including the state–level policies from all seven states, and the district and school interviews and policies from the three states, were used to answer all of the research questions.

Selecting Districts and Schools

The study team, working with the state administrators and three alliance members who served on an advisory committee, generated a list of districts in the three states that had implemented competency–based–learning reforms and districts that had considered these policies but had not yet implemented them as of summer 2013. This list, along with demographic information for each site, was presented to the advisory committee, which selected six districts from each state: three that had implemented competency–based learning and three that had considered but not yet implemented it. Schools were included when there were not enough districts that fit the criteria; advisory committee members believed that schools could also provide meaningful insight into this reform. Advisory committee members familiar with districts and schools in each state provided background information on each potential site. The study team and advisory committee members selected sites in each state that would provide meaningful data and had similar characteristics (e.g., at least one alternative district or school, at least one district or school that served a majority of at–risk students, and at least one district or school that was considered high achieving). Despite statewide policy in Maine and Rhode Island requiring adoption of competency–based learning, the number of districts that had fully implemented the reform was limited (Maine school districts must adopt this policy by 2018). All but one of the districts included in the study had only one high school (one district had two high schools). Given that all the districts were relatively small, the data from all sites were combined.

Interviewing Administrators

Interviews were conducted with state, district, and school administrators across the three states. At least one state administrator was interviewed in fall 2013 in each of the three states. Interviews focused on the history of competency–based–learning reform in the state, why the state had or had not adopted competency–based–learning policies, supports the state had provided to districts and schools implementing these reforms, definitions of competency and state expectations for determining competency, and perceived implementation barriers and facilitators at the state level (see Appendix C for interview protocols).

Interviews with district and school administrators in sites that had implemented competency-based learning included questions about the history of the reform at the site, why the site had adopted competency-based learning, definitions of mastery of competencies, the implementation process, how state policy influenced district and school decisions, and implementation barriers and facilitators.

Interviews with district and school administrators in sites that had considered but not yet implemented competency-based-learning reforms focused on the history of such reforms in the district or school and whether and how the district or school had considered these policies, implementation barriers and facilitators, supports and resources needed to implement competency-based learning, and plans for adopting it.

Identifying Key Themes

All interviews were transcribed and coded so that key themes could be identified (e.g., definitions of competency-based learning, definitions of mastery of competencies, and implementation barriers and facilitators). Common practices identified across sites served to define competency-based learning. Analysis included a search for themes that were unique to state, district, or school administrators or to implementers and nonimplementers.

No differences or unique themes were found among these groups in any of the themes identified (for a list of themes, see Appendix B). Thus, the results are presented together throughout the report. A review of state and district or school policies revealed common elements related to competency-based-learning policy, graduation requirements, and grading policies (see Appendix D for state policy review and Appendix E for district and school policy review).

The interview sample included 6 state administrators, 11 district administrators, and 3 school administrators from Maine, Massachusetts, and Rhode Island (see Table B1 in Appendix B). Massachusetts does not have a state policy requiring districts to adopt competency-based learning; thus, there were fewer districts and schools that had adopted or even considered the reform. Several sites either did not respond to requests or were unable to participate in the study. Only two district or school interviews were conducted in Massachusetts.

Participating districts and schools represented a range of practices, from several years of fully implemented competency-based-learning reforms to no implementation.

Note: See Appendix B for more detailed discussion of methods and Table B1 for number of interviews per state and number of state and district policy reviews completed.

What the Study Found

Although reviews of state and district policies and interviews with administrators revealed no agreed upon definition of competency-based learning, several common elements of the reform were identified. While administrators used similar terms in identifying the common elements, these were often defined differently in practice. In addition, administrators discussed several common challenges to and needed supports for implementation of this reform. The findings are detailed further in three main sections summarizing key elements of competency-based learning, how sites developed competencies and definitions of mastery, and needed supports for implementation.

State and District Policies and Administrators Often Used Similar Language to Describe Common Elements of Competency-Based Learning, But How These Policies Were Defined in Practice Varied

Four common elements of competency-based learning were discussed by administrators and highlighted in state and district policies:

1. Students must demonstrate mastery of all required competencies to earn credit or graduate.

2. Students advance once they have demonstrated mastery, and students have more time to demonstrate mastery if needed.
3. Students are assessed using multiple measures to determine competency.
4. Students earn credit toward graduation in ways other than seat time and course taking (such as apprenticeships, blended learning, dual enrollment).

State and local administrators often defined the four common elements of competency-based learning differently, partly because districts retained control over how state laws for graduation requirements were implemented. Districts and schools in this study, therefore, developed competencies and definitions of mastery by working with staff to align curriculum, instruction, and assessment, leading to differences in how these elements were defined in practice. The following sections describe the four common elements as well as the range of practices administrators reported. (Please note, the findings on district and school policies in the tables that follow are based only on publicly available policy documents and not interview data.)

Students must demonstrate mastery of all required competencies to earn credit or graduate.

Administrators were clear that the expectation was that all students must demonstrate mastery of all required competencies to earn credit or graduate. A common motivator for moving to a competency-based-learning model was to ensure that all students, especially those at risk of school failure and dropout, graduate with the skills they need for postsecondary success. As one participant explained, "the motivation was a moral purpose and the realization that … either 30 percent of the kids or 20 percent of the kids not graduating was no longer tolerable." (See Box 4 for motivations for adopting competency-based learning.) Implicit in achieving this goal is the need to establish assessment and grading policies that measure student progress toward mastery of each of the competencies.

Box 4. Motivation for adopting competency-based-learning reforms

Interviews with administrators revealed several motivations for adopting competency-based-learning reform. Several administrators interviewed reported that they had adopted competency-based learning to ensure that all students achieved competency, especially at-risk students. Administrators explained that the current system based on seat time and credit requirements resulted in widely varying learning levels. Students could pass a class by achieving a minimum average on assignments and attending class regularly. Several administrators recounted that students could pass a math class without, for example, learning statistics because statistics was averaged into the grade. Students were granted diplomas despite sometimes lacking mastery of concepts. Administrators believed that at-risk students would not be able to slip through the cracks in a competency-based-learning system where students move at their own pace and receive support specific to the competencies they are struggling to master. One state administrator explained that the motivation behind this reform was the recognition that the schools were "not currently able to meet the needs of all of their students."

Another motivation was to ensure that students graduate with the skills and knowledge needed for postsecondary success. Administrators discussed how competency-based learning helps ensure that schools provide engaging learning opportunities by allowing multiple measures of student achievement, offering multiple pathways toward credit completion, and personalizing instruction. These administrators said that assessment of competency-based learning often required that students apply their knowledge. One state administrator explained, "We are past the point of being ready for the world if you're literate and numerate but not able to apply those skills of literacy and numeracy." A few administrators also spoke to how competency-based learning provides students with the ability to be "advocates for their own learning and take ownership of their learning," skills they felt were essential for success after high school.

Finally, administrators reported that they adopted competency–based learning and new grading approaches because they believed this provided a better assessment of student learning. One school administrator from Maine said, "I think it's a much fairer assessment, a more valid measure of what a student knows and is able to do than a traditional grading system." Another district that had not adopted competency–based learning but implemented a standards–based grading model explained that its motivation was less about competency–based learning and more about clearly communicating student achievement: "The old model wasn't necessarily meeting the needs of our students."

Three states had policies requiring that students demonstrate mastery of all required competencies to graduate (Table 1 and Appendix D). For example, New Hampshire specified that high school course credit be awarded based on an assessment of each student's mastery of course competencies. Districts must decide on the appropriate methods to measure student progress and define mastery. Competencies were not always limited to academic content; some also included separate competencies related to learning skills (such as neatness, timeliness, taking responsibility for learning, and other nonacademic factors related to learning). District and school policies highlighted different ways in which students were expected to demonstrate competency, including through comprehensive course assessments, common tasks in each class, and performance tasks (such as graduation portfolios and internship projects; Table 2 and Appendix E). Often districts relied on a variety of assessments to determine student mastery. Many districts and schools also adopted or were piloting standards–based grading systems at the high school level (two also adopted them for the elementary school level) to measure student progress toward mastery.

Table 1. States with policies requiring that students demonstrate mastery of required competencies

Competency based learning policy element	Connecticut	Maine	Massachusetts	New Hampshire	New York	Rhode Island	Vermont	Total
Graduation is based on mastery of all required competencies		✓		✓		✓		3
Separate competencies are defined for content and learning skills		✓						1

Source: Authors' analysis of state competency-based-learning policy documents and interview data in 2014 (see Appendices C and D).

Table 2. Districts or schools with policies requiring that students demonstrate mastery of required competencies (N = 14)

Competency based learning policy element	Number of districts or schools with policy element
Separate competencies are defined for content and learning skills.	4
Students demonstrate competency through comprehensive course assessments or common tasks in each class.	3
Students demonstrate competency through performance tasks.	2
Students use a variety of assessments to demonstrate mastery.	9
Standards-based grading is used at the high school level to measure student progression toward mastery.	6

Note: The 11 districts and 3 schools in the sample have been combined and counts presented represent the total number of districts or schools that included these policies.

Source: Authors' analysis of district and school competency-based-learning policy documents and interview data in 2014 (see Appendices C and D).

In practice, administrators reported that ensuring that students demonstrate mastery of all required competencies often necessitated changes to assessment practices so that all assessments were a true measure of student progression toward competency. In some cases, this meant ending practices that gave students credit or extra credit for things like neatness and turning assignments in on time. As one district administrator explained: "We have separated the handing things in on time, the neatness, the more subjective and softer types of assessments, and so our reporting is really based upon what the students can show academically—not when they get it done or how neat it looks or how it compares to other students."

Implementing competency-based learning also required making grades reflect and communicate student progress toward mastery. For example, administrators discussed shifts in grading practices away from marking based on class averages and assigning zeros for missing work so grades more accurately indicate students' progress toward mastery of competencies. According to a Rhode Island district administrator, "It's [not] about moving toward…a 100-point scale, but [about] moving toward assessing student learning based on being proficient on specific learning targets."

Students advance once they have demonstrated mastery, and students have more time to demonstrate mastery if needed. Administrators noted that the main purpose of a competency-based-learning system is to meet the needs of students by recognizing that all students do not attain mastery at the same time. Differences in the pace of learning necessitate providing opportunities for students to tackle more challenging content after they demonstrate mastery and to receive extra support and time if they have not met competency requirements. Implied is the need to provide personalized instruction or pathways toward graduation.

Several state policies referred to students advancing once they had demonstrated mastery (Table 3 and Appendix D). For example, Maine legislation detailed how students will earn a competency-based diploma, which allows them to move at their own pace and advance when they have mastered learning outcomes. Some states, districts, and schools required personalized learning plans, which include placing students in appropriate-level classes and

providing extra support if they fail to achieve mastery of competencies (Table 4; see also Appendix E).

In practice, there was a range in what advancement meant for students. In some cases, it meant that students started the next unit or lesson within the same class; in other cases, it meant that students were placed in classes based on their level of understanding rather than on their grade level. For example, in two districts a student could be placed in a grade 11 math class and a grade 8 English class based on the student's competency in each subject. Another common element in practice was that students received extra support and instruction when they failed to demonstrate mastery. For example, at a district in Rhode Island, one administrator reported, "Anytime throughout the entire year students … participate in re–teaching as well as reassessing to determine if they've mastered that learning target."

Table 3. States with policies on student advancement based on demonstration of mastery

Competency based learning policy element	Connecticut	Maine	Massachusetts	New Hampshire	New York	Rhode Island	Vermont	Total
Students advance based on demonstration of mastery of competencies.	✓	✓				✓	✓	4
Personalized learning plans are used for guiding instruction.	✓					✓	✓	3
Students receive additional support and instruction for competencies they have not yet mastered.	✓					✓	✓	3

Source: Authors' analysis of state competency-based-learning policy document and interview data in 2014.

Table 4. Districts or schools with policies on student advancement based on demonstration of mastery (N= 14)

Competency based learning policy element	Number of districts or schools with policy element
Personalized learning plans are used for guiding instruction.	5
Students receive additional support and instruction for competencies they have not yet mastered.	6

Note: The 11 districts and 3 schools in the sample have been combined and counts presented represent the total number of districts or schools that included these policies.

Source: Authors' analysis of district and school competency-based-learning policy document and interview data in 2014.

Students are assessed using multiple measures to determine competency. Administrators discussed how they used multiple types of assessment to gain a better understanding of student progression toward mastery. As a district administrator in Maine explained: "We're looking at everything that we've got. So [that means] local assessments, standardized testing, and whatever else we can." Standardized assessments and performance–based assessments were two important measures mentioned in both policy and practice.

Two states had policies requiring that districts use multiple measures to assess student progress, while another state strongly recommended that districts use multiple measures (Table 5 and Appendix D). Some states required that students meet a minimum level of achievement on the state standardized assessment to graduate. As a result, districts in states with standardized test requirements identified a passing score on the state standardized assessment as a component of their graduation requirements (Table 6 and Appendix E). In 8 of the 14 districts or schools and 5 of the 7 states, performance–based assessment was a graduation requirement. Often, this included students presenting a portfolio or capstone project.

Table 5. States with policies on multiple measures to determine competency

Competency based learning policy element	Connecticut	Maine	Massachusetts	New Hampshire	New York	Rhode Island	Vermont	Total
Require or recommend districts to use multiple measures to measure student progress.		✓		✓		✓		3
Students must take statewide standardized exam to graduate.	✓		✓		✓	✓	✓	5
Students must meet minimum level of achievement on statewide standardized exam to graduate.	✓		✓		✓	✓		4
Students must complete performance assessment to graduate.				✓		✓		2

Source: Authors' analysis of state competency-based-learning policy document and interview data in 2014.

Table 6. Districts or schools with policies on multiple measures to determine competency (N = 14)

Competency based learning policy element	Number of districts or schools with policy element
Students must meet established minimum level of achievement on statewide standardized exam to graduate.	8
Students must complete performance assessment to graduate.	8

Note: The 11 districts and 3 schools in the sample have been combined and counts presented represent the total number of districts or schools that included these policies.

Source: Authors' analysis of district and school competency-based-learning policy document and interview data in 2014.

In practice, districts or schools used a range of measures to assess student progress. Some administrators reported that students were required to have multiple assessments of mastery for each competency. For example, one district administrator in Massachusetts explained, "Proficiency really is a mastered skill. It's not a one time and you're done. It's a real deep understanding that is conveyed by multiple performance tasks." In other districts or schools, students could choose among assessment options to demonstrate mastery, according to administrators. How this worked logistically with grading policies varied. Sometimes teachers made the final determination about how to weigh multiple entries for mastery. As one Rhode Island administrator explained: "Over time you get multiple entries for a standard. Maybe the median is the best indicator or maybe the student performs poorly in the first part of this quarter but then at the end he got 4s. You wouldn't take the average; maybe it's just the end of the quarter. So really, teachers look at what best represents what he knows or is able to do, and that's not one answer." At other sites, administrators reported that only the final assessment of student mastery counted in the final grade. At others, the grading policies were still in development.

