The Art and Science of Designing Competencies

WRITTEN BY:

Chris Sturgis, MetisNet

July 2012

CompetencyWorks

*i*NACOL
International Association for K-12 Online Learning

w w w . m e t i s n e t . n e t

Acknowledgments

About CompetencyWorks

CompetencyWorks is a collaborative initiative drawing on the knowledge of its partners and advisory board. The International Association for K–12 Online Learning (iNACOL) is the lead organization with project management facilitated by MetisNet. We are deeply grateful for the leadership and support from the partner organizations American Youth Policy Forum, Jobs for the Future, and the National Governors Association. Their vision and creative partnership have been instrumental in the development of CompetencyWorks.

www.competencyworks.org

CompetencyWorks is made possible with the generous support of our funders:

TABLE OF CONTENTS

At the heart of competency education is the assumption that by maintaining a laser focus on learning, allowing time to be a variable and powerful competencies to set the bar, we can create an education system that produces high achievement for students from all income levels, across all racial and ethnic communities. However, as we well know, the transition from an education system relying on a time-based Carnegie unit to competency-based education is not a silver bullet—it must be implemented with attention to quality so that both students and educators are fully supported in the learning process.

The purpose of this paper is to discuss how innovators in competency education develop competencies. Often this is referred to as a tuning process or reengineering process—mapping from what we want students to know and be able to do all the way backwards to the choices for curricular tasks and assessments. This paper provides insights into the orientation and processes that innovators use; however, it is not a tool kit.

You can learn more about competency education at CompetencyWorks.org as well as links and materials for all the resources mentioned in the paper on the Competency-Based Pathways wiki.

ı. What Makes a Good Competency?

Similar to many other education models, competency education requires educators to be competent in several skills, including building "learning" relationships with students, integrating formative assessments, and providing learner-centered instruction. One additional skill area necessary for competency education is designing competencies. Yet no rubric exists to our knowledge to guide educators in building expertise in this area. So we started our investigation with the question "What makes a good competency?"

Kim Carter, Executive Director of the Q.E.D. Foundation, described a well-designed competency as having the following characteristics:

- A competency describes knowledge and skills that can be applied to novel, complex situations.
- The skills described in a competency will be valuable ten years from now even if the content knowledge has changed.
- Learning objectives are accompanied by clear performance criteria that help students identify their performance level(s) and what they need to do to improve.

- Learning objectives are accompanied by effective rubrics that help students understand themselves better as learners.

- The competency and the learning objectives allow for personalization and opportunities for deeper learning.

If the competencies, learning objectives, and rubrics are not designed well, students may become bored by low expectations, frustrated by high-level competencies without adequate scaffolding embedded in the learning objectives, or disengaged through inconsistent feedback from flawed rubrics. If learning objectives are not explicit and measurable, teachers will not get the feedback they need from assessments to help individual students and to strengthen their own skills. Although it is obvious, it cannot be overstated: well-designed competencies are one of the essential elements for high-quality competency education.

Competencies are the knowledge, skills, and/or behaviors students must master in a specific content or performance area.

– Q.E.D. Foundation

Equally important to well-designed competencies are well-designed systems of assessments. In competency education, formative assessments are key to ensuring that students are getting the help they need to stay on pace. Performance-based assessments are necessary for creating opportunities to demonstrate mastery. Summative assessments are a crucial mechanism for quality control. Although critically important within competency education, the topic of assessments is beyond the scope of this paper as it deserves its own in-depth discussion.

A WORKING DEFINITION OF COMPETENCY EDUCATION

In 2011, innovators from across the country developed a working definition of competency education.

- Students advance upon mastery.

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

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

- Students receive timely, differentiated support based on their individual learning needs.

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

A Note on Language

Across our country, states and schools are using different language to convey the big concepts that we expect students to know and do and the more concrete, measurable components that are used to provide feedback on learning and instruction. This paper will use the term "competencies" to describe the big concepts and "learning objectives (LOs)" for the explicit, measurable goals that are used in designing assessments. However, when quoting directly from innovators, the language from their schools and districts will be used.

