# When Failure Is Not An Option:

## Designing Competency-Based Pathways for Next Generation Learning

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International Association for K-12 Online Learning

# About the Authors

In early 2010, the Nellie Mae Education Foundation asked Susan Patrick from iNACOL and Chris Sturgis of MetisNet to scan the field of competency-based approaches and identify avenues for philanthropic investments. The authors come to the issue from different perspectives: Susan from her advocacy for online learning, and Chris from her commitment to creating educational opportunities for over-aged, under-credited students to complete their high school diplomas. The findings and insights offered here are designed to generate discussion and to support the emerging leaders of next generation learning.

In the effort to establish an inclusive learning community, iNACOL has established a wiki at www.inacol.org to provide additional materials and to capture the insights of all those who are working to redesign education so that it works for all of our students.

## About iNACOL

iNACOL is the International Association for K-12 Online Learning, a non-profit 501(c)(3) membership association based in the Washington, DC area with more than 3,700 members. iNACOL is unique in that its members represent a diverse cross-section of K-12 education from school districts, charter schools, state education agencies, non-profit organizations, colleges, universities and research institutions, corporate entities and other content and technology providers.

iNACOL's mission is to ensure all students have access to a world-class education and quality online learning opportunities that prepare them for a lifetime of success.

Online learning is expanding educational options for students regardless of their geographic boundaries, background or family income levels. In light of this, iNACOL is uniquely positioned to help identify online learning models that are emerging in the next generation of education, highlight new trends and help improve online programs and services. iNACOL's annual conference, the Virtual School Symposium (VSS), provides important analysis, interactive sessions and thought-provoking workshops for leaders looking to help shape the future of education.

## About MetisNet

MetisNet works with foundations, government, and individuals to identify the most effective ways to shape investments that build communities, benefit children and families, and strengthen our future. Our mission stems from the very roots of our name—metis—a Greek word for local knowledge and wisdom. Drawing on multiple perspectives, MetisNet works with clients to develop vibrant, asset-based investment strategies. For more information, visit www.metisnet.net.

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# Introduction

This exploration into competency-based innovation at the school, district, and state levels suggests that competency-based pathways are a re-engineering of our education system around learning—a re-engineering designed for success in which failure is no longer an option.

Competency-based approaches build upon standards reforms, offering a new value proposition for our education system. Frequently, competency-based policy is described as simply flexibility in awarding credit or defined as an alternative to the Carnegie unit. Yet, this does not capture the depth of the transformation of our education system from a time-based system to a learning-based system. Competency-based approaches are being used at all ages from elementary school to graduate school level, focusing the attention of teachers, students, parents, and the broader community on students mastering measurable learning topics.

Certainly, much of the interest in competency-based learning is inspired by the enormous technological advancements that are opening up new avenues for learning. With the exception of Florida, all other virtual schools are stuck in a time-based system. With funding still dependent on seat-time, they are confined to operating within traditional school-based course schedules. Without a competency-based policy framework, they are unable to take advantage of the full potential of online learning. We simply cannot generate the anytime, anyplace, at any rate learning offered by the technologically enhanced innovations within the current time-based policy framework of seat-time-based funding, 180-day calendars, restrictions on when students can enroll in new courses, and end-of-year testing for exams.

Competency-based approaches also hold promise as districts explore new ways to expand and enrich support to students, challenging the assumption that learning takes place within the classroom. Out-of-school-time initiatives in Providence, Rhode Island, are exploring ways in which students can learn skills in after-school programs. In Chicago, the district is piloting a program for extended learning in which students can access online learning with support of staff from community-based

organizations. For older students re-enrolling in high school, competency-based schools are a lifeline, as it is physically impossible to accumulate credits before they age-out of the education system. Competency-based approaches, in which learning topics are explicitly shared with students and parents, create a formal mechanism to align community resources around student success.

The following discussion draws on interviews and site visits with innovators and the limited literature that has been developed on the topic of competency-based approaches. The first section introduces a working definition for competency-based pathways that hopefully will be the beginning of creating consensus on the characteristics of a high-quality approach to guide policy. The second section explores the driving forces behind competency-based innovations and implementation issues. The last section highlights a number of challenges facing states and districts as they explore competency-based approaches.

This paper has been designed to generate a deeper understanding, as it is critically important that competency-based pathways be implemented effectively with a vigilant focus on student learning. Otherwise, we risk creating an empty system that undermines our nation's efforts to raise standards and expectations for our children and ourselves.

# On Creating a New Grammar

The issue of language is always a challenge when new concepts or paradigms are introduced. In order to not stumble upon the variety of catchy slogans and similar principles that are floating through education policy discussions, the following language will be used throughout this paper:

**(1) Competency-Based Pathways:**

(a) Multiple phrases are used by foundations, innovators, and state policy to capture the practice of students progressing upon mastery: standards-based, outcomes-based, performance-based, and proficiency-based. The use of "competency-based" has been selected as it is has already entered federal policy with its inclusion in Race to the Top (RTTT) and the subsequent state applications. In the second round of RTTT, nearly one third of the states included some reference to competency-based options for students, with almost all describing strategies to ensure that teachers master competencies.

(b) The phrase "pathway" is used instead of "system" intentionally. Based on the current developmental stage of competency-based approaches, there is no reason nor is it viable to try to fully replace the traditional time-based system in its entirety. Although there are examples of district and school options for a full conversion to a competency-based system, the assumption is that most innovators and early adopters will seek to create pathways that complement and inform the traditional, time-based system.

**(2) Next Generation Learning (NxGL):**

There are numerous branded initiatives across the country, many of them foundation-led, that are focused on promoting a mix of online learning, student-centric, competency-based approaches. Although often similar in principles, the variety of similar terms can cause confusion for policymakers and directs attention away from the core issues.

The definition developed by the Council of Chief State School Officers (CCSSO) is embraced within this paper as it has the broadest roots within the education system itself. In partnership with six states—Kentucky, Maine, New York, Ohio, West Virginia, and Wisconsin—CCSSO is launching innovative labs to support next generation learning that is rooted in six critical attributes, or essential conditions:

1. *Planning for Personalized Learning* calls for a data-driven framework to set goals, assess progress, and ensure students receive the academic and developmental support they need.

2. *Comprehensive Systems of Supports* address physical, social, emotional, and cognitive development along a continuum of services, availing opportunities for success to all students.

3. *World-class Knowledge and Skills* require achievement goals to sufficiently encompass the content knowledge and skills required for success in a globally oriented world.

4. *Performance-based Learning* puts students at the center of the learning process by enabling the demonstration of mastery based on high, clear, and commonly shared expectations.

5. *Anytime, Everywhere Opportunities* provide constructive learning experiences in all aspects of a child's life, through both the geographic and the Internet-connected community.

6. *Authentic Student Voice* is the deep engagement of students in directing and owning their individual learning and shaping the nature of the education experience among their peers.

*"Our economy and overall way of life are changing and will change more in the coming years. The time has come for schooling to keep pace. If we want to improve our collective prospects for the future, we must increase the number of people who possess the skills and knowledge that prepare them for success in postsecondary education, work and life. This means improving learning outcomes for all populations. In our current system, young people from disadvantaged backgrounds are too often kept back to repeat grades because they fail to attain arbitrary, age-based benchmarks that still define the dominant design of most schools. By acknowledging that different students learn at different rates and attending to those differences as part of the educational endeavor, we can ensure equal opportunity by customizing appropriately without sacrificing high expectations."*

— Nicholas C. Donohue, President and
CEO, Nellie Mae Education Foundation

# I. A Working Definition of Competency-Based Pathways

As we expand innovative competency-based approaches, it is important to build a working definition that can shape the characteristics of a high-quality, competency-based pathway that is focused on learning. The following is a three-part working definition that outlines the critical design principles of a competency-based pathway that can serve as a starting point for discussion:

- Students advance upon mastery

- Explicit and measurable learning objectives that empower students

- Assessment is meaningful and a positive learning experience for students

There is a tremendous risk in considering competency-based approaches as equivalent to credit flexibility. Simply unhooking credits from the Carnegie unit could contribute to a new mechanism for institutionalizing low expectations. Our challenge is to design competency-based pathways so that they replace the time-based system with a set of practices that propel students toward mastery of college and career-ready skills.