Standardized assessments were used in different ways across the sites where interviews were conducted for this study. Three administrators explained that competency did not equate to a passing score on a test; the standardized test was only one lens for looking at student progress. Other districts used the standardized test as one measure among others. Two administrators discussed how standardized testing requirements are in many ways antithetical to competency–based learning. One administrator reported that the state is moving to a high–stakes testing requirement, and as a result, the school is going to "cut back" on its competency–based measures to eliminate putting students through exercises that do not lead to graduation. Another administrator pointed out that there is "circular logic" in a system that requires standardized tests, which go against competency–based learning: "You are proficient if you can demonstrate your proficiency on the test, and the test is administered at a certain date within your high school experience, thereby linking students back into the loop of something that has oblique references to year in school, course taking patterns, and seat time."

The 11 districts and 3 schools in the study had different types of performance–based assessments, including digital portfolios that capture the work students have done throughout their high school experience, portfolios that capture senior year projects, and senior capstone projects or independent studies. Often, districts or schools required that students present these portfolios or projects as part of the performance–based assessment. Most often this

presentation happened at the end of senior year, but in several cases, students presented their portfolios several times throughout their high school experience. One administrator in Rhode Island reported: "Each year, every student presents his or her portfolio to a panel. So, at the end of 9th grade there'll be a panel of judges, and the student will present his or her 9th grade work, and there'll be conversations about whether the student is on track." Two sites that did not identify performance-based assessments as a graduation requirement still relied on these measures as part of the curriculum.

Students can earn credit toward graduation in ways other than seat time and credit requirements. Administrators discussed how a main element of a competency-based-learning system is to "decouple graduation determinations from seat time and course taking." One state administrator explained that this aspect of competency-based learning is meant to "encourage schools and students to pursue proficiency through lots of other means that might be more rigorous for the learner." Interviews revealed that schools often provide students with learning opportunities outside the traditional classroom setting, such as apprenticeships, blended learning, dual enrollment, and career and technical education programs. Administrators reported that having such learning opportunities available to students requires allowing multiple pathways toward graduation and varied options for demonstrating mastery of competencies while maintaining the same expectations and rigor of these learning experiences. Based on policy, however, some states and districts had not yet moved away from seat time and credit requirements: three states and 11 districts had course credit requirements (Tables 7 and 8 and Appendices D and E). In some states and districts, students had to demonstrate competency to earn credit; thus, credit requirements were not tied to seat time and location. Other states and districts required instruction in courses or units of study. Five states had policies that allowed multiple pathways toward graduation. For example, Vermont has a flexible pathway initiative to promote high-quality learning opportunities that enable students to achieve postsecondary readiness and earn credit toward graduation. Personalized learning plans were often related to multiple pathways in which students created their own paths toward completing graduation requirements that could include learning experiences outside the traditional classroom.

Table 7. States with policies on course credit requirements

Competency based learning policy element	Connecticut	Maine	Massachusetts	New Hampshire	New York	Rhode Island	Vermont	Total
Course credits are requirements for graduation.	✓			✓	✓			3
Students must demonstrate competency to earn credit; credit requirements are not tied to seat time and location.		✓		✓		✓		3
Instruction or completion of courses or units of study are required for graduation.		✓	✓			✓	✓	4
Multiple pathways toward graduation are allowed.		✓		✓	✓	✓	✓	5

Source: Authors' analysis of state competency-based-learning policy document and interview data in 2014.

Table 8. District or schools with policies on course credit requirements (N = 14)

Competency based learning policy element	Number of districts or schools with policy element
Course credits are required for graduation.	11
Multiple pathways toward graduation are allowed.	5

Note: The 11 districts and 3 schools in the sample have been combined and counts presented represent the total number of districts or schools that included these policies.

Source: Authors' analysis of district and school competency-based-learning policy document and interview data in 2014.

In practice, state and district administrators said that moving away from seat time and credit requirements was the goal, but six administrators said they were implementing competency–based learning while still using credits as a graduation requirement—even though no state policies stipulated credit requirements. Interviews with administrators revealed that some districts or schools had multiple pathways toward graduation. For example, at a school in Rhode Island, students work with an advisor to set learning goals and a path toward reaching those goals agreed on by the student, advisor, parents, and mentor. In several instances, administrators reported that multiple pathways were used in the 11 districts and three schools that had not adopted competency–based–learning reform. Two administrators emphasized that multiple pathways and personalized learning plans do not equate to competency–based learning.

Districts or Schools Developed Competencies and Definitions of Mastery by Aligning Curriculum, Instruction, and Assessments

Findings related to the second research question on how competency is defined revealed that all districts had to define these terms on their own following state guidelines but that these guidelines varied across the states. In some states, districts and schools were not required to

implement competency–based learning but could choose to do so. These states had legislation that allowed students to earn credit through nontraditional and competency–based means (Table 9 and Appendix D). In other states, districts were required to transition to a competency–based–learning model in which students were awarded credit and advancement based on mastery of standards or competencies. Districts in these states determined the competencies for each course and other learning opportunities. New Hampshire was the only state to provide statewide competencies that districts could adopt or adapt. Finally, one state had strict guidelines for a multiple–measures system for determining competency, including specified course requirements, minimum achievement levels on the state standardized test, and two performance–based assessments for all students. Districts had to work within these guidelines when establishing competency–based–learning policies.

Table 9. State policies on how districts should apply competency–based–learning requirements

Competency based learning policy element	Connecticut	Maine	Massachusetts	New Hampshire	New York	Rhode Island	Vermont	Total
Districts can but are not required to adopt competency-based learning; students can earn credit through competency-based means.	✓		✓				✓	3
All districts are required to transition to competency-based learning.		✓		✓				2
All districts are required to transition to competency-based learning; districts must follow state guidelines in developing competencies.						✓		1

Source: Authors' analysis of state competency-based-learning policy document and interview data in 2014.

Administrators did not provide direct answers to how competency is defined, and many were still in the process of developing requirements. Instead, administrators described the processes they used to define competencies and noted the need to establish policies to ensure that competency–based learning could be implemented (e.g., policies related to grading, graduation requirements, and assessment of student work). The majority of administrators reported that they developed competencies and clarity about expectations and policies by aligning curriculum, instruction, and assessments to the competencies. The following sections outline common practices that administrators used to define and develop proficiencies.

Developing clarity about competencies and shared expectations, and aligning curriculum and assessments. Most administrators referenced state standards or the Common Core State Standards when developing competencies and talked about the need for clarity about the standards. Most often, it was teams of teachers and administrators that established competencies for each course and shared expectations within subject areas. One district administrator in Maine explained, "The large focus was on establishing the standards so that they were crystal clear as to what they were and also ensuring that proficiency from one 3rd grade teacher to another 3rd grade teacher was as close to the same as possible." A critical step in establishing consistent expectations and grading and assessment practices was developing

common, clear definitions of competencies. Teachers and administrators needed to come to a common understanding of "what something looks like as being proficient or nearly proficient or substantially below proficient … at the grade level," according to a Rhode Island district administrator. This was often accomplished by developing and assessing common tasks and looking at student data. Administrators discussed developing a taxonomy scale for each competency that defines the level of rigor required to demonstrate mastery. One district administrator explained, "So the whole idea is you have to go higher up on the taxonomy scale to be proficient. To be advanced, you have to go at least one above that proficiency taxonomy scale." Administrators shared that this process of defining mastery of competencies led to increased transparency of expectations for students and parents.

Developing the proficiencies led to changes in curriculum, instruction, and assessment. District and school administrators said that teachers were relying more on backward design, thinking about assessment and curriculum in light of the competencies. Teachers also used assessment to guide their instruction. A district administrator from Massachusetts said, "We're moving away from people who are lockstep in a reading program or lockstep in a math program. It is all about the standards at each grade level. The standards themselves . . . that is the foundation, the anchor for all of this."

Setting aside time for teacher collaboration is critical. State, district, and school administrators reported that developing competencies and aligning curriculum, instruction, assessment, and grading practices to these competencies require establishing a professional culture of sharing practices and setting aside time during the school day for teachers to collaborate and participate in focused discussions on shared expectations. This often necessitates a culture shift for teachers accustomed to working independently, according to administrators. As one administrator from Rhode Island explained, "part of the cultural change was breaking down the artificial walls that exist from one classroom teacher to the next." Some administrators talked about the need for teachers to "get rid of some of their old habits" and learn new methods related to instruction, assessment, and student motivation that likely were not part of their initial training or practice. Leadership teams that included teachers were essential for establishing understanding and support for the reform among staff, according to several administrators. Some administrators had instructional teams that included teachers while other sites practiced a distributive leadership model. A few administrators stressed the importance that this process not be imposed from the top.

Needed supports for implementing competency–based learning include communication strategies, shifts in student culture, ongoing teacher support, and access to more research, models, and guidance. Implementing competency–based learning requires substantive changes in teaching and learning, as described earlier. Related to the third research question on perceived implementation barriers and facilitators for competency–based learning, administrators discussed several common challenges and needed supports to implement the reform.

A clear communications strategy that involves all stakeholders is needed to establish understanding, acceptance, and support for the reform. Administrators discussed the need to engage all stakeholders, including business owners, community members, families, school board members, students, and teachers, in conversations about competency–based–learning reform. Administrators made clear that this inclusion was important not only in the initial

stages of implementing the reform but also throughout the process as continuous communication was necessary to ensure that all stakeholders had a clear understanding of the goals. A Maine school administrator explained: "I think [one] obstacle is just continually helping students and parents in the community understand it. I think we've met that obstacle, but it doesn't go away."

Resistance from some students and families was a barrier. Administrators often reported that resistance was a common barrier to implementing competency-based learning. District and school administrators said that most resistance came from students and families of students who do well academically. These students and families were concerned about how new grading systems would affect college and scholarship applications. A Rhode Island district administrator reported that parents often said: "My kid will lose a scholarship. A college will pass us by because we're doing this." Determining honors was another concern. As one state administrator said, "recognizing achievement in a system where every kid has the opportunity to be proficient" is a challenge. Establishing a clear system of communication and helping students and families understand the goals and motivation behind this reform were critical for addressing this type of resistance. The 11 districts and three schools in the study reported that this was an ongoing process.

A culture shift among students is required for them to take ownership of their learning and establish a "growth mindset." Several administrators spoke to the challenges of helping students take ownership of their own academic success under a competency-based-learning model. According to a school administrator from Rhode Island: "Our biggest challenge is getting kids to take this seriously … we're still talking about 17- and 18-year-old kids of different, varying motivational levels." Some administrators talked about establishing a "growth mindset" (Dweck, 2006) in which students understand that their education is focused on mastering competencies and their own growth as a learner rather than thinking of their academic achievement as fixed or unchangeable. One district administrator from Rhode Island said they are trying to help students "recognize the fact that it's okay if we all don't master it at the same time, but our job is to keep working at it so that we do master it." Another major culture shift is for students to recognize that they must master all the competencies. One administrator explained, "It's still a struggle to get that kid who already has challenges as a learner, to say 'Hey, I've got to do these extra steps in order to prove that I'm proficient'—especially in a community where people still think, 'Look, I passed the class. I got a D. Shouldn't that count for something?'"

Ongoing support for teachers is critical, especially providing professional development and opportunities for collaboration. Administrators discussed the need for professional development opportunities for teachers during initial implementation of competency-based-learning reform. Competency-based learning requires a different approach to instruction, assessment, and grading. As one Maine district administrator said, "There's been a lot of professional development in terms of homework policies, grading practices, and creating assessments that allow students to demonstrate mastery as opposed to using a percentage-based model." A few administrators highlighted the need for teacher support in "assessment literacy," because teachers must create new assessments and accept different forms of assessment for students who have multiple and varied opportunities to demonstrate mastery. One state administrator explained that teachers have to examine all types of assessments, and "they have to be able to determine the quality of evidence [students present] … [and] come to a

decision about whether it's adequate." These often are new skills for teachers who are accustomed to creating their own assessments.

Administrators reported that teachers also need time after initial implementation to continue to collaborate on curriculum alignment, common tasks, assessment practices, and clarity of expectations. This can be especially important in small schools, which often have fewer teachers and curriculum coordinators to share the work. Ongoing support was critical to maintaining teacher understanding and support for the reform, according to several district and school administrators, including one who said: "We put a lot of effort into training our professional learning community facilitators and providing ongoing support. I think because of the effort and the energy that we put in, … our teachers feel comfortable critiquing each other's work. Because of that, our teachers really see a lot of value in that, and that's helped decrease resistance to a lot of things in the school."

A push from leadership is needed to initiate competency-based-learning reform. State, district, and school administrators discussed the need for a push from the state, school board, district office, or school leadership to initiate the move to a competency-based-learning system. A few district administrators reported that a vote from the school board or the self-study conducted through an accreditation process provided the impetus to initiate competency-based-learning reform. Other times, a school or district leader or group of teachers led initial efforts. Several state administrators noted that it is not enough for states to allow districts and schools the flexibility to implement this type of reform because districts often assume that they are not able to adopt the reform. Even when districts or schools do adopt competency-based learning, they do not always take advantage of the flexibility the reform can offer (e.g., many sites in this study still use credit requirements to determine graduation eligibility). State administrators said they must find ways to communicate clearly to districts how they can implement competency-based learning. One state administrator said they should have "worked a lot harder not merely to tell school districts that it was possible [to implement competency-based learning] but to give them real guidance about how it might be accomplished."

More examples, research, and guidance are needed to support schools in implementation. Administrators expressed the need for more research on competency-based learning as well as more examples to guide implementation and ongoing work on the reform. Several state, district, and school administrators noted that they used research and examples from other schools that had implemented competency-based learning to guide their own implementation. As one administrator explained, more models and examples are needed to help staff find approaches that work best in their circumstances: "I think figuring out how it's going to work at a local school is important. There's no cookie cutter model for how this needs to happen. Teachers have different capacities. You have different staff members at your disposal. You have different technology at your disposal. I think you just need to go see how people are doing it." Administrators emphasized that often when districts hear about competency-based learning, they do not assume that it is something that they could implement in their own settings. One district administrator shared: "When I go and talk to schools [about our implementation of competency-based learning], … it's fascinating to me, first, how many people say, 'Well, this [competency-based learning] just sounds like really good teaching.' And then, second, they say, 'But we can't do it because of this, this, this, and this.'" More examples could help dispel some of this belief.

Limitations of the Study

This study was designed to gather information about the ways that states and districts define competency-based learning and to examine perceived challenges to and needed supports for implementation. District administrators with experience implementing the reform were interviewed because they were able to speak to the definitions they have used and the challenges and successes they have experienced. Administrators from districts or schools that had considered but not adopted competency-based learning were interviewed to address barriers and challenges to the reform. This study, therefore, relied on interview data from a limited and purposive convenience sample. Thus, interviewees may not fully represent the perspectives of their peers. Findings from the interview data may not be generalizable to other districts and schools in the three states that served as the sample frame for this study and to other states in the NCCRA region. (See Appendix F for detailed information on each district and school included in the study).

A major finding of this study was that while there were common elements and a common language about competency-based learning, these were often defined differently in practice. Because the interview data relied solely on an interview with one administrator at each district or school, insight into practice is limited. Given that state policy in two of the states required districts to adopt competency-based learning, administrators from those states may have felt pressure to answer questions about their implementation of this reform in certain ways.