II. The Art of Designing Competencies

As Carter explained, "Designing competencies is a creative process. We gather together the tools we will need the same way a painter might choose brushes and paints." Schools need to consider what these tools—or ingredients, if you would prefer a cooking metaphor—might be. Below are examples of the ingredients that innovators bring together in their design process.

Essentials of the Discipline: Diploma Plus starts with the "disciplinary habit of mind" for each content area. Gloria Pineda, National Network Director, explained that the disciplinary habit of mind is "the mindset you need to attack and achieve rigorous content. It is the skillful approach you need within a content area regardless of the content or how it changes over time." Math is about logic and problem solving. English language arts emphasize communication in its many different forms. Science is the process of inquiry. Carter emphasized that "We want each person to start by thinking about their discipline and what it means to be in that discipline in the world. What are the themes that are essential to that discipline? Those themes form the core of the competencies."

Real-World Challenges: Tony Monfiletto, co-founder of ACE Leadership High School, approaches school design through a community development lens. The school is considered an intermediary between young people and employers, weaving together economic development and youth development. The ACE model starts with an exploration of the conditions of the industry, identifying issues that are important to the industry, such as efficiency in health care or biomimicry in architecture. This isn't an occupational focus—it's integrating the dynamics of industry with the academic curriculum. For students with little access to knowledge about a variety of industries, creating these linkages between academic standards and real-world challenges in industry embeds career development and motivation deeply into the school culture and curriculum. The creative process is to blend real-world projects and standards so that students become experts in the disciplines.

Knowledge Frameworks: Innovators in competency education build their competencies around knowledge frameworks. These frameworks are conceptual models that identify levels of learning in aligning standards with assessments. The educators interviewed used one of two knowledge frameworks in designing competencies and assessments.

- **Depth of Knowledge**, developed by Norman Webb at the Wisconsin Center for Education Research, offers four levels: recall, skill/concept, strategic thinking, and extended thinking. The framework was designed specifically to analyze alignment between standards and standardized assessments.
- **Bloom's Taxonomy of Educational Objectives** has six levels: remember (knowledge), understand, apply, analyze, evaluate, and create (synthesis).

The Smarter Balanced Assessment Consortium has has adopted a Cognitive Rigor Matrix that blends these two frameworks.

Rose Colby, a leading consultant in competency education in New Hampshire, reminds us that a well-designed competency focuses upon the highest levels of these frameworks, such as evaluate and strategic thinking. The lower levels of knowledge, such as recall and understand, are vitally important for the process of building knowledge and skills. However, it is in the higher levels that students have the opportunity to demonstrate mastery in applying the knowledge and skills.

Habits of Mind: In competency education both academic and lifelong learning skills, or "habits of mind," are made explicit. Some schools use the habits of mind to bring life to their competencies and rubrics. Boston Day and Evening Academy's six habits (reflection, evidence, perspectives, connections, possibilities, and relevance) are designed to build critical thinking skills, as well as resiliency. Alison Hramiec, Director of Curriculum and Instruction, explained, "The Habits of Mind live in the types of assessments and questions teachers ask of the students. They are not separated from the academic competencies. You should expect to hear the words. As schools develop their Habits of Mind, they need to ask themselves 'Are we using them in our language and assessments?' "

WEBB'S DEPTH OF KNOWLEDGE

Level One (Recall): Draw, Identify, List, Define, Memorize, Label, Calculate, Illustrate, Arrange, Who, What, When, Where, Why, Measure, Repeat, State, Name, Report, Infer, Tabulate, Recall, Tell, Use, Quote, Categorize, Design, Recognize, Match, Collect and Display, Connect, Recite

Level Two (Skill/Concept): Graph, Identify Patterns, Classify, Organize, Separate, Construct, Cause/Effect, Modify, Estimate, Predict, Compare, Interpret, Relate, Distinguish, Use Context Cues, Make Observations, Summarize, Show, Compare, Investigate, Differentiate

