

**CompetencyWorks** ISSUE BRIEF

# Progress and Proficiency: *Redesigning Grading for Competency Education*

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## About Competency Works

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# PROGRESS AND PROFICIENCY: REDESIGNING GRADING FOR COMPETENCY EDUCATION

## i. Introduction

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*Casco Bay High School is harder than other schools, but you learn everything. You can't pass by with a 78 and not know half the material. I used to pass by with a B-, but when I got to Casco I didn't know half of the material I was supposed to have learned in middle school because that was the half I didn't learn.*

– Student from Casco Bay High School in Expeditionary Learning's "[Why Use a Standards-Based Grading System?](#)"

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Any school that has begun the journey toward competency education, breaking free of the limitations of the time-based system, will eventually come face-to-face with grading policies and practices. Along with the excitement of creating a new grading system that ignites a dynamic culture of learning will come opportunities to engage students, families and the community in creating a shared vision about the purpose of school. Challenging the traditional system of grading practices, rooted firmly in the American culture with its exhilarating A+ to the dreadful F, will prompt questions, fears, and misconceptions. There are likely to be lively community meetings and even a letter or two in the local newspaper. There will also be the mutual delight when a competency-based grading system is put into place that allows students and teachers to work together toward a shared vision of learning. Most importantly, there will be cause to celebrate as students make progress toward proficiency.

This paper is part of a series investigating the implementation of competency education. The purpose of the paper is to explore how districts and schools can redesign grading systems to best help students to excel in academics and to gain the skills that are needed to be successful in college, the community, and the workplace. In order to make the discussions most useful, the paper is divided into four sections.



You can learn more about competency education at [CompetencyWorks.org](https://www.competencyworks.org), as well as find links and materials for all the resources mentioned in this paper on the [CompetencyWorks wiki](#).

- “Understanding the Weaknesses of the Traditional Grading System” provides a review of the inherent weaknesses and the implications of A–F grading policies.
- “Redesigning Grading” looks at six elements essential to grading in competency-based environments.
- “Lessons from the Field” offers insights from innovators into the lessons learned and ongoing efforts in leading states, districts, and schools.
- “Going Forward” explores several issues that are likely to emerge, requiring creativity and stakeholder engagement to address.

What this paper will not do is cover the research on grading in depth since much has been written on the subject.<sup>1</sup> Nor will it cover the much broader topic of building the systems of assessment required in a competency-based school.<sup>2</sup>

As in all CompetencyWorks briefing papers, there will be an exploration of what needs to be in place to address the inequity that challenges our schools and our communities. We are on our way toward designing a system that emphasizes learning rather than ranking and excelling rather than sorting. It is up to us to make sure that the system is designed to work for students who have the steepest path to climb to college and careers.

## WHAT IS COMPETENCY EDUCATION?

*At its most fundamental, mastery learning simply suggests that students should adequately comprehend a given concept before being expected to understand a more advanced one.*

– Salman Khan, *The One World Schoolhouse*

Competency education is an approach to ensure that all children are successful in developing the knowledge and skills they need for life. Competency education has a laser focus on learning that challenges century-old assumptions about schools and schooling. The five essential elements of competency education are that:

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

Depending on where you live, it may be called proficiency-based, performance-based, standards-based, or mastery-based education. In this paper, the term competency education will be used except in examples from districts and schools in which we will use their preferred terminology.

## II. Understanding the Weaknesses of the Traditional Grading System

Letter grades and age-based grades are the way we currently track student progression through the system. Grades play many functions — communicating performance, providing motivation and feedback to students, criteria for guidance, and input for instructional planning and administration<sup>3</sup> — although not as effectively as we would like.

As educators begin the conversation within their schools and with the broader community about redesigning grading systems, questions will arise regarding what is wrong with the traditional grading practices.

Although designed with best intentions to motivate students and communicate student achievement, both past and potential, as students move through school, our A–F grading scheme is undermining the very core purpose of our education system: learning. To understand how this happens, we need to review the inner workings of traditional grading.

Before a student receives one of those five powerful letters at the end of the semester, a number of steps occur. Schools and districts set some overarching policies; however, it is up to teachers to create their own grading policies. They do this by mixing and matching how they design the grade scale; distributing points for scoring assignments and exams; adding points for extra credit and deducting points for late homework, missing work, and classroom behavior; and determining the final grade.

- **What Is a Passing Grade?** The continuum of A–F, with its curiously missing E, is familiar to all of us. Traditionally, an F has suggested an unsatisfactory performance, while students getting anywhere from a C to a D get passed on to the next class. Some schools are moving toward a higher cutoff point for satisfactory achievement by eliminating the D so that only a C, B, or A allows a student to move on without taking a course over.
- **What Does Each Grade Mean?** Before teachers give a letter grade, they create a numerical scale. The 100-point scale is the standard practice in classrooms. Teachers create cutoff points, such as an A is 90–100, B is 80–89, and so on. Cutoff points differentiate and rank students, separating “A” students from “B” students with as little as one point.
- **How Can Students Earn Points?** Teachers decide how points will be distributed among assignments, projects, exams, and behavior, such as turning in homework on time and how to earn extra credit. The grade book is then constructed around these items.
- **What Does a Grade Point Average (GPA) Mean?** When students reach high school, the competition for admissions to college escalates the focus on ranking. Letter grades for each course are converted back into a numerical form and then averaged. Averaging ensures that the GPA reflects bad years as well as good ones in the students’ overall high school experience. Weighting advanced courses more heavily can allow the GPA to rise above 4.0.

There are several weaknesses in this grading system. First, it is not a reliable indicator of achievement, often misleading parents into believing that their children are making progress toward college and career readiness. Second, it allows students to advance without fully mastering skills. Finally, it is a limited tool for motivating students. The following section will describe how each of these failings of the A–F grading system inhibits the effectiveness of our schools and the achievement of our children.

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### **What Are the Problems with the Traditional System?**

- *For all students, there are only time-limited incentives to learn course material and no opportunity or incentive to improve performance or learn more after grades are issued; no mechanism for recording student progress relative to learning goals; and a lack of connection between classroom grades, state learning standards, and standardized accountability measures.*
- *Students earning low but passing grades accumulate credits even in the absence of substantive learning. They earn a high school diploma without achieving a requisite level of skills and knowledge, and a low grade point average threatens their eligibility for colleges and financial scholarships.*
- *For students who fail classes, the resultant credit deficiency increases the likelihood that they will leave school without a diploma; a low GPA threatens their eligibility for colleges and financial scholarships even if they persevere to graduation; and their official school transcripts permanently record their failure and undermine their future life choices.*

– Camille A. Farrington and Margaret H. Small, “A New Model of Student Assessment for the 21<sup>st</sup> Century”<sup>46</sup>

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## THE HISTORICAL CONTEXT OF THE A–F GRADING SYSTEM

Material summarized from "[Making the Grade: A History of the A–F Marking Scheme](#)"<sup>5</sup>

*Grading is the linch-pin-keystone-underlayment-foundation of our factory model of education.*

– Shawn Cornally, Teacher, Cedar Rapids Community School District, Iowa<sup>6</sup>

Once upon a time, children in school were not graded at all nor were there age-based grade levels. Colleges began early experiments in grading in the U.S. in the late 1700s in an effort to use competition to produce higher achievement. Some of these practices were absorbed in schools with students constantly ranked and re-ranked based on exam results. By the end of the Civil War, grading as a form of differentiating students within their peer group was becoming a familiar practice in elementary and secondary schools, although there was no uniformity in the grading systems.

In the late 19<sup>th</sup> century, grading — and the other major design elements of our education system — started to firmly take root when educators were confronted with the challenge of teaching at a much larger scale than ever before. As the nation's population swelled with the arrival of new immigrants and the introduction of compulsory education laws, our schools went through a rapid process of bureaucratization. U.S. educators turned to the Prussian model with its attention to efficiency. Soon the education system was organized around age-based grade levels, report cards to monitor progress, and the practice of averaging to determine rank in order to differentiate and track students. These were early steps by Horace Mann and his colleagues toward modularization and transparency, a journey we continue on today.

Two other inventions making their way into the education system intersected with the efforts to adopt the Prussian model. First, the statistical invention of the bell curve and the concept of "normal" were embraced into the social sciences. Soon the bell curve began to shape grading practices.<sup>7</sup> Second, the newly created Carnegie unit, or credit hour, introduced a time-based system of measuring teaching and learning.

Despite an ongoing debate about weaknesses, unintended consequences, and limitations of grading practices, the practices of A–F grading, with its 100-point system and the 4.0 scale, continued to expand, becoming standard practice by the 1980s. Age-based grades, A-F grading systems, credit hours, and the agrarian calendar became the building blocks upon which our education system rests. Grades and credits became the currency.



## A. Subjectivity, Variation, and Inaccurate Measures of Achievement

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*If someone proposed combining measures of height, weight, diet, and exercise into a single number or mark to represent a person's physical condition, we would consider it laughable. How could the combination of such diverse measures yield anything meaningful? Yet every day, teachers combine aspects of students' achievement, attitude, responsibility, effort, and behavior into a single grade that's recorded on a report card and no one questions it.*

– Thomas R. Guskey, “Five Obstacles to Grading Reform”<sup>8</sup>

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Given that one of the main functions of the traditional grading system is to differentiate students based on achievement, it should then be safe to assume that grades can produce a consistent understanding of achievement. However, that is not the case at all. The A–F grading scheme is too subjective, abstract, and arbitrary to act as a meaningful proxy of achievement.

As described by Robert J. Marzano in *Transforming Classroom Grading*, the process of grading is rife with subjectivity. Take for example that two perfectly well-intentioned teachers, teaching the same course, are likely to give different grades to students doing the same level of work. There are three reasons for this situation. First, they are likely to weight parts of the point system differently within a course. One teacher may give more points to the final exam, another to a paper. Second, the consideration that teachers give to factors other than academic achievement could vary. One teacher may deduct for late homework, another for attendance. One may give points for class participation, another for extra credit. Third, teachers will weigh the importance of skills differently within an assignment or test. This results in two teachers assigning different scores to the exact same assessment.<sup>9</sup>

Thomas Guskey and Eric Anderman point to one of the primary weaknesses in grading systems: arbitrary cutoff scores on the 0–100 point scale. In their article “In Search of a Useful Definition of Mastery,” they write that “Setting percentage cutoffs on any form of assessment is an arbitrary decision that says little about the rigor of expectations set for students' performance.”<sup>10</sup> Teachers may use different cut scores, which could result in two students in different classrooms doing the same level of work, but one receiving an A- and the other a B+. Moreover, if a passing grade is 70, it means that any one of the failing scores has an extreme mathematical impact upon the averaged final grade.