## DESIGN PRINCIPLE 1: Students Advance upon Mastery

The core element of a competency-based approach is that students progress to more advanced work upon **demonstration of learning** by applying specific skills and content. The most important implications of this design principle include:

- **Students are advanced to higher-level work upon demonstration of mastery, not age.** It is possible that a ten-year-old student may be doing fourth grade math but reading at the eighth grade level. A high school student may be taking algebra while completing advanced online courses in college-level literature and history, earning dual-enrollment credits. In the United Kingdom, this is referred to as organizing education around "stage not age."

- **Students work at levels that are appropriately challenging.** Students are more likely to be intrinsically motivated when they are encountering coursework that is both challenging and in which they can be successful.[1] Students are empowered to progress at their own pace, becoming active, engaged, and more independent learners.

- **Students are evaluated on performance.** Students demonstrate that they have mastered the skills and content through multiple demonstrations of learning. Students are not graded subjectively or unevenly—based on indicators such as attendance, submitting homework assignments, or classroom participation—unless those behaviors are built into competencies.

- **Some students may complete courses more rapidly than others.** Essentially, all students will achieve A- or B-level work or will "try again." This may mean that some students may complete the courses sooner than others.

- **Earning credits is based upon demonstration of mastery, not seat-time.** Teachers work together to clarify the standards of proficiency for a course to ensure that high expectations are consistently implemented across classrooms.

## DESIGN PRINCIPLE 2: Explicit and Measurable Learning Objectives That Empower Students

In competency-based practices, a course is organized into measurable learning objectives that are shared with students. Students take responsibility for their learning, thereby increasing their engagement and motivation. The implications of this design principle include:

- **The relationship between student and teacher is fundamentally changed.** Teachers take on a stronger role as facilitator and coach of learning rather than simply delivering content. The skills required of teaching increasingly focus on formative assessment and access to a broad range of instructional practices to help students that are struggling with a concept.

- **The unit of learning becomes modular.** Mastering learning objectives provides a sense of progress and accomplishment. Students that change schools in the middle of the semester gain value for their work that was completed even if they didn't complete the entire course. This is particularly important given the high mobility of students in low-income neighborhoods.

- **Learning expands beyond the classroom.** Students may learn outside of the classroom with informal and formal learning opportunities, digital learning, the help of youth programs and mentors, or independently, in order to practice and apply the skills and content of a clear learning objective.[2]

## DESIGN PRINCIPLE 3: Assessment Is Meaningful and a Positive Learning Experience for Students[3]

In a competency-based model, the traditional approach to assessment and accountability "of learning" is turned on its head with assessments "for learning." Formative assessments are aligned with learning objectives. Students receive immediate feedback when assessment occurs. This is used to encourage students to return to difficult concepts and skills until they achieve mastery. It is essential that assessments are student-centered in which students are assessed on material with which they are familiar.[4] In order for competency-based pathways to offer high-quality education, the following must be put into place:

- **Schools embrace a strong emphasis on formative assessment.** The Oregon Education Roundtable claims that "in a proficiency-based system, formative assessment drives instruction and therefore has primacy over summative assessment."[5] Schools will need to provide information management systems to support teachers, including learning management systems that are integrated with student information systems.[6] With the help of sophisticated, integrated information systems, teachers can easily identify where students are struggling, and principals can identify where teachers are having difficulty in helping their students master concepts.

- **Teachers collaborate to develop understanding of what is an adequate demonstration of proficiency.** Proficiency for any specific learning objective and for the competencies required for course completion must be understood and meaningful to the teachers. Teachers must share a clear understanding of what students need to demonstrate before they advance to higher levels.

> *In most school reform efforts the focus is on the schools. The question we typically ask is, "Why aren't schools performing as they should?" Perhaps a key reason we're so dissatisfied with the state of public K–12 education is that we've been asking the wrong question. If we asked instead, "Why aren't students learning?" perhaps we might see things that others have yet to perceive. After all, it's the children's performance that should concern us. The performance of a school is little more than the sum of the performance of its students.*
>
> – "Rethinking Student Motivation," Clayton M. Christensen, Michael B. Horn, and Curtis W. Johnson

- **Teachers assess skills or concepts in multiple contexts and multiple ways.** Just as a doctor has many tools for assessing patient needs, teachers will assess proficiency through multiple demonstrations of learning. All of the competency-based innovators who were interviewed suggested that students must demonstrate proficiency multiple times to ensure that they are completely comfortable with the material. Examples of techniques used by innovators to assess student knowledge and level of proficiency included formative assessments, digital learning tools, performance-based assessments, presentations, and peer-to-peer instruction.

- **Attention on student learning, not student grades.** In competency-based approaches, student progress is often categorized in three or four levels that capture 1) mastery or high performance; 2) proficient; and 3) novice or still working toward proficiency. Grades may still be used to rank progress toward proficiency. Essentially, students progress when they have demonstrated A- or B-level work. Students may not progress with a C or lower as they have not demonstrated proficiency.

- **Summative assessments are adaptive and timely.** Students are assessed on the learning objectives (skills and concepts) for which they have demonstrated proficiency. Tests to assess degree of mastery, such as the Advanced Placement (AP) exam, should be available when students have completed courses with proficiency, rather than at only one point each year, so that they may move on immediately to the next level of their studies.

*"We need to redefine the way we credential student learning. We learned in Kentucky that when we waived seat-time and began to think more broadly about what constitutes authentic evidence of learning, we unleashed individual teacher's ingenuity to provide interventions on a very personalized basis. The option also helped district leaders implement entire new programs and services that could not have been delivered in the traditional calendar, schedule and constraints of the Carnegie unit. With implementation of the common core, we have unprecedented opportunity to focus on measuring each individual student's progress towards known goals. We are moving towards a clear vision of what success means and that vision of success is not defined by time or place.  So, it's time to put these two concepts together and begin shifting policy to next generation systems of learning that are performance and competency-based."*

– Gene Wilhoit, Council of Chief State
  School Officers

# II. Insights from Pockets of Innovation

The scan of the field found a limited number of innovators who have fully developed competency-based models but signs that there is a ripple of interest across the country. Evidence from the early innovators including Diploma Plus, Chugach Alaska School District, and Florida Virtual School are encouraging. Yet, there is a dearth of formal documentation, research, or evaluation on competency-based approaches.[7] Many of the claims of the value of competency-based learning are not yet substantiated. Thus, it is safe to say that we are in the early stages of the innovation curve, with signs of early adoption beginning to take hold. A concern is that as districts and schools try their hand at competency-based approaches, they will have only a handful of knowledgeable technical assistance providers, most in relatively early stages of developing their organizational capacity.

This investigation relied heavily on interviews, site visits, and a survey to update the literature in the field of competency-based pathways in K–12 education. In the discussion below, the key findings are organized to expand the current body of knowledge, providing insights into the barriers and opportunities arising in the early stages of innovation and adoption. The first section explores the dynamics that are leading to competency-based innovations. The second focuses on implementation issues raised by innovators.

## A. Drivers of Innovation

### 1. Overcoming Inequities Produced by a Time-Based System

Innovators consistently cited a growing frustration with stagnant levels of low achievement and seeing students fall farther behind as their inspiration and motivation for exploring competency-based approaches. There is agreement among the innovators that the time-based system is holding students back from accelerating their learning while also ensuring that others who are chronically behind will never master the materials needed to prepare them for college. Competency-based approaches confront the systemic elements that are holding inequity in place, contributing to a deeper understanding of the larger underpinnings of time-based policy and funding models.

Farrington and Small in *A New Model of Student Assessment for the 21st Century*[8] outline the ways in which the time-based system, resting upon the Carnegie unit, ensures that a portion of students will begin to fall behind, and often out of school. Students and teachers have to race the clock to

complete course materials with no opportunity or incentive to improve performance after grades are given. Students earning C's and D's may progress in school and even earn their high school diploma but may not be prepared for post-secondary education or training, requiring developmental education. For students that prematurely leave school, the disincentives to re-engage in learning are looming; woefully behind in skills and credits, they face years of seat-time at the point they are near to aging out of the K–12 system. Furthermore, those that re-enroll with renewed motivation find that their failures are locked into their grade point average. According to Farrington and Small:

*Under this traditional model, a small proportion of students in urban schools do well, but significant numbers fail to graduate, and the majority of those who do are inadequately prepared for college or the workplace. Other factors, too, affect student achievement in urban schools, such as the quality of teaching and instructional leadership, characteristics of school culture and organization, and the availability of adequate resources. But even in a well-resourced classroom with a highly qualified teacher in a caring and challenging school environment, a heterogeneous group of students will be stratified in their achievement when learning time is held constant. Those who demonstrate achievement above a bare minimum level will be awarded course credit at the rate of one Carnegie unit per 120 hours of seat time, whether or not they have mastered requisite skills and content knowledge. Final letter grades will be communicated on report cards, permanently recorded on student transcripts, and calculated into grade point averages.*

At a time in which our economic health and national security are riding on our ability to lift up our education system, we simply cannot afford to continue without questioning the constraints of the time-based system.

