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3 Essential College and Career-Ready Skill Sets

Supporting Deeper Learning to Better Prepare Students for Life after High School

By Karin K. Hess, Ed.D.

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When my younger son returned from his first semester in college as an engineering major, I 'interviewed' him one night at dinner. "So what do you think best prepared you in high school for what you are expected to do in college?" This is what happens when you've been in education as long as I've been. You find yourself collecting data all of the time about what's working in education—even at your own dinner table.

His answer surprised me. I'd expected him to list some of the many high-level math courses he'd taken that provided a strong foundation for college math. I was not even close. "Mom, it was all of that writing the English teachers made us do. I know. I complained about it all the time; but you know, I've learned that I don't really know what I know until I have to communicate what I know—in any subject, even in math. There are a lot of smart kids at school who can't do this. They don't even know how to get started. I know how to get started and I'm not afraid to take a risk putting my ideas together for others to react to."

I wondered how that could be possible. How could some students get good grades, score high on standardized tests, and get into college, but not be able to communicate what they know? And what was implied by my son's response? I realized as we talked that he understood (a) when communicating in any subject area, you organize your ideas around principles—or schemas—specific to that discipline and use content-specific language in articulating them; (b) when you have an assignment you're not sure how to approach, consider approaches or supports you've used in the past and try several until one works; and (c) when you have an extended project, self-monitor your time and progress and don't be afraid to get feedback that could improve the quality of the final product.

How could some students get good grades, score high on standardized tests, and get into college, but not be able to communicate what they know?

I think sometimes as educators we search so hard for the right combination of things to focus our instructional time and energy on, that we may overlook the obvious. We end up with long lists of skills and dispositions—somewhat disconnected from academic content and curriculum—and we have no clear systemic plan of how they might be meaningfully integrated across subject areas and grade levels. Sure, we have college and career-readiness (CCR) standards in some content areas that set expectations for demonstrating the knowledge and skills needed for success in college. However, academic content standards alone provide limited or no guidance as to how, when, or to what degree specific skills and supports should be emphasized by teachers in the classroom. Without a clear and coherent focus coupled with strategic use of rich, engaging learning opportunities and assessments, important CCR skills and dispositions will likely be inconsistently addressed system-wide and underemphasized in the overall design of local curricular and assessment programs. At the end of the day, what gets tested is what gets instructional attention. If assessments of CCR standards only test acquisition and basic applications of academic skills and concepts, there will be little incentive for schools to focus instruction and assessment on deeper understanding and fluid transfer of learning to new and authentic (real-world) contexts (Hess & Gong, 2014).

A review of the research related to engagement and deeper understanding indicates that rigorous academic standards alone will not ensure that all students graduate from high school well prepared for the potential pathways they may take. Truly preparing students for college, careers, and ultimately life-long learning calls for re-envisioning our approaches to rigorous curriculum with a broader skill set of competencies that by necessity will shift the roles of teachers and students (Table 1, see next page) in the learning process: moving from teacher-directed learning to student-initiated and "owned" learning.

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So, what is beyond the explicit content expectations laid out in most CCR standards, but proven to be strong indicators of future college and career success? Which skills and thinking behaviors are essential for supporting rigorous curriculum and deeper learning for all students and can be taught and reinforced at every grade level? And finally, what approaches might help us to systemically target and support the development of what I call the three essential CCR cross-cutting skill sets?