Level Three (Strategic Thinking): Revise, Assess, Develop a Logical Argument, Construct, Apprise, Use Concepts to Solve Non-Routine Problems, Critique, Explain Phenomena in Terms of Concepts, Formulate, Draw Conclusions, Hypothesize, Cite Evidence

Level Four (Extended Thinking): Design, Connect, Synthesize, Apply Concepts, Critique, Analyze, Create, Prove

Describe, Explain, Interpret

Learning Progressions: The Common Core of State Standards is based upon research in learning progressions—how concepts build upon each other. Students need to have strong conceptual underpinning to retain and apply knowledge. Carter emphasized that "In designing competencies for other content areas, we need to draw on learning progressions research as much as possible so that we do not leave students struggling to overcome gaps in their knowledge. Competencies should build upon each other to help students move to the next developmental level of conceptual understanding."

As our mental models shift from time-based to competency-based, it is also important to move away from linear toward flexible pathways for learning. A learning progression does not necessarily mean that all students will learn in a linear fashion; students with high mobility are going to enter classrooms with gaps in their knowledge. So it is important to be able to identify when those gaps have to be filled in order for students to learn a new concept.

This new capacity of schools to respond to gaps in knowledge and skills is expanding with credit recovery or competency recovery. Steve Kossakoski, CEO of Virtual Learning Academy Charter School (VLACS) in New Hampshire, explained that "VLACS is becoming skillful at identifying missing competencies and learning objectives, and then designing ways to help students complete them quickly. It is, of course, better to remediate while in the context of the course," Kossakoski emphasized. "However, competency recovery is better than credit recovery that demands that students sit through an entire semester again." Colby reinforced this point, saying "The goal is to redesign the learning time and space to be 'just-in-time' learning so students get help when they need it. We don't have to wait for a student to fail to know he or she is struggling. Competency recovery is a step forward on the continuum toward 'just-in-time' support."

When designing competencies, think about the learning progressions and the ability to use the competencies and learning objectives to identify those critical skills students need to succeed in higher-level coursework.

The Power of Words: Finally, in drawing together the ingredients for designing competencies and rubrics, consider the language you will use. It can be powerful or bureaucratically boring. It can inspire and challenge, or it can introduce a culture of compliance and checklists. Remember that the language you use can be an invaluable tool to engage and motivate students.

III. The Science of Designing Competencies

Of course, the essential ingredients for designing competencies are the standards. Most states will be drawing from the Common Core of State Standards for mathematics and English language arts. For other content areas, schools will turn to state standards or national resources.

However, a competency is not the same as a standard. Educators need to know the difference between competencies and standards and be able to apply this knowledge to skillfully developing competencies, learning objectives, and rubrics. Colby explained that "Competency implies much more than content and skills. By its very definition, competency requires that a student be able to transfer content and skill in a particular setting." Pineda described the difference as "Standards are something you need at a point in time or that you will revisit. Competencies are the things that you carry with you as a learner. They look beyond graduation day."

In preparing for the transition from a time-based system to a competency-based system, education leaders will need to be prepared to help teachers change from a focus on objectives and lesson plans to a cycle of assessing learning and providing new content and activities toward the competencies. "In education schools, teachers are trained to teach based on standards and objectives," explained Pineda. "When teachers are asked to cover material, to move through a curriculum, they are encouraged to think in terms of objectives and lesson plans. Competency education takes a step back to make sure that there is agreement on what we want students to be able to do. The focus shifts to curricular tasks, assessing learning, and feedback on our instruction."

When teachers are asked to cover material, to move through a curriculum, they are encouraged to think in terms of objectives and lesson plans. Competency education takes a step back to make sure that there is agreement on what we want students to be able to do. The focus shifts to curricular tasks, assessing learning, and feedback on our instruction.