## 2.  Growing Demand

There are four forces that are driving interest in competency-based approaches.

- **Online Learning:** Online learning is becoming increasingly in demand as schools seek to level the playing field for all students to access high-quality courses. Demand for online courses is primarily driven by the unavailability of courses (40 percent of high schools do not offer Advanced Placement courses) and by the necessity to meet individual student needs.[9] Thirty-two states have state virtual schools delivering online courses to students in any district in the state.[10] In the United States, 75 percent of school districts offer online courses[11] in K–12 education, and student enrollments are growing at a rapid pace of 30 percent annually. Online learning is also expanding options for credit recovery and helping to address teacher shortages in science, technology, engineering, math (STEM), and foreign languages. Many of the benefits of online learning are lost due to reliance on the time-based systems. Thus, iNACOL has identified expanding competency-based policy to drive student-centered, next generation learning models as their highest priority on their agenda.

- **Multiple Pathways to Graduation:** Districts across the country are establishing multiple pathways to graduation by increasing the number of options for students that are over-aged and under-credited, those missing a few credits to graduate, and those that left prematurely due to life circumstances or the need to work.[12] Students in multiple pathways schools and programs tend to be older and are confronted by policies that determine when they will

age-out of the K–12 system. They simply cannot afford the seat-time required by the Carnegie unit. Even still, there are waiting lists across the country for alternative educational opportunities designed to accelerate progress toward graduation.

- **State and District Budget Deficits:** Given the economic downturn, across the country leaders are questioning the costs built into the time-based systems such as remediation, summer school, and developmental education at the college level. Thus, reforms that offer greater cost-effectiveness are gaining more attention.

- **Low-Performing Schools and Districts:** As our country takes on the challenge of improving the lowest performing schools, there is a growing concern that the models proposed by the U.S. Department of Education are difficult to implement in rural areas. Both Chugach (rural) and Adams County 50 (suburban) turned to competency-based reforms that replaced the inequities of the time-based practices to find solutions to the low performance in their districts.

Whether this growing interest kindles real demand is dependent on policy, financing, and public will.

> *"We were standing on a platform that was burning out from under us. What we were doing was not working for us. We had dismal results in all areas of student performance.*
>
> *In the Reinventing Schools Model… There's nobody that can get through with a "C". We call that 'developing'— they're still working on it. When they move to a proficient or advanced level, then they're allowed to progress to the next level. So that's why we feel our system is a little more accountable: You can't slide through with low scores."*
>
> – Robert Crumley, Superintendent of Chugach School District (CSD) in Anchorage, Alaska[10]

## 3. Exploring Multiple Points of Entry

Innovators are finding a number of starting points for introducing competency-based models into the education system. Yet, there is inadequate research to determine if any one starting point is more valuable than another. Examples of the innovators working at different entry points are highlighted below.

*Classroom Practices*

The standards-based practices promoted by Marzano Research Laboratory can be easily employed by teachers in traditional schools. These practices include the design of educational objectives with appropriate tasks to assess student learning and standards-based grading. In addition, there is growth in the use of adaptive software tools that are introducing a competency-based approach with content and embedded assessments within classrooms.

*School Design*

At the school level, there are a number of models that are being replicated or adapted including

Diploma Plus, Young Women's Leadership Charter School, the Big Picture Learning schools, and Performance Learning Centers. In Oregon, six districts are working to integrate competency-based practices into their schools. One state, Florida, has been able to shape the policy environment to establish a performance-based virtual school.

*District Reforms*

At the district level, Chugach has demonstrated results and their leadership has formed an independent nonprofit, the Reinventing Schools Coalition (RISC), to coach and support other districts like Adams County 50, Colorado, and Kansas City, Missouri.[13]

*State Policy*

There is activity at the state level to expand policies to offer credit options to seat-time. New Hampshire and Oregon are leading the way in formulating state policy that focuses on creating fully developed competency-based systems. Federal leverage through the Race to the Top program has prompted some scattered activity for states to include competency-based approaches in their strategies, although some efforts appear to be shallow.

*Federal Policy*

The U.S. Department of Education has been referencing competency-based approaches in their major grant competitions. Although none were successful, at least four proposals for the i3 grant competition included competency-based approaches.

At this time, the geographic regions where the pockets of innovation are taking place are rarely overlapping. Certainly, each of the points of entry provides insights into how a comprehensive competency-based system might operate. Yet this isolation makes it difficult to build knowledge or easily begin to align practice and policy.

# B. Keys to Success

## 1. Designing Effective State Policy Frameworks

There are three important lessons to be gained from the review of state policy highlighted on page 16. First, creating waivers for Carnegie units is an important first step, but it is inadequate for opening up innovative space for competency-based approaches to take root. It assumes that a competency-based approach is created by simply eliminating seat-time. As discussed, competency-based pathways are focused on student learning, not just credits. Both New Hampshire and Oregon have been working with districts and schools to uproot the traditional system and replace it with one that is focused on learning.

Second, it is clear that simply changing policy at the state level is not enough to catalyze competency-based systems. In Oregon, there was little uptake on the credit options until the Department of Education provided substantial leadership by establishing a Credit for Proficiency Task Force and invested in pilots. New Hampshire's strategy includes setting up regional networks to provide technical assistance to districts and schools. States will need to create intentional strategies to work in partnership with districts and schools if they are to effectively expand competency-based practices and pathways.

Third, enabling credit flexibility is a critical step but most likely one of the easier pieces of policy infrastructure that will need to be in place. The knowledge generated by the Council of Chief State School Officers' initiative on next generation learning promises to hold valuable insights into how information and accountability systems will need to be adjusted, how funding structures are modified, and what quality control methods are needed to ensure that there is a shared understanding of proficiency.

The U.S. Department of Education can play a catalytic role in helping states shape comprehensive policies to support competency-based pathways and create the innovation space by integrating competency-based practices as a core element of the Elementary and Secondary Education Act (ESEA). It will be important to engage advocates for high-needs students—including special education, English language learners, and students off-track to graduation—by ensuring that students have the support they need without necessarily relying on regulations that are designed in response to the traditional time-based system.

In summary, state policymakers should eliminate barriers to competency-based systems immediately. Ensuring that students are not held back by the rigidity of the Carnegie unit is an essential first step. In addition, there must be a vigilant focus on quality control so that poorly implemented competency-based approaches do not undermine our nation's efforts to improve achievement. Finally, districts and schools need to be supported in creating the independent space required for innovation. It is not recommended that states boldly try to replace the entire traditional time-based system with a competency-based system, as we are at such early stages of understanding how a full system will work.

## State Policy: Opening the Door to Competency-Based Pathways

In interviews, state policy regarding the Carnegie unit is often referred to as the greatest barrier to competency-based pathways. There is a fair amount of activity at the state level to address this issue. There appear to be three models by which states are moving forward: waiver, credit flexibility, and redesign.

**Waiver:** Most states have created a minimum policy that provides a waiver for students to get credits for competency, rather than the time-based Carnegie unit. Idaho is an example of a state depending on a waiver process to allow competency-based credits. Their policy states that one credit shall equal sixty (60) hours of total instruction. School districts or local education agencies (LEAs) may request a waiver from this provision by submitting a letter—signed by the superintendent and chair of the board of trustees of the district or LEA—to the State Department of Education for approval. The waiver request has to provide information and documentation that substantiates the school district or LEA's reason for not requiring sixty (60) hours of total instruction per credit.

**Credit Flexibility:** Increasingly, states are creating policies that enable credit flexibility. This has primarily been in response to the expansion of online learning and credit recovery. These policies tend to provide districts with the capacity to use competency-based assessments instead of seat-time with little guidance for ensuring quality or consistency across the state. It is up to the districts to take advantage of this enabling policy to move beyond limited credit recovery to competency-based systems that are focused on learning.