TABLE 1: SHIFTING ROLES: MOVING FROM TEACHER-DIRECTED TO STUDENT-DIRECTED LEARNING

DOK Level	DOK Level Descriptions	Teacher's Role	Student's Role	Sample Tasks
1	**Recall & Reproduction** requires recognition of information, such as a fact, definition, term, principle, or performance of a simple process or procedure. Responding to a Level 1 task or question involves following a well-known rule, procedure, or formula. You either know it, or you don't know it.	• Questions to direct or focus attention (Who? What? Where? How? When?) • Directs, leads, demonstrates, defines • Examines, breaks down • Uses concrete objects, nonverbal and visual cues to teach concepts, procedures, and vocabulary • Builds background knowledge to build upon later • Provides resources and procedures • Uses mentor texts as unambiguous models • Asks closed questions (right there)	• Learns rules (spells, decodes, edits for grammar, usage, mechanics, principles of design) • Learns processes (order of operations, evaluate expressions, measure, key word searches) • Acquires vocabulary, facts • Memorizes, recites, quotes • Practices, restates, paraphrases • Locates/retrieves information • Identifies/names parts • Reports/shares solutions /findings	- Reads orally, reads fluently - Draws/labels/acts to illustrate an event, parts of the whole, phases in a cycle - Writes a variety of sentences - Represents math/fine arts relationships with words, symbols, objects, visuals - Recalls math facts, terms, dates, formulas, rules - Calculates, measures, follows steps - Uses tools, records data - Reads or reproduces maps, diagrams - Highlights key words
2	**Basic Application of Skills/Concepts** requires engagement of some mental processing beyond recall or reproduction–putting pieces together that results in basic comprehension and processing of content. Students apply more than one concept and make some decisions about how to approach the question or problem, such as what tools to use, and how ideas relate.	• Questions to differentiate/classify, draw out inferences, check conceptual understanding (Why? Under what conditions? Give example?) • Provides examples and non-examples to build conceptual understanding • Provides graphic organizers to show relationships or organizational schemas • "Thinks aloud" to explore possible options or connections	• Explains relationships, sorts, classifies, compares • Makes predictions based on observations, estimates, proposes • Compiles and organizes information • Distinguishes relevant-irrelevant, fact-opinion, example-non-example • Selects appropriate strategy and applies it • Explains steps taken to complete a task	- Solves routine, multi-step math word problems - Makes science observations, organizes data (graph, table, spreadsheet, etc.) - Writes a caption, paragraph, summary - Creates a timeline of events - Makes and uses models - Interprets simple graphics, tables, etc. - Retrieves information and uses it to answer a question or solve a problem - Creates survey to research a topic
3	**Strategic Thinking/Reasoning** gets at deeper understanding of concepts within novel or new contexts. Students develop their reasoning underlying an interpretation, generalization, or connection, and provide supporting evidence for judgments made. Cognitive demands are more complex and abstract, often with more than one possible answer or approach.	• Questions to probe reasoning and underlying thinking (How do you know? What is the evidence? But what if? Is this supported by the facts?) • Asks open-ended questions • Encourages varied approaches • Acts as a resource, coach, mentor • Guides using criteria for making judgments • Guides how and what materials encourage in-depth explorations • Models and scaffolds complex thinking	• Uncovers relevant, accurate, and credible information • Uncovers flaws in a design or logic • Develops supporting evidence for conclusions or claims • Tests ideas, predictions, hypotheses • Transfers knowledge to solve non-routine problems • Revises work to establish a progression of ideas or chain of reasoning	- Interprets complex graphics, tables - Sets up a data base - Conducts a designed investigation - Develops both sides of a fact-based argument for debate or speech - Creates a website, podcast, multi-media presentation matched to purpose - Critiques an essay, performance, or novel, using discipline-based criteria - Analyzes theme, perspective, author's craft in a piece of work
4	**Extended Thinking** requires complex reasoning, planning/designing, and conducting research, probably over an extended time. Tasks require significant conceptual understanding and application of skills across concepts or disciplines, using multiple sources, resources, or real-world constraints.	• Questions to extend thinking, explore sources, broaden perspectives (What are the potential biases? Can you propose an alternative? Can you design a model? What is the importance/value?) • Facilitates teaming, collaboration, peer- and self-monitoring • Models and scaffolds integrating sources	• Initiates learning focus and structures tasks needed to complete complex projects • Locates relevant and credible mentors and resources • Transfers and constructs knowledge • Modifies, creates, elaborates • Investigates real-world problems and issues • Revises work to establish an integration of complex ideas or chain of reasoning across sources	- Produces a short film, play, or short story based on a theme, issue, style - Designs own research or investigation as an extension of concepts or issues studied - Critiques importance of policies or events from different perspectives (e.g., historical, social, economic, cultural) - Analyzes theme, perspectives, authors' craft across multiple pieces of work or time periods