Implications of the Study

The interviews and policy document data suggest several implications for policy and future research to support implementation of competency-based learning.

Key areas of needed ongoing support for district and schools were identified. Interviews revealed several key areas of support that could help districts and schools implement competency-based learning. Districts and schools need the proper support, tools, and guidance on how to engage staff in developing competencies, defining expectations, and establishing consistent assessment and grading procedures. In addition, they need support in establishing communication to promote initial support for the reform within school communities and continuing support as the reform takes shape. Guidance may also be needed to help districts and schools take advantage of the flexibility granted by states to adopt competency-based learning. For example, many sites still rely on credits to determine graduation requirements, possibly indicating that it is difficult to implement approaches that do not rely on familiar models of measuring student progress. Finally, states need to be vocal in their support for competency-based learning. This would not only help districts and schools in their communication efforts with their school communities, but could also be an impetus for other districts and schools to initiate this reform.

The critical elements of competency-based learning must be clearly identified across districts through further research. More research is needed on the critical elements to competency-based learning identified in this study. Research should determine whether the elements outlined in this study are shared more broadly across districts and schools implementing this reform, especially among elementary and middle schools where competency-based learning

often looks quite different. Defining these components could help researchers who have struggled to conduct studies on a topic that lacks a common definition and conceptual clarity.

Research should also explore the outcomes of competency-based learning. Many administrators spoke to the need for more empirical studies exploring the student outcomes of competency-based learning. The lack of research on student outcomes is a challenge that impedes the efforts of states, districts, and schools in establishing support from their school communities. Administrators cautioned against conducting these studies too early. Developing competencies, defining common expectations, and establishing consistency in instructional and assessment practices take considerable planning; examining outcomes while districts and schools are still working to implement these new policies and practices could produce misleading results. Also, it may be problematic to compare districts that have recently implemented competency-based learning with districts that have not, because if instruction in competency-based learning is suddenly geared toward students' levels of understanding, students who have struggled academically may be placed in much lower level classes. Testing these students using the current standardized assessment and testing schedule may not reveal true outcomes of this reform.

A common metric across sites would ensure that students are meeting set standards and establish common expectations from district to district. One of the main obstacles to scaling up competency-based learning statewide is the need for a common metric across sites to ensure that students are meeting set standards and to establish common expectations from district to district. With many approaches to competency-based learning and multiple pathways for students, administrators talked about the need for a metric to examine whether these diverse approaches and pathways are achieving the same results and are effective in helping students master the material. Several state and district administrators reported that one reason for adopting competency-based learning was to ensure greater consistency in graduation expectations across districts and schools in the state. Several administrators also believed that a competency-based-learning system would increase the rigor of education for all students and provide a more valid measure of what students know. Determining whether schools that have adopted competency-based learning have similar expectations for students and whether students are achieving at the same level is difficult, especially if the only common metric is a standardized test that is not aligned with a competency-based approach to learning. Yet, without a way to vet programs, states run the risk of districts and schools adopting the language of competency-based learning without instituting common practices that are essential to this reform.

Schools must provide instruction at the levels students need. One of the main goals of competency-based learning is to ensure that all students—especially disadvantaged students—master the content and skills needed for postsecondary success. In a competency-based-learning model this means providing instruction at the student's level, which has important implications for states and districts. For example, teachers and schools will need to be prepared to provide a broad range of instruction, especially initially. For students who have struggled academically, this could require providing instruction at a lower level than their traditional grade level and lower than what is typically offered at the school to help these students master the required competencies. It also might take more time for students to complete graduation requirements.

Staff need tools to motivate students to progress. Staff need tools and approaches to motivate students and ensure that they continue to progress, according to administrators in this study. In addition to motivational issues, there may be emotional fallout for students who are in lower level classes and take longer than their peers to complete graduation requirements.

These findings suggest that reaching consensus on a definition, or at least definitions, of common elements of competency–based learning is an important step. States need to provide guidance and support to districts and to establish important metrics to hold districts and schools to a common understanding of this reform. Clearly defining these elements would ensure that districts and schools are not just adopting the language of the reform without making substantive changes to policy and practice. A common definition could aid states in advancing toward full implementation of competency–based learning. Definitions are needed to conduct research on models of this reform that can yield insights on implementation strategies and approaches to motivate students using this new model. In addition, having a definition would help researchers amass empirical data on the outcomes of these programs, which could help states, districts, and schools make important decisions about this reform and establish support among stakeholders.

Appendix A. Review of the Literature

This review of the literature on competency-based learning includes studies on how the reform is defined, research findings on this education model, and challenges and facilitators for successful implementation.

Defining Competency-Based Learning

Competency-based learning, in which students must demonstrate mastery of content to earn credit and graduate, has been heralded as a promising means of improving student outcomes and ensuring that students graduate with the skills and knowledge they need to be ready for postsecondary success. This reform was highlighted as an "innovative approach and best practice" by the US Department of Education (2011). When students are granted greater flexibility in how they earn credit, they are more engaged in their learning (US Department of Education, 2011). States in the Northeast College and Career Readiness Research Alliance (NCCRA) are interested in competency-based learning and its potential to increase student graduation rates, improve student outcomes, and ensure college and career readiness.

Most high schools use the Carnegie unit system, which awards credit based on seat time. The Carnegie unit system was created in 1906 to improve preparation for college admissions by standardizing the credit system. It has become part of the "grammar of schooling" or standard policy in nearly all high schools, affecting all students, including those not pursuing higher education (Tyack & Cuban, 1995).

Some researchers have argued that this type of rigid structure separating time and knowledge into discrete parts is not the same as learning, does not serve all students effectively, and does not factor in the varying amounts of time different populations of students need to achieve proficiency (Farbman, Christie, Davis, Griffith, & Zinth, 2011). Rather than focusing on learning, the emphasis is on seat time. According to many critics and reformers, this approach has resulted in many students leaving high school without the skills and knowledge they need for postsecondary success. In particular, measuring learning by seat time has resulted in many students advancing without mastering content and later requiring remediation (Grossman & Shipton, 2012).

Several attempts have been made to dislodge the Carnegie unit, including the 1920 Dalton Plan, which called for students to meet monthly with teachers to determine minimum tasks they had to complete at their own pace until they mastered the content, as well as the "free schools" and "schools without walls" reforms of the 1960s. Nonetheless, the Carnegie unit is still entrenched in most schools across the country. Disrupting this grammar of schooling is difficult because experimenting with student learning time often requires changes in state and district policies that regulate schedules (Tyack & Cuban, 1995).

Many states, including states in the NCCRA, have begun to carefully examine the time-based approach for awarding credit toward graduation. For example, in 2005 New Hampshire replaced the Carnegie unit graduation requirement with a competency-based system in which students must demonstrate mastery of course content, regardless of the amount of time it takes (Alliance for Excellent Education, 2013). New Hampshire was the first state to remove the seat-time requirement, but many other states and even the Carnegie Foundation itself are taking a closer look at this structure. The Carnegie Foundation for the Advancement of Teaching

recently commissioned a report examining how the Carnegie unit "might be changed and more aligned with better, richer tools for measurement," according to a senior associate for research and policy at the foundation (Adams, 2012, para. 7). The foundation echoed that this unit, while initially part of a larger effort to increase standards for secondary schools, is not a good "universal measure" for student progress.

Competency-based models in K–16 education in the United States date to the objectives-based instruction movement of the 1930s (Priest, Rudenstine, & Weisstein, 2012). Competency-based-learning models can be traced to institutions of higher education, corporations, community colleges, and K–12 schools (Voorhees, 2001). Corporations and teacher training institutes used competency-based approaches to ensure adults had the skills and knowledge needed to perform their jobs (Priest et al., 2012). By the late 1960s these approaches were starting to be implemented in student instruction, including vocational education (Malan, 2000). In higher education over the past 10 years, national efforts such as SCANS 2000 and the National Skills Standards Project have sought to create and standardize competencies for occupations across career and technical programs to ensure that graduates are ready to enter those occupations (Voorhees, 2001). Internationally, "outcomes-based" education has been implemented in several countries, including Canada, New Zealand, and South Africa (Malan, 2000).

According to advocates, competency-based approaches encourage a new relationship between teachers and students, in which teachers act more as facilitators, coaches, and mentors, and students take responsibility for the learning process (Alliance for Excellent Education, 2013; Shubilla & Sturgis, 2012). In this new collaborative relationship between teachers and students, learning is more flexible; rather than strictly following curriculum progressions, teachers can personalize instruction to better meet the needs of students. Teachers and students focus on student performance, identifying and addressing gaps in knowledge (Sturgis, 2012; Voorhees, 2001). Since the focus is on learning, students often advance at their own pace and learn to regulate their own learning (Sturgis, 2012; Sturgis & Patrick, 2010). Questions still remain, however, about the effectiveness of this approach. There is also concern that competency-based learning could increase the achievement gap if some students are able to advance even further than before.

In this literature review, the term *competency-based learning* is used to refer to approaches where students advance upon demonstrated mastery. Multiple terms have been used when discussing this approach, including *proficiency-based*, *mastery-based*, *standards-based*, *outcomes-based*, and *performance-based learning*. Across the states in the NCCRA region, several terms are used to reference competency-based-learning reform, including *mastery-based learning* in Connecticut, *standards-based learning* in Maine, *competency-based learning* in New Hampshire, and *proficiency-based graduation requirements* in the New England Secondary Schools Consortium, a partnership of five states in the region that engages in secondary school redesign to increase graduation rates and postsecondary readiness. *Competency-based* is the term used by the US government in its Race to the Top initiative, including state applications where nearly a third of all states included references to competency-based options for students in the second round of Race to the Top applications. Different definitions are used across the states in the NCCRA region. In some states, districts are required to use multiple measures to assess student achievement as part of a competency-learning approach, whereas other states recommend, but do not require, multiple measures.

The Council of Chief Staff School Officers has adopted the following definition of competency-based learning from the International Association for K-12 Online Learning:

> [Competency-based learning includes approaches in which] students advance upon mastery; competencies include explicit, measurable, transferable learning objectives that empower students; assessment is meaningful and a positive learning experience for students; students receive timely, differentiated support based on their individual learning needs; and learning outcomes emphasize competencies that include application and creation of knowledge, along with the development of important skills and dispositions. (Patrick & Sturgis, 2011, p. 6)

This definition and the work of the International Association for K-12 Online Learning and the Council of Chief Staff School Officers were highlighted by the US Department of Education in its discussion of competency-based pathways to college and career readiness (US Department of Education, 2012).

As of late 2014, 41 states had adopted competency-based learning, but there is a wide range of how it is defined in practice (Education Commission of the States [ECS], 2011a; Patrick, Kennedy, & Powell, 2013). Across these 41 states, competency-based policy includes reforms that simply allow flexibility in awarding credit for some or all classes to complete transformations of education systems from time-based or Carnegie unit structures to systems based on demonstration of mastery (Sturgis & Patrick, 2010). For example, in Louisiana, competency-based learning allows students to take exams and earn credit for courses they had previously failed (Louisiana Handbook for School Administrators, 2011). This policy allows greater flexibility for students, especially those for whom the credit-based approaches do not work, but it does not make major changes to the structure of learning.

In Oregon, conversely, state department of education documents state that competency-based learning is not limited to alternative ways to award credit or "changing the grading system"; rather it is student-centered instruction that is standards based with explicit learning outcomes against which students are evaluated on performance (Kirk & Acord, 2011). Students are allowed multiple opportunities to demonstrate learning, and teachers use formative assessments throughout instruction and collaborate with colleagues to improve practice. Students move at their own pace; in other words, "seat time is not the measure of learning" (p. 3).

Competency-based learning policies across the 41 states that have adopted this reform include a wide range of parameters that districts must follow (Education Commission of the States, 2011b). Some states require all districts to make competency-based credits available to students while others allow districts to decide whether they will be offered. Some states specify how students demonstrate proficiency (e.g., passing scores on statewide or national tests, portfolios), while others leave it to the discretion of the district. Some states allow credits to be awarded for demonstration of proficiency across all courses, while others offer this only in certain subjects (e.g., foreign language credits, subjects in which statewide assessments are developed). This wide range of definitions for competency-based learning in policies and practice has made researching and interpreting the outcomes of competency-based learning efforts difficult.

Research Findings on Competency-Based Learning

Five empirical studies on competency-based learning were located. They include case studies and descriptive findings from schools implementing this reform. In addition, the Education Commission of the States has published several briefs and maintains a database on state policies related to competency-based credit; however, analysis of this data is limited. The briefs provide a general overview focused on credit recovery. The policy database provides links to legislative documents outlining state policies. Several theoretical reports were also found. Some, however, were written by advocates for competency-based learning who promoted related materials. For example, several reports were by the International Association for K-12 Online Learning, which seeks to ensure all students have access to high-quality education through online, blended, and competency-based education. The nonprofit group has developed resources and services it promotes and sells. Literature reported here include only themes and major findings in empirical studies. Since the literature base is so limited, references to theoretical works by groups advocating competency-based learning are included only when the theme was found in two or more empirical studies.

Four elements of success. Findings from across empirical and theoretical studies indicate that four elements lead to successful implementation of competency-based learning:

- ***Defining and adopting competencies aligned with standards***: Proficiency or competency statements must be unambiguous and specific, making explicit what students must do to demonstrate learning. Proficiencies should demand an appropriate level of challenge for students, focus on higher-level thinking (e.g., evaluation, strategic thinking), and define the content and skills that are essential across subject areas. It is important that schools create definitions and a set of criteria for mastery to ensure that mastery is not reduced to simple recall of discrete facts and to avoid ineffective teaching practices that limit when students can advance. Clearly communicating information about the proficiencies allows students, teachers, community members, and other external audiences, such as higher education agencies, to engage and understand the quality and range of proficiencies needed. Crafting these proficiencies typically takes a year (Alliance for Excellent Education, 2013; Bers, 2001; Guskey & Anderman, 2014; Jones, Vorhees, & Paulson, 2002; Kirk & Acord, 2010; Priest et al., 2012; Silvernail, Stump, Duina, & Gunn, 2013; Sturgis, 2012; Wiggins, 2014).

- ***Developing formative and summative assessments to measure progress toward mastery.*** Summative assessments are needed that measure whether students have successfully acquired the knowledge and skills defined in the proficiencies or competencies. Decisions need to be made about how students demonstrate their knowledge and skills and the standards by which students are determined to be proficient or competent. For example, summative assessments must be complex and valid tasks on which students demonstrate high-level ability rather than passing scores on invalid, simplistic assessments. Formative assessments are just as critical, providing ongoing feedback to teachers and students on progress toward mastery and identifying gaps in knowledge and skills to complete summative assessments successfully. As with proficiencies, the assessment system must be transparent to students, teachers, parents, and outside stakeholders (Alliance for Excellent Education, 2013; Guskey &

Anderman, 2014; Jones et al., 2002; Kirk & Acord, 2010; Priest et al., 2012; Shubilla & Sturgis, 2012; Silvernail et al., 2013; Sturgis, 2012; Wiggins, 2014).