Gregg Palmer, principal of Falmouth High School in Maine, in the essay “Demystifying Standards” explains that “The problem is that schools have no clear reasons for these single cut point differences. . . . They remain a mystery to students, parents/guardians and, to be honest, to the schools that issue the grades. It comes down to this idea: the difference between any two consecutive numbers in a traditional 0–100 scale is not about a difference in the quality of the work an individual student has completed so much as it's about ranking the students in order to sort them in relation to one another.”<sup>11</sup> Even more worrisome is the insidious grade inflation that can creep into norm-referenced classrooms, resulting in students receiving As and Bs even if they are actually doing work at several levels below their grade.

The abstraction and variation of the A–F grading system then begs the question: If we can't trust the reliability of grades then why do we think that the all-powerful GPAs should be trusted? We extend our misplaced trust in grades to the GPA as a meaningful way to differentiate and rank students. However, if the GPA is such a good measure of achievement, why do so many supposedly high-achieving students take remedial courses at college? At best, grades are an inaccurate measurement of accomplishment.

## B. Swiss Cheese Achievement

Our traditional grading system undermines learning because it allows students to “slide by” until they stumble over the gaps in their knowledge. In norm-referenced classrooms the risk is high that many students — including those with As and Bs — will be moving on with gaps in their knowledge. Even in standards-referenced classrooms, in which standards are used as the basis of assessment, students with Cs and Ds are passed on by teachers to the next level, thereby expecting the next teacher to help them fill in the gaps or positioning them for more Cs and Ds. We wouldn't accept a flawed foundation in our homes, so why do we accept it for our children's education?

This phenomenon, described as “Swiss cheese learning” is described by Salman Khan in his book *The One World Schoolhouse*.

*What constitutes a passing grade? In most classrooms in most schools, students pass with 75 or 80 percent. This is customary. But if you think about it even for a moment, it's unacceptable if not disastrous. Concepts build on one another. Algebra requires arithmetic. Trigonometry flows from geometry. Calculus and physics call for all of the above. A shaky understanding early on will lead to complete bewilderment later. And yet we blithely give out passing grades for test scores of 75 or 80. For many teachers, it may seem like a kindness or perhaps merely an administrative necessity to pass these marginal students. In effect, though, it is a disservice and a lie. We are telling students they've learned something that they really haven't learned. We wish them well and nudge them ahead to the next, more difficult unit, for which they have not been properly prepared. We are setting them up to fail.<sup>12</sup>*

Regardless of whether grades are norm-referenced or standards-referenced, trouble lies ahead if students are allowed to slide on to the next course with gaps in knowledge.

## C. Motivation, Competition, and Control

From the very early days of grading, the underlying assumption was that competition for grades would motivate students. It is true that grades can inspire students to work harder. Students with the top grades may be motivated to work harder to earn more points and a higher GPA, but it doesn't always hold true. Research suggests that a culture of competition for grades actually has limited value. Among adolescents, academic achievement and strong peer relationships are associated with cooperative rather than competitive cultures in the classroom.<sup>13</sup>

Students may begin to see grading as a game when teachers create grading systems, distributing points among assignments and desired behaviors. Rich Delorenzo, a leader in competency education, describes this dynamic, “Students want to know the rules of the game. They try to find out what the teachers want and what it is going

to take to get an A. The focus becomes more on increasing points earned rather than on learning.”<sup>14</sup> Knowing the limits of the motivational power of grades, teachers create incentives by giving points for behaviors that are part of good study skills, such as attending and participating in class or turning in assignments on time. Despite teachers’ good intentions, for adolescents this can easily be perceived as punishment and control, thereby undermining the quality of the relationships in the classroom.

As teachers exert power over students in an attempt to control the classroom, distrust and disengagement grows rather than the respect and trust needed for a safe learning environment. This downside of using grades to inspire and motivate good study skills can easily become a vicious cycle. Students who have landed at the bottom of a grade scale start to feel that they aren’t smart, that teachers don’t care, that school is a waste of time, and that perhaps they should just get on with their lives.

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The cost of this time-based grading system is enormous. We invest heavily in an education system that consistently produces gaps in learning. Drop-out rates, retention, credit recovery, and remediation in college are all direct consequences. Yet, it’s hard to let go of the familiar A–F system. Robert J. Marzano emphasizes that “Americans have a basic trust in the message that grades convey — so much so that grades have gone without challenge and are, in fact, highly resistant to any challenge.”<sup>15</sup> Districts and schools converting to competency education will need to be prepared to help students and parents understand that those As, Bs, and Cs are a result of a profoundly idiosyncratic process that does little more than differentiate and rank students.

However, in communities all across the country, districts and schools are discovering the power of using standards to lift expectations and organize teaching, learning, and grading. For those districts that are embracing competency education, redesigning grading is an important step in fully aligning systems, policies, and practices around learning.

## III. Redesigning Grading

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*Competency-based grading should develop a culture of continuous learning, providing targeted feedback to students in relation to identified learning outcomes. Grades should be a reflection of learning based on transparent expectations and consistent rubrics.*

– Akili Moses Israel, Diploma Plus<sup>16</sup>

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Districts and schools that are converting to competency education are developing new philosophies of grading as well as the specific practices needed to operationalize them. In this section, the core values and major elements of competency-based grading are described.

### A. Getting Started

The process of redesigning grading policies and practices begins with thinking through the purpose and the design principles. In competency education, student learning and achievement is always the primary purpose. Grant Wiggins, President of Authentic Education, proposes the following criteria to use in redesigning grading:<sup>17</sup>

- Honest feedback about one’s standing
- Fair to each student and other students
- Transparent and without mystery
- Credible to clients and constituencies
- Valid assessment against key long-term learning goals
- Useful (actionable) and user-friendly information about performance and how to improve
- Pedagogically wise — it sends the right message and gets the incentives right for learners

Gaining agreement on the design principles or criteria that will be used to assess grading policies is a participatory process that includes educators as well as students and families.

As schools begin the conversion to competency-based education, they have choices along a continuum of incremental steps to a full redesign. When schools take incremental steps, they may narrow the band of what is considered satisfactory by eliminating Ds as a passing grade. They may implement standards-referenced grading, in which student performance is based on meeting specific standards, rather than norm-referenced grading. Others may try to increase the relationship between grades and academic performance by reducing the amount that behavior and homework can count toward grades.

Others consider a comprehensive approach to be necessary. Kim Carter, Executive Director of the QED Foundation, explains the problem: “Trying to move from traditional grading to a system that fully supports

learning is like trying to cross a chasm with small leaps. It's like trying to translate from Chinese to English. You lose too much in the translation. You can't convert scores that indicate performance level into traditional grades or vice versa."<sup>18</sup> She cautions that "We have to design for exactly what we want in schools. Otherwise we are simply perpetuating inequity under the guise of new names." New schools will find it easier to leap to an entirely new grading system that is fully aligned with competency education. Traditional districts and schools converting to competency education will need to build the change in grading policy into their implementation plans.

For those not comfortable with either approach, Grant Wiggins offers a third option: "To avoid fruitless battles, students could continue to receive letter grades (which would provide a holistic look at how the student is doing as measured by teacher goals and expectations, more or less related to local norms). But at least twice a year, they should also receive a standards-based score, which would be derived from school-wide assessments that reflect Common Core standards and which would incorporate tasks like those on the new Common Core-aligned assessments."<sup>19</sup> What is common across all three approaches is that a competency-based grading system has one primary function — supporting student success — and everything else is secondary.

## **B. Elements of Competency-Based Grading**

Competency-based districts and schools are experimenting with systems of grading as they align policies and practices around student learning. Although there is a lot of variation, six elements are followed in most, if not all, competency-based schools.

### **The Six Elements of Competency-Based Grading**

1. Embrace explicit learning progression or standards so that everyone will have a shared vision of what students should learn.
2. Develop a clear understanding of levels of knowledge so that students and teachers share an understanding of what proficiency means.
3. Ensure transparency so that educators, students, and parents all understand where students are on their learning progression.
4. Create a school-wide or district-wide standards-based grading policy.
5. Offer timely feedback and meaningful reassessments so that students can continue to progress and stay on track.
6. Provide adequate information infrastructure to support students, teachers, and school-wide continuous improvement.

The following sections explore how schools are designing each of the components of competency-based grading policies. Bear in mind that technology is playing a part in many of these elements. As technological supports continue to develop our sense of what is possible will expand.

## **1. Learning Progressions**

Rich Delorenzo challenges the current grading system. “When we talk about the traditional grading system, we aren’t just talking about A–F. It is built on three assumptions: 1) a bell curve in which students are compared to each other based on how quickly they learned new concepts, 2) how a student is doing in meeting teacher expectations, and 3) presumed consistency from teacher to teacher and school to school. So what does it mean to get a B+ or an A-? What’s the difference? Teachers and students can’t tell you unless they are using standards and aligned assessments.” Thus, the first step in building a competency-based grading system is to develop the learning progression that indicates what students are expected to know and be able to do. A learning progression can be organized to stretch from kindergarten all the way through graduation or to be as short as what is expected to be learned in a specific course. It needs to include the essential standards or performance indicators upon which a student is to be graded.

It is important to remember that students will be starting at different points along the larger learning progression, and teachers will need to be able to assess, grade, and track learning gains for skills at earlier stages, as well as later, beyond the specific skills to be taught in a specific course. In addition, the culture of transparency will demand that the learning progression or standards be written in student-friendly language so that students can fully understand the expectations.<sup>20</sup>

States, districts, and schools are exploring different ways of designing structures or competency frameworks in which the standards are embedded. For example, the New Hampshire Department of Education created [College and Career Ready Competencies](#) for English Language Arts and Mathematics that bind the state standards together.<sup>21</sup> The English Language Arts standards have nine competencies, such as the Writing Arguments Competency that states “Students will demonstrate the ability to analyze and critique texts or topics and support claims and reasoning with sufficient evidence for intended purpose and audience.”<sup>22</sup> The Mathematics standards have nineteen competencies, such as “Students will apply probability concepts to analyze and evaluate potential decisions and strategies.”<sup>23</sup> At Kennebec Intra-District Schools (referred to as RSU2) in Maine, a different structure or language is used as shown in Exhibit 1. [RSU2’s learning progressions](#) are broken into standards or strands, measurement topics, and learning targets that indicate the level of performance or knowledge at which a student is working.