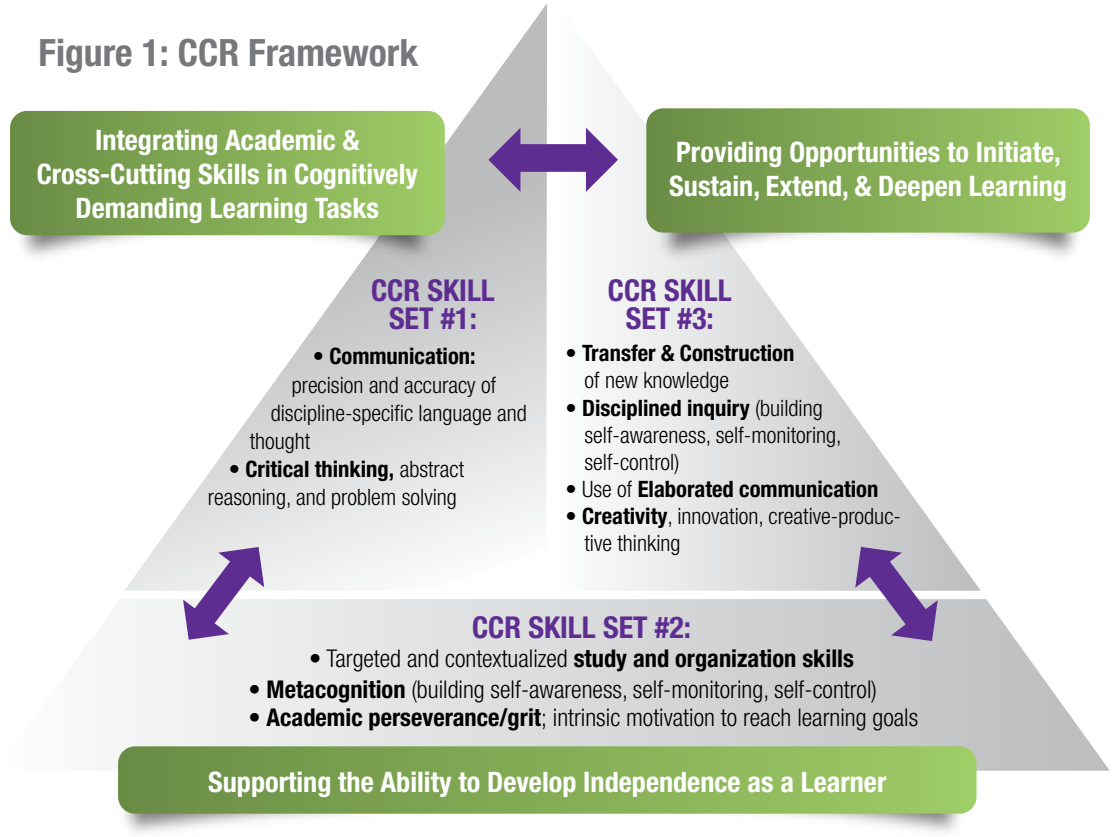
(Hess, 2013)

To answer these questions, I propose starting with a conceptual framework that was built upon a close examination of research correlated with deeper learning, student engagement, and academic success. The Hess & Gong CCR Framework (2014) describes three critical research-based skill sets essential for success beyond high school. The skills and behaviors included in the Framework were identified, prioritized, and organized using these criteria:

- Cognitive skills and thinking processes that can be integrated with academic instruction and assessed;
- Intrapersonal skills and dispositions that correlate with success in both college and careers; and
- Context-specific cognitive skills that support deeper understanding, creative-productive thinking, and deep disciplinary knowledge.