- ***Providing support for students and teachers.*** Students, especially students whose progress is slower, need support making decisions about their learning and how best to navigate their way toward graduation. Providing professional development and collaborative time for teachers was essential to the success of competency-based learning initiatives in the empirical research (Alliance for Excellent Education, 2013; Bers, 2001; Jones et al., 2002; Kirk & Acord, 2010; Priest et al., 2012; Silvernail et al., 2013).

- ***Creating and adopting structures that support competency-based learning.*** Competency-based learning necessitates that students work at their own pace, which requires flexible pacing guides, schedules, and school calendars so students have the time they need to master the content. This type of learning requires restructuring the school day, school year, class structure, and other elements of the traditional schooling model. Other needed supports highlighted in the research include tools for tracking student progress; grading policies; guidebooks and manuals for faculty, students, and families; and graduation requirements (Alliance for Excellent Education, 2013; Jones et al., 2002; Kirk & Acord, 2010; Priest et al., 2012; Shubilla & Sturgis, 2012; Silvernail et al., 2013).

Facilitators and challenges for successful implementation of competency-based learning reform. Across empirical and theoretical reports on competency-based learning, several recommendations were highlighted as important facilitators for the success of this reform. Establishing a broad base of support through clear communication was a common recommendation (Bers, 2001; Jones et al., 2002; Kirk & Acord, 2010). Developing and communicating a consistent message so administrators, teachers, students, and parents are well informed and know that competency-based learning is accepted in admissions standards and leads to college success were discussed as well as dedicating resources to measure results and communicate these to stakeholders (i.e., parents, teachers' unions, school boards, teacher preparation institutions). Specifically, theoretical research proposed that at the district level, policies are needed to ensure clear communication with parents, community members, and students so all understand the benefits of competency-based education (Grossman & Shipton, 2012). The National Governors Association recommended that states be involved in building support by helping local districts identify proficiencies that students must demonstrate to earn credit and by providing professional development for educators to implement these changes.

The literature also presents several challenges to the adoption of competency-based learning:

- ***Existing policies and time schedules for earning credit.*** Policies that determine how students earn credit and the time schedules by which they earn credit can pose challenges for implementing competency-based learning, according to empirical studies (Kirk & Acord, 2010; Priest et al., 2012). Many states have policies that restrict or even prohibit alternative approaches to earning credit toward graduation (Grossman & Shipton, 2012). In response to these policies, recommendations have been made to make changes to diploma requirements, assessments, calendars, and accountability

systems in some states and districts looking to adopt proficiency –based learning (Kirk & Acord, 2010; Priest et al., 2012).

- *Access to assessments and curricula materials*. Many commercially developed assessments do not provide the feedback necessary for teachers and students to gain a clear understanding of student progress and areas that need further support. Often teachers have had to make changes to the curriculum to accommodate competency–based learning (Jones et al., 2002; Priest et al., 2012; Silvernail et al., 2013).

- *Tracking student progress*. There is a lack of available packaged systems to track student progress, according to empirical evidence (Priest et al., 2012). Ensuring that data systems across the state are linked to track data on student performance in both in– and out–of–school credit–bearing opportunities is another potential challenge, according to theoretical work (Grossman & Shipton, 2012). Often these data are in separate, disconnected databases. Linking that data could help students and teachers have a clear understanding of student progress.

- *Funding structures.* Enrollment is often the basis for school funding, which penalizes schools when students earn credit through out–of–classroom opportunities (e.g., workforce certificate programs, virtual learning, and blended learning) and when students advance or complete requirements early (Grossman & Shipton, 2012). This funding structure runs counter to many aspects of competency–based learning.

Finally, one report recommended phasing in competency–based–learning reform by breaking large changes into smaller steps that build on one another over time (Jones et al., 2001). Introducing changes too quickly, without thoughtfully considering the impact across the entire system, could increase the likelihood that these policies are not sustained over time.

Contributions of This Study

This study makes three main contributions to the field and specifically to the NCCRA; it (1) provides needed empirical research on the topic, (2) supports state efforts toward competency–based education in the NCCRA alliance, and (3) serves as a foundation for future studies for the NCCRA.

This study provides needed empirical research on definitions of competency–based learning by exploring working definitions in state and district policies beyond those focused on credit recovery. Research on competency–based learning is limited with few empirical studies on this topic. Research on district policies is especially limited. Although the findings presented in the literature review outline some key characteristics and possible definitional elements of competency–based learning, they are limited because they are based on a very small number of empirical and theoretical research studies. They also focus on school implementation and explore the process for making decisions on how to determine proficiency rather than exploring specifics about how proficiency is defined and how competency–based reform is implemented. Results from this study will help fill gaps in the literature on district policies and implementation of competency–based learning.

Appendix B. Data and Methods

This appendix describes the data sources and details the methodology of this study. Data collection included examining publicly available documents to review policy related to competency–based learning and proficiency across all seven states in the Northeast College and Career Readiness Research Alliance (NCCRA) region. An initial review was conducted in 2012 and revised as late as fall 2014. This review helped researchers, in consultation with the study's advisory committee, determine which states to select for participation in the study. In selected states (Maine, Massachusetts, and Rhode Island), interviews were conducted with state administrators to provide information about policies and implementation challenges and supports at the state level. In summer 2013, advisory committee members helped identify districts and schools in three selected states to participate in the study. Policies related to competency–based learning from each of the selected districts or schools were reviewed and district and school administrators were interviewed in fall 2013 to provide insight into policies and practices related to competency–based learning as well as barriers and facilitators experienced while implementing this reform.

Sampling Strategy

To gain a better understanding of the range of policies related to competency–based learning in NCCRA states, state legislation and education policy related to competency–based learning and graduation requirements were reviewed across all seven states in fall 2012.

Selecting state sampling frame. Three states that represented the range of state policies in NCCRA states were identified using procedures described below.

First, members of the research team identified the range of state policies in NCCRA states using the policy review and grouped the states into three categories:

- States adopted competency–based-learning policies and districts had freedom in how they implemented this reform (Maine and New Hampshire).
- States adopted competency–based-learning policies and districts must follow strict guidelines in defining policies (Rhode Island).
- States had not adopted competency–based-learning policies, but districts and schools had the freedom to implement competency–based learning (Connecticut, Massachusetts, New York, and Vermont).

For example, New Hampshire required districts to offer competency–based credit options for all subjects and develop competency assessments for all courses to determine how proficiency is measured. Districts had the freedom to develop these as they deemed fit. Rhode Island also required districts to offer competency–based learning. State policy stipulated a multiple–measures system for determining proficiency, including specified course requirements, minimum achievement levels on the state standardized test, and completion of two performance–based assessments for all students. Districts must work within these guidelines when establishing competency–based-learning policies. There was a comprehensive set of Rhode Island policy regulations (for career–and technical education, secondary education, and virtual learning) that provided a framework and requirement for competency–based graduation. (Note that in Rhode Island, a course was defined as a recognized body of knowledge and skills for that content area. Course credit was not tied to seat time or location.)

Second, NCCRA members reviewed the findings from the policy data and categories, providing their feedback on accuracy in spring 2013. Necessary revisions were made. Advisory committee and NCCRA members advised the research team on which states should be selected to represent the range of state policies, using the categories as a guideline. Advisory committee and NCCRA members are subject-matter experts in this field. Researchers leveraged this expertise in selecting a sample of states that represented the range of existing policies and that and would provide relevant data. In summer 2013, advisory committee and NCCRA members recommended Maine, Massachusetts, and Rhode Island.

Connecticut, New Hampshire, New York, and Vermont were also considered for inclusion in the study. At the time of the study, Connecticut and Vermont were in the midst of several legislative changes related to competency-based learning. Researchers and advisory committee members thought it would be better to select states that had legislation in place for several years. Connecticut, New York, and Vermont did not have enough districts or schools that had adopted competency-based learning to be included in the study. New Hampshire was not included because the research agenda for the alliance included a future case studies project in New Hampshire. Because the purpose of this study was to describe current policies and practices rather than to analyze similarities and differences across all seven states in the region, identifying representative states was appropriate. Limiting this study to just three states enabled researchers to examine each state more thoroughly.

States selected for the study were the sampling frame for selecting interview participants and conducting district policy reviews and interviews. Interviews were conducted with six state administrators from Maine, Massachusetts, and Rhode Island to provide in-depth insight into how states define competency-based learning and proficiency (the first two research questions for the study) as well as perceived challenges and supports for implementation (the final research question of the study). Participants were selected with the help of advisory committee members, who identified the state education agency administrator or administrators best able to answer questions about the state's competency-based learning policies. State administrators included directors, specialists, and researchers.

Up to six districts, including three districts that had implemented competency-based learning policies and three districts that had considered but not yet implemented this reform, were identified in each of the states—Maine, Massachusetts, and Rhode Island (fewer than six districts were identified in Massachusetts)—with the help of advisory committee members and state administrators.

Selecting districts and schools. The procedures outlined below were used to select districts for this study.

First, state administrators were asked to provide a list of districts that had implemented competency-based-learning reform as well as a list of districts that had considered these policies but had not yet implemented them. Given the limited number of districts in each state that had fully implemented this reform, the research team also asked for a list of schools that had implemented competency-based learning. The research team also consulted school reform groups such as the League of Innovative Schools in each state to identify districts and schools engaged in this work. The League of Innovative Schools is a regional professional learning community for schools, many of which are engaged in innovations and school redesign efforts related to competency-based learning. Researchers also contacted NCCRA members from the

study states to identify those districts and schools that had implemented competency–based–learning reform and those that had considered but not yet implemented competency–based learning reform. Additional searches were conducted of state and district websites to identify districts and schools that had implemented competency–based learning reform. This process was completed in summer 2013.

For this study, a district or school was considered as having "implemented" competency–based learning reform if students were able to demonstrate mastery of content to earn credit for at least some content (it was not required that students had the opportunity to demonstrate mastery to earn credit for all content and all courses). The policies had to have been in place for at least six months. This definition was intentionally broad to capture the different implementation phases of schools and districts.

A district or school that had considered but not yet implemented competency–based learning ("nonimplementer") included districts or schools that had voiced an interest and had taken steps to investigate this reform (e.g., reviewed the competency–based learning policy with state, district, or school board members; applied for a waiver; expressed interest to state or district administrators), but had not yet implemented this reform either because they had ruled it out or because they were planning to do so in the future. Some schools in this category had implemented reforms related to competency–based learning with plans to engage in further, more dramatic reforms to implement a full competency–based–learning system. Other schools had adopted reforms related to competency–based learning (e.g., standards–based grading) with no intention of implementing competency–based learning reform. The nonimplementer category, therefore, was also broad and captured those districts and schools that had not implemented any competency–based learning reforms and those who were at the very initial planning stages.

Second, during summer 2013 researchers gathered the following information on each of the districts and schools considered for this study:

- Size of the district (number of schools, total student enrollment) and size of the school
- Number of schools in the district that had implemented competency–based learning
- Demographic characteristics of students served
- Number of years that competency–based learning had been in place and how many years ago the district or school had considered competency–based learning
- Location type (e.g., urban, suburban, rural)
- Process used to review competency–based learning
- Type of school (traditional, alternative, magnet)

Third, in early fall 2013, information on each district or school considered for inclusion was presented to the advisory committee members who used it to advise researchers on which districts or schools should be interviewed. Based on the districts and schools identified in each state, advisory committee and research team members made decisions on which characteristics were most important in selecting districts. As each state had different policies and demographics, decisions for inclusion were made by state. For each state, researchers and advisory committee members looked at the size of the district or school, the student body

demographics, location type, school type, and history of competency–based learning reform. The majority of the sites identified had just one high school. This was due in part because in Maine and Rhode Island the majority of districts in these states have a single high school. Another reason the majority of sites identified had only one high school was because this reform requires comprehensive changes, and many of the districts with multiple high schools were either piloting reforms in only one of their high schools, were still in the planning phase, had decided against adopting competency–based learning, or had yet to consider this reform (this was especially the case in Massachusetts where the reform is not required). Districts and schools were selected that represented the range of these characteristics and that would yield the most relevant data. For states where districts and schools had similar characteristics (e.g., most districts were alternative or charter schools, most had just begun to implement reform), districts or schools that seemed most representative were selected. Advisory committee members were asked to consider whether districts and schools differed from typical districts in other ways that might limit the usefulness of the findings.

In fall 2013, the superintendent of each identified district or school was contacted about being interviewed or about helping to identify the district or school administrator most appropriate to interview regarding the district's or school's competency–based learning policies. If a selected district or school did not wish to participate, one with similar characteristics was asked to participate. Eighteen sites and two state administrators did not respond to requests to participate in the study. Two sites opted not to participate, and another site agreed to participate, but a common time for the interview could not be reached. One administrator from each of six sites in Maine and Rhode Island and one administrator from each of two sites in Massachusetts were interviewed about the competency–based learning policies as well as perceived barriers and facilitators for implementing the reform. Thus, a total of 14 district and school administrators were interviewed. Along with the six state administrators interviewed, there were 20 interviews conducted in fall 2013 (Table B1).

Table B1. Interview participants and state, district, and school policy reviews completed

Data	Connecticut	Maine	Massachusetts	New Hampshire	New York	Rhode Island	Vermont	Total
State policy review	1	1	1	1	1	1	1	7
District or school policy review	0	6	2	0	0	6	0	14
State administrator	0	3	2	0	0	1	0	6
District administrator	0	4	3	0	0	5	0	11
School administrator	0	2	0	0	0	1	0	3
Totals	1	7	3	1	1	7	1	21

Source: Authors' analysis of state competency-based-learning policy documents and interview data in 2014.

Data Sources, Instruments, and Collection Methods

State policy information. State legislation and education policy related to competency–based learning in each of the seven northeast states in the REL Northeast and Islands Region were reviewed to determine definitions of competency–based learning and proficiency. Publicly

available documents were reviewed, information was obtained through Web searches, and NCCRA members were consulted to identify pertinent policies and information not located in the initial search. The initial search was conducted in 2012 and was revised as late as fall 2014. The following sources were examined to provide information on how competency-based learning was defined in policy:

- State legislation regarding competency-based learning

- State board of education policies regarding competency-based learning

- State, school board, or district regulations that allow, mandate, or regulate student success plans, personalized learning plans, or something similar

- State, school board, or district regulations that allow students to meet graduation requirements through multiple means, including earning credits by attaining passing scores on exams, completing online coursework, participating in internships, and other alternative means

- Districts and select schools that were allowed to test or pilot competency-based learning, student success plans, or multiple pathways

Graduation requirements in all seven NCCRA region states were also examined because competency-based learning often has implications for graduation requirements. Definitions of proficiency are often given in graduation requirements. Graduation requirements were an important component of how this reform was defined. For example, New Hampshire and Rhode Island did not award credit based on seat time or the Carnegie unit. Study team members examined credit requirements, state standardized test requirements, competency-based requirements, and performance-based requirements in each state.

State legislative and state board of education websites were searched using the following terms: *competency-based learning*, *performance-based learning*, *competency-based learning*, *customized learning*, *student success plans*, *multiple pathways*, and *performance assessment*. This list of search terms was reviewed by the NCCRA advisory committee. Google searches of the search terms with each state's name were also conducted to ensure that pertinent information was located.