## EXHIBIT 1

### Sample Science Measurement Topic — Life Sciences<sup>24</sup>

CONTENT AREA: <b>Science</b>		STANDARD/STRAND: <b>Life Science</b>	
STEP: <b>3</b>		MEASUREMENT TOPIC: <b>Environmental Science</b>	
<b>4.0</b>	<i>In addition to the 3.0 knowledge, infers or applies beyond what was taught.</i>	<i>Taxonomy Level</i> <b>ANALYSIS</b> <b>Specifying</b>	<b>4.0 ASSESSMENT ITEMS:</b> As a result of understanding or being skilled at the knowledge identified in 4.0, the learner is able to: <ul style="list-style-type: none"> <li>• Predict what would happen to an environment when an invasive species is introduced.</li> <li>• Explain how it effects the interactions of the existing species.</li> </ul>
<b>3.0</b>	<i>No major errors or gaps in the following TARGETED, COMPLEX ideas and processes.</i> Understand ways in which organisms interact within an ecosystem (competition for resources, predator/prey, mutualism, parasitism, commensalism etc.).	<i>Taxonomy Level</i> <b>COMPREHENSION</b> <b>Integrating</b>	<b>3.0 ASSESSMENT ITEMS:</b> As a result of understanding or being skilled at the knowledge identified in 3.0, the learner is able to: <ul style="list-style-type: none"> <li>• Create your own environment, animals and plants.</li> <li>• Describe how they interact.</li> <li>• Identify the type of interaction.</li> </ul>
<b>2.0</b>	<i>No major errors or gaps in the following FOUNDATIONAL, SIMPLE details and processes.</i> Knows Terms: predator, prey, mutualism, parasitism, commensalism, symbiosis.	<i>Taxonomy Level</i> <b>RETRIEVAL</b> <b>Recalling</b>	<b>2.0 ASSESSMENT ITEMS:</b> As a result of understanding or being skilled at the knowledge identified in 2.0, the learner is able to: <ul style="list-style-type: none"> <li>• Define and give an example of the terms: predator, prey, mutualism, parasitism, commensalism, symbiosis.</li> </ul>

## 2. Calibrating Proficiency through Levels of Knowledge

Competency education assumes that proficiency means the ability to apply skills or content, sometimes referred to as higher-order skills and sometimes as deeper learning. Therefore, competency-based schools need a common framework to help teachers and students communicate about the depth of knowledge or learning target for any specific standard that students are expected to meet. For example, in New Hampshire the state has embraced Webb's Depth of Knowledge with four levels: Recall, Skill/Concept, Strategic Thinking, and Extended Thinking.<sup>25</sup> Many of the districts in the Re-Inventing Schools Coalition network use the New Taxonomy of Educational Objectives developed by Robert Marzano and John Kendall.<sup>26</sup> Others, like schools in the Diploma Plus network, use Bloom's taxonomy.<sup>27</sup> See Exhibit 2 for an overview of the levels of knowledge in four of the frequently used learning taxonomies. Although beyond the scope of this paper, the implications that higher-order skills or deeper learning is embedded in competency education requires districts and schools to build their capacity to design and assess performance tasks.

### EXHIBIT 2

#### Taxonomies of Learning

##### BLOOM'S TAXONOMY – Original (1956)



##### REVISED BLOOM'S TAXONOMY – Anderson and Krathwohl (2000)



##### WEBB'S DEPTH of KNOWLEDGE (1997)



##### NEW TAXONOMY on EDUCATIONAL OBJECTIVES – Marzano and Kendall (2007)



Competency-based schools and districts need to ask: What does proficiency look like? Kim Carter explains: "Schools need to be clear and transparent about the level of performance that meets the bar. We need to have a shared understanding for awarding credits based on competency." This is the process, sometimes called calibration or tuning, in which teachers come together with their competency frameworks or standards, knowledge taxonomy, rubrics, and examples of student work. Through discussion, they fine-tune their understanding of what is expected



of students at each learning target. As schools implement the Common Core State Standards and competency education, reviewing their curriculum and assessments, they often find that they have been setting proficiency at recall and comprehension rather than the higher levels of application and analysis. Calibration is one of the important mechanisms for sustaining high expectations, and it is attained by bringing together teachers from different grade levels to create a shared understanding of the full learning progression.

### **3. A Culture of Transparency**

Transparency is a core value in competency education. It is the magic ingredient for increasing students' agency and ownership of their education. Rich Delorenzo explains that "In a proficiency-based system, everything is transparent. Students know where they started, where they are at in their learning progression, where they are going next, and how they will get there. Kids want to know what they need to do to be successful and they are always trying to figure it out. Once you unpack the standards, you empower kids to create unique ways to learn it and demonstrate it. When you have a culture of transparency, then and only then will acceleration of learning occur." Transparency also reinforces "show what you know," emphasizing performance assessment and the demonstration of learning, often in public settings such as presentations, blogging and digital portfolios.

Students can play several roles in understanding the expected learning progression, grading or scoring their evidence of learning, and tracking their progress. First, teachers can guide students in unpacking the standards, helping to rewrite them in student-friendly language. Second, students need to become familiar with the rubrics at the beginning of any unit so that there are no secrets about what is expected. Some schools use peer and self-assessment to help students learn how to revise and correct their own work. When students believe that they have become proficient and have evidence of their learning, they initiate a conference with the teacher.

Finally, monitoring their own learning progression sparks students' ownership and responsibility for their learning. According to Robert Marzano in his paper "[The Art and Science of Teaching/When Students Track Their Progress](#)," schools can anticipate better engagement and higher achievement from students if systems are designed so that students can track their own progress.<sup>28</sup> Some type of Target Tracker or other visible system for students to show where they are on in their learning is used in most personalized, competency-based classrooms. In schools with information systems that support competency education, the students, teachers, and parents can all see the same information about a student's progress.

Operating in a culture of transparency requires teachers to be crystal clear about how they are defining proficiency. In their article "In Search of a Useful Definition of Mastery," Thomas Guskey and Eric Anderman explain that "First, if teachers want students to achieve mastery on a particular task or assignment, they must make sure students understand the goal and must clearly articulate to students what constitutes mastery. If mastery will be determined by answering 80 percent or 90 percent of the questions on an assessment correctly, then students should know that in advance. Likewise, if mastery means being able to demonstrate a particular level of skill on a complex task, then students need to know the criteria by which their performance will be judged and the level of skill that will be expected. Students can work toward mastery only if they know what is involved and how mastery is defined."<sup>29</sup> As schools gain more experience with competency education, teachers become more skilled in creating shared understanding of proficiency and the different techniques for determining proficiency across the disciplines.

#### 4. A School-Wide Standards-Based Grading Policy

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*Today's graduates must be able to apply skills and knowledge in order to succeed in college or land a job, climb a career ladder, and earn a family-supporting income. While just going through the motions of school, getting by with "C" and "D" grades, was never optimum, it is now more than ever a dead-end for students and society as a whole.*

– Nora Priest, Antonia Rudenstine, and Ephraim Weisstein, "[Making Mastery Work: A Close-Up View of Competency Education](#)"

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At a minimum, competency-based schools need to have standards-based grading policies in place so that the focus is on what students learn, not when they learn it. However, Rose Colby, a national leader in competency education, points out that although there are many similarities between standards-based and competency-based grading, there are important differences. "First, competency-based requires teachers to be able to assess and grade the application of skills or performance tasks whereas not all standards have that quality of deeper learning. Second, competency-based grading assumes that students may be Not Yet Proficient and need to take the time to get help and continue practicing in order to have a reassessment."<sup>30</sup>

Given that there is substantial literature on the topic of standards-based grading, this section explores four aspects particularly important to competency education: school-wide approach, scoring, trending, and separation of academic progress from behavior.

##### **a. Standards-based grading requires a school-wide commitment**

The commitment to standards means that there is a commitment on behalf of the school to help all students become proficient in the standards. Not some, or a few, but all.<sup>31</sup> This means that schools have to establish a standards-based grading policy, not just a standards-referenced approach. In his book *Formative Assessment & Standards-Based Grading*, Robert J. Marzano explains the difference. "In a standards-based system, a student does not move to the next level until he or she can demonstrate competence at the current level. In a standards-referenced system, a student's status is reported (or referenced) relative to the performance standard for each area of knowledge and skill on the report card; however, even if the student does not meet the performance standard for each topic, he or she moves to the next level. Thus, the vast majority of schools and districts that claim to have standards-based systems in fact have standards-referenced systems."<sup>32</sup> The implementation of a standards-based policy is consistent with the primary principle of competency education — students continue to learn until they are proficient. They are not passed on to the next course or teacher unprepared.

One of the major changes for grading in a competency-based environment is that grading policy becomes school-wide or even district-wide, rather than having individual teachers setting the policy. Teachers alone cannot bear the burden of ensuring that all students in their class receive the support they need to be successful. Without a school-wide commitment, teachers are unable to create the flexibility and deploy adequate resources needed to help students. Nor do they have the capacity to continue to work with students who are not yet proficient. Even with the best intentions, individual teachers cannot move beyond standard-referenced grading.

In competency education, as a whole school reform, teachers' roles are elevated to higher levels of professionalism in which they work collaboratively with their peers to ensure that students understand the

standards and what proficiency means, use formative assessment to provide meaningful feedback, and provide instructional tools and opportunities for students to build their skills. Rose Colby offers that “Developing a school-wide grading philosophy that guides individual teacher grading practices provides a quality control measure in the grading process whereby staff, students, and parents all share in the same understanding for the process and products of grading.” When teachers are working together with a shared understanding of proficiency, grading becomes a way of tracking progress.

***b. A system of scoring: describing performance and progress***

Once a transparent learning progression made up of standards and a framework to describe depth of knowledge is in place, the next step is to design a scoring system that informs students about how they are progressing and what they need to work on next. The variety of scoring systems available mostly use a scale of 0–4, sometimes broken down into an eight-point range of 1, 1.5, 2, 2.5, and so on.