The CCR Framework (Figure 1) encompasses a curriculum design which supports each student's ability to: **Tackle Cognitively Demanding Learning Tasks** in all subject areas; **Develop Independence as a Learner** using self-regulatory and metacognitive behaviors; and **Initiate, Sustain, Extend, and Deepen Learning**. Within each skill set are a small number of essential competencies that can be applied in any content discipline. This is what makes them "cross-cutting."

Figure 1: CCR Framework



Collectively, the competencies in the CCR Framework form a strong foundation for developing cognitive, intrapersonal, and interpersonal skills needed for success in life beyond high school. These skills and behaviors are intended to be integrated with academic content (rather than taught in isolation), in contexts that will add relevance, rigor, and authenticity to any content taught.

In the past few years, the terms "rigor" and "complexity" have become the new buzz words in education. Some people define increased rigor as simply making learning tasks more difficult (e.g., harder words to decode; harder concepts to understand; more information to recall; more complex texts to read). Others equate verbs—such as analyze, evaluate, and create—with all rigorous tasks. These assumptions are simply not accurate. I often say that there is a big difference between analysis "lite" (e.g., sorting materials or data into categories) and analysis "deep" (e.g., using data from a designed investigation to support conclusions drawn or to identify flaws in the experimental design).

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To better understand the potential cognitive demand and depth of understanding elicited when integrating each proposed skill set of the CCR Framework, the lens of Webb's four Depth-of-Knowledge (DOK) levels can become useful. First, let's start with a definition of cognitive rigor applied to learning and assessment: "Cognitive rigor encompasses the complexity of content, the cognitive engagement with that content, and the depth and scope of the planned learning activities" (Hess, Carlock, Jones, & Walkup, 2009).

Webb's Depth-of-Knowledge Levels

Level 1: Recall and reproduction
Level 2: Basic skills and concepts
Level 3: Strategic thinking and reasoning
Level 4: Extended thinking

The demands of today's world require complex skills—not just for some, but for all. Comprehensive, 21st-century curriculum and assessment systems must consider new ways to think about how and where learning occurs and how to best assess these more complex, life-long skills (e.g., performance tasks and portfolios, formative and self- assessments, mentor assessments of internships and extended projects).

CROSS-CUTTING SKILL SET #1

Tackling Cognitively Demanding Learning Tasks in All Content Areas and at All Grade Levels

The first set of cross-cutting skills focuses on two key cognitive processes that the research implies should be regularly applied across all content areas and grade levels: **communication** (including precision and accuracy of discipline-specific language and thought) and **critical thinking**, which involves the application of abstract reasoning and the ability to solve novel or non-routine problems in each content domain. These cognitive processes appear on most 21st-century skills and competencies lists (NRC, 2012) and are often discussed in reference to supporting dispositions, such as the ability to determine significance or to strive for accuracy and precision in communication. While the terms *communication* and *critical thinking* are familiar to most readers, it's worth further defining them, because there are many interpretations and some misconceptions about teaching and assessing them.

In Skill Set #1

- **Communication** focuses on using language and resources specific to the discipline. Students discuss results from a science investigation, for example, using appropriate science terminology (data, variable, hypothesis, etc.) and related concepts. In terms of DOK levels, communication in a discipline requires the mental processing of recall of terms and principles (DOK 1) and application of basic skills and concepts (DOK 2) in routine or familiar contexts.