Information gathered through these Web searches, including documents such as state legislative documents related to graduation requirements (e.g., bills, acts, public acts); board of education policy documents (e.g., board of education rules and regulations, parent information documents, website pages describing current policies and reform); and documents describing innovative schools, pilot programs, and grants related to proficiency-based learning, were used to complete two tables for the policy review (Tables D1 and D2 in Appendix D).

The state policy reviews were conducted prior to interviews with state administrators to help inform the interview protocols.

District and school policy information. District or school policies in the three states included in this study were also reviewed to examine definitions of competency-based learning at the district and school level. The selection and policy reviews were conducted in summer 2013. The same process used for the state policy reviews was used to conduct the district and school

policy reviews. In addition to the documents listed earlier, researchers searched for district policy documents (e.g., student handbooks, reports from superintendent, school profiles), gathering information to help in completing the review (see Table E1 in Appendix E). The district and school policy reviews were completed prior to interviews with district and school administrators to help inform the interview protocols. The administrator interviewed from each site was asked to check the review for accuracy. State and district and school policy reviews are enumerated in Table B1.

Interviews with administrators. Semi-structured interviews were conducted with six state administrators, at least one from each of the three states selected for the study, and 14 district or school administrators selected for this study to gain a better understanding of competency-based-learning reform and the barriers and facilitators for implementation. All interviews were conducted in fall 2013. As described in the sampling frame, interviews were conducted with state and district leaders in sites that had implemented competency-based learning policies as well as with state and district or school leaders in sites where this policy had been considered but not implemented. Interviewing education leaders within these different policy contexts was important for identifying and providing insight into barriers and facilitators for implementing competency-based-learning reform.

The purpose of these interviews with six state administrators, including three from Maine, two from Massachusetts, and one from Rhode Island, was to gather information about state efforts related to competency-based learning. Questions sought to gain information about:

- The history of competency-based learning reform in the state, including whether and how the state had considered these policies

- Why the state had or had not adopted competency-based learning policies

- Supports that had been provided to schools and districts seeking to implement competency-based learning

- Definitions of proficiency or competency and what the state expected of districts and schools in determining proficiency or competency

- The implementation process used at the state level

- Perceived barriers to implementation at the state level

- Challenges experienced at the state level in adopting and implementing competency-based learning policies

- Facilitators for implementation at the state level

- Successes experienced at the state level in adopting competency-based learning

- Resources and supports needed to implement this reform at the state level

Interview questions for state administrators were also prepared based on findings from the policy review, with questions specific to the state policy context.

Three district or school administrators in Maine and Rhode Island and one from Massachusetts from sites that had implemented competency-based learning were interviewed to gather in-

depth explanations of how competency–based learning worked at the district or school levels. Interview questions sought to gain information about:

- The history of competency–based learning reform in the district or school (how the policies were considered, the process for implementation)
- Why the district or school had adopted competency–based learning reform
- Definitions of proficiency or competency and how proficiency was determined in the districts or schools
- The implementation process used in the district or school(s)
- How state policy and efforts influenced district or school decisions
- Barriers to implementation in the district and school(s)
- Facilitators for adopting this reform in the district and school(s)
- Supports received from the state
- Successes experienced by districts or schools

Interview questions for district and school administrators were prepared based on findings from the policy review with questions specific to the district or school policy context.

Three administrators in Maine and Rhode Island and one administrator from Massachusetts from sites that had considered adopting competency–based learning but had not yet implemented this reform were also interviewed in fall 2013. Interviews focused on understanding why districts had not adopted competency–based learning (according to the definition in this study) and included questions about:

- The history of competency–based learning reform in the district, including whether and how the district or school had considered these policies
- Barriers to implementation by the district or school
- Supports and resources needed from the state to implement competency–based learning
- Plans for adopting competency–based learning in the future

Interview questions were prepared based on findings from reviewing competency–based–learning policies with some questions specific to the district policy context.

State and district administrators were asked if there were any documents other than those gathered that would be useful for understanding the policies related to competency–based–learning reform. Any information gathered from these documents was added to the results in the state, district, and school policy reviews.

Three interview protocols were developed: one for state administrators and two for district or school administrators—one for districts or schools that had implemented competency–based learning and another for districts or schools that had considered but not yet implemented this reform (see Appendix C for the interview protocols). Questions were added to each protocol based on results from reviewing competency–based–learning policies to help gain more in-

depth understanding of policies and practices as well as barriers and facilitators across the states and sites in the study.

Because there were nine or fewer interviews per protocol, Office of Management and Budget clearance was not required. The advisory committee reviewed the protocols and had the opportunity to offer revisions. A pilot was conducted with one state administrator and one district administrator not in the study sample. These individuals were recruited with the assistance of the NCCRA members. During the pilot, interviewees were asked whether the interview questions were clear and if any additional questions should be asked. Revisions were made based on feedback from those who participated in the pilot interview.

Confidentiality of Data Sources

For the interview data, researchers adhered to a strict set of procedures, including completing institutional internal review board requirements and safeguards to protect the confidentiality of all respondents. Researchers used de-identified data for all analyses. Electronic files were shared only through a secure FTP server or through e-mail as encrypted attachments; all hard files are stored securely at Education Development Center headquarters in Waltham, Massachusetts.

Data Processing and Analysis

Publicly available documents related to state competency-based-learning policies were gathered and reviewed for each of the seven northeast states in the REL Northeast and Islands Region. The results of the searches related to state legislation and state board of education policies related to competency-based learning, student success plans, multiple pathways, performance assessment, and pilot or innovation schools for each state are detailed in Table D1 in Appendix D. Additional information about each state is provided following the table. Table D2 contains information about graduation requirements in each state with detailed information on credit requirements, state standardized test requirements, competency-based requirements, performance-based requirements, and grading systems (see Table D2 in Appendix D). This information provides insight into how competency-based learning and proficiency is defined across states in the region.

One research team member conducted the search and completed the tables for each state, noting where information was found, questions for further exploration, and any other important information. A second research team member reviewed the comments and notes and conducted a similar search as needed to address questions raised and confirm accuracy of the information. The two researchers met to resolve any discrepancies in the information gathered and how the information was presented in the tables. Finally, NCCRA members reviewed the tables to ensure accuracy.

Publicly available documents related to competency-based-learning policies for each of the 14 districts or schools participating in the study were gathered and reviewed, creating a table similar to the one for state policies (see Table E1 in appendix E). A similar process was used by researchers to ensure that information was categorized and reflected accurately in the tables: two researchers were assigned to each district or school, one who completed the policy document analysis and another who reviewed the findings, confirming the accuracy of the information and resolving any discrepancies or differences in the findings and in how the

information was presented. In all but one district, there was only one high school and graduation requirements for that high school were included. For the one district that had two high schools, one was chosen that more accurately represented the direction of the district's policies. The policy data provide insight into the variation in district and school policies within and across states. Demographic information for each site is shown in Table F1 in Appendix F. District information is presented if a district administrator was interviewed, and school information is included if a school administrator was interviewed.

All interviews were recorded and transcribed. The interviewer compared the transcription to the audio recording as needed to ensure the accuracy and completeness of the transcript. The transcript was coded using coding software. All codes were explicitly linked to the study's research questions, including key elements in defining competency-based learning, challenges experienced in implementing these policies, and key supports that have aided in implementing this reform. Analyses included themes and substantive patterns that emerged within each state and district or school as well as across states and districts or schools.

To establish the codes, selected interviews were initially coded by all study team members to identify codes based on key domains. Study team members then met to discuss and make necessary revisions to the codes. A codebook was created with definitions for each code, which allowed the team to aggregate data to describe the key domains of the research questions. Another set of interviews was coded by study team members. After coding these interviews, researchers met to discuss the use of the codes, identifying and resolving any inconsistencies, establishing additional coding rules, and revising the codebook as needed. The following final set of codes was used with all interviews:

- Assessing district/school progress implementing competency-based learning
- Assessment
- Assessment—Capstone projects
- Assessment—Common tasks/common formative assessments
- Assessment—End of course
- Assessment—Formative assessment
- Assessment—Performance-based assessment
- Assessment—Portfolios
- Assessment—Rubrics
- Assessment—Standardized assessment
- Carnegie units
- Challenges
- College admission/postsecondary
- Curriculum
- Curriculum—Instructional practices
- Data management
- Definition of competency-based-learning system

- Definition of proficiency/measurement of proficiency
- Grading/report card
- Graduation requirements
- Impact/changes
- Implementation
- Leadership
- Level of preparedness
- Motivation
- Parent, teacher, student reaction
- Policies—Other/Related impacting competency–based learning
- Policies—State mandate
- Reforms related to competency–based learning—Blended learning
- Reforms related to competency–based learning—Individualized learning plans
- Reforms related to competency–based learning—Multiple pathways
- Reforms related to competency–based learning—Other
- Reforms related to competency–based learning—Personalization
- School culture
- Successes
- Successes—Facilitators
- Support—District
- Support—Needed supports
- Support—Other
- Support—State
- Teacher participation
- Teacher preparation
- Type of school

The coding process was iterative to ensure that the codes were applied validly and consistently. After the codebook was created, one study team member coded each interview, with a second team member reviewing the coding. Any inconsistencies were discussed and resolved between the two study team members.

Following the coding of all interviews, the coded passages were divided among the research team members. Members then reviewed each of the quotes for their assigned codes, identifying significant themes. Researchers identified the following themes:

- Developing proficiencies/clarity about expectations.
- Rigor in competency–based learning.

- Role of leadership in competency-based learning.
- Aligning curriculum, assessment, and grading policies to proficiencies.
- Culture shift: Students.
- Culture shift: Teachers.
- Common elements: Students must demonstrate mastery of all competencies/proficiencies to earn credit.
- Common elements: Students move on to the next competency once they demonstrate mastery; students have more time to demonstrate mastery if needed.
- Common elements: Students can earn credit toward graduation through multiple means rather than just through seat time and course taking/Carnegie unit.
- Common elements: Multiple measures used to determine proficiency.
- Motivation for implementation of competency-based learning.
- Needed supports: Need for jump start.
- Needed supports: Policy.
- Needed supports: Examples, research, guidance.
- Needed supports: Support for teachers.
- Needed supports: Support from state.
- Needed supports: Resources.
- Challenges: Resistance.
- Challenges/needed supports: Communication.

Research team members searched for any substantive themes among implementers and nonimplementers as well as among state, district, and school administrators. No substantive themes were revealed in the analyses. In terms of including both district and school administrators in the study, many of the interview questions examined policies and policy implementation in districts and schools regardless of the type of participant (e.g., district administrators were asked about barriers in the district as well as in the schools; school administrators were asked about facilitators in the district as well as in the schools). Mixing district and school staff, therefore, did not prove to be problematic. Researchers reviewed the themes, combining similar themes from across codes. The themes were presented to advisory committee members who offered feedback. The descriptive findings were arranged according to themes of definitions of proficiency or competency, how proficiency is determined, and barriers and facilitators to implementation. All analyses were conducted in fall 2013.

Appendix C. Telephone Interview Protocols

This appendix includes the three telephone interview protocols used for the state administrator and the district or school administrator interviews (one for sites that implemented competency–based learning and one for sites that had not yet implemented it).

Interview Protocol: Administrator

Introduction. Many educators around the region are implementing or considering proficiency– or competency–based– (depending on the state) learning reform. Proficiency– or competency–based learning encompasses changes in policy where students must demonstrate mastery of content in order to earn credit and graduate. This interview is part of a study that seeks to understand the policies and implementation plans of states and districts across the region. We would like to get your perspective on adopting policies related to proficiency– or competency–based learning and any implementation efforts in your state thus far as well as barriers to implementation. As part of this study, we are also interviewing state and district administrators that have and have not adopted this reform. Your participation in this interview will provide valuable insight into the policies, proficiency definitions, and the facilitators and challenges to implementation.

Everything you say in this interview is confidential; we will not share your name or identify you in any reports from the study. Because we want to share what you have to say, we may quote you, but we will identify you as, for example, "State administrator 1." If you don't want to answer any questions, you may decline to respond to any questions or stop the interview at any time.

This interview will take approximately 45 minutes. We will begin by asking general questions about your own background, then move on to questions about current efforts across the state, the challenges your state has experienced in considering implementing proficiency– or competency–based–learning policies and the facilitators available to assist in implementation, and/or barriers that have contributed to decisions to not adopt such policies.

Do I have permission to record this interview with you? [Note: If the respondents wish not to be recorded, take notes, but do not proceed with recording. If respondents agree to be recorded, turn on the recorder and repeat the question so that the positive response to this question and subsequent responses are recorded.]

Before we start, do you have any questions or concerns about this process?

Background information

1. What is your role in the state and how long have you been in this position?

2. How have you been involved in the state's efforts to review or implement proficiency–based learning?

Current policies related to proficiency- or competency-based learning (If state has adopted proficiency- or competency-based-learning policies)

3. We know from reviewing state documents that the state currently has the following policies related to proficiency- or competency-based learning [review state-level policies]. Is this correct?

    a. How recently were these adopted?

    b. When were these policies implemented?/When will these policies be implemented?

    c. What was the motivation behind the adoption of proficiency- or competency-based-learning reform?

4. We know from reviewing state documents that the state currently has the following policies related to graduation requirements [review state-level policies]. Is this correct?

    a. How does proficiency- or competency-based learning fit with the current graduation requirements in the state?

    b. How are proficiencies used in the state's graduation policy?

    c. Were there any additional policy changes required (e.g., ensuring that funding structures do not penalize schools when students earn credit through out-of-classroom opportunities or complete requirements early)?

5. How is proficiency defined in your state?

    a. Are there state guidelines or expectations for districts in determining proficiency?

    b. How is this operationalized in the schools?

    c. How did the state determine this definition of proficiency? What was the process for creating that definition?

6. What is expected of students to demonstrate proficiency?

7. How is proficiency measured?

    a. What type of data does the state require or expect to be included in this measure?

    b. How are these data collected at the state level? How frequently? By whom?

    c. How are these data monitored at the state level? Who is in charge of this?

    d. How are these data managed at the state level? By whom?

    e. Are there any data management systems in place at the state level? How are these used?

f.   How are these measures reported? How often? By whom? On what level (school, district)?

Current plans related to proficiency– or competency–based learning policy (If state has not adopted proficiency– or competency–based–learning policies)

8. Are there any plans to adopt proficiency– or competency–based learning in your state?

   a.   When do you anticipate that these policies will be implemented?

      i.   Can you describe the process that you used to review and adopt these policies?

      ii.   Who was involved in the process?

      iii.   What are the next steps in the process?

   b.   What is the motivation behind the adoption of proficiency– or competency–based–learning reforms?

   c.   Have any schools or districts already begun implementing proficiency– or competency–based–learning reforms?

9. If the state does not have plans to adopt proficiency– or competency–based learning—Why has your state decided not to adopt proficiency– or competency–based–learning reforms?

   a.   Can you describe the process that was used to review these policies?

   b.   Who was involved in this process?

   c.   Are there any specific barriers that are preventing the state from adopting this reform?

   d.   Have any schools or districts expressed interest in or begun implementing proficiency– or competency–based–learning reforms on their own?