In general, scales may indicate a combination of the depth of knowledge, the amount of independence and the degree that proficiency was demonstrated. For example, in Exhibit 2, Lindsay Unified School District uses the scoring scale based on the generic scale recommended by Robert J. Marzano in *Formative Assessment & Standards-Based Grading*.<sup>33</sup> Level 1 suggests retrieval or recall and Level 4 indicates knowledge utilization or application of skills to new complex problems.

**EXHIBIT 3**

**Lindsay Unified School District Scoring Scale for Academic Learning**

<b>Score</b>	<b>What the Student Knows</b>
<b>4</b>	The learner knows all of the simple knowledge and skills, all of the complex knowledge and skills, and goes beyond what was taught in class to apply the knowledge.
<b>3.5</b>	The learner knows all of the simple knowledge and skills, all of the complex knowledge and skills, and in-depth inferences and applications with partial success.
<b>3</b>	The learner knows all of the simple knowledge and skills, and all of the complex knowledge and skills.
<b>2.5</b>	The learner knows all of the simple knowledge and skills, and some of the complex knowledge and skills.
<b>2</b>	The learner knows all of the simple knowledge and skills.
<b>1.5</b>	The learner knows some of the simple knowledge and skills, and some of the complex knowledge and skills.
<b>1</b>	With help, the learner knows some of the simple knowledge and skills.
<b>0</b>	Even with help, the learner does not know any of the simple or complex knowledge and skills.

Other schools are using scales that reflect how students are progressing toward a standard without explicit reference to the depth of knowledge. The scale is likely to be some variation of 1) inadequate evidence of learning, 2) emerging or not yet proficient, 3) proficient, and 4) exceeding proficiency. Some teachers may create their own scales, such as “Almost there,” “I understand,” and “Above and beyond.” The challenge with this model is two-fold. First, teachers may establish proficiency at a level too low to include higher order skills. Second, the ambiguity of what a score of 4 means can easily reinstitute a way for students to strive for extra points, including performing extra credit activities or requesting reassessments or “do-overs” to get the highest scores they can.

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## Understanding Scores Versus Grades

*In the process of collecting and analyzing data, it is important to differentiate between scores and grades. Grading is at least in part subjective; therefore, expectations might differ from one classroom to the next, resulting in a wide disparity in students' grades across the school. Grades often take into account class participation, timeliness, behavior, attendance, and extra credit. A proficient score should be the same no matter what. Even if grades focused only on cognitive performance, the same quality work could earn different grades depending on the time of the school year. For example, a particular essay should earn the same score no matter when it was written, but that score could correspond to a different grade in a teacher's grade book at the beginning of the year versus the end of the year. Grades reflect performance relative to expectations at the time.*

*When teachers use a rubric to score projects, they are looking for certain aspects of student work within different categories (e.g., idea development, supporting evidence, organization, and conventions & styles). The explanatory bullets in each category position students along the rubric, showing what elements they have mastered and areas where they have room to improve. When teachers give students specific guidelines on an assignment along with a rubric with specific criteria, students write and edit their papers to fit the standards. According to one teacher, scoring with the rubric “points out what areas [students] need to work on and breaks it out nicely.”*

– Center for Collaborative Education, Quality Performance Assessment: A Guide for Schools and Districts.<sup>34</sup>

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### c. Trending

The traditional technique of averaging is a big no-no in competency-based schools. It can mask gaps as well as creative disincentives for students to work hard on challenging new material. When a student's performance is averaged, scores from the time they were first learning a new skill are included, which might be low in comparison to later scores. The result is that students are penalized for making mistakes during the learning process. Educators with a growth mindset know that with constructive feedback students can learn from mistakes. Anything that penalizes students for making mistakes as they engage in learning is a violation of a core principle of competency education.

Instead, competency education looks for trends. As David Ruff from Great Schools Partnership suggests that “We want to see student’s personal best. We want to look and see student’s highest attainment and ensure that this attainment can happen consistently.”<sup>35</sup> Gregg Palmer explains trending in his essay “Demystifying Standards.”

*When you think about trending think about a light bulb model of learning. The idea is that whenever you’re just starting to learn something new (say you’re learning how to fly fish) you might have a hard time, at first, showing to the outside world that you’re learning though you are. Someone gives you lessons on how to cast using a fly rod. For a week or more you have no ability to show that you’re learning during the lessons, but in that time you are figuring it out, putting together the motions and requirements to cast, studying so that there is a lot going on in your brain though you haven’t put it all together yet. Then, one day, the light bulb goes on for you and you think (or say), “ah! I get it.” Suddenly you can show your progress and soon are becoming a better and better fly fisherman.*

*Trending would not penalize you as heavily for your early mistakes as would a traditional system that uses averaging. Instead, trending looks for the steep increase in learning that happens once the light bulb goes on. Teachers in this system want to see the trend of that learning and show, through the grade you earn, that in the end you did learn the knowledge and/or skill.<sup>36</sup>*

Competency-based schools look at trend lines to make sure that students are moving from 1s and 2s to 3s and 4s. If they aren’t, that is a clue that they are stuck and need some extra help. Schools also look for several pieces of evidence that a student has reached proficiency. Again, this varies across schools and in some cases is left to teachers to use their professional judgment. Although variations exist in how final scores are set, in general teachers use the highest score on each measurable topic. This reflects students’ learning when they have completed all of the units, usually in a range of 3–4. Schools also have techniques for converting standards-based grades back into the traditional ABCs if needed.<sup>37</sup>

#### **d. Scoring academic progress separately from lifelong learning competencies**

In competency-based schools, academic progress and lifelong learning competencies — often referred to as habits of mind, college and career readiness skills or higher-order skills — are assessed and reported separately. States, districts, and schools select the lifelong learning competencies that are most suited to their community and to the challenges facing their students. These might include collaboration, communication, creativity, or professionalism. Robert Marzano refers to the specific set of skills that relate to our ability to manage ourselves, such as focus or persistence, as conative competencies.<sup>38</sup> There are many ways to structure lifelong learning competencies, taking into consideration the vision for what is expected of students to know and be able to do, the desired school culture, and the culture and experiences of the school community.

Maine and New Hampshire have set state-level competencies. [Maine’s Guiding Principles](#) clearly outline what is expected of students by the time they graduate, including being a clear communicator, a self-directed learner, and a creative, practical problem-solver.<sup>39</sup> New Hampshire’s Cross-Cutting Competencies include self-management, the use of technology, and an ability to work with others.<sup>40</sup> Oregon left the decision of which lifelong learning activities and behaviors to emphasize as a local decision but required that academic progress be reported separately from behavior.<sup>41</sup>

The description of the lifelong learning competencies is an important part of creating a shared vision for competency-based schools. In Exhibit 3, Lindsay Unified School District’s shared vision of what they want for their students is described, as well as the scoring guide.

## EXHIBIT 4

### Lindsay Unified School District's Lifelong Learning Standards Lifelong Learning Standards

- A Well-Balanced Person
- A Self-Directed, Lifelong Learner
- A Caring, Compassionate Person
- A Civic-Minded Person
- A Responsible Global Citizen
- A Quality Producer and Resource Manager
- A Culturally Aware Person

### Scoring Scale for Lifelong Learning Standards

Score	What the Learner Does
4	The learner always or nearly always demonstrates these characteristics.
3	The learner usually demonstrates these characteristics.
2	The learner sometimes demonstrates these characteristics.
1	The learner rarely or never demonstrates these characteristics.

In competency-based classrooms, homework — better described as practice — are often considered formative assessment and as such are not graded. Points are not taken off academic grades for late homework, nor are zeros given for work not turned in. Instead, it triggers conversations about how the student is going to show evidence of learning, including the behaviors and dispositions that are needed to be successful in school and work. Opportunities to work on assignments are built into the school day so that students can get support when they need it.

This last point is essential to creating a competency-based school. As Salman Khan argues:

*There is another unintended and undesirable side effect of homework as it is usually assigned and generally understood. Traditional homework is a driver of inequality, and in this regard it runs directly counter both to the stated aims of public education and to our sense of fairness. Insofar as parents can help with homework, moms and dads who are themselves well educated obviously have a huge advantage. Even when the homework help is indirect, households with books and families with a tradition of educational success have an unfair edge. Wealthier*

*kids are less likely to be burdened with after-school jobs or chores that single parents — or exhausted parents — can't perform. In short, homework contributes to an unlevel playing field in which, educationally speaking, the rich get richer and the poor get poorer.<sup>42</sup>*

In competency-based schools, systems of supports are developed so that students can get help daily on their homework or any area with which they are struggling. At Messalonskee Middle School in Maine, students have Learning Goal Time (LGT) every day, with a full two hours once a week to work on assignments and get the extra help they need.<sup>43</sup>

## **5. Not Yet Proficient and the Roles of Feedback, Revision, and Reassessment**

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*One of the fundamental things you look for in a grading policy is the elimination of Ds and Fs. You simply can't give credit for less than a minimum level of proficiency. There is no reason to report it other than as Not Yet Proficient.*

– Rose Colby

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Competency education depends on educators sharing a growth mindset that believes that students, as well as adults themselves, can develop and build skills with the right mix of feedback, supports, and time to practice. A number of the policies and practices in competency-based grading are rooted in this mindset, including the ideas that 1) students should never be penalized for mistakes that take place during the learning cycle, 2) practice is never graded, and 3) it is acceptable and even expected that students may reach proficiency the first time through a cycle of learning. The most important tenet sprouting from the growth mindset is that feedback and support are necessary for learning.

In competency education, the primary purpose of grading is to provide feedback to students. Although research suggests that feedback can have a powerful impact on learning, there is reason to believe that some feedback is better than others. Robert Marzano summarizes the research done by John Hattie and Helen Timperley in their report “The Power of Feedback”<sup>44</sup> by saying that, “They argued that feedback regarding the task, the process, and self-regulation is often effective, whereas feedback regarding the self (often delivered as praise) typically does not enhance learning and achievement.”<sup>45</sup> In competency education, we want to design grading or scoring systems to provide a stream of feedback. Thus, formative assessment and adaptive instruction becomes absolutely essential.