Alabama created a seat-time policy in 2009 in the context of improving high school graduation rates. The policy states that "one credit may be granted in Grade 9-12 for required or elective course consisting of a minimum of 140 instructional hours or in which students demonstrate mastery of Alabama course of study content standards in one-credit courses without specified instructional time." Similar language was written for one-half credit and 70 instructional hours. Currently, nearly 50 percent of the districts in Alabama are taking advantage of the enabling policy to provide credit recovery and/or credit advancement.[14]

Kentucky's state policy empowers schools to award competency-based credits if the school site-based council has developed criteria for determining proficiency. In Kentucky, there are efforts to create competency-based pathways in foreign language, including discussions on a graduation requirement that every student must demonstrate a minimum proficiency to align with University of Kentucky's admission criteria.

Ohio's Credit Flexibility policy is much broader, designed to include distance-learning, afterschool programs, internships, and community service. The policy is constructed as a waiver, with districts seeking state approval. Local boards will govern their credit flexibility policies, and teachers are empowered to award the credits. The policy is designed for high school students, providing multiple ways to gain credit, including seat-time, testing out, or demonstration of proficiency. It also allows for simultaneous credit in two areas, as well as partial credit.

Since 2002, Oregon has enabled districts and schools to use proficiency-based approaches through an administrative rule for credit options. In 2004, the Department of Education initiated pilot programs. More recently, the Department of Education has updated its policies and has begun investing in pilot programs in six districts. In 2009, the policy was expanded with the expectation that districts will offer students the option of seat-time or demonstration of proficiency.

**Redesign:** New Hampshire has taken the boldest step in declaring a full high school redesign, replacing the time-based system with a competency-based system. New Hampshire's comprehensive approach is designed around three themes: 1) personalization; 2) students as active learners; and, 3) choice and flexibility for where and when learning occurs. It eliminates the Carnegie unit, replaces it with a competency-based system, and allows students to earn credit toward graduation outside of traditional classrooms. The Concord Area Center for Educational Support (CACES) is taking a leadership role in supporting districts and schools as they redesign, helping to clarify the competencies students are expected to master. In addition to academics, there are cross-cutting competencies such as communication skills and problem solving.

## 2. Application of Knowledge Requires Holistic Set of Competencies

Innovators reinforced the concept that the application of knowledge and skills was integral to a competency-based approach. Jim Schnitz of Western Governors University explained that "competency" contains both the understanding of content and a component of performance. The creative challenge is to ensure that the learning objectives are measurable and that the competencies can be demonstrated. This is more difficult with some areas than with others and is likely to require attention in ensuring quality across all knowledge domains.

The application or demonstration of skills was described differently across the innovators, although they all shared an understanding that competencies needed to integrate academic content and skills with "soft skills" such as critical analysis, creativity, communication, and problem solving. Diploma Plus uses Bloom's Taxonomy to structure their competencies. Adams County 50 had a set of social-emotional competencies to complement the academic standards. Thus, the competencies were often student-centered, integrating strong youth development perspectives.

Following are examples from Chugach's Highland Tech High's Social Environments standards area that apply to history and geography.[15]

| Level 1 | |
|---|---|
| Inquisitive Thought and Creativity | Develops questions to focus inquiry and analysis |
| Information Processing Tools | Summarized information through restatement |
| Logic and Reasoning Systems | Explores the differences between primary and secondary sources |
| Understanding Variability and Point of View | Identifies and describes opposing viewpoints |
| Mastering Action | Forms opinions based on examination of evidence |
| **Level 3** | |
| Inquisitive Thought and Creativity | Identifies and describes times when alternative courses of action would have changed the outcome of events |
| Information Processing Tools | States relationships between categories of information |
| Logic and Reasoning Systems | Develops appropriate criteria for comparing and contrasting information |
| Understanding Variability and Point of View | Compares and contrasts opposing viewpoints |
| Mastering Action | Forms, expresses, and explains opposing points of view on issues |
| **Level 6** | |
| Inquisitive Thought and Creativity | Develops a creative solution to a current issue based on available information |
| Information Processing Tools | Analyzes the impact and credibility of information from various media outlets |
| Logic and Reasoning Systems | Evaluates the lasting impact of primary source documents |
| Understanding Variability and Point of View | Analyzes opposing viewpoints to determine a course of action |
| Mastering Action | Implements an action plan to influence those in power regarding a contemporary issue |

Innovators of competency-based approaches have designed competencies and levels slightly differently, as well as the tools to support the system. This promises continued creativity and variations as early adopters experiment with the design and tools. Similarly, it may create challenges as practices are lifted into policy.

## 3. Opportunity to Teach

In *Proficiency-Based Instruction and Assessment,* the Oregon Education Roundtable states, "In a proficiency-based system, teachers flourish as much as students." The results from Chugach reinforce this. After three years of competency-based approaches, Chugach teachers approached the administration to ask if their evaluations could be based around student performance instead of traditional one-size-fits-all assessments that were unrelated to their competency-based teaching models. In Chugach, using competency-based learning significantly increased satisfaction and greatly reduced teacher turnover rates. Before moving toward competency-based learning in 1994, Chugach school district had a 55 percent annual rate of teacher turnover during the previous 20 years. After moving toward competency-based learning, between 1995 and 2000, teacher turnover dropped to 12 percent annually.[16]

Anecdotal evidence suggests that some of the by-products of competency-based approaches are increased teacher engagement, a shift in professional culture, and changes in the teacher's role.[17] The process of teachers assessing student performance on explicit learning topics, becoming familiar with examples of proficiency, and evaluating master in advanced performance requires teachers to talk with one another about their own expectations, both horizontally with their grade-level peers and vertically. Those we interviewed said that simply focusing on learning and helping students created greater job satisfaction.

Yet these early innovators all engaged teachers early on, requiring their support before moving into implementation. One of the risks of any top-down policy initiative is that teachers will perceive it as a burden rather than an opportunity to rediscover their joy of teaching.

> *"Once we free ourselves from a factory model and the time practices handcuffed to that structure, we must rethink such unquestioned time-honored practices as:*
>
> * *Grouping kids in grades;*
> * *Grading as a way to communicate what has been learned;*
> * *Moving kids around based on bell schedules;*
> * *Separating subjects divided into discrete time blocks; and,*
> * *Connecting high school graduation with Carnegie units.*
>
> *Schools can no longer be expected to change and still look the same. It's time to get away from the legacy of the factory that imprisons us, as educators, as well as the students we teach. We know that 'a cage for every age' is an archaic and dysfunctional way to group students. It's for us to start questioning the sacred rituals of schools and school systems. We can use time as the catalyst to do just that."*
>
> – Dr. Ellen Bernstein, President of the Albuquerque Teachers Federation, Testimony at the U.S. Senate Committee on Health, Education, Labor & Pensions Field Hearing on Innovative Approaches to School Time, 2010

## 4. Cultivating a Culture of Continuous Improvement

Competency-based approaches enable meaningful continuous improvement processes at a depth that has never before been seen in education. Case in point, Chugach School District received the Malcolm Baldrige National Quality award for organizational excellence in 2001.

There are two reasons why continuous improvement suddenly takes root in competency-based systems. First, competency-based approaches require a heavier emphasis on formative assessment and responsiveness when students are struggling. With a focus on whether or not students are mastering the skills, teachers become engaged in exploring new ways to help students.

Second, by breaking courses into discrete learning objectives and monitoring student learning trajectories supported by a student information system, principals are able to gather indicators of progress in a much more granular and timely way than end-of-course grades or summative testing. This allows principals, as instructional leaders, to keep an eye on which areas teachers are having difficulty in supporting their students or identify any schoolwide patterns that are causing students to stumble. Peer support and professional development are then targeted toward those areas.

Adams County 50 provides a good case study. Dr. Copper Stoll explained that once they started down the path, the culture of continuous improvement required them to "turn over rocks," bringing more issues to light. Very quickly, the district began to reallocate resources around learning management goals. In order to build on assets at the elementary school level, some teachers began to specialize in math so that all students could have a chance to work with the most effective teachers. They discovered that *Everyday Mathematics*, which depends on spiraling, is a mismatch with their standards-based approach. Thus, they are searching for curriculum that matches their learning objectives.

They are also beginning to rethink career ladders for teachers. They are considering creating opportunities for master teachers, interdisciplinary teachers, and instructors that are skilled in differentiated instruction.