– Gloria Pineda

Kossakoski described the process as reverse engineering. "We set out the big ideas of a course and explicitly state what students will need to know and be able to do to fully master the competency. Stay focused on the big ideas—certainly no more than seven or eight competencies within a course." All those interviewed agreed—staying focused on big ideas is critically important. Carter explained that "This is how we develop expertise in our learners, helping them to make meaning of knowledge and then transferring or applying it to new situations."

In some cases, innovators are finding that they can draw the big ideas directly from the Common Core and other times they find they need to unpack the standards, reorganizing them to be more meaningful. Kari Webb, from Spirit Lake Community High School, commented that "Once we began to think of the standards in a real-world context, the interdisciplinary themes became crystal clear. As our team writes competencies, we find it very natural to meld the core content areas together."

LIFELONG LEARNING COMPETENCIES

Based on previous research, it is clear that the lifelong learning competencies play an important role in competency education. Carter believes that "We can't be successful without both academic competencies and habits of mind." The labels may vary, as does the process of developing them, but they are found consistently in competency education models.

Schools that have intentional cultures also develop the lifelong learning competencies to engage, motivate, and support students. Others develop the lifelong learning competencies by embracing a set of "21st century skills" or crosscutting skills. Some leave it to a process of elimination—when it becomes time to design report cards, everything not fully integrated into the academic competencies will become the lifelong learning competencies.

Lifelong learning competencies are challenging for those teachers who have not been trained on how to use them to engage students, how to think about these skills in terms of youth development or cultural diversity, or how to assess and provide feedback. The Q.E.D. Foundation has invested in a powerful set of rubrics to guide discussion on lifelong learning competencies. Schools can save considerable time by using this set of rubrics as a starting point for designing their lifelong learning competencies.

Please note: There is an alternative view. Some practitioners prefer to incorporate the habits of mind or lifelong learning competencies, rather than have them stand alone. As Colby notes, "This is a bit sticky—habits of mind or process skills can be prioritized in the 'how' to bring kids to competency. They do not necessarily have to be competencies unto themselves. In fact, many performance indicators can target these skills." Districts and schools will have to decide which approach to use: complementary or incorporated lifelong learning skills. It will be important to take into consideration your student population and your school culture.

Possibilities
Character
Collaboration
Decision Making
Communication
Connection Evidence
Quality Work Technology
Reflection
Ownership Curiosity
Perspective
Critical Thinking
Organization
Self-Direction
Leadership Relevance
Community
Creative Thinking
Management Wonder
Problem Solving
Information

IV. Process, People, and Professional Development

All innovators agreed that the process used to design and refine competencies, learning objectives, and rubrics depended on the context of a school, including the stage of development for implementing a competency education model, the range of experience of teachers in using competencies, and other competing organizational development needs. Thus, the following discussion highlights important steps to consider in the process.

Preparing a Strategic Process: The key to success in designing and revising competencies is developing a strategic process. Start with the philosophy and culture that are at the core of your school. How can you design this process to be an opportunity to build on those principles? Bring together a leadership team to research and determine what tools or ingredients you will be using to design your competencies. Innovators all agreed: provide common language and a framework—don't expect teachers to work from a blank page. Beatriz Zapater, Head of the Boston Day and Evening Academy, suggested that "Schools need to develop a framework around the language used in rubrics [BDEA uses "not yet competent," "competent," and "highly competent"], scope and sequence, and extra support. It is essential to agree to a common language so that we can consistently apply descriptors for student performance." Finally, design the process to support high-quality professional development, collaboration, and bringing joy into the process of learning.

Colby emphasized that "The process of designing competencies is an opportunity for leadership and an opportunity to develop educational leaders. It is a chance for principals and their leadership team to engage staff in the culture of the school. They may find that the traditional or hierarchical forms of leadership may not be as effective in trying to create a culture of learning."

For example, as Colby pointed out, "Developing competencies can be a collaborative or distributed leadership process. At Spaulding High School, the math department worked together, drawing on their different talents, interests, and leadership styles as they developed competencies and rubrics for algebra." Colby stressed that it is important to think about sustainability in leadership. Distributed leadership is more likely to be sustained through staff changes and in creating a resilient school culture.