In competency-based schools, there is a constant cycle of learning, practice, application, and assessment. When students do not demonstrate proficiency on an assessment, they are not given an F. Instead, the status of “Not Yet Proficient” is used to indicate that students are still working on completing a unit or a course. If an assessment shows that a student doesn’t fully comprehend or know how to apply skill or content, it triggers feedback, supported revision, and meaningful reassessment. Brian Stack, principal at Sanborn Regional High School in New Hampshire, emphasizes that “Making reassessments a school-wide practice changes the learning culture for students from one where they are trying to earn enough points to pass to one in which they are held accountable for everything they need to know and be able to do.”<sup>46</sup> Providing opportunities for meaningful reassessments of the specific standards, not taking the same test over and over or taking an entire course over, is a core policy and practice in competency-based schools. It is what Envision schools call “a culture of revision.”<sup>47</sup>

Competency-based educators often reflect that schools need not be afraid to determine that a student is not yet proficient. Brian Stack’s experience at Sanborn Regional High School suggests that teachers learn how to engage students in a competency-based system. “When this model was first implemented, my teachers were skeptical and concerned that this practice may make it difficult, if not impossible to keep track of make-up work and could drag out the grading deadlines indefinitely. While this may be true to some extent in the short term, my teachers quickly realized that the more they ‘hounded’ students early on in a course, the less likely students were to give them issues later in a course. Our teachers continually impress upon students the idea that they cannot give them a grade on their learning if they have no proof that learning has taken place.”<sup>48</sup> To support students and teachers alike, it is important to implement school-wide systems of supports so that there is no excuse for a student to reach the end of the semester not having met the standards. Schools are also using schedules creatively to allow more time up front to help students who do not have prerequisite knowledge, as well as flex time at the end of a course or semester for students who need a little more time.

## CHARACTERISTICS OF FEEDBACK THAT SUPPORTS LEARNING

The time has come to stop believing that report card grades and test scores represent effective communication capable of supporting student learning. They do not — indeed cannot. It’s not that they cannot provide indications of learning success or failure. But a recent summary of research on the characteristics of feedback that supports learning reveals why they fall short as supporters of learning.

Hattie and Timperley (2007) report that research reveals that feedback works to encourage and support student learning when it does the following:

- Focuses on attributes of the student’s work rather than attributes of the student as a learner
- Is descriptive of that work, revealing to the student how to do better the next time, rather than judgmental
- Is clearly understood by the intended user, leading to specific inferences as to what is needed
- Is sufficiently detailed to be helpful yet not so comprehensive as to overwhelm
- Arrives in time to inform the learning, versus too late

– Rick Stiggins, [Assessment FOR Learning, the Achievement Gap, and Truly Effective Schools](#)<sup>49</sup>



Ashley Ogonowski, Dean of Instruction at the PASE program at Southeastern High School in Detroit, pointed out that reassessments are a wonderful learning experience for students and that “As students realize that they are going to have to do a reassessment and that it will require more studying, they realize that they might as well do it right the first time.”<sup>50</sup> By refusing to allow students to slide by, students succeed in learning the academic skills, as well as developing the maturity required for being an independent learner.

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*Reassessment is an integral part of any competency-based grading system. Students learn at different rates, and they need multiple chances to demonstrate mastery of a competency or skill. Most state-level department of motor vehicle agencies that I know of let new drivers reassess their driving test until they have reached a proficient level. Most state-level department of education offices allow future teachers to reassess a licensure test until they have reached mastery. Why should a high school assessment be any different?*

*At Sanborn High School, we initially established a policy that any student who does not obtain an 80% or higher on a summative assessment has the option to reassess providing they met a set of conditions. We expected them to complete a reassessment plan with their teacher that may include a deadline for completion of the reassessment as well as the completion of several formative assessments at a proficient level prior to taking a reassessment. However, some teachers started wondering why we were preventing students from excelling in academics. Next year our reassessment policy will be revised so that any student can ask for a reassessment and we'll use the highest grade. Together, teachers and students are learning to balance striving for excellence with staying on pace to move through the course.*

– Brian Stack, Principal, Sanborn Regional High School<sup>51</sup>

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Schools embed reassessment in their grading policies based on the design and culture of their schools. In classrooms with more personalized approaches there is less emphasis on reassessment and more on students continuing to work until they can submit evidence that they have learned a standard. Schools converting to competency education may encounter tension around reassessment, especially if the grading policy indicates the highest score is for “exceeding proficiency” rather than knowledge utilization. Rose Colby warns that “If you are using a modified grading system that is going to be converted into a GPA, then opening reassessment to everyone all the time may result in the system crashing in on itself.” High-performing students who have already demonstrated proficiency may start asking for “do-overs” to get higher marks on tests or papers if the grading system allows them to get the highest score. Suddenly teachers are being asked to direct their time to students who are demanding reassessments in pursuit of higher grades, rather than exploring the topic more deeply or advancing to the next unit.

Colby recommends that schools clearly design reassessment policies around students who are not yet proficient. “Schools have to use the lens of reaching proficiency to determine when students need a reassessment. If they have already demonstrated proficiency, there is no need to do a reassessment. If they want to reach for a deeper level of learning, then students will need to design a project to demonstrate knowledge utilization, not retaking

an examination. Reassessments are for students that are not yet proficient and they require extra investment of time and effort, i.e., re-learning.” Reassessment policies for students not yet proficient usually require a work plan and evidence that the student participated in more practice or study, such as individual or small group tutoring, before resubmitting evidence of learning or taking a test over. Teachers may also use the reassessment as an opportunity to engage parents in making sure that there is consistency in expectations surrounding the student.

### **6. Tracking and Communicating Progress**

One of the big changes in standards-based grading is that teachers organize their grade books around measurement topics rather than assignments and assessments. Instead of distributing points across tests, projects, homework, and behavior, grade books — or perhaps they should be referred to as “progress books” — are designed around what students are expected to learn with information on how students are progressing under each one, based on evidence of learning or assessments.<sup>52</sup>

Tracking student progress according to measurement topics or standards generates an extraordinary amount of information about student learning. Thus, many schools turn to platforms that allow them to collect and use the data for supporting individual students, informing teachers’ professional development, and embarking in continuous improvement of school performance. For example, many of the proficiency-based schools in Maine use Educate K-12 and the Education Achievement Authority schools in Michigan use Buzz. One of the key elements of the technology platforms is to provide transparency on how students are progressing, where they are in their learning cycle within a unit or standard, and what they can do next. Students, teachers, and parents all see the same information about a student so that they can have informed conversations about how to best

## **DISCUSSION QUESTIONS REGARDING GRADING POLICIES**

Districts and schools are developing a variety of grading schemes as they convert to competency education. The following questions should be considered in designing competency-based grading policies:

1. How is the learning progression communicated?
2. In what way is proficiency or the depth of knowledge communicated?
3. How do students and parents know where a student is on their learning progression?
4. What are the core elements of the standards-based grading policy and what are the implications for school operations?
5. What elements of the grading policy ensure timely feedback and meaningful reassessments so that students can continue to progress and stay on track?
6. What type of information infrastructure is available to support students, teachers, and school-wide continuous improvement?

The [CompetencyWorks Wiki](#) includes examples of grading policies from Rochester School District, New Hampshire; Lindsay Unified School District, California; Casco Bay Charter School, Portland, Maine; and the Diploma Plus Network.

support the student. Buzz provides teachers with a “radar report” that allows them to quickly scan their students’ progress. By clicking on a student’s name in the report, teachers can dive quickly into the student’s learning path to better understand the content, issues they’ve had, and results on assessments.

Although the technology platforms allow real-time access to student progress, report cards continue to be important tools for communicating with parents. Standards-based report cards vary in their design across competency-based schools. However, what they do have in common is that they provide significantly more information about how students are doing in their learning than traditional report cards, and they separate academic progress from lifelong learning competencies. In addition, they are likely to give some indication of the progress of students who are not yet proficient along their learning progression.

An important communication tool about student achievement is the high school transcript that is used for students transferring between schools and for college admissions. Through collaboration between colleges and districts, the Great Schools Partnership and New England Secondary Schools Consortium are developing a proficiency-based transcript to be used throughout Maine. The considerations articulated by the higher-education partners included providing students’ proficiency in each standard and in cross-curricular graduation standards, an ability to compare students, and a complementary school profile that describes the school’s approach to pedagogy, learning standards, and the proficiency-based approach.<sup>53</sup>

## iv. Lessons from the Field

The following discussions explore some of the lessons learned from various districts and schools as they began implementation of competency-based grading.

### A. Timing, Sequencing, and Community Engagement

Schools that begin the process by focusing on what parents and communities want for their children and creating a set of beliefs about learning are able to embed the conversation about grades within a shared vision. John Caesar, Director of Technology & 21<sup>st</sup> Century Learning at Lindsay Unified School District reflects on this point. “We all can agree that people learn in different time frames. This opens the conversation to assess traditions such as time-based courses or grade levels. It allows us to ask whether ‘time’ should be the primary variable in the learning process . . . or should it be ‘learning’? This conversation begs us to dive deeper into how we assess learning, leading to further questions such as ‘Is A–F the best measure of learning?’ We are more likely to have productive discussions where we find common ground in ‘beliefs’ versus attacking tradition first.”<sup>54</sup>

Others find that grading is a powerful entry point for engaging the broader community in systems change. Don Siviski, a consultant to Maine’s Department of Education, cautions that “Educators have to be ready to have deeper conversations about the purpose of school and why a personalized, proficiency-based system will work for families and their children.” However, if grading is the entry point, educators need to be prepared to lift up the conversation to create a shared vision and community-wide commitment. The risk is that conversation can grind to a halt if the debate becomes about one grading system compared to another.

No matter when you begin the conversation about grading, there will always be some parents or community members asking tough questions. Rose Colby warns that “If you don’t invest in helping parents to understand

the big picture, you might as well move the meeting to the gym. High school is the most challenging, as parents are worried that any changes might impact their child's chances of getting into Harvard." Thus, it makes sense to be prepared. In addition to being clear about why the current grading system isn't working for even the highest achieving students who often find themselves in remedial college classes, principals and superintendents will need to be ready for concerns and misconceptions. Below are a few examples of ones heard in community meetings about grading:

- Without deadlines, students are not held accountable.
- Real life doesn't allow for do-overs.
- It's not fair for students to get the same grade if one student works hard all semester and another procrastinates until the end.
- This just means testing out.
- The NCAA won't accept competency-based credits.
- The GPA is necessary for my child to get into a good college.
- Giving too many second chances is unfair.
- Students will stop doing homework or participating if I can't take away points.