> *"Competency-based is the antithesis of social promotion. A competency-based pathway creates more equitable outcomes for students because each is allowed to show evidence of their knowledge and their progress in defined competencies through authentic and student-responsive assessments. In a system like Diploma Plus, students learn to own their learning, rather than inherit it (or not) from their instructors as in many traditional systems of learning. Students, teachers and families can be more assured that students have mastered content, because they must demonstrate competency in that content at the pace appropriate for each."*
>
> – Akili Moses Israel, Diploma Plus

If a district embraces competency-based education as its overall reform model, it must be prepared to establish a culture of continuous improvement. Without it, there is always the risk that flawed implementation will lead to low achievement. A full, competency-based approach is a re-engineering overhaul that requires revisions, modifications, and sometimes a complete reworking of each component of a district's operations. This doesn't have to be done all at once. Yet leadership will need to be prepared to offer strong change management.

## 5. Engaging Community Early and Often

All of the interviewees suggested that engaging parents and students in the implementation of a competency-based approach was much easier than anticipated. The shared experience of mastering the initial levels of video games before progressing to the next is easily translated into competency-based approaches. It's a message that resonates with students. Demonstrating proficiency on learning objectives is strikingly similar to earning merit badges in camp or after school.

The districts that converted to competency-based models such as Chugach and Adams County 50 heavily emphasized the importance of fully engaging all stakeholders: parents, students, teachers, and the broader community. Both districts invested in community engagement early on with presentations in town-hall-type meetings to garner feedback on what learning should look like for the 21st century and to identify the competencies for college and career readiness. Adams County 50 took two years in the engagement process, not moving forward with implementation until they had 80 percent of the teachers supporting the reform.

> *"The achievement gap is a product of a time-based system. The moral purpose that drives competency-based approaches is proficiency for all."*
>
> – Dr. Copper Stoll, Adams County 50

One of the challenges was to prepare students and parents for the implications of having graduation dependent on mastery of a set of competencies. Schools would no longer grant diplomas to students that had been skating by with mediocre grades and large gaps in learning. Adams County 50, avoiding having to explain to parents that their students needed to remain in school longer while they completed their high school education, began their rollout of competency-based reforms at the elementary school level.

# III. Challenges in Designing Competency-Based Pathways

There is no doubt that there are multiple challenges to expanding competency-based pathways. Leadership, vision, and creativity are required to reconfigure the education system so that it is designed for success for all students. These challenges need to be confronted head-on in order to construct high-quality policy platforms to support competency-based pathways.

## CHALLENGE 1: Protecting High Levels of Proficiency

There is nothing inherent in competency-based approaches that guarantees that disadvantaged children will achieve at high levels. Jill Powers Kirk of Oregon Business Council expressed the concern that the biggest risk is that teachers set proficiency on learning objectives too low. Or if educators direct resources toward students who are progressing most rapidly and away from students who are struggling, the current achievement gaps would continue. There is also a concern that the achievement gap may expand, even if all students are achieving at higher levels. In lifting the ceiling on how rapidly students may advance, the actual value of the economic, cultural, and social capital of higher-income families may produce higher learning gains. Dinner-table conversation, exposure to careers and interests of friends and family, and summer enrichment activities are likely to generate motivation, background knowledge, and skills that accelerate learning. Upper-income students with multiple enrichment activities may be able to speed through courses as they apply concepts and knowledge learned outside of school.

Even so, competency-based pathways hold great promise as they are designed for success, not failure. Thus, vigilance is required to protect against unintended consequences and mismatched incentives. Florida Virtual School (FLVS) demonstrates a solid understanding of the dynamics of a competency-based system. FLVS has open enrollment so that students can enter a course at any time and complete the modules at their own pace. In a personalized learning environment, teachers are able to—and expected to—intervene quickly when students start to fall behind or struggle with a concept. Finally, the performance-based funding model aligns incentives around rapid response when students show the earliest signs of disengagement. It may be that performance-based funding is a necessary ingredient to ensuring high-quality competency-based practices.

 One of the more controversial aspects of competency-based approaches is when schools decide to group students based on their level of proficiency so that teachers can work more intensively with

them. At first glance this may look like a form of tracking. Yet, within competency-based systems, students have the opportunity to advance in some topics while still taking extra time to progress in others. Furthermore, there is no gate or test to place students in a certain group, and students can easily be moved between groupings as they advance, especially with the opportunities provided by online learning. Yet to be on the safe side, it is important to include experts in special education and English language learners (ELL) in the early design of competency-based approaches to ensure that tracking does not creep into the practices.

The Oregon Proficiency Project[18] is building substantial knowledge on the changes in the classroom that nurture a high-quality, competency-based program. It is also in the process of defining the attributes that are required for a competency-based approach at the classroom, school, district, and state levels. Oregon's efforts are forming an initial base of knowledge to guide districts and schools in establishing excellence in competency-based practices.

## CHALLENGE 2:  Re-Engineering for Student Learning

There are four areas that were raised in conversations about the challenges of re-engineering for competency-based systems. First, in our current policy environment, resources are being directed toward information systems that are designed around accountability and compliance. The question confronting competency-based efforts is whether they will be able to redesign management information systems around student learning. Are we going to continue to simply digitize current practices such as online grade books or are we going to step back and redesign the practices and the supportive management information system so that "learning maps" will document student progress in a way that is meaningful to students as they transition between schools, teachers, and out-of-school learning opportunities? (See Challenge 3 for more on this topic.)

Second, given the highly interdependent nature of the education system, a full implementation of a competency-based pathway is likely to require minor and major revisions throughout the system infrastructure.[19] As we move forward, it will be important to determine the types of modifications needed, the complexity and cost of doing so, and the key leverage points in the system. For example, unwinding our education system from the Carnegie unit will likely have implications for budgeting, planning, and union work assignments and contracts. Issues of aligning student learning with summative assessments are already arising. Can students take the high school exit exams at the time they complete the level of work upon which the assessment is based, whether that is in eighth grade or twelfth grade, spring or fall? Can students taking an online AP course complete the course and take the test soon after so that they can progress onto higher-level college courses, or do they have to wait until May to take the exam?

Third, competency-based approaches may change the way we think about and provide supplemental and enrichment services. With response to intervention (RTI) built directly into the classroom practices, intervention models and regulations for ELL and special education may need modification. Summer school might be designed for students to work on

> *"Proficiency approaches are the leading edge of a set of practices that result in greater effectiveness and efficiency."*
>
> – Jill Kirk Powers, Oregon Business Council

learning objectives with which they are struggling rather than having to sit through entire courses again. Or students may continue to progress during the summer without participating in formal schooling.

Finally, the requirements needed to run two systems simultaneously—developing innovative competency-based metrics while also trying to improve the traditional system—may be too cumbersome to be realistic. It appears that the burden will fall heavily on the school district. The complexity of district management will increase if they are to juggle two sets of classroom grading practices, semester marking periods, permanent letter grades and grade point averages, Carnegie units/course credits, and high school transcripts. Going forward, it may make sense for districts to create the innovative space to run competency-based efforts separately for the short run, to allow the changes to take hold and thoroughly digest the ramifications for district policy.

## CHALLENGE 3: Integrating Student Information and Learning Management Systems

Although competency-based approaches have been used in the past, the advances in information technology are enabling it for the first time to become truly operational. Competency-based systems generate massive amounts of data about student learning. For teachers, the time required to monitor each student's progress in demonstrating competencies at the learning objective level is too burdensome without an easy-to-use system. Without adequate technology, the paperwork involved in competency-based systems can be overwhelming.

*"… there is far more standardization than customization in schools. Schools teach using a monolithic batch system. When a class is ready to move on to a new concept, all students move on, regardless of how many have mastered the previous concept (even if it is a prerequisite for learning what is next). … Both the bored and the bewildered see their motivation for achievement shredded by the system."*

– "How 'Disruptive Innovation' Will Change the Way We Learn" by Clayton M. Christensen, Michael B. Horn, and Curtis W. Johnson. *Education Week*, June 4, 2008.

Two concerns were raised about the importance of the information systems that are needed to support competency-based pathways. First, states are continuing to expand and refine their accountability systems without taking into consideration the implications of competency-based pathways. Unless the architecture of the system is changed, the data systems will be aligned to capture "grade levels" and courses rather than competencies attained. The tremendous resources that are being absorbed in these data system modernization efforts are aligned around the traditional time-based system rather than thinking about the specifications need for accountability or next generation learning.