Kicking Off with the Essential Questions: Most of the innovators interviewed recommended that the process should start with discussions about habits of mind of the disciplines or talking about the big themes in a discipline, rather than jumping right into identifying competencies. This is a natural place for the type of rich conversation about learning and teaching that is needed to write meaningful competencies, as well as for brainstorming ways to construct curricular activities and assessments. Carter suggested that "This is also an opportunity to explore cross-disciplinary learning by looking across the top five themes in different disciplines. As teachers embrace school-wide competencies, they can begin to see how their content and curricular activities reinforce each other. This is the process of fine-tuning, as teachers begin to understand the relationships between what they are teaching and how together they can create added value and deeper learning."

Involving Teachers: Being involved in the design and refinement of competencies helps teachers "own" the competencies, ensuring that they fully understand what is required to master the competency, as well as helping to spark their creativity. Innovators all agreed that within a well-managed process, teachers enjoy vetting competencies. They can share their expertise, their opinions are valued, and the collaborative process strengthens their relationships with their colleagues. As competencies, learning objectives, and rubrics are refined, teachers will find themselves discussing student work and building a common set of expectations with others.

However, there is a natural tension between wanting all educators in a school to really "own" the competencies through a process of helping to create and/or revise them and the cost of doing that. Among the innovators interviewed, there was general agreement that instructional leadership definitely needs to fully embrace and understand the implications of competencies, learning objectives, and rubrics. Additionally, it is absolutely acceptable to provide the competencies to newly hired teachers and expect them to use the competencies to guide their teaching and assessment. The trick is for those schools that are going through the reform process from a time-based system to a competency-based system to use the process of designing competencies as transformational in creating a school culture, teaching philosophy, and commitment to student learning.

For those schools that are linking their competencies to real-world experiences and/or making the link to the world of work to increase relevance for their students, a first step is likely to be bringing together educators, employers, and industry thought-partners. Schools approach this differently: ACE Leadership engages employers in identifying the issues confronting the industry so that competencies are integrated into their projects, and Diploma Plus engages employers in designing specific competencies for their Career and Technical Education courses.

Sixty percent of the work in designing competencies for the first time is the mental realignment—shifting the mental models.

– Kim Carter

Building Skills in Writing Competencies, Learning Objectives, and Rubrics: Schools will find that they can expedite the process of helping teachers design competencies by providing a framework—examples of different types of well-written packages of competencies, learning objectives, and rubrics—and an opportunity for experiential learning to test them by reviewing student work together. There are enough examples of competencies now available that schools can avoid the costly process of re-creating the wheel. In many cases, competency design can be a process of revision, leaving more time for discussion on how to use content, curricular tasks, and experiential learning opportunities. With the ever-expanding curricular resources available in online learning and open educational resources, this will be increasingly important to support teachers in drawing together resources that can provide personalization, extra support, and opportunities for deeper learning.

Aligning Horizontally and Vertically: An important step in ensuring that the competencies in a school or across a district will be sustainable is to review them horizontally and vertically. Ask teams to look across disciplines to determine any gaps that may trip up students or any opportunities to reinforce the competencies across content areas. Review grade levels to make sure that the competencies and learning objectives are building upon each other in a meaningful pathway to the college- and career-ready standards. Ephraim Weisstein, founder of Schools for the Future, suggests that this is best accomplished by developing a type of curriculum map.

Engaging Outside Reviewers: Finally, at some point you may want to bring in people from outside your school and district to review your competencies. Diploma Plus is working with Marzano Research Laboratory Associates to help fine-tune the language of their competencies. Another option is to develop peer reviews so that there are opportunities to exchange knowledge and insights across schools. Some schools use the practice of students "unpacking" the competencies and rewriting them in their own words, which also provides feedback about how to improve them over time.