Implementation of proficiency– or competency–based learning reforms (If the state has already adopted proficiency– or competency–based–learning policies)

10. What was the process for implementing proficiency– or competency–based–learning reforms at the state level?

11. Who provides the leadership for the implementation of the new policies?

   a.   Who is responsible for monitoring the implementation? On what level (state, district, school)?

12. How well prepared do you think this state is for implementing proficiency- or competency-based-learning policies?

    a. Why do you feel you are well prepared?/Why do you feel you are not well prepared?

13. Have many districts adopted a new proficiency- or competency-based-learning policy?

    a. What types of districts have adopted proficiency- or competency-based-learning policies? Is there a pattern? Large or small? Urban or rural?

    b. How have districts reacted to the changes adopted?

        i. How have districts with historically high graduation rates reacted to the new proficiency- or competency-based-learning policy?

14. What is your sense on how well prepared districts across the state are for implementing the new policies?

    a. Why do you feel the districts are well prepared?/Why do you feel the districts are not well prepared? (Probe for content, practices, and assessment.)

    b. What types of state support are provided to districts and schools in making this transition to proficiency- or competency-based learning?

15. Are there any districts that are doing particularly well in implementing the new proficiency- or competency-based-learning policies?

    a. What are these schools doing? To what do you attribute their success?

16. How do you plan to assess districts' progress in implementing the new policies?

    a. Are there any resources that you plan to use to help measure progress?

    b. What types of resources are needed or would be most useful for measuring this progress?

17. What changes have you seen since the implementation of proficiency- or competency-based-learning policies?/What changes do you anticipate with the implementation of proficiency- or competency-based-learning reforms?

    a. Changes in standards?

    b. Changes in instruction?

    c. Changes in assessment?

      d.   Changes in graduation rates?

18. If you could do it all over again, what would you do differently in terms of rolling out these changes?

      a.   What has been particularly helpful in implementing these policies?

Implementation of proficiency- or competency-based learning reforms (If the state has not adopted proficiency- or competency-based learning, but some schools or districts have)

19. How many districts across the state are implementing proficiency- or competency-based-learning reforms?

      a.   Is the state supporting these efforts?

      b.   What types of support are provided?

      c.   Is the state monitoring these schools? Who is responsible for monitoring these schools?

      d.   Do you have a sense why these schools and districts have adopted these reforms?

            i.   Do these schools and districts share similar characteristics (e.g., large/small schools, urban/rural/suburban)?

20. What is the process for a school or district to start implementing proficiency- or competency-based learning (i.e., waiver process, pilot school)?

      a.   Can any school or district decide to adopt proficiency- or competency-based learning?

      b.   What types of flexibility are granted to schools and districts that pursue proficiency- or competency-based-learning reforms?

Challenges and needs

21. What challenges has the state faced thus far in implementation efforts?

      a.   Among the challenges you just listed, what do you perceive is the biggest challenge at the state level for implementation?

      b.   Why is this so challenging?

      c.   What supports are needed?

22. How have local, state, and federal guidelines had an impact on your state's consideration or implementation of proficiency-based learning?

23. Have you experienced any resistance toward this approach (from administrators, teachers, parents, community members)?

Successes

24. What do you perceive as the greatest success at the state level for implementing proficiency- or competency-based learning thus far?
    a. How was this accomplished?
    b. What supports were needed?

Resources and supports

25. What have been some of the key supports that have pushed this initiative forward?
    a. What types of support do you think states need to implement proficiency- or competency-based-learning policies?
        i.   What supports have been offered to the state?
        ii. What supports has the state requested?
        iii. Do these challenges vary across the state or are they similar statewide?

26. What supports would be helpful at the state level for implementation of proficiency- or competency-based-learning policies?

27. Is there anything else about proficiency- or competency-based learning in your state that you would like to share with me?

Thank you for participating in this interview! We really appreciate it.

Note: Ask participant if he/she would like a copy of the final report and collect e-mail address information.

Interview Protocol: District/School Administrator of Implemented Districts/Schools

Introduction. Many educators around the region are implementing or considering proficiency- or competency-based-learning reform. Proficiency- or competency-based learning encompasses changes in policy where students must demonstrate mastery of content in order to earn credit and graduate. This interview is part of a study that seeks to understand the policies and implementation plans of states and districts across the region. As part of this study, we are also interviewing state administrators for their perspectives. Your participation in

this interview will provide valuable insight into the policies, proficiency definitions, and the facilitators and challenges to implementation.

Everything you say in this interview is confidential; we will not share your name or identify you in any reports from the study. Because we want to share what you have to say, we may quote you, but we will identify you as, for example, "District/School administrator 1." If you don't want to answer any questions, you may decline to respond to any questions or stop the interview at any time.

This interview will take approximately 60 minutes. We will begin by asking general questions about your own background, then move on to questions about current efforts in your district, the challenges your district is likely to face in implementing proficiency– or competency–based– learning policies, and the facilitators available to assist in implementation.

Do I have permission to record this interview with you? [Note: If the respondents wish not to be recorded, take notes, but do not proceed with recording. If respondents agree to be recorded, turn on the recorder and repeat the question so that the positive response to this question and subsequent responses are recorded.]

Before we start, do you have any questions or concerns about this process?

Background information

1. What is your role in the district/school and how long have you been in this position?

2. We know from reviewing district/school documents that [outline some characteristics of the district/school]. Is this accurate?

Current policies related to proficiency– or competency–based learning

1. We know from reviewing district/school documents that the district/school currently has the following policies related to proficiency– or competency–based learning [review district/school policies]. Is this correct?

   a. How recently were these proficiency– or competency–based–learning policies adopted?

   b. When were these policies implemented?/When will these policies be implemented?

   c. What was the motivation behind the adoption or development of proficiency–based learning policies?

   d. What support did you receive from the state?

       i. (If school) What support did you receive from the district?

2. We know from reviewing district/school documents that the district/school currently has the following policies related to graduation requirements [review district policies]. Is this correct?

    a. How does proficiency– or competency–based learning fit with current graduation requirements in the state/district?

    b. How are proficiencies used in the district's/school's graduation policy?

    c. Were there any additional policy changes required (e.g., ensuring that funding structures do not penalize schools when students earn credit through out–of–classroom opportunities or complete requirements early)?

3. How is proficiency defined in your district/school?

    a. Are there district guidelines or expectations that schools must follow in determining proficiency?

    b. How does this definition relate to state/district guidelines on proficiency?

    c. How is this operationalized in the schools?

    d. What is expected of students to demonstrate proficiency?

    e. What does a "proficient" student look like? What does his or her resume look like? What does it mean to be proficient that leads to credit or graduation?

    f. How did the district/school determine this definition of proficiency? What was the process for coming up with that definition?

4. How is proficiency measured in the district/school?

    a. What type of data is included in this measure?

    b. How are these data collected at the district level? At the school level? How frequently? By whom?

    c. How are these data monitored at the district level? At the school level? Who is in charge of this?

    d. How are these data managed at the district level? At the school level? By whom?

    e. Are there any data management systems in place at the district level? At the school level? How are these used?

    f. How are these measures reported at the district and/or school level? How often? By whom? On what level (school, district)?

Implementation of Proficiency– or Competency–Based Graduation Requirements

5. What was the process for implementing proficiency– or competency–based–learning reforms in your district/school?
    a. (If district) Did this process vary by school?

        i. If so, why was it different for the different schools?
        ii. How did the district handle this?
    b. How did you establish buy–in for implementing these reforms (i.e., school, leadership, parents, students)?

6. Who provides the leadership in the district/school for the implementation of the new policies?
    a. Who is responsible for monitoring the implementation? On what level (districts, schools)?

7. How well prepared do you think your district/school was for implementing proficiency– or competency–based–learning policies?
    a. Why do you feel you were well prepared?/Why do you feel you were not well prepared?

8. (If district) What is your sense on how well prepared schools across the district were for implementing the new policies?
    a. Why do you feel the schools were well prepared?/Why do you feel the schools were not well prepared? (probe for content, practices, and assessment)

9. (If district) Have many schools adopted a new proficiency– or competency–based–learning policy?
    a. What types of schools have adopted the new proficiency– or competency–based–learning policies? Is there a pattern? Large or small? Urban or rural?
    b. How have schools reacted to the changes adopted?

        i. How have schools with historically high graduation rates reacted to the new proficiency– or competency–based–learning policy?

10. How do you plan to assess school progress in implementing the new policies?
    a. Are there any resources that you plan to use to help measure progress?
    b. What types of resources are needed or would be most useful for measuring this progress?

11. What changes have you seen since the implementation of proficiency– or competency–based–learning policies?/What changes do you anticipate with the implementation of proficiency– or competency–based–learning reforms?
    a. Changes in standards?
    b. Changes in instruction?
    c. Changes in assessment?
    d. Changes in graduation rates?

12. If you could do it all over again, what would you do differently in terms of rolling out these changes?
    a. What has been particularly helpful in implementing these policies?

Challenges and needs

13. What has been the biggest challenge for implementing the proficiency– or competency–based–learning policies across the district/school?
    a. Why is this so challenging?
    b. What supports are needed?

14. What challenges has the district/school faced thus far in efforts to implement the new proficiency– or competency–based–learning reforms?

15. (If district) What challenges have schools faced thus far in their implementation efforts?
    a. Among the challenges you just listed, what do you perceive is the biggest challenge at the school level for implementation?
    b. Why is this so challenging?
    c. What supports are needed?

16. (If district) Are there any schools in the district that are struggling more than others?

    a. What do you believe is the cause? What supports are needed to help bring these schools up to speed?

17. How have local, state, and federal guidelines had an impact on your state's consideration or implementation of proficiency-based learning?

18. Have you experienced any resistance toward this approach (from administrators, teachers, parents, community members)?

Successes

19. What have been some of the successes you have experienced in implementing these reforms?

20. (If district) Are there any schools that are doing particularly well in implementing the new proficiency- or competency-based-learning policies?
    a. What are these schools doing? To what do you attribute their success?

Resources and supports

21. (If district) Have any schools expressed interest in adopting the new proficiency- or competency-based-learning policies but have been unable to implement them?
    a. What do you believe is the cause? What supports are needed to help these schools reach implementation?

22. What have been some of the key supports that have pushed this initiative forward?/ What have been the most helpful facilitators in implementing proficiency- or competency-based learning in your district/school?
    a. (If district) What have been the most helpful facilitators in implementing at the school level?

23. What efforts has the state/district made (does the state plan to take) to support your district/school in implementation?
    a. What supports provided by the state/district have been particularly helpful?
    b. What other types of support have been particularly helpful?

24. What types of support do you still need to implement the new proficiency- or competency-based learning policies?

    a. What supports have you requested?

25. Is there anything else about proficiency-based learning in your district/school that you would like to share with me?

Thank you for participating in this interview! We really appreciate it.

Note: Ask participant if he/she would like a copy of the final report and collect e-mail address information.

Interview Protocol: District/School Administrator of Considered but Nonimplemented Districts/Schools

Introduction. Many educators around the region are implementing or considering proficiency- or competency-based-learning reform. Proficiency- or competency-based learning encompasses changes in policy where students must demonstrate mastery of content in order to earn credit and graduate. This interview is part of a study that seeks to understand the policies and implementation plans of states and districts across the region. We know that your district/school has not yet implemented proficiency- or competency-based learning, and we would like to have your perspective on this reform. As part of this study, we are also interviewing state administrators and district or school administrators in districts that have adopted this reform. Your participation in this interview will provide valuable insight into the policies, proficiency definitions, and the facilitators and challenges to implementation.

Everything you say in this interview is confidential; we will not share your name or identify you in any reports from the study. Because we want to share what you have to say, we may quote you, but we will identify you as, for example, "District/School administrator 1." If you don't want to answer any questions, you may decline to respond to any questions or stop the interview at any time.

This interview will take approximately 45 minutes. We will begin by asking general questions about your own background, then move on to questions about current efforts in your district, the challenges your district is likely to face in implementing proficiency-based-learning policies, and the facilitators available to assist in implementation.

Do I have permission to record this interview with you? [Note: If the respondents wish not to be recorded, take notes, but do not proceed with recording. If respondents agree to be recorded,

turn on the recorder and repeat the question so that the positive response to this question and subsequent responses are recorded.]

Before we start, do you have any questions or concerns about this process?

Background information

1. What is your role in the district/school and how long have you been in this position?

2. We reviewed district/school documents that [outline some characteristics of the district/school—focused on proficiency– or competency–based learning]. Is this accurate?

    a. It looks like you are in the process of implementing proficiency– or competency– based learning/It doesn't look like your district/school has implemented proficiency– or competency–based learning—are there any other initiatives or reforms in the district/school that you feel are related to proficiency– or competency–based learning (e.g., performance assessments, multiple pathways, personalized learning plans, portfolios, standards–based reporting)?

Current policies related to proficiency– or competency–based learning

3. Why has your district/school considered adopting proficiency– or competency–based learning? Why are you interested in proficiency– or competency–based learning types of reforms?

    a. What was the process that you used to review/consider this reform?
    b. Who was involved in the process to consider adopting these reforms?
        i. Who has taken leadership of this process? How have district/school administrators been involved?
    c. When did you start considering these reforms?

4. Are there any plans to adopt proficiency– or competency–based learning in your district/school?

    a. How did you establish buy–in for implementing these reforms (i.e., school leadership, parents, students)?
    b. When do you anticipate that these policies will be implemented?
        i. Can you describe the implementation process?
        ii. Who is involved in the process?
        iii. What are the next steps in the process?

   c. What is the motivation behind the adoption of proficiency- or competency-based-learning reforms?

   d. How has the state context influenced the district/school in terms of implementing these reforms?

      i. (If school) How has the district context influenced the school in terms of implementing these reforms?

5. (If the district/school does not have plans to adopt proficiency- or competency-based learning) Why has your district/school decided not to adopt proficiency- or competency-based-learning reforms?

   a. Can you describe the process that was used to review these policies?

      i. Who has provided leadership in this review process?

   b. Are there any specific barriers that are preventing your district/school from adopting this reform?

   c. (If district) Have any schools expressed interest in or begun implementing proficiency-based learning reforms on their own?

      i. Why are these schools interested in these types of reforms?

6. (If district) How much flexibility is granted to districts across the state in terms of implementing these reforms?

   a. (If school) How much flexibility is granted to schools across the district in terms of implementing these reforms?

7. (If district/school has implemented) How is proficiency defined in your district/school?

   a. (If district) How is it expected to be operationalized in schools across the district?

   b. What is expected of students to demonstrate proficiency?

   c. How did/will the district/school determine a definition of proficiency? What was/will be the process for coming up with that definition?

   d. How much flexibility do schools have in determining the definition of proficiency?

8. (For districts/schools planning to adopt proficiency- or competency-based learning) How do you expect proficiency will be measured in the district/school following the adoption of proficiency-or competency -based learning?

   a. What type of data will be included in this measure?

  b. How will these data be collected at the district and/or school level? How frequently? By whom?

  c. How will these data be monitored at the district and/or school level? Who is in charge of this?

  d. How will these data be managed at the district and/or school level? By whom?

  e. Will there be any data management systems in place at the district and/or school level? How will these be used?

  f. How will these measures be reported at the district and/or school level? How often? By whom? On what level (schools, districts)?

  g. What has been the process for making these decisions?