- **Critical thinking**—in a content discipline—requires that students use thinking that is deeper, more analytical, and deliberate. Students look for connections to "big ideas" and schemas unique to the content domain. They interpret what is presented and take the content or context apart to see how the parts work together to form a coherent whole/system (e.g., what are the critical elements of a reasoned argument or of an experimental design). When presented with abstract and more complex and novel problems, students use reasoning skills to uncover why one solution may work better than another or to justify possible alternative

approaches or conclusions drawn. Generally this would be considered DOK 3–type thinking—using strategic thinking and reasoning with an analysis of supporting evidence. When learning or assessment tasks require multiple sources or an interdisciplinary approach to locating and analyzing supporting evidence, DOK 4 thinking is likely to be elicited.

The use of strategically designed performance tasks in all content areas and courses is one excellent means of integrating the cognitive processes of communication and critical thinking in meaningful, student-centered ways. When integrated with specific academic content, these cross-cutting skills yield more challenging—and ideally more engaging—learning activities for students (Paige, Sizemore, & Neace, 2013). Evidence suggests that when communication/precision of thought, critical thinking, and application of abstract reasoning to solve non-routine problems is sustained instructionally, both in daily content lessons and across the K-12 curriculum, students begin to build expertise in the discipline-specific knowledge and dispositions they will need in college and future careers. This approach leads to students reasoning like a mathematician; investigating like a scientist; and reading like an historian, technician, or literary critic.

CROSS-CUTTING SKILL SET #2

Developing Independence as a Learner

When creating a visual representation of the CCR Framework, it made perfect sense to place Skill Set #2 as the foundation, at the bottom of the triangle (Figure 1), in support of the other two CCR skill sets. Skill Set #2 includes three different areas of intrapersonal skills that, according to the research, facilitate intrinsic motivation and the successful achievement of short- and long-term goals in the classroom and beyond. Skill Set #2 is essential in supporting Skill Set #1 (accomplishing challenging and complex tasks); for without developing independence as a learner, students lack opportunities to build what we have come to know as perseverance (Duckworth, Peterson, Matthews, & Kelly, 2007) and a growth mindset (Dweck, 2015). Curricula that increase rigor, but do not systemically support learners in their ability to organize time and reflect on their own learning, will fall short of preparing all students for college and careers. These skills include:

- **Study and organizational skills** help students manage time and sustain the effort needed to engage with and learn complex content. These skills can easily be taught by embedding them within curricular projects and extended performance tasks that require students to break extended tasks into manageable parts. In terms of cognitive demand, these tasks would generally be considered DOK 2–type skills, such as gathering and organizing information/data, summarizing ideas, and checking for understanding.

- **Metacognitive skills** are more abstract than organizational skills, and equally (if not more) important to pay attention to. Students developing metacognition reflect on their own learning, develop identities as learners, and frame and monitor their own learning and career goals. They seek out and use evidence of their own progress from one or more sources (DOK 3 or DOK 4) to improve their performance. They act on feedback from formative assessments. Because traditional curricula do not typically include metacognitive activities, many students do not learn how to capitalize on their learning strengths or to develop self-efficacy (Savitz-Romer & Bouffard, 2012). Educators can support metacognitive skills by developing students' self-questioning skills (Goodwin & Hein, 2015) or through carefully planned activities such as reflective writing, learning portfolios used formatively, and conferencing with adults, peers, and outside mentors/experts.

Educators can support metacognitive skills by developing students' self-questioning skills...

- The most abstract intrapersonal disposition in Skill Set #2 is **academic perseverance**. Although some researchers caution that more evidence is needed to determine the causal relationship between perseverance and performance (Farrington, et al., 2012), several studies of motivation and perseverance suggest that grit, defined by researchers as perseverance and passion for long-term goals, may be a better predictor of college and career success than either IQ or standardized test scores (Duckworth, et al.). People with grit work strenuously toward challenges, maintaining effort and interest over time, whatever the adversities they face. Because vague extrinsic goals,

such as getting a college degree or high-paying job, can rarely sustain learners in the long run, perseverance depends on intrinsic motivation, which gives individuals the stamina to reach personal long-term goals (Duckworth, et al.). It's difficult to identify a level of mental processing associated with developing perseverance. Suffice it to say that this would require, at minimum, strategic thinking and reasoning (DOK 3) and likely lead to extended thinking applied to longer-term and more complex learning tasks (DOK 4).