Colby suggests several ideas for high schools converting to competency education, including rolling out the transition to the new grading system starting in 9th grade, engaging students in helping to communicate the value of the new grading system and how it works, and demonstrating to parents that colleges will accept the transcripts. Siviski encourages principals and teachers to use adaptive leadership practices whenever possible. Instead of simply responding to questions, use them to open up deeper conversations that can build higher engagement.

## **B. Preparing for Transparency in the Classroom**

It is very important to think about the implications of the transparency inherent in competency education. It calls for new practices as relationships change, demands honesty and courage in those relationships, and creates new ways to address current challenges.

### ***1. Classroom Management in Personalized Settings***

The transparent scoring system that tracks student progress in competency education shifts the power dynamics in the classroom. Immediately, students are more empowered, demanding to understand what the standards mean, to know what proficiency looks like, and to have choices in how they demonstrate their learning.

Teachers who try to cling to traditional management practices from the conventional classroom — by using points as incentives or punishment — are likely to end up frustrated. Rich Delorenzo cautions that "In the traditional classroom, teachers seek to have control over the classroom. They only know one way to do grading, the way they were graded. Once a school shifts to competency-based education, teachers understand how the traditional systems prohibit growth and recognize the potential of the new paradigm. It's important to remember that teachers know only what they know. We can't expect them to move to a new paradigm they've

never experienced unless it is clearly laid out for them and they have support.” Those who are willing to let go of control and develop classroom management methods suited to a more personalized setting will find themselves forming partnerships with students around a common goal: learning.

## **2. Honest Conversations**

Imagine that you are an 8th grader who has been getting As and Bs all along the way, but now your new teacher is explaining to you and your family that you are actually performing at the 6th–grade level in your learning progression. You thought you were a “good student” and now you are behind?!

This is one of the situations that often develops when a new student enrolls in a competency-based school. Encountering a student-centered environment that focuses on teaching students not just delivering the curriculum, students learn about where they are on their learning progression even if they are well behind their age-based grade. The older the students, the more painful this conversation is with the students and their families. Educators have to be ready to help students and their families through the emotions this causes: shame, anger, frustration, and distrust. Then, students, educators, and families can work together to implement intentional strategies to fill gaps and accelerate learning.

Competency-based schools help teachers prepare to handle this situation. With a strong culture of learning and respect, teachers can focus on where students are on their learning progression and make plans on how to help students catch up. Principals need to understand that it isn’t only the students and families that will have emotional responses to this situation. Kristin Floreno from Matchbook Learning working in partnership with Brenda Scott Academy for Theatre Arts in Detroit explained that “Teachers can be demoralized by seeing where students are on their learning progressions and how far they need to go to catch up.”<sup>55</sup> Competency education didn’t create this situation; it is exactly the same situation in conventional classrooms with students having a wide range of skills. However, in competency education, students are no longer passed along; instead, the expectation is to find a way to help students get back on track. Principals and coaches need to build their own leadership capacity to help teachers and students see that they are making progress, even if the journey is long. Beginning with the honest conversations, perseverance and grit are developed on the part of students and teachers alike.

## **C. Continuous Improvement**

The conventional grading system doesn’t allow for schools to draw on student data for continuous improvement or as feedback to teachers to improve their skills because of the subjectivity and absence of standards. Once competency education’s grading system is put into place, principals and teachers can access information to help identify the instructional strengths and weaknesses of the school.

At the Barack Obama Charter School in Los Angeles, data is used to track student progress, rate of learning, and teacher verification of proficiency, all of which can be used to target where teachers need support.<sup>56</sup> At the Education Achievement Authority in Michigan, principals can quickly identify the students who are not making the expected progress, identify if it is a school, teacher, or individual student issue, and engage the appropriate parties to develop meaningful strategies.<sup>57</sup> In Chugach School District in Alaska, within three years of implementation, teachers were asking for student data to be included in teacher evaluations as it was so helpful in driving meaningful conversations with their peers.<sup>58</sup>

## D. High School and College Admissions

Implementing competency-based or standards-based grading in elementary school is easier than in high schools. As Rich Delorenzo points out, “High school is where there is the most risk and the most vulnerability because it is high stakes grading. Kids are counting on their GPA for eligibility for scholarships.” However, in many schools, there is a conversion process that allows students to determine a GPA to be used in college applications.<sup>59</sup> In addition to ensuring that high schools have a way of recognizing high achievement, they also need to ensure that students can advance beyond the K–12 curriculum through Advanced Placement, concurrent or dual enrollment, or online opportunities to pursue their career interests.

District collaborations and partnerships with state leadership can be helpful in engaging colleges and universities. In Maine, the Commissioner of Education convened higher education leaders, and later, a meeting with admissions directors was held. With the leadership of the New England Secondary Schools Consortium, 48 universities and colleges in New England have pledged to accept a proficiency-based transcript.<sup>60</sup>

## v. Going Forward

As we move forward and become more adept at deconstructing the time-based system, new ideas and models are developing that challenge the underlying assumptions of the conventional system. We are also encountering practices that seem intransigent. Alternatives can be easily developed for some of these practices, while others may require the participation of stakeholders to design new solutions. Below are some of the emerging opportunities and issues that will need our attention.

### A. Recognize Excellence in Academic Performance

Conventional schools use the GPA system to rank students, but it doesn’t necessarily tell us much about their courses, calibration to standards, or the depth of knowledge students are expected to demonstrate. In competency education, the understanding of academic excellence is transparent and more expansive — we’ll know where students are on their learning trajectories, the depth of knowledge at which they are learning, and their rate of learning.

It’s unlikely that the need for ranking will ever be absolutely obsolete. Highly selective colleges and those who want to attend them are going to want to be able to identify the “best students” through some mechanism that recognizes distinction. Brian Stack asks, “Why not instead set a bar that you will use to distinguish an “honor graduate,” and any student who is able to reach (or exceed) that bar gets the distinction at graduation. From year to year, the number of honor graduates will change, but the standard never would. Every student would have the opportunity to be considered an honor graduate, provided they meet the requirements.”<sup>61</sup>

Perhaps we can turn to levels of distinction, such as *cum laude* meaning “with honor,” *magna cum laude* meaning “with great honor,” and *summa cum laude* meaning “with highest honor.” Or perhaps we can create a range of academic distinctions. Similar to recognition in sports teams of the most valuable player, we might have levels of distinctions in different subject areas or distinctions that recognize those who are the most improved or who have demonstrated the most academic growth.

## B. Design for Deeper Learning

In both traditional and competency-based schools, teachers are working to upgrade instruction and learning in response to the Common Core State Standards. Since its inception, our system has been focused on recall and basic skills, the lower half of knowledge taxonomies. The Common Core and the call to college- and career-readiness demand that we build the capacity in our schools to help students apply and use new skills.

David Ruff raised this question: “What would competency education and its grading system look like if we designed backwards from a commitment that all students reach deep levels of success?” Designing backward from where we want students to be might lead us toward organizing our schools to offer substantially more project-based, problem-based, and real-world learning. We would invest in performance assessment, as well as support teachers in assessing creativity, analysis, and evaluation. Grading systems might be modified to be more granular at the higher end of performance targets, and students might have the opportunity to veer from linear progress, taking different paths in demonstrating proficiency along their learning progression.

Diploma Plus has resolved some of this tension by expecting students to demonstrate a level of analysis for every standard and to participate in deeper learning in at least one project for each course. As Akili Moses Israel explains, “It’s critical that our students have an opportunity to apply their learning in interdisciplinary ways so that they can make the connections between real life and what they are learning in class.” Similarly, Boston Day and Evening Academy sets aside a week at the end of each trimester for their Symposium in which teachers offer different projects for students so that they have an opportunity for hands-on application of the skills they have been learning.

Another issue that is likely to emerge as we better understand the implications for building capacity in our schools to support deeper learning is the relationship to the lifelong learning competencies. Rose Colby explains the challenge: “The issue of non-academic skills and dispositions is a tough one. We are preparing students for college- and career-ready skills so we should be assessing them. However, those college- and career-ready skills, as described by David Conley or the Partnership for 21<sup>st</sup> Century Learning, are the process skills behind the performance tasks. So we are asking our teachers to assess students separately on those specific dispositions and skills necessary for the performance task.” Colby suggests that, as we develop better insight into the relationship between the lifelong learning skills and the application of academic skills, we assess and report but not grade lifelong learning skills so that they can be useful for student reflection.

## C. Equity in a Competency-Based Grading System

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*Feedback is an essential ingredient for learning. In a mastery-based system, grading using a rubric is designed to provide students with constant feedback on where they need to focus, where they need extra help, and the progress they are making. These grades are even more powerful as they direct teachers' attention to making sure students get the help they need today, not next week.*

– Mary Esselman, Deputy Chancellor, Education Achievement Authority

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We know the ways that the conventional grading scheme perpetuates inequity. What we do not know yet is how equity issues and unintended consequences may appear in competency-based grading systems. As Susan Patrick, CEO of the International Association for K–12 Online Learning, emphasizes, “We have to be vigilant in protecting the quality of competency education implementation. This means paying attention to the rigor of learning experiences, calibrating the assessment rubrics for each level of proficiency, providing all students with access to timely supports, and personalizing learning for each student’s needs.” The most important issues to consider in ensuring that competency education improves educational equity are related to monitoring progress and responding quickly when students are struggling.

### **1. Rates of Learning**

In competency-based high schools, you may hear students talk about themselves as “faster” or “slower” learners. At first it sounds disturbingly like smarter and dumber. However, as the conversation continues, you find that students think of this as their pace or tempo. They talk about their pace within the context of what they are learning, recognizing that it changes in relation to whether they are doing recall or analysis, tackling new content or reviewing previous curriculum, and whether they are turned-on by the topic or not. As teachers and students become familiar with teaching and learning in a competency education, they realize that pace matters. If a student is beginning to fall off-pace, they and their teacher know they will need to work together to invest the right mix of extra time, extra effort, and extra support.