Second, competency-based approaches require technology to be relatively sophisticated, which is not always easy to do given the technological infrastructure and resources in some districts. Jim Schnitz of Western Governors University explained that a high-quality, competency-based approach required linking the architecture of two information systems: 1) a student information system of data that

supports principals, teachers, and students; and 2) a learning management system that maintains curricula, standards, and competencies. Thus, by integrating student information systems and learning management systems, individual student learning plans can be developed, the student learning trajectory monitored to ensure progression, and a deeper understanding of what helps the student to succeed identified. As knowledge is gained about student learning styles, interests, and competencies attained, the data system(s) of the future will be able to provide a view into each student's "learning genome map" and their progression toward college- and career-ready standards.

Consistently throughout the interviews, the use of technology to manage data around individualized student learning was noted as critical to managing the processes, learning objectives, new assessment models, rubrics, and performance data. Innovators are developing or adopting their own systems, including DART (Data Analysis and Reporting Toolkit), E-ducate, and DiplomaPlus.net, adding components along the way to better support teachers and principals. As an example, Adams County 50 is working with E-ducate to design a student information system that is transparent so that parents and students can monitor progress, while simultaneously encouraging students to continue their learning over the summer and in extracurricular activities.

## CHALLENGE 4: Aligning Incentives for Students, Educators, and Communities

One of the underlying assumptions of next generation learning is that it creates a virtuous cycle. Students are empowered; their intrinsic motivation is increased. Teachers take on the role of coaches, further supporting students with greater personalization. Students feel respected and cared for, experience success, and are further motivated. The challenge is to align the incentive structures of policy, accountability, and funding to support customization.

Given that competency-based approaches are designed to produce outcomes in student achievement, reward systems should also be focused, at least partially, on attainment. For example, Florida Virtual School is funded based on successful completion and student performance. Teachers have very clear incentives to respond to students upon the first signs of disengagement. In the United Kingdom, schools are funded per pupil; at level 16, schools are funded based on individual students' credit attainment and lose money if students do not successfully earn credits. In contrast, in the United States, federal, state, and local policies fund a time-based system, do not reward for attainment, and direct policy through a compliance model, focusing on school-level (not student-level) performance. Yet, redesigning funding is filled with its own pitfalls and obstacles.

Competency-based pathways will also raise the question of how to engage and reward the organizations or people outside of the classroom that help students progress. This includes providing access to the current learning objectives, funding, and giving "credit" or recognition for effectively helping students learn. If students practice their skills in an after-school program, should that program receive any recognition or funding for outcomes obtained? After-school programs and summer camps may design around student progress, yet the adults may not be certified teachers. Students may take advantage of digital tools or open education resources such as iTunes University and HippoCampus. Will we be comfortable recognizing increased skills regardless of where students developed them?

## CHALLENGE 5:  Nurturing Organic Expansion and Innovation Space

At this stage, the growth of competency-based programming will most likely be organic. More innovators and early adopters are expected to enter the field as competency-based policy platforms are established, other innovations will be modified to include competency-based practices, and some early adopters will branch off with alternative approaches. In addition, teachers will become increasingly more familiar with the main concepts through Marzano's training and others that promote standards-based practices. At this point, top-down approaches may be difficult primarily because of the small pool of innovators and limited technical assistance capacity. Furthermore, the policy and operational changes that need to be made at the district level have not been fully explored or documented. New Hampshire's approach in establishing regional technical assistance to support districts in their high school redesign around competency-based learning will offer insight into how to invest in implementation. CCSSO's project to support states in developing Innovation Labs will help promote next generation learning design specifications for student-centered, performance-based models—the heart of competency-based pathways.

It is equally important to recognize the need for innovation space so that new efforts and adaptations may continue to develop their new approaches. It is no coincidence that two of the best examples of competency-based schools were designed in protected innovation space and protected by policies that allowed them to experiment without constraints.

- Florida Virtual School was founded in 1997 with a $200,000 "break the mold" planning grant. It was designed from its inception to create an out-of-the-box, student-centered learning model. With individualized instruction, students move at their own pace through a competency-based learning progression. Using a performance-based funding model in which funding follows the student to the level of course enrollment, students have flexibility in enrollment and completion of courses.

- The Western Governors University started in 1995 as a joint venture by the members of the Western Governors Association. With support from philanthropy, WGU was able to design from scratch an organizational structure that supported competency-based learning. Rather than the traditional structure of higher education that is organized around academic domains, WGU's dynamic organizational structure is designed around the student. There are three primary divisions: 1) degree programs that coordinate content from providers; 2) assessments that determine how students will demonstrate mastery aligned with industry standards; and 3) student support services, with each student assigned a mentor, to ensure that students are progressing.

Yet, most schools are operating within the traditional policies and have to allocate resources in order to navigate the policy environment. For example, both Diploma Plus and Big Picture Learning had to do independent cross-walks to seat-time requirements for California's A-G courses without any benefit of waivers from the time-based system just to be able to run their competency-based schools. Therefore, if we are going to see an increase in competency-based approaches, we will need to create "labs" or protected space that allow the schools and districts to do fine-tuning of the innovations to see the real value of the model.

*In a RISC (Re-Inventing Schools Coalition) system, everyone knows what the instructional targets are and everyone works together to do whatever it takes to get every child to those instructional targets. If it takes a little more time for a particular student, it takes a little more time. If it takes a little bit different strategy for another student, then we do that.*

*We give extra and external opportunities to any student who is capable of taking advantage of those. We certainly don't insist that students sit in our classrooms if we can find additional opportunities— whether in our district or outside it—to help extend their learning.*

> – Greg Johnson, Director of Curriculum,
> Bering Strait School District, from
> *Delivering on the Promise*

# Opportunities for Philanthropic Investments

One of the goals of this project was to develop a strategic framework to support coordination of philanthropic investments. However, in discussions with program officers, it soon became clear that for many foundations their strategies were still emerging. In addition, because foundations use a variety of frames or focal points—including assessments, student-centered approaches, or discrete elements of next generation learning—it appears that the timing is not right for a coordinated strategy.

Yet, there is also an appetite among foundations for making investments that can accelerate knowledge building and support the state and district efforts to adopt competency-based approaches. Thus, an initial set of investment opportunities are outlined, as well as a set of goals to spur discussions among philanthropy. The following recommendations are based on the findings that competency-based approaches are: 1) in the early stages of innovation; 2) being developed through multiple entry points; 3) dependent on a limited number of innovative practitioners and technical assistance providers; and 4) increasingly a focus of discussion as a key to improving education. The recommendations take into consideration Hargadon's four types of capital (intellectual, design, social, and financial) required for innovation in order to establish a catalytic infrastructure to advance competency-based pathways.[20]

# Investment Opportunities

**Support Innovators and Early Adopters:** Most of the innovators and early adopters are developing their models with little philanthropic support. The repercussions may be inconsistent implementation and little formative evaluation to help guide the work. Philanthropic support, especially designed to nurture peer networks, could play a critical role in establishing proof points for competency-based learning. A critical element of this work is to help develop the information systems to support principals, teachers, and students. In addition, technical assistance providers need support to expand capacity and develop sustainable business models.

**Generate Knowledge Base:** There is very little research on competency-based approaches and plenty of questions. The research agenda might include: 1) cost-effectiveness to determine if there are any benefits; 2) the degree to which disadvantaged students perform at higher levels; 3) the conditions required for high-quality performance; and 4) the implications and benefits to teachers. In addition, understanding if the different ways that learning objectives and the overall competencies are shaped has any implications for learning, school culture, and teacher engagement.

**Design Catalytic Infrastructure for Field-Building and Advocacy:** At the moment, innovators and policy leaders are working in isolation, without any organizational capacity to support knowledge sharing. Thus, it is important over the next year to create a lean infrastructure to support networking, knowledge sharing, and discussions on the most challenging elements of designing competency-based pathways.

**Promote Competency-Based Pathways within Other Education Policy Discussions:**
As conversations about developing curriculum and assessments based on the Common Core of Standards proceed, it is important that competency-based approaches are taken into consideration.