NURTURING PROFESSIONAL DEVELOPMENT

Often a substantial part of engaging in designing competencies is the profound shift in how teachers understand their jobs. Carter explained that "Sixty percent of the work in designing competencies for the first time is the mental realignment—shifting the mental models. We can't give that up. We can make it easier and accelerate the process by using principles of adult learning, exploring the assumptions and concepts that we bring to our work as teachers, and offering transparency to the process as we shift from one model to another."

The process of designing competencies is also an opportunity to engage in other meaningful professional development for the teaching staff. It naturally opens a conversation about your school's philosophy of teaching and the science of learning as it relates to youth development, personalization, engagement, motivation, and instruction.

Education leaders will want to strategically prepare to support teachers in building their competencies in the other critical elements, including formative assessment and instructional design. Shelly Moody from Williams Elementary School in Maine said that "Our district found that as we shift to a model of customized/standards-based learning, it is important for teachers to reflect on our models of instruction. If we are going to target the competencies of individual students, we needed to look at how we can devote more time to individual and small group instruction. The formative assessments we use feed into our grouping of students and targets for instruction."

Weisstein pointed out that "The power of competencies is in how they can be used to deepen learning through continuous assessment and conversations with students. It's where I think most of the professional development time should go." The Q.E.D. Foundation engages teachers to look at student work with protocols using the School Reform Initiative. As teachers build their capacity for professional collaboration and focus on looking at student work for evidence of learning and instruction, they increasingly feel more competent and effective, which in turn makes them more willing to be open to feedback. Carter emphasized that "The shift comes when teachers are tasked with bringing students to competency—not teaching the 'stuff.' This is a powerful language change in shifting delivery of content to engaging students at their level of learning and bringing them to deeper levels of understanding of the discipline."

v. Competencies, Content, and Curricular Tasks

Starting with competencies can be a big leap for some teachers. As Barbara Weed pointed out in her post on the CompetencyWorks website, "The vast majority of teachers spent years being taught how to write lessons. Single content lessons were at the heart of what we were expected to produce for most of our education courses. Assessments and tests, that were to be delivered at the end of a unit of study, were usually included in our lesson plans, but learning to write lessons was the core of our training. The result is that we are comfortable with lessons. We even feel a sense of ownership and personal identity about the lessons that we write."

Districts and schools will need to take this dynamic into consideration as they build the capacity for designing and refining competencies. This was highlighted as Carter explained the process used by the Q.E.D. Foundation in designing competencies:

> We ask teachers to start by listing the characteristics they want students to have upon graduation—very concretely. What do they need to know and be able to do? Then working in discipline/subject area groups, teachers define how their discipline contributes to those characteristics, mapping the progression of knowledge and skills that gets students there. It's easy for teachers to see that this is the point of connection between student learning and their lesson plans.

> Some teachers feel more comfortable starting with their lesson plans. So we have them work from both ends—so that you can see the scaffold progression of lesson plans built toward the end result of what we want students to know and do and how our end result unfolds into lesson plans.

What's important is that no matter where you start, you end up focusing on the higher levels of the knowledge frameworks. Educational leadership will need to be vigilant in making sure that competencies, learning objectives, lesson plans, and assessments are all driving toward application and creation of knowledge. Hramiec explained that "What significantly transformed student ownership of learning at BDEA was the creation of well-scaffolded scope and sequence for each content area's competencies. The scope and sequence outlines for teachers include the competencies for each 11-week course, as well as a variety of common assessments. When you talk with students in each class, they know specifically what they are working on and understand what is expected of them before they can move to the next course. This transparency brings clarity to student learning. There is no mystery or moving target."

CONSISTENCY AND COHERENCY: STATE, DISTRICT, AND REGIONAL EDUCATIONAL INTERMEDIARIES

Many of the early innovators in competency education developed their practice within schools. As states embrace competency education, state education agencies, districts, and regional education intermediaries are taking on essential roles in supporting the development of competencies. Policy development, development of rubrics, formation of peer networks, and provision of technical assistance are just a few examples.