9. (For districts/schools planning to adopt proficiency- or competency -based learning) How will proficiency- or competency-based learning fit with graduation requirements in the state? In the district?

  a. How much flexibility do districts and/or schools have in developing their own graduation policies?

  b. Are there any additional policy changes required to help make sure proficiency- or competency-based learning can happen in the district/school (e.g., ensuring that funding structures do not penalize schools when students earn credit through out-of-classroom opportunities or complete requirements early)?

Implementation of proficiency- or competency-based graduation requirements (For districts/schools planning to adopt proficiency- or competency-based learning)

10. What will be the process for implementing proficiency- or competency-based-learning reforms?

11. Who will provide the leadership for the implementation of the new policies?

  a. Who will be responsible for monitoring the implementation? On what level (districts, schools)?

12. What changes do you anticipate with the implementation of proficiency- or competency-based-learning reforms?

  a. Changes in standards?

  b. Changes in instruction?

  c. Changes in assessment?

    d. Changes in graduation rates?

Challenges and needs (For all districts)

13. What challenges has the district/school faced thus far in any efforts to develop proficiency- or competency-based learning reforms?
    a. Among the challenges you just listed, what do you perceive has been the biggest challenge for implementing proficiency- or competency-based-learning policies?
    b. Why is this so challenging?
    c. What supports are needed?

Challenges and needs (For districts where schools have adopted proficiency- or competency-based-learning reforms)

14. What challenges have schools faced thus far in their implementation efforts?
    a. Among the challenges you just listed, what do you perceive has been the biggest challenge at the school level for implementation?
    b. Why is this so challenging?
    c. What supports are needed?
    d. Has this created any challenges at the district level?

15. Are there any schools that are doing particularly well in implementing the new proficiency- or competency-based-learning policies?
    a. What are these schools doing? To what do you attribute their success?

16. Are there any schools in the district that are struggling more than others?
    a. What do you believe is the cause? What supports are needed to help bring these schools up to speed?

17. How have local, state, and federal guidelines had an impact on your state's consideration or implementation of proficiency-based learning?

18. Have you experienced any resistance toward this approach (from administrators, teachers, parents, community members)?

Resources and supports

19. What have been some of the key supports that have pushed this initiative forward?

20. What types of support have you received from the state/district for implementing proficiency- or competency-based learning?
    a. What efforts has the state/district made (or does the state plan to take) to support districts/schools in implementation?

21. What supports or facilitators would you need to feel prepared to implement proficiency- or competency-based-learning policies?
    a. What supports have you requested?

22. (For districts/schools not planning to adopt) What supports or facilitators would you need to feel you can adopt proficiency- or competency-based-learning reforms?

23. Is there anything else about proficiency- or competency-based learning in your district/school that you would like to share with me?

Thank you for participating in this interview! We really appreciate it.
Note: Ask participant if he/she would like a copy of the final report and collect e-mail address information.

Appendix D. State Laws and Policies Related to Graduation Requirements and Competency-Based Learning

This appendix describes state laws and board of education policies in the seven northeast Regional Educational Laboratory Northeast and Islands states regulating competency–based graduation requirements. It also details graduation requirements for these seven states.

State Legislation and Policy Related to Competency–Based Learning

This section describes state legislation related to competency–based learning and details which states have implemented competency–based learning, student success plans or individual learning plans, multiple pathways, and pilot schools or schools with innovations related to these initiatives (Table D1).

Table D1. State legislation, policy, regulations, and flexibility related to competency–based learning

State	State legislation in place (date)[a]	State board of education policy (date)[b]	Competency based learning[c]	Student success plans[d]	Multiple pathways[e]	Performance assessment[f]	Pilot/ innovation schools
Connecticut	✓ (2010, 2011, 2013)	—	✓	✓	–	—	✓
Maine	✓ (2009, 2011, 2012)	—	✓	—	✓	—	✓
Massachusetts	—	—	✓	—	—	—	✓
New Hampshire	—	✓ (2005, 2011)	✓	—	✓	✓	✓
New York	—	—	—	—	✓	—	—
Rhode Island	—	✓ (2003, 2008, 2011)	✓	✓	✓	✓	✓
Vermont	✓ (2013)	✓ (1999, 2014)	✓	✓	✓	—	✓

— is not available

a. Refers to states that have laws regulating or mandating competency-based learning.

b. Refers to states where the board of education has approved policy regulating or mandating competency-based learning.

c. Refers to whether state or school board regulations allow/mandate/regulate earning credit toward graduation through demonstration of mastery of standards or competencies.

d. Refers to whether state or school board regulations allow, mandate, or regulate student success plan, personalized learning plans, or something similar.

e. Refers to whether state or school board regulations allow students to meet graduation requirements through multiple means, including earning credits by earning passing scores on exams, completing online coursework, participating in internships, and other alternative means.

f. Refers to the ability of local education agencies or select schools to test or pilot competency-based learning, student success plans, or multiple pathways toward graduation. *Performance assessment* refers to whether state or school board regulations stipulate that students must complete a performance-based assessment in order to graduate.

Source: Authors' analysis of publically available information on graduation requirements for each state (2014).

Connecticut. In 2013, Connecticut legislation permitted high school students to earn academic credits "using non–traditional, mastery–based standards based on guidelines by the State Board of Education" (An Act Unleashing Innovation in Connecticut Schools, 2013). Thus, high school students can earn credits toward graduation by demonstrating mastery based on competency and performance standards in accordance with guidelines established by the state board of education. In 2010 and 2011, secondary school reform acts were passed requiring that each student from grades 6 to 12 have a student success plan that included students' career and academic choices. The acts also established graduation requirements (Table D2). As of this writing, a policy change related to mastery–based learning has been proposed but not yet passed. Titled "An Act Concerning the Study of Personalized Learning Schools," it would establish a pilot program providing grants to school districts to develop personalized systems of learning, authorize the commissioner of education to develop assessments to determine eligible credits for satisfying high school graduation requirements, and develop a personalized assessment system based on various models of state examinations.

Maine. In 2007, legislation was passed stating that each school administrative unit should use multiple assessment methods to measure student achievement and learning results. In 2009, legislation mandated that elementary and secondary schools provide students with opportunities for learning in multiple pathways, including career and technical education, alternative education programs, apprenticeships, career academies, advanced placements, online courses, adult education, dual enrollment, and gifted and talented programs. In 2011, legislation was passed leading toward a standards–based system with proficiency–based learning but still requiring local course work and accumulation of credits.

Legislation was passed in 2012 stating that public elementary and secondary schools and school administrative units must transition to a standards–based education system in which standards guide curriculum and instruction and in which graduation is based on student demonstration of mastery in meeting education standards. In addition, beginning in 2018 (or earlier with the commissioner's approval), a diploma indicating graduation from a secondary school must be based on student demonstration of mastery. This mandate is pending the legislature's determination of whether to allocate funds. Maine's strategic plan, *Education Evolving: Maine's Plan for Putting Learners First*, includes among its core priorities learner–centered instruction with assessments and information systems that track learner growth over time and multiple pathways for learner achievement in which students advance based on demonstration of mastery. A core group of schools has adopted proficiency–based learning, and the department of education has developed resources and tools to help guide schools to adopt this reform. The state maintains its commitment to a standards–based system, in which learning is defined and curriculum is guided by standards. Students will earn a standards–based diploma, which allows them to move at their own pace and advance when they have mastered learning outcomes.

Massachusetts. Currently Massachusetts has no state legislation or board regulations related to competency–based learning, multiple pathways, or student success plans for public schools. Board policy, however, is not restrictive and allows for competency–based learning. Legislation does allow students who attend virtual school to waive district credit requirements. Students who attend for a minimum number of hours or days each school year can earn credits by demonstrating competency in a grade or subject matter. Each virtual school is required to ensure that students are provided, in each credit–bearing course, multiple synchronous

learning opportunities with their teachers in which students are required to participate and share their knowledge. Two Massachusetts schools are members of the New England Network for Personalization and Performance, which includes demonstration of learning through complex, rigorous performance assessments.

New Hampshire. In 2005, the updated *Minimum Standards for School Approval* included a requirement that high school course credit be awarded as a result of assessment of each student's mastery of course competencies. These rules were to be implemented in the 2008–09 school year. School districts must define competencies for each class, decide on appropriate competency assessment methods, and define sufficiency (identifying necessary and sufficient evidence for students to demonstrate mastery). In 2011, the New Hampshire Department of Education updated the *Minimum Standards for School Approval*, requiring competency education to be in place in all public elementary and secondary schools by 2017. In addition, the standards required that each high school determine the number of credits awarded for successful demonstration of competencies following completion of a classroom course, independent study, distance learning course, or extended learning opportunity. One credit was to equate to the level of rigor and achievement necessary to master competencies that have been designed to demonstrate the knowledge and skills necessary to progress toward college and career work. While not mandated, the department of education strongly recommended that local school districts use multiple forms of assessment to measure student mastery of competencies.

According to the 2011 updated standards, by 2017, all graduating students must demonstrate college or career readiness based on an expanded definition (beyond the foundation the Common Core State Standards provides) of rigorous content and knowledge, adaptive skills, and work study practices. The state has developed common statewide competencies that have been approved by the State Board of Education in English language arts, math, science, and work study practices. Competencies for arts and social studies are currently being developed. The competencies are aligned with the Common Core State Standards and organized to encourage cross–disciplinary learning, teaching, and assessment.

The state plans to define ambitious but achievable annual measurable objectives to hold schools and districts accountable. The New Hampshire Department of Education intends to adopt a balanced system of assessments (formative, interim, and summative) to assess student competency by 2015. In addition to the Smarter Balanced Assessment Consortium assessments for math and English language arts and the New England Common Assessment Program for science and alternative assessments, the state's system will include performance–based assessments administered when students are ready to demonstrate competency—as opposed to waiting for the end of the term or school year. The performance assessments are to allow schools to evaluate a student's readiness by measuring not only his or her content knowledge but also deeper diagnostics of skills and dispositions.

The New Hampshire Department of Education is working with the Center for Collaborative Education and the National Center for the Improvement of Educational Assessment to develop and pilot a large–scale, statewide Performance Assessment for Competency Education (PACE) model that will provide a balance of local control with statewide accountability and comparability. The PACE model will be used for state and federal accountability purposes. The

New Hampshire Department of Education has requested approval from the US Department of Education for the PACE model to serve as the state's federal accountability testing.

New York. New York has no state legislation or board regulations related to competency-based learning, multiple pathways, or student success plans. A school district may provide students the opportunity to earn credits toward a Regents' diploma through online or blended course study if they complete the course and demonstrate mastery of the learning outcomes for the subject, including passing the Regents' examination in the subject or other assessment in the subject required for earning a diploma.

Rhode Island. In 2003, the Board of Regents for Elementary and Secondary Education adopted regulations to restructure the learning environment, which included proficiency-based graduation requirements in high schools. Since the adoption of these reforms, local education agencies designed their high schools to meet two goals: (1) each secondary school offers all students meaningful opportunities to achieve proficiency in six core academic areas: math, English language arts, social studies, science, technology, and the arts and (2) each secondary school provides sufficient student supports and personalization of instruction to ensure meaningful opportunities for students to achieve proficiency. In addition to completing coursework, students must successfully complete a large-scale, performance-based assessment such as a senior project or portfolio.

In 2008, the board of regents revised the regulations adding the graduation requirements that each student must reach "partial proficiency" on the state assessment in reading and math. Included in the regulations was a district sanction, which has since been removed, that each school district that failed to reach full diploma system approval from the Rhode Island Department of Education would lose its diploma-granting authority. In 2011, new regulations specified that starting with the graduating class of 2014, each local education agency must create a composite measure of each student's overall proficiency in the six core academic areas, which must be aligned to state standards or to locally adopted national standards in content areas for which there are no state standards. The regulations also changed the definition of a *course* to ensure that districts were not bound by seat time requirements. (Details on graduation requirements are in Table D2.) In addition, 2011 regulations specified that students who fail to reach the required level of achievement on the state assessment should be provided a progress plan, which must include the types and duration of academic and educational supports and academic performance targets necessary for graduation. The 2011 regulations also specified waiver eligibility requirements, diploma commendations for students who achieve above the minimum level required for graduation, and certificate credential requirements.

In 2012, the board of regents approved the first Rhode Island policies related to virtual learning education in the state. The state virtual learning regulations and legislation granted the Rhode Island Department of Education the responsibility for promoting state and local policies to support and move to proficiency-based learning in digitally rich learning environments. Rhode Island now has a comprehensive set of policies that include secondary, career and technical education, and virtual learning education regulations to ensure implementation of proficiency-based learning. The virtual learning regulations also highlight personalized learning opportunities through the use of technology to meet student interests, goals, and needs.

Individual learning plans should reflect each student's engagement in virtual learning opportunities.

Vermont. The Vermont Agency of Education stipulates that students meet the requirements for graduation if they demonstrate meeting or exceeding Vermont's *Framework of Standards and Learning Opportunities* or complete at least 20 Carnegie units (see graduation requirements section and Table D2). The Vermont Agency of Education's strategic plan prioritizes personalized, proficiency–based learning and assessments. In addition, the Education Quality Standards Commission, charged with recommending a state policy framework, released recommendations in June 2013 that included a move toward proficiency–based learning.

In 2013, the Flexible Pathways Initiative (Act 77) was passed to promote opportunities for students to achieve postsecondary readiness through high–quality educational experiences that acknowledge individual goals, learning styles, and abilities. The act includes dual enrollment and established a personalized learning plan process and an implementation working group. The working group, consisting of teachers, principals, superintendents, and other interested parties, was to consider which effective personalized learning plan processes best enhance the development of the evolving academic, career, social, transitional, and family engagement elements of a student's plan and identify best practices that can be replicated in schools. The working group was to publish a report with guiding principles and practical tools for implementing personalized learning plans by January 2014. Vermont's strategic plan outlines work to create multiple aligned assessment opportunities—formative, benchmark, and summative—that support all Vermont learners to make progress and demonstrate proficiency in core academic areas. The strategic plan includes the need to offer programs, such as dual enrollment; technical training; early college enrollment for high school credit; virtual learning; science, technology, engineering, and math opportunities; and multiple pathways to graduation. Vermont is accepting proposals for the Vermont Secondary Schools for the 21st Century Innovative Practices grant. The grant will fund work on the development of sustainable models in two priority policy areas: moving toward proficiency–based learning and flexible pathways for all students.

State Graduation Requirements

This section describes state graduation requirements, including credit requirements, state standardized test requirements, and competency–based or performance–based requirements for each northeast state in the REL Northeast and Islands Region (Table D2).