CROSS-CUTTING SKILL SET #3

Initiating, Sustaining, Extending, and Deepening Learning

The third CCR skill set in the Framework is about building ownership and expertise in a discipline and clearly requires more learning time than completing shorter, teacher-directed tasks. The skills in Skill Set #3 prepare students for deep learning, which is defined by the NRC (2012) as "the process by which an individual becomes capable of taking what was learned in one situation and applying it to new situations" (pp. 5–6). This skill set develops when teachers and curricula provide opportunities for students to extend prior content learning, think flexibly, and apply the key cognitive skills of Skill Set #1 to initiate and solve authentic, complex problems which require **transfer and construction of new knowledge**. This skill set requires reflective, DOK 4–type thinking, since students initiate and carry out extended learning activities requiring multiple sources and resources to complete. Skill Set #3 is an area of the curriculum ripe for differentiation. Some students might work independently, while others work with peers or mentors. A "menu" of tasks, framed by increasing complexity of content and scope, might be provided that offers students choice and voice as to what they are most interested in learning in greater depth. Students in advanced courses might have more emphasis on Skill Set #3; however, all courses should expose students to times when learning is more student-directed. Newmann, King, and Carmichael (2007) call this kind of learning "authentic intellectual work," which they described as complex intellectual work that is socially and/or personally meaningful. Its key components include construction of knowledge, use of disciplined inquiry (e.g., following a discipline-specific research process from start to finish), and products that have value beyond school.

Other related skills in Skill Set #3:

- Through **disciplined inquiry**, students demonstrate deeper understanding and extended thinking (DOK 4) by building upon prior knowledge to investigate novel problems and complex ideas of their own design. Disciplined inquiry requires that students sustain and monitor their planning and progress as they conduct investigations/projects, determine credibility and validity of sources, and synthesize information to create new models, approaches, insights, or alternative solutions. They may do this alone or with others, which is often the optimal way to provide these opportunities for most students.

- In the "real" world, authentic intellectual work relies on sophisticated forms of **elaborated communication** for both conducting the work and presenting its results (e.g., new knowledge). Elaborated communication extends Skill Set #1, making complex use of verbal, symbolic, and visual information to clarify, elaborate on, and defend claims and information. This skill goes far beyond recall of terms and concepts learned in Skill Set #1 to interpreting deeper and more symbolic meanings (DOK 3 or DOK 4) underlying abstract ideas. Digital literacy and technology have a role in providing the tools and means for elaborated communication.

Digital literacy and technology have a role in providing the tools and means for elaborated communication.

- **Creative-productive thinking** is the opposite of—and balances—critical thinking. While the purpose of critical thinking is to analyze (break things apart) and build schema, creative thinking creates new schemas and insights by changing the "system" to make it work better (DOK 3–4). Productive thinking often involves a back-and-forth tension between evaluative critical thinking and innovation. Transferable knowledge can help students view a situation or topic from new perspectives, and not only encourages risk taking and flexible thinking behaviors, but expands the ability to construct (rather than just reproduce) knowledge.

For most students, these skills will not develop independently or by chance, but they can be nurtured. Studies of authentic intellectual work in grades 3–12 found that, across the content areas and regardless of race, gender, or socioeconomic status, students who experienced instruction that promoted these skills demonstrated higher achievement than students who experienced more traditional curricular approaches (Newmann, et al.). While this third skill set goes farther than most expectations for college and career readiness, it articulates essential abilities that successful adults in all walks of life regularly deploy.