As we move to more systemic approaches in the transformation from time-based education to competency-based education, the district and intermediaries are likely to discover other roles. There will be natural tensions between the desire for consistency across schools and the importance that school culture plays in shaping competencies. For example, considering high mobility, which is prevalent in low-income communities, we may want to include portability as a meaningful characteristic of competencies. However, it may not make sense for thematic schools to use competencies worded in exactly the same manner.

> *When you talk with students in each class, they know specifically what they are working on and understand what is expected of them before they can move to the next course. This transparency brings clarity to student learning. There is no mystery or moving target.*
>
> – Alison Hramiec

We have entered a period where the instructional opportunities and options are expanding rapidly. Direct instruction, projects, adaptive software, mobile applications … teachers in the classroom will need to become skillful in guiding students to the opportunities that are most engaging, motivating, and appropriate for the specific skills they are focused on. Schools and educators will be experimenting with organizing resources so that there are ever-increasing options for personalization, deeper learning, and intensive supports. For example, in online schools, content and curricular tasks are built for teachers by instructional designers. As Kossakoski explained, "It is not seen as a critical element for teachers to design and have ownership over the curriculum. In online schools, we emphasize the relationships and individual support to students." We are all on a fast-paced learning trajectory about how content and curricular tasks can be organized on behalf of students.

VI. Concluding Remarks: New Competencies for Educators

The techniques and processes used in shaping competencies will no doubt continue to be refined as states, districts, and schools prepare to introduce new assessment systems and implement the Common Core framework. What will not change is that educational leadership will need to ensure that school personnel have the necessary set of competencies to effectively implement high-quality competency-based schools.

This will depend on creating powerful cultures of learning, as Carter has suggested, where educators are the master learners and students their apprentices. It is not only schools that will need to value professional learning; districts and state education entities will need to operate with a culture of innovation and improvement as well.

Those schools undergoing the transformation from time-based education to competency-based education cannot overestimate the power of designing competencies in shifting mental models. As we move forward, we hope that CompetencyWorks can offer even greater insight into how to design these processes that create powerful learning opportunities for students all across our nation.

You can learn more about competency education at CompetencyWorks.org as well as links and materials for all the resources mentioned in the paper on the Competency-Based Pathways wiki.

About the Author

Chris Sturgis is Principal of MetisNet, a consulting firm based in Santa Fe, New Mexico, that specializes in supporting foundations and special initiatives in strategy development, coaching, and rapid research. MetisNet specializes in competency education, high school reform, dropout recovery, youth issues, and community engagement. Chris brings a commitment to drawing on local knowledge (metis) early in the design process to ensure that problem definition reflects the realities of communities. Her knowledge of philanthropy was developed while at the Charles Stewart Mott Foundation and Omidyar Foundation. Prior to joining the philanthropic sector, she worked in state government, human service organizations, and campaigns. Clients include the Donnell-Kay Foundation, Bill and Melinda Gates Foundation, Sapelo Foundation, Skillman Foundation, and the McCune Foundation. She has consulted to the U.S. Department of Education on secondary school policy. She is co-founder of the Youth Transition Funders Group and is project manager of CompetencyWorks and the Connected by 25 blog.

Chris has authored a number of publications including:

- *When Success Is the Only Option: Designing Competency-Based Pathways for Next Generation Learning* with Susan Patrick

- *It's Not a Matter of Time: Highlights from the 2011 Competency-Based Learning Summit* with Susan Patrick

- *Synchronizing Policy and Practice: Next Generation Learning State Policy Frameworks for Performance-Based Learning* with Susan Patrick and Linda Pittenger

- *Clearing the Path: Creating Innovation Space for Serving Over-Age, Under-Credited Students in Competency-Based Pathways* with Bob Rath, Ephraim Weisstein, and Susan Patrick

- *Positioning for the Possible: Investing in Education Reform in New Mexico*

- *Closing the Graduation Gap: A Superintendent's Guide for Planning Multiple Pathways to Graduation*

- *Beyond the Tunnel Problem: Addressing Cross-Cutting Issues that Impact Vulnerable Youth* with Joel Miller and Tim Ross