This could include investing in competency-based innovators to convert the Common Core of Standards into competencies, ensuring that practitioners familiar with competency-based approaches are at the table in developing assessment practices, and moving policy toward performance-based funding with rewards for attainment. Most importantly, with the reauthorization of the Elementary and Secondary Education Act on the horizon, it is critical that policies and programming have the flexibility to make room for next generation learning.

## Proposed Organizing Goals to Drive Investment Choices

By the end of 2016:

- Federal education policy will be upgraded to include attention to and support for next generation learning including competency-based approaches.

- All states will have created flexible credit options and three states will have developed comprehensive competency-based policies, including strategies to support districts, to complement the traditional system.

- Twenty-five percent of districts will have established competency-based pathways, including but not limited to access to advanced and specialized studies through online learning, policies and programming to support students that need more time to attain proficiency, and high-quality alternative education for over-aged and under-credited students.

- There will be adequate research and evaluation of competency-based approaches to inform policy decisions.

- There will be a minimum of ten organizations that can provide high-quality technical assistance to the schools, districts, and states embracing competency-based pathways.

- The Common Core of Standards has been translated into competency-based models with measurable learning topics.

## Questions for Discussion

- Are these suitable goals for driving investments across foundations? What needs to be added or changed?

- What federal, state or philanthropic investments are currently underway or emerging that contribute to reaching the goals?

- What are potential investments that could be designed for co-funding that would expedite reaching the goals?

- How can foundations ensure that diverse voices will be heard, especially those that bring critical insights?

- How can foundations monitor progress towards the goals?

# IV. Concluding Remarks

The rapid decentralization that is shaking industries across the globe, so well described by Thomas Friedman in *The World Is Flat*, is now challenging fundamental aspects of our education system. The application of technology is spawning new innovations daily, such as adaptive instructional software and assessments, mobile smart phone applications, and digital content. The success of next generation learning models is enabled by technology, especially through powerful online and blended learning, sophisticated management information systems, and the much-needed data analytics that support student learning trajectories. With access to timely information on student progress, teachers, schools and districts can improve their effectiveness in responding to the educational needs of all the children in their community.

The impact for students is enormous. Today's students were born into a digital age. The positive evaluation of blended learning, in which students are spending part of their learning time in online environments, is generating even greater interest in making online learning available.[21] Students will have the ability to engage in their studies at times that suit them best and to access a greater diversity of courses. Florida Virtual School found that Saturday night was one of the busiest times for students to be active in their online courses.[22] As we continue down this road of technologically enhanced education, we can soon expect to see personalized models such as the School of One in which students have access to a range of modes of learning that respond to their unique learning styles and interests.

Competency-based pathways are not a silver bullet; however, they are a critical element for unleashing the power of next generation learning, as well as our children's inherent hunger for learning. Practitioners and policymakers alike will need to be thoughtful in design and implementation so that old practices do not undermine the adaptations of competency-based practices. Yet, by sharing a laser focus on learning, we can redesign our education system around student success, classroom by classroom, school by school, state by state.

As our nation reflects upon the implications of a Common Core of Standards and common assessments, we will eventually come to a fork in the road. One road leads to bureaucratic one-size-fits-all approaches that will strangle teachers and students alike. Another leads to the effective use of community resources, information management systems, and technology to support personalized student learning that will nurture the joy of teaching and learning.

*Time-based measures were appropriate in their day, but they are not now when we know more about how people learn and we have access to technology that can help us accommodate different styles and paces of learning. As we move to online learning and learning that combines classroom and online learning, time-based measures will increasingly frustrate our attempts to provide learning experiences that lead to achievement and the pursuit of postsecondary education that our modern world requires. Another basic assumption is the inflexible way we organize students into age-determined groups, structure separate academic disciplines, organize learning into classes of roughly equal size with all the students in a particular class receiving the same content at the same pace, and keep these groups in place all year. . . Technology can facilitate implementation of such a competency-based approach to education.*

– National Education Technology Plan,
U.S. Department of Education, 2010

# Appendix A:  Descriptions of Innovators

## Adams County School District 50

4476 West 68th Street
Westminster, CO 80030
303-428-3511
www.adams50.org
www.sbs.adams50.org

In the fall of 2009, Adams County School District 50 (Adams 50), serving 10,000 students, kicked off its conversion to standards-based education. Recognizing that their demographics were changing, with higher diversity and lower income levels, Adams 50 knew they had to find a way to produce higher achievement. They did not begin until they had 80 percent support from their teachers and community stakeholders.

Adams 50 decided to introduce competency-based pathways systemically, starting with elementary school so that high school students would not suddenly be confronted with a situation of not being able to graduate because they had not mastered the required skills and content. Replacing grades with Levels 1–10 that incorporate standards from elementary school through high school graduation, Adams 50 is supporting teachers as they develop consensus on what proficiency looks like. Teachers work together around rubrics to determine when a student's work should be considered emerging, developing, proficient, or advanced. As teachers develop a shared sense of what they need in order to help students to know and do, their interest in getting additional support on how to improve instruction is growing.

To support their standards-based education, Adams 50 is working with E-ducate to create an information system that eases the burden on teachers to enter proficiency levels on each standard and to track student progression. In the next year, they will begin converting the middle schools to standards-based education. Given that it is the first year of implementation, it is too early to tell if Adams 50 is producing results. With careful monitoring, Adams 50 will identify what types of mid-course corrections will be needed. To maintain a culture of openness and learning, Adams 50 has set up a website and wiki to make it easy for parents, students, and teachers to access information.

## Chugach School District

9312 Vanguard Drive #100
Anchorage, AK 99507
907-522-7400
www.chugachschools.com

In 1994, the Chugach School District, serving 214 students over 20,000 square miles in impoverished communities, began a fundamental redesign of how they would educate their students. With the courage to confront the fact that 90 percent of their students could not read at grade level and only

one student in 26 years had graduated from college, Chugach focused their mission on ensuring that all students learn to high standards.

The district engaged the community in establishing a performance-based approach, developing standards in ten content areas, new assessments, and modified reporting mechanisms. Within five years, Chugach School district saw the following results:[23]

- Over a five-year period, average student achievement on the California Achievement Test rose from the bottom quartile to the 72nd percentile.

- The percentage of students participating in college entrance exams rose from 0 percent to more than 70 percent by 2000.

- Between 1995 and 2000, teacher turnover was reduced to 12 percent; in the previous twenty-year history of the district, turnover was 55 percent yearly.

Chugach's transformation gained them national attention, including the prestigious Malcolm Baldrige National Quality Award for organizational excellence. Members of the team that led the redesign have formed the Re-Inventing Schools Coalition (RISC) and are guiding other districts across the country through the process of converting to a competency-based approach.

# Diploma Plus

89 South Street, Suite 803
Boston, MA 02111
617-443-0050
www.diplomaplus.net

Diploma Plus was developed as a response to the alarmingly high dropout rate and barriers to post-secondary success for underserved youth, and the inadequate supply of high-quality alternatives to traditional high schools. Launched in 1996 as a 100-student pilot program, Diploma Plus now serves over 4,300 students in 29 small alternative high schools and programs in Massachusetts, Rhode Island, California, Indiana, Michigan, New York City, Newark, Baltimore, Nashville, and Denver.

Diploma Plus opens small standalone schools and small learning communities built on the DP Four Essentials for success: a performance-based system, a supportive school culture, a future focus on college and careers, and effective supports for teachers and schools. DP students are placed into and promoted through three distinct Diploma Plus Phases (Foundation, Presentation, and Plus) that allow students to learn content and skills at the appropriate level, regardless of their age or previous credit accumulation.

DP Schools provide curriculum, instruction, and assessments that are built around defined competencies and that focus on knowledge, skills, and understandings. Students develop meaning at their own pace and are placed, promoted, and graduate according to their demonstrated learning rather than seat time, age, or credit accumulation. DP offers its affiliated schools an information system, DiplomaPlus.net, which allows them to track student progress in this competency- and performance-based system.

# Florida Virtual School

2145 Metrocenter Blvd., Suite 200
Orlando, FL 32835
407-513-3587
www.flvs.net

The Florida Virtual School (FLVS) is an accredited, public, online e-learning school serving students in grades K–12. It is based in Orlando, Florida, and governed as a local education agency (LEA) providing supplemental online courses and services to students in Florida and nationwide.