How might we measure pace or a rate of learning? Are we considering a rate of learning between standards, based on the student’s learning trajectory, or the rate to reach a specific benchmark such as completion of an academic level? At what periods of time should we measure? Are there periods of time that are too small to be meaningful? As John Caesar explained, “One of the greater challenges of performance-based systems (PBS) is pacing. Pacing is easy in a time-based system because ‘time’ is the constant. In PBS, time is the variable and learning is the constant, so pacing and acceleration become a critical conversation. At Lindsay we are designing ‘individual meters’ for students that provide for diagnostic pacing to include acceleration and deceleration over time. This is critical information that students, parents, and teachers need to navigate a system that honors learning over time. We still need to maintain ‘viability’ within a ‘guaranteed’ curriculum even though we often allow for extra time when needed.” As we think about equity in designing metrics, we want to make sure that they are meaningful for learning, recognize the persistence and extra work it takes to get back on track, and recognize but not privilege students for knowledge that they carry with them when they enter school.



## **2. Advance or Go Deeper**

In conventional classrooms, students who master knowledge and skills may find themselves overwhelmed with boredom. In the competency-based classroom, reaching proficiency triggers the question “What’s next?”

In many competency-based grading schemes, reaching Level 3 is considered proficient. This is usually spoken about as strategic thinking, application, or analysis. Depending on how the school is structured and the degree that blended learning is available to expand educational opportunities, students may advance to the next unit of study or reach for Level 4 or knowledge utilization, in which skills are applied to create or explore complex problems. Or they can stay at teacher pace and use their time in other ways that are important to them, such as focusing on topics that are more difficult or developing skills and knowledge in areas that are particularly meaningful. In highly personalized schools, as students reach proficiency based on their individual learning plan, they might create flexible schedules to help with adult responsibilities of child care or working to support their family.

Given that students have more voice and choice in competency education, how do we value these different paths in learning, especially as they relate to students who have traditionally been underserved? How do we construct grading policies and honors distinctions that support their choices?

## **3. Lifelong Learning Competencies**

Gloria Pineda, a long-time competency-based educator, points out that teachers have rarely been trained in how to assess students on lifelong learning standards and that this is an area in which stereotypes and bias of all forms — cultural, racial, gender, and class — can come into play.

This spectrum of learning area is ripe for bias and misunderstanding. For example, if there are cultural or racial dynamics at play, students may respond negatively or shut down, possibly generating lower scores on skills that require group participation. Furthermore, severe poverty can shape student behavior. Take for example the student at a Diploma Plus school who was consistently late for school by fifteen minutes. It would be easy to say that she was unprofessional and reflect it on her report card as such. On the other hand, knowing the young woman’s story — that she had to get two young siblings up, dressed, fed, and off to school before then riding two bus routes to get to her own school — one might say she shows the ultimate level of professionalism, taking responsibility for her schooling even in the face of daily challenges.

## **D. Higher Education**

There are several ways that higher education and K–12 systems will want and need to realign themselves as competency education expands. Among many issues, key are admissions and alignment.

### **1. Admissions, Transcripts, and Ranking**

Moving beyond the GPA may be one of the biggest changes from the time-based system. Students and parents are cautious about changes in grading policies, as both college admissions and scholarship personnel use the GPA to differentiate students, with some state university systems using it to offer entrance to the top students in any high school.

Do competency-based schools need an alternative to the GPA so that students can demonstrate that they have good grades? Or can we find a way to focus on what students have learned rather than the grades they received? In competency-based schools, there will be a broader range of ways that students can differentiate themselves and colleges can take advantage of that to help them create a rich diversity of skills, interests, and backgrounds among their student body. Transcripts can focus on the learning done only in school, or we may see them become documents that represent students' lifelong learning with much broader recognition of skills through badging and other forms of credentialing outside of school.

If colleges insist on using individual ranking rather than other forms of distinctions of academic excellence as an element of their admission process, they will be holding back our students and our country.

## **2. Alignment between Competency-Based Systems**

It is too soon to tell to what degree higher education will become competency-based. As colleges and universities explore ways to establish competency-based programs, there will be an opportunity to further align the high school and college systems to make a more streamlined transition for students. For example, if both systems are competency-based, we can begin to ensure that a college prep English course in high school is aligned directly to the expectations of college admissions, without taking placement tests or remediation courses. Or if there are differences between what is required for graduation and what competitive colleges consider "ready," high schools and colleges can both offer transitional courses.

## **E. Competency-Based Human Capital Development**

Kristin Floreno pointed out that once a school begins to score students according to their progress toward competencies, it only makes sense to do the same for teachers. She organizes professional development based on where teachers are in their own learning progression in different skill areas such as blended learning or managing a personalized classroom. As teachers develop their skills, they find ways to show evidence of their learning, including classroom videos and presentations. It is easy to imagine that by embedding the philosophy of competency education into the human resource functions of a district and school, new approaches to staffing patterns, hiring, training, and evaluation might develop.

## **F. The Role of State Policy in Grading**

Leading states in competency education vary in their approach to establishing their grading policy. [New Hampshire](#) has established a powerful set of state policies that expect schools to be competency-based yet recognize grading as a local responsibility, expecting districts to develop their own grading policy and explaining that there are a "variety of reliable, research-based grading methods for competency assessment that may be adopted or adapted by local school districts."<sup>62</sup> They also recommend to districts that they engage the community in making changes to assessment, grading or reporting systems.

Oregon has taken a stronger approach. In 2012, Oregon's [State Board of Education established a policy](#) that parents will be informed whether or not their child is proficient in grade-level standards and that academic standards will be reported separately from behavioral factors. In addition, it establishes the expectation that students will receive additional services and have multiple opportunities to demonstrate mastery of academic content standards.

Maine has shaped their policy around a proficiency-based diploma that includes academic expectations and [Guiding Principles](#) that describe what students should know and be able to do. Without creating state policy around grading, Maine is actively helping to address issues as they arise. For example, as discussed previously, the Maine Department of Education is working with the [Great Schools Partnership](#), districts, and admissions directors to develop a proficiency-based transcript.

States are beginning to understand the importance of upgrading information and data systems to align with competency education. As more investments are made in developing the information infrastructure, there will be more conversations about which elements of grading policies need to be consistent across districts and schools to ensure portability and alignment with higher education.

## **G. Badging, Credentialing and Community Assessors**

In K–12 competency education systems, the teachers’ role in assessing student learning and providing constructive feedback is elevated. Yet, there will be situations in which students pursue coursework or skills that may be outside the capacity of a school. For example, students may pursue online courses, in which case the online teacher or professor will be the one to assess and credential the learning.

Competency-based schools may want to explore ways to take advantage of emerging trends in credentialing skill building. [Digital badging](#) is being applied in workforce development, as well as in youth programs. As students develop skills, a community or workforce mentor credentials them with digital badges that identify the skill, the assessor, and a link to evidence of the skill. Badging allows students to develop skills beyond what is available in their school, offering opportunities for hands-on learning and more extensive personalization. This may be particularly important for students with passions and talents that are outside the scope of the school curriculum.

For example, the Providence After School Alliance runs the [Hub](#), in partnership with high schools, to offer students expanded learning opportunities that provide hands-on learning opportunities for them to build, apply, and demonstrate skills. Students may develop apps for their smart phone, participate in the Debate Club, or learn to be a DJ, generating credit as well as digital badges in recognition for the skills they’ve developed.<sup>63</sup> Community mentors, working in partnership with teachers, fill the role of assessing demonstration of skills that are beyond the knowledge base of school personnel.

Developing badging to complement competency education may be an important avenue, especially for students who may have less educational and social capital. Badging can also open doors to deeper career development, as students try their hands at a range of skills in a variety of industries and even explore the world. Badging is certainly a mechanism for community organizations, schools, and students to communicate about the learning that takes place in expanded learning opportunities.<sup>64</sup>

## vi. Conclusion

Our traditional grading system is one of the lockstep pieces of our “factory model” education system that was designed with an eye to efficiency and sorting students. Although the original intent was to increase access for students, the unintended consequences have been to reproduce inequity and leave our students — even our high-achieving students — communities, and country vulnerable.

It takes courage to face the truth that the A–F grading scheme is doing a disservice to our children and thwarting the efforts of educators to produce greater improvements in academic achievement. However, with the courage to change comes the possibility of advancement. In competency-based schools across the country, teachers are courageously speaking the truth to students and parents about where their students are on their learning progressions. It is difficult for parents who have received report cards filled with passing grades year after year to suddenly learn that their child is one, two, three, or even four grade levels behind. Nevertheless, the transparency of the competency-based grading is empowering, enabling educators and parents to work together to help students progress.

Given the stage of development of competency education, we can anticipate the practices that make up competency-based grading to develop over time. As more and more districts implement the components of competency-based grading, we will better understand how the pieces best fit together. As in any major systems redesign, when you pull on one thread, you find yourself pulling on many. As districts and schools convert to competency-based grading, they quickly find that they need to address other practices in their schools. As innovators have learned, once grading is revised, it is impossible to avoid revising classroom management practices and adjusting support systems. As school capacity increases regarding the use of the Common Core State Standards, our knowledge of the learning sciences expands, and learning management systems catch up to the innovators of the field, we will be able to understand the full implications of competency-based grading.

Although at times the new structures of competencies, learning progressions, depth of knowledge, and grading systems can feel complex, as districts and schools become comfortable with the structures and terms, the language of competency education will be as familiar to us as the As, Bs, and Fs of our traditional grades. As many have pointed out during school visits, our students will be the ambassadors and translators, explaining to family members, colleges, and employers what they have learned, how they have learned it, what they want to learn next, and what they need in order to be successful.

## End Notes

<sup>1</sup> For a review of research on grading, see Thomas R. Guskey and Jane M. Bailey, *Developing Grading and Reporting Systems for Student Learning* (Thousand Oaks, CA: Corwin, 2001), and Chapter 1 in Robert J. Marzano's *Formative Assessment & Standards-Based Grading* (Bloomington, IN: Marzano Research Laboratory, 2010).

<sup>2</sup> For more information about the systems of assessments, see "[Performance Counts: Assessment Systems that Support High-Quality Learning](#)," Linda Darling-Hammond, and "[Quality Performance Assessment](#)" at the Center for Collaborative Education.

<sup>3</sup> Robert J. Marzano, *Transforming Classroom Grading* (Alexandria, VA: Association for Supervision and Curriculum Development, 2000), 14.