Table D2. State graduation requirements

State	Credit requirement	State standardized test requirement	Competency based requirement	Performance based requirement
Connecticut	25 credits [a] (in six content areas)	Students must meet established minimum level of achievement in four subject exams	–	Students must complete a senior demonstration project
Maine	Engagement in educational experiences (four content areas)[b]	–	Students must demonstrate competency in meeting state standards in eight content areas	Students allowed to gain competency through multiple pathways and by presenting multiple types of evidence
Massachusetts	Instruction in American history/civics and physical education [c]	Students must meet established minimum level of achievement on three subject exams	—	—
New Hampshire	20 credits [d] (in eight content areas)	—	Students must demonstrate competency in defined course competencies	State recommends using multiple forms of assessment
New York	22 credits [a] (six content areas)	Students must meet established minimum level of achievement on five subject exams	—	—
Rhode Island	20 academic courses [e] (in six content areas)	Students must meet established minimum level of achievement	Students must demonstrate competency in six content areas	Students must complete two Diploma Assessments
Vermont	20 credits[a] (six content areas) *or* demonstrate met standards	Students must take assessment consistent with the Vermont Comprehensive Assessment System	—	Students must pass standards-based performance assessments (class 2021)

—Is not available

a. Credit or unit requirements refers to participating in a year-long course.

b. Local districts may assign credit requirements.

c. Local districts may assign other subject area course requirements.

d. Credit must be earned by demonstrating mastery of required competencies for the course.

e. According to 2011 regulations, course is defined as a connected series of lessons and learning experiences that establish expectations defined by recognized standards, provide students with opportunities to learn and practice skills, and include assessments of student knowledge and skills adequate to determine the level of academic rigor required by relevant content standards.

Source: Authors' analysis of publically available information on graduation requirements for each state (2014).

Connecticut. Starting with the graduating class of 2020, each student must complete 25 credits, including 9 credits in humanities (4 credits in English, including composition; 3 credits in social studies, including at least 1 credit in American history and at least 0.5 credit in civics and American government; 1 credit in fine arts; and 1 credit in a humanities elective). Students must also complete 8 credits in science, technology, engineering, and math (4 credits in math, including algebra I, geometry, and algebra II or probability and statistics; 3 credits in science, including at least 1 credit in life science and 1 credit in physical science; and 1 credit in a science, technology, engineering, or math elective). Also, students must take 3.5 credits in career and life skills (1 credit in physical education, 0.5 credit in health and safety education, and 2 credits in career and life skills electives, such as career and technical education, English as a second language, community service, personal finance, public speaking, and nutrition and physical activity). Two credits in world languages are needed plus a 1-credit senior demonstration project or its equivalent. In addition, each student must meet assessment criteria determined by the local and regional board of education. The assessment process, according to state legislation, can include but should not be exclusively based on the results of the mastery examination for students in grade 10 or 11 (Connecticut Promotion and Graduation Policies, 2012).

Maine. Beginning in January 2018, students must demonstrate engagement in educational experiences related to English language arts, math, and science and technology in each year of the student's secondary schooling; demonstrate proficiency in meeting state standards in all eight content areas (English language arts; math; science and technology; social studies; career and education development; visual and performing arts; health, physical education, and wellness; and world languages); demonstrate proficiency in each of the guiding principles (clear and effective communication; self-directed and lifelong learning; creative and practical problem solving; responsible and involved citizenship; and integrative and informed thinking); and meet any other requirements specified by the governing board of the school administrative unit. Students must demonstrate mastery of the Common Core State Standards in English language arts and math. Students can gain proficiency through multiple pathways and must be allowed to demonstrate proficiency by presenting multiple types of evidence, including (but not limited to) teacher-designed or student-designed assessments, portfolios, performance, exhibitions, and projects. Legislation passed in 2012 requires the state department of education to coordinate the development of standards, assessments, and assessment criteria needed to enable school administrative units to implement a standards-based system of education. Students may graduate high school sooner or continue longer than the traditional four-year time frame.

Massachusetts. In terms of graduation requirements, students must receive instruction in American history and civics and physical education. There are no other state requirements related to credits or courses, though districts establish course and credit requirements. In addition, students must meet the state competency determination requirement by either meeting or exceeding the proficiency threshold scaled score on English language arts, math, and science and technology/engineering on Massachusetts Comprehensive Assessment System tests, or by meeting or exceeding the needs improvement scaled score and fulfilling requirements of an educational proficiency plan. The board of education will establish a timeline for meeting competency determination standards in history and social science. The board approved the implementation of a student learning time waiver for programs or schools that want a schedule that meets less than 990 hours or 180 days. The state released the

statewide waiver application in September 2014. In addition, the Massachusetts High School Program of Studies (MassCore) provides recommendations for graduation requirements to districts to ensure college and career readiness. The MassCore program includes four years of English, four years of math, three years of lab–based science; three years of history; two years of the same foreign language; one year of an arts program; and five additional "core" courses such as business education, health, and technology. MassCore includes additional learning opportunities such as Advanced Placement classes, dual enrollment, senior project, online courses for high school or college credit, and service– or work–based learning.

New Hampshire. Students must complete 20 credits to earn a high school diploma in the following program areas: arts (0.5 credit), information and communication technologies (0.5 credit); health education (0.5 credit); physical education (1 credit); English (4 credits); math (3 credits); science (physical sciences—1 credit; biological sciences—1 credit); US and New Hampshire history (1 credit); US and New Hampshire government and civics (0.5 credit); economics (0.5 credit); world history, global studies, or geography (0.5 credit); and open electives (6 credits). Students must demonstrate mastery of course competencies to earn credit toward graduation. Each high school determines the number of credits awarded for successful demonstration of competencies following completion of a classroom course, independent study, distance learning course, or extended learning opportunity. Local school boards must have a competency assessment process and defined course competencies. While the *Minimum Standards for School Approval* require defined course competencies and a competency assessment process, they do not mandate either the content of the course competencies or the grading method used with the competency assessment process.

New York. Graduation requirements for students entering grade 9 beginning in 2008 include successful course completion and minimum level of proficiency on state assessment in English, math, global history and geography, US history and government, and science. Students must complete 22 credits, including English (4 credits); social studies (4 credits total, including 1 in American history, 0.5 in economics, and 0.5 in participation in government); science (3 credits total, including at least 1 in life science and 1 in physical science, and 1 in life or physical science); math (3 credits); visual art, music, dance, or theater (1 credit); and health and physical education (2.5 credits total, including 2 in physical education, 0.5 in health education). Students have the option of earning an Advanced Regents Diploma for which they must meet additional measures. Students can earn a maximum of 6.5 credits toward their diploma through alternative measures, including established minimum scores on the regents exam.

Rhode Island. Rhode Island proficiency–based graduation requirements include three elements: minimum level of proficiency on state assessment in content areas designated by the board of regents, successful course completion, and successful completion of two performance–based diploma assessments. Starting with the class of 2020, students will be required to reach a to–be–determined minimum achievement level on the state assessment or assessments in content areas designated by the regents. Students must also complete 20 academic courses that include demonstrations of proficiency in six core content areas, including four courses of English language arts, four courses of math, three courses of science, and three courses of history or social studies. The additional six required courses can include world languages, the arts, physical education and health, and technology. The selection and scheduling of courses should be consistent with the needs of each student and his or her individual learning plan. Students can meet the requirements through enrollment in state–approved career and technical

programs, expanded learning opportunities, dual enrollment, online learning, and other nontraditional academic and career-readiness programs. Students must complete two performance-based diploma assessments that include demonstrations of both applied learning skills and core content proficiency. Students must complete at least two of the following: graduation portfolios, exhibitions, comprehensive course assessments, or Certificate of Initial Mastery. Districts are to develop performance-based assessments in accordance with regulations.

Vermont. In Vermont, graduation requirements include demonstration of attaining or exceeding standards (either the state framework standards or comparable local standards) as measured by results on performance-based assessments; successful completion of at least 20 Carnegie units; or any combination of the above that demonstrates that students have attained the framework or comparable standards. Each school is required to administer assessments of student performance that are consistent with the Vermont Comprehensive Assessment System. All students are required to participate in the statewide assessments in math, reading and writing, and science in grades 3-8 and 11 (unless a student qualifies for alternate assessment or an exemption). Schools assess student performance in additional subject areas and grade levels using portfolios, norm-referenced standardized tests, and locally developed assessments. Students must take a minimum of four years of English language arts; three years of science; three years of math; three years of civics, history, and the social sciences (one year of which is US history and government); one year of the arts; and one-and-a-half years of physical education.

The Education Quality Standards Commission released recommendations for school board policy to eliminate these requirements and replace them with regulations stipulating that each secondary school board would be responsible for setting graduation requirements and defining proficiency-based graduation requirements based on standards adopted by the state board of education. In addition, it recommended that students meet requirements for graduation when they demonstrate evidence of a progression through rigorous, relevant, and comprehensive learning in the curriculum.

Appendix E. District or School Policies Related to Competency-Based Learning in Maine, Massachusetts, and Rhode Island

Table E1. Competency–based requirements, graduation requirements, and grading systems for sample districts or schools in Maine, Massachusetts, and Rhode Island

District or school[a]	Credit requirement	Standardized test requirement	Competency based requirement	Performance based requirement	Other requirements	Grading system
District A[b]	24 credits	—	Demonstrate competency (earning a 3.0 or higher) in meeting core standards and complete three skill-based interventions/ enhancements and two electives	—	Complete application to postsecondary institution or training program	Standards-based grading system
District B	20 credits	Demonstrate proficiency on all required statewide standardized assessments	Demonstrate mastery through comprehensive course assessments in each class every semester	Present a graduation portfolio	Create an individual learning plan	Letter-based grading system; piloting standards-based grading
District C	22 credits[c]	Demonstrate proficiency on all required statewide standardized assessments	Demonstrate proficiency through classroom assessments that include presentations, common tasks, end-of-course exams, and classroom projects	Present a graduation exhibition and portfolio	Create an individual learning plan	Letter-based grading system
District D	22 credits	—	—	—	Personal learning plan;	Letter-based

District or school[a]	Credit requirement	Standardized test requirement	Competency based requirement	Performance based requirement	Other requirements	Grading system
					15 hours of community service	grading system
School E	41 credits	—	Students are awarded a "habits of work" grade in each course	—	—	Standards-based grading system
District F	22 credits	Demonstrate partial proficiency on all required statewide standardized assessments	Demonstrate mastery through end-of-course exams across discipline areas	Present a graduation portfolio or capstone project	—	Letter-based grading system; standards-based grading for grades K–4; grades 5–8 moving to standards-based grading during the 2014/15 school year
District G	24 credits	Demonstrate proficiency on all required statewide standardized assessments	Demonstrate proficiency through project based, experiential learning, and ongoing assessments	Present a portfolio and senior project	—	Standards-based grading system
District H	—	Meet established minimum level of achievement in three subject areas	Demonstrate proficiency based on a variety of qualitative and quantitative assessments aligned to state frameworks	Complete senior capstone project	—	Standards-based grading system
District I	95 credits	Meet established minimum level of achievement in three subject areas	—	—	—	Letter-based grading system; standards-based grading system in

District or school[a]	Credit requirement	Standardized test requirement	Competency based requirement	Performance based requirement	Other requirements	Grading system
						K–5
District J	75 credits[d]	—	Demonstrate 2.5 or greater proficiency in the content area for diploma requirements	—	—	Standards-based grading system
School K	22 credits	Demonstrate proficiency on all required statewide standardized assessments	Demonstrate mastery through common task and end-of-course assessments	Complete a graduation portfolio and senior presentation	Create an individual learning plan	Letter-based grading system; piloting standards-based grading
School L	23 credits	—	Demonstrate achievement of two schoolwide academic expectations by meeting standards on graduation portfolio	Complete senior exhibition	Complete 40 hours of community service	Letter-based grading system
District M[e]	na	na	na	na	na	Standards-based report card
District N	na	Demonstrate proficiency on all required statewide standardized assessments	Demonstrate mastery of core subject areas through participation in yearly internship projects in a workplace setting	Present a public exhibition each trimester as well as an end product as the final piece to required internship projects	Create an individual learning plan and autobiography	Standards-based evaluations (presented in narrative and rubric format)

— is not available.

na is not applicable

a. Districts and schools were both included in our sample. For district sites, unless otherwise noted, there was only one high school in the districts and the information in the chart represents that high school's graduation requirements and grading system.

b. There were two high schools in this district. The information presented in the table is representative of one of the two high schools. The other high school is in the process of adopting these graduation requirements.

c. A minimum of 22 credits are required; however, students demonstrating proficiency may be able to substitute that demonstration for a credit.

d. The district is in the process of transitioning to a learning level requirement for each content area. To be considered proficient, a student would need to obtain either a 3 or 4 on a 4-point scale.

e. This is a K–8 school district.

Source: Authors' analysis of publically available information on graduation requirements for each site in the sample (2014).

Appendix F. Sample District and School Characteristics

Table F1. Demographic characteristics of sample districts or schools in Maine, Massachusetts, and Rhode Island

District or school	Student enrollment[a]	Graduation rate[b] (percent)	Free/reduced lunch[c] (percent)	English language learner[d] (percent)	Special education[e] (percent)	Black[f] (percent)	Asian[f] (percent)	Hispanic[f] (percent)	White[f] (percent)	Two or more races[f] (percent)
District A	2,457	85.4	55.7	0.4	—	1.0	0.6	1.4	95.4	1.1
District B	5,025	80.9	22.0	2.0	17.0	3.0	2.0	8.0	—	84.0
District C	1,499	85.7	19.0	0.0	9.0	—	—	1.0	—	98.0
District D	1,465	91.7	58.4	—	—	1.5	—	—	96.8	0.7
School E	280	74.6	45.7	18.9	—	18.5	—	5.1	75.0	—
District F	3,594	70.0	50.0	2.0	18.0	4.0	2.0	11.0	—	80.0
District G	127	—	17.0	0.0	23.0	2.0	—	13.0	—	84.0
District H	359	13.0	99.7	3.1	13.9	50.7	1.7	34.5	9.2	2.8
District I	16,595	74.5	68.4	19.8	13.2	54.0	2.5	14.4	24.7	3.8
District J	2,218	81.2	40.9	—	—	1.3	1.0	0.5	96.4	0.7
School K	855	93.7	14.0	0.0	9.0	2.0	1.0	3.0	—	92.0
School L	138	93.8	31.2	—	—	—	—	—	96.8	—
District M	783	NA	45.5	—	—	—	—	—	96.3	1.9
District N	650	73.4	64.0	0.0	16.0	15.0	2.0	42.0	2.0	35.0

— is not available.

a. Student enrollment information for districts or schools in all three states is from the 2012/13 school year.

b. Graduation rate information for districts or schools in all three states is from the 2011/12 school year.

c. Free/reduced lunch information for districts or schools in all three states is from the 2012/13 school year.

d. English language learner enrollment information for districts or schools in all three states is from the 2012/13 school year.

e. Number of students receiving special education services information for districts or schools in all three states is from the 2012/13 school year.

f. Information about ethnicity of students for districts or schools in Massachusetts and Rhode Island is from the 2012/13 school year. In Maine, this information is from the 2010/11 school year.

Source: Authors' analysis of publically available information on the Maine Department of Education Data Warehouse (http://dw.education.maine.gov/DirectoryManager/WEB/Maine_report/DTHome.aspx), the Massachusetts Department of Elementary and Secondary Education School/District Profiles database (http://profiles.doe.mass.edu/), and the Rhode Island Education Data Reporting database (http://infoworks.ride.ri.gov/search/schools-and-districts). All information was for the latest year possible (see notes).

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