FLVS embodies the concept that competency-based approaches collapse the traditional notions of time, including the school calendar, schedules, and length of time to complete a course. FLVS has a rolling enrollment policy that includes a pacing guide, which allows as little as six weeks or as many as twenty-six weeks to complete a course. FLVS can be used by districts as a response to intervention; if a student is halfway through a traditional course and it appears they will fail the course, they can enroll in FLVS and complete the course with a clear focus on the learning objectives. FLVS has a strong culture of student-centered learning and trains every teacher to provide individual instruction and flexibility in pacing.

In 2003, the legislature passed a law creating a performance-based funding model. FLVS receives full funding for each student's successful completion of a course. This funding model required a learning management system that was integrated with a competency-based student information system in order to track progressions toward completion. This deeply integrated, student-centered approach allows for an individualized learning plan for every student in every course. The information systems capture relevant data and have an e-portfolio for submitting and storing student work, learning objectives, and outcomes.

# Western Governors University

4001 South 700 East, Suite 700
Salt Lake City, UT 84107-2533
801-274-3280
www.wgu.edu

Western Governors University (WGU) is an accredited, not-for-profit, virtual university offering competency-based degrees at the associate, bachelor, and master's levels. Founded in 1995 as a joint venture by the members of the Western Governors Association, WGU serves over 19,000 students from all fifty states.

WGU offers courses in business, information technology, health, and education. WGU's competency-based approach to online education is personalized with the length of time varying for students to complete a program. WGU uses a number of assessments including tests, projects, papers, and practical demonstration of a required skill. Students demonstrate mastery across a number of domains including general skills, as well as those specific to the degree program. Each student has a mentor who serves as an academic advisor and helps students manage the online environment.

WGU defines the roles of faculty and administration differently than traditional universities. Students are assigned mentors who have the primary relationship with the students throughout their program.  A program council for each degree program brings together experts from the program field who approve the competency-based degrees and certificates. The assessment council is responsible for reviewing the credentialing assessments to ensure that the applications are valid measures of the competencies related to a given degree or certificate. WGU contracts with education providers for instructors for the online courses. All assessments are objective and proctored. Student work is assessed by graders. Program coordinators are responsible for maintaining the content working with councils and coordinating with the assessment department to ensure effective mechanisms to determine student performance on competencies.

## Young Women's Leadership Charter School

2641 S. Calumet Ave.
Chicago, IL 60616
312-949-9400
www.ywlcs.org

The Chicago Board of Education awarded a charter to the Young Women's Leadership Charter School (YWLCS) in 1999. Soon after, YWLCS developed a new method of awarding course credit using competency-based assessments. Throughout the year, YWLCS teachers evaluate student work and grant students a proficiency rating of High Performance, Proficient, or Not Yet Proficient for each key learning objective associated with the class. Students earn credit for classes in which they have demonstrated that they are at least 70 percent proficient. If students demonstrate a competency after the end of the year has passed, future teachers can update students' proficiency ratings in the data system to reflect what they have learned since the conclusion of a course.

Working with the Equity and Achievement for Standards-Based Learning Institute (EASL www. easlinstitute.org), YWLCS developed an information system that supported teachers and students in developing proficiency and preparation for college. A non-selective public school that serves primarily low-income minority students, YWLCS graduated 79 percent of its students in 2005, a figure 1.5 times higher than Chicago Public Schools' overall graduation rate of 52 percent that year. Of the students who graduated in 2009, 90 percent of YWLCS were accepted to college or another post-secondary option.

# Appendix B:  Resources

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# Appendix C: Interviews

**Sharon Arnott and Rick Perkins**
Florida Virtual School

**Peggy Baker and Margaret Small**
Equity and Achievement for Standards-Based Learning Institute

**Richard DeLorenzo**
Re-Inventing Schools Coalition

**Bill Diehl**
Diploma Plus

**Laura Harris**
National Governors Association

**Paul Leather and Mariane Gfroerer**
New Hampshire Department of Education

**Melinda Maddox**
Alabama State Department of Education

**Jill Kirk Powers**
Oregon Business Council

**Jim Schnitz**
Western Governors University

**Copper Stoll and Roberta Selleck**
Adams County 50 School District, Westminster, Colorado

# Endnotes

[1]    For more discussion on student motivation, see C. Christensen et al., "Rethinking Student Motivation: Why Understanding the Job is Crucial for Improving Education," Innosight Institute, September 2010.

[2]    The National Governors Association has initiated an effort on competency-based opportunities, framing it under Increased Credit Flexibility. This effort emerges out of the A New Day for Learning initiative from the Mott Foundation with the interest of formally recognizing out-of-school learning.

[3]    Adapted from materials from the Equity and Achievement for Standards-Based Learning Institute and the Re-Inventing Schools Coalition.

[4]    For more discussion on student-centered assessment, see Rick Stiggins's "Assessment Manifesto: A Call for the Development of Balanced Assessment Systems."

[5]    "Proficiency-Based Instruction and Assessment: A Promising Path to Higher Achievement in Oregon Education" by Oregon Education Roundtable, March 2009, page 5.

[6]    Wikipedia provides a good introduction to learning management systems and student information systems.

[7]    The first formal study of competency-based learning is starting in 2010. The EASL Institute, supported by National Science Foundation funding, will partner with the 21st Century Partnership for STEM Education (21PSTEM) in a four-year research project studying attitudes and student success in learning mathematics when supported by outcomes-based assessment. The project, called Proficiency-Based Assessment and Reassessment of Learning Outcomes (PARLO), will incorporate EASL software as a crucial component of the project. 21PSTEM is based in the greater Philadelphia area and will engage ninth grade Algebra teachers from more than forty schools around the area.

[8]    Available at American Youth Policy Forum, www.aypf.org/.../ ANewModelofStudentAssessmentforthe21stCentury.pdf.

[9]    *Schools and Staffing Survey: 1999-2000*, U.S. Department of Education. www.ed.gov

[10]   *Keeping Pace with K-12 Online Learning 2010*, Evergreen Consulting; www.KPK12.com

[11]   *K–12 Online Learning: A 2008 Follow-up of the Survey of U.S. School District Administrators*, Sloan Consortium, January 2009, http:// www.sloan-c.org/publications/survey/pdf/k-12_online_ learning_2008.pdf

[12]   The authors use the language "over-aged and under-credited" or "students off-track to graduation" rather than the phrase "dropout." The term "dropout" does not capture the dynamics between schools, communities, and students that lead to students disengaging from school. For more information on Multiple Pathways to Graduation see Jobs for the Future's "Bringing Off-

Track Youth Into the Center of High School Reform: Lessons and Tools from Leading Communities" (July 2009) at www.jff.org and "Youth Transition Funders Group's Closing the Graduation Gap: A Superintendent's Guide for Planning Multiple Pathways to Graduation" at www.ytfg.org

13    See article in *USA Today*, July 5, 2010. http://www.usatoday.com/news/education/2010-07-05-grade-held-back_N.htm

14    Although it is beyond the scope of this paper, the authors want to bring readers' attention to the fact that even though credit recovery is rapidly expanding, there are not quality standards defining it. The authors have reason to believe that in some cases credit recovery programming does not follow the guidelines of effective online or blended learning.

15    R. DeLorenzo et al., *Delivering on the Promise* (Bloomington, IN: Solution Tree Press, 2009), 71–72, Source: Highland Tech High Standards and Rubrics, www.highlandtech.org/academics/standards_and_rubrics/index.php.

16    Ibid, page 28.

17    Forthcoming "Attributes of Proficiency-Based Education and Conditions Required to Support It and Take It To System-Wide Scale," Oregon Proficiency Project, 2010.

18    The Oregon Proficiency Project offers materials, including videos available at the Center for Educational Leadership at www.k-12leadership.org/professional-development/proficiency-project.

19    The system infrastructure includes financing models, performance metrics, student information systems, teacher training and professional development, curriculum and digital tools, assessments, grading practices, transcripts, scheduling, etc.

20    Andrew Hargadon is the founder of the Center for Entrepreneurship and a Professor of Technology Management at the Graduate School of Management at University of California, Davis. His research focus is on innovation and entrepreneurship. http://andrewhargadon.typepad.com/my_weblog/on_managing_innovation/.

21    "USDOE Evaluation of Evidence-Based Practices in Online Learning," http://www.ed.gov/technology/netp-2010/reorganizing-teaching-learning.

22    Interview, March 2010.

23    *Delivering on the Promise*, p27.

INTERNATIONAL ASSOCIATION FOR K-12 ONLINE LEARNING