<sup>4</sup> Camille A. Farrington and Margaret H. Small, "[A New Model of Student Assessment for the 21<sup>st</sup> Century](#)" (American Youth Policy Forum, 2008), 4.

<sup>5</sup> Jack Schneider, College of the Holy Cross, and Ethan Hutt, University of Maryland, College Park, "[Making the Grade: A History of the A–F Marking Scheme](#)," retrieved November 1, 2013.

<sup>6</sup> Shawn Cornally, "[Standards-Based Grading: Misconceptions](#)," *ThinkThinkThink* (2013), retrieved November 20, 2013.

<sup>7</sup> Lynn Fendler and Irfan Muzaffar, "[The History of the Bell Curve: Sorting and the Idea of Normal](#)," *Educational Theory* 58 (University of Illinois, 2008).

<sup>8</sup> Thomas R. Guskey, "[Five Obstacles to Grading Reform](#)," *Educational Leadership* 69 (2011): 16–21.

<sup>9</sup> Marzano, *Transforming Classroom Grading*, 3.

<sup>10</sup> Thomas R. Guskey and Eric M. Anderman, "In Search of a Useful Definition of Mastery," *Educational Leadership* 71 (2013): 18–23.

<sup>11</sup> Gregg Palmer, "[Demystifying Standards](#)," Maine Department of Education, retrieved November 20, 2013.

<sup>12</sup> Salman Khan, *The One World Schoolhouse* (New York: Twelve Hachett Book Group, 2012), 83–84.

<sup>13</sup> Cary J. Roseth, David W. Johnson, and Roger T. Johnson, "Promoting Early Adolescents' Achievement and Peer Relationships: The Effects of Cooperative, Competitive, and Individualistic Goal Structures," (*Twin Cities Psychological Bulletin*, University of Minnesota, 2008, 223–246). For more information on motivation and engagement, see John V. Shindler, "[Examining Motivational Strategies — What Makes Your Students Care?](#)" in *Transformative Classroom Management* (San Francisco: Jossey-Bass, 2008); Edward Vockell, "[Social Aspects of Motivation: Classroom Goal Structure](#)," *Educational Psychology: A Practical Approach*; and "[Motivating Students](#)," Center for Teaching, Vanderbilt University.

<sup>14</sup> Interview with Rich Delorenzo, May 20 and November 26, 2013.

<sup>15</sup> Marzano, *Transforming Classroom Grading*, 1.

- <sup>16</sup> Interview with Akili Moses Israel, Executive Director, Diploma Plus, April 25, 2013.
- <sup>17</sup> "[Grant Wiggins on Grading](#)," Authentic Education, retrieved November 20, 2013.
- <sup>18</sup> Interview with Kim Carter, Executive Director, QED Foundation on May 10 and September 27, 2013.
- <sup>19</sup> Grant Wiggins, "How Good Is Good Enough?" *Educational Leadership* 71 (2013): 10–16.
- <sup>20</sup> For more on this topic, see Chris Sturgis, "[The Art and Science of Designing Competency Frameworks](#)," International Association for K-12 Online Learning (2012).
- <sup>21</sup> "[College and Career Ready Competencies aligned with Common Core State Standards](#)," New Hampshire Department of Education, retrieved November 20, 2013.
- <sup>22</sup> "[New Hampshire Common Core State Standards-Aligned English Language Arts and Literacy Competencies](#)," New Hampshire Department of Education, retrieved December 23, 2013.
- <sup>23</sup> "[New Hampshire Common Core State Standards-Aligned Mathematics Competencies](#)," New Hampshire Department of Education, retrieved December 23, 2013.
- <sup>24</sup> "[Sample Science Measurement Topics](#)," Kennebec Intra-District Schools (RSU2), retrieved December 23, 2013.
- <sup>25</sup> [Webb's Depth of Knowledge](#) has four levels: Recall, Skill/Concept, Strategic Thinking, and Extended Thinking.
- <sup>26</sup> For more information, see Robert J. Marzano and John S. Kendall, "[Designing & Assessing Educational Objectives: Applying the New Taxonomy](#)," Marzano Research Laboratory. [RSU-2, a leading proficiency-based district in Maine provides an example of how districts use Marzano's Taxonomy](#).
- <sup>27</sup> Bloom's Taxonomy has six levels. The original version developed in the 1950s was Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. [http://en.wikipedia.org/wiki/Bloom%27s\\_taxonomy](http://en.wikipedia.org/wiki/Bloom%27s_taxonomy). It was revised in the 1990s by [Lorin Anderson and David Krathwohl](#) to be Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating.
- <sup>28</sup> Robert J. Marzano, "[The Art and Science of Teaching/When Students Track Their Progress](#)," *Educational Leadership* 67 (2009): 86–87.
- <sup>29</sup> Guskey and Anderman, "In Search of a Useful Definition of Mastery," 18–23.
- <sup>30</sup> Interview with Rose Colby, May 16 and August 12, 2013.
- <sup>31</sup> Many of the innovators in competency education report that the Common Core State Standards are easily modified to create a competency-based learning progression. However, they also remark that in some cases there are too many standards and they have to identify the "power standards" in order to structure learning progressions that are meaningful for students.

- <sup>32</sup> Robert J. Marzano, *Formative Assessment & Standards-Based Grading* (Bloomington, IN: Marzano Research Laboratory, 2010), 18–19.
- <sup>33</sup> Marzano, *Formative Assessment & Standards-Based Grading*, 45.
- <sup>34</sup> Center for Collaborative Education, *Quality Performance Assessment: A Guide for Schools and Districts* (Boston, MA: Center for Collaborative Education, 2012), 104.
- <sup>35</sup> Interview with David Ruff, Executive Director, Great Schools Partnership on May 24, 2013.
- <sup>36</sup> Palmer, "[Demystifying Standards](#)".
- <sup>37</sup> See Marzano's *Formative Assessment & Standards-Based Grading* for techniques for determining end-of-course grades.
- <sup>38</sup> For more on conative competencies, see William G. Huitt and Shelia C. Cain, "[An Overview of the Conative Domain](#)." *Educational Psychology Interactive* (2005), retrieved November 19, 2013.
- <sup>39</sup> "[Guiding Principles](#)," Maine Department of Education, retrieved November 20, 2013.
- <sup>40</sup> "Course-Level Competencies," New Hampshire Department of Education, retrieved November 20, 2013.
- <sup>41</sup> "[OAR 581-022-1670 Individual Student Assessment, Recordkeeping, Grading, and Reporting](#)," Oregon Board of Education, retrieved November 13, 2013.
- <sup>42</sup> Khan, *The One World Schoolhouse*, 114.
- <sup>43</sup> Laura Shubilla and Chris Sturgis, "[The Learning Edge: Supporting Student Success in a Competency-Based Learning Environment](#)," International Association for K-12 Online Learning (2012): 13.
- <sup>44</sup> John Hattie and Helen Timperly, "[The Power of Feedback](#)," *Review of Educational Research* 77 (2007): 31-112, retrieved October 15, 2013.
- <sup>45</sup> Marzano, *Formative Assessment & Standards-Based Grading*, 5.
- <sup>46</sup> Brian Stack, "[Reassessments and Retakes: A Necessary Part of a School-Wide Grading Policy](#)," *CompetencyWorks* (2013), retrieved November 20, 2013.
- <sup>47</sup> Tom Vander Ark, "[Deeper Competency-Based Learning](#)," *Getting Smart* (2013), retrieved November 22, 2013.
- <sup>48</sup> Brian Stack, "[Assessment of Learning with Competency-Based Grading](#)," *CompetencyWorks* (2013).
- <sup>49</sup> Rick Stiggins, "[Assessment FOR Learning, the Achievement Gap, and Truly Effective Schools](#)," a presentation at the Educational Testing Service and College Board conference, Educational Testing in America: State Assessments, Achievement Gaps, National Policy and Innovations. Washington, DC, September 8, 2008.

<sup>50</sup> Interview with Ashley Ogonowski, Dean of Instruction at the PASE program at Southeastern High School, October 1, 2013.

<sup>51</sup> Brian Stack, "[Assessment of Learning with Competency-Based Grading](#)," revised November 22, 2013, based on email correspondence.

<sup>52</sup> See Chapter 5 in Marzano's *Formative Assessment & Standards-Based Grading* for more information on tracking progress and setting up grade books.

<sup>53</sup> "[Proficiency-Based Learning Webinar: Transcripts + Reporting](#)," *Great Schools Partnership* (2013), retrieved November 20, 2013.

<sup>54</sup> Email correspondence with John Caesar, Director of Technology & 21<sup>st</sup> Century Learning at Lindsay Unified School District November 21 – December 9, 2013.

<sup>55</sup> Interview with Kristn Floreno at Brenda Scott Academy for Theatre Arts, October 1, 2013.

<sup>56</sup> Site visit to Barack Obama Charter School, February 6, 2013. See "[Ingenium Schools: A Big City Competency-Based School](#)," *CompetencyWorks* (2013).

<sup>57</sup> Site visit to Education Achievement Authority, October 1–2, 2013.

<sup>58</sup> Richard A. Delorenzo et al., *Delivering on the Promise: The Education Revolution*, (Bloomington, IN: Solution Tree Press, 2009).

<sup>59</sup> See Marzano's *Formative Assessment & Standards-Based Grading*, Chapter 6 for methods to convert standards-based scores to grades.

<sup>60</sup> "Collegiate Endorsement of Proficiency-Based Education and Graduation," New England Secondary Schools Consortium, retrieved November 22, 2013.

<sup>61</sup> Brian Stack, "[Class Rank in a Competency-Based High School](#)," *CompetencyWorks* (2012).

<sup>62</sup> "[Clarification relative to Ed 306.27: Course Level Competencies and Grading](#)," New Hampshire Department of Education Update, September 13, 2011, retrieved November 24, 2013.

<sup>63</sup> For more information on the Hub, see the [Providence After School Alliance](#).

<sup>64</sup> For more information on badges, see the [Mozilla Open Badges](#) project.



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- The Learning Edge: Supporting Student Success in a Competency-Based Learning Environment by Laura Shubilla and Chris Sturgis, December 2012
- The Art and Science of Designing Competencies by Chris Sturgis, August 2012
- It's Not a Matter of Time: Highlights from the 2011 Competency-Based Summit by Chris Sturgis, Susan Patrick and Liinda Pittenger, July 2011
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