Student-Centered Learning as One Approach to College and Career Readiness and Life-Long Learning

Developing each of these CCR skill sets within your K-12 program will help students become successful, self-directed, autonomous learners across all content areas. Collectively, the skills serve as research-based indicators of a more student-centered approach to teaching and learning, and provide a rationale for redefining the roles of 21st-century students and teachers and the need for major educational program shifts.

The CCR Framework offers one curricular approach in support of the acquisition of rigorous academic content and preparation in becoming independent thinkers with both the skills and perseverance needed to engage in authentic intellectual work. For these skills to achieve their promise, however, educators and school systems must systemically embrace all three, rather than cherry picking or teaching some skills, some of the time. Systemic integration of academic content and the three CCR skill sets requires long-term approaches that:

1. overhaul curriculum structure, design, and assessment;
2. reshape learning environments, learning tasks, and day-to-day instruction; and ultimately
3. shift the roles of students and teachers in the learning and assessment processes.

Student-Centered Learning

In contrast to more traditional, adult-directed approaches to instruction, SCL adheres to four broad principles:

1

Learning is personalized:
Each student is well known by adults and peers and benefits from individually paced learning tasks, tailored to their needs and interests. Collaboration with others and engaging, authentic, increasingly complex tasks deepen learning.

2

Learning is competency-based:
Students move ahead when they demonstrate competency, and they have multiple means and opportunities to do so. Differentiated supports ensure that all students have what they need to achieve college and career readiness goals.

3

Learning takes place anytime, anywhere:
Students learn outside the typical school day and year in a variety of settings, taking advantage of learning technologies and community resources, and receiving credit for learning, wherever it happens.

4

Students exert ownership over learning.
Students understand that they improve by applying effort strategically. They have frequent opportunities to reflect on and understand their strengths and learning challenges. They take increasing responsibility for learning and assessment, and they support and celebrate each other's progress.

(NMEF, 2013)

Student-centered learning (SCL) has great potential for systemically operationalizing these college and career readiness skill sets, so that educators and schools can successfully prepare students for whatever pathways they may take. Table 2 summarizes some of the SCL practices that provide entry points for systemic implementation.

Table 2: Interrelated Cross-Cutting College and Career Readiness Skills & Thinking Behaviors with Supporting Student-Centered Learning (SCL) and Assessment Practices

Skill Set #1 **Ability to Tackle Cognitively Demanding Learning Tasks**	**Why are they important?** Cognitive skills and processes closely connected to the academic rigor implied in CCR content standards	• SCL uses a variety of ongoing formative assessments to monitor learning and tailor instruction to promote learning and self-reflection • SCL complements traditional assessment with performance assessments, which require deeper understanding, and/or analysis and evaluation of a body of work in portfolios, which promotes growth over time • Teachers analyze student work so they can develop more effective assessments of deep thinking, adjust instruction, and provide descriptive feedback to students
Skill Set #2 **Ability to Develop Independence as a Learner**	**Why are they important?** Critical skills and dispositions for personal development, managing complex tasks, and essential for success in college and careers	• SCL capitalizes on student strengths and has the flexibility to focus on particular needs • SCL addresses the emotional aspects of learning by nurturing positive relationships, teaching emotional regulation skills, and providing shelter from harmful stresses • SCL supplements formal assessment with individualized measures (self- and peer-assessment, individual learning plans) that promote self-regulation, self-monitoring, and development of metacognitive skills
Skill Set #3 **Ability to Initiate, Sustain, Extend, and Deepen Learning**	**Why are they important?** Context-specific skills needed for success in high-level, advanced courses (extended learning, research, etc.) and in most careers and leadership	• SCL empowers students to plan and engage in active, discovery-based learning experiences that are relevant to their lives and learning goals • SCL incorporates a variety of nontraditional learning experiences, such as afterschool enrichment, field work, internships, independent studies, and service learning • SCL expands traditional assessment practices to include exhibitions, Capstone projects, graduation portfolios, and other demonstrations of mastery to authentic audiences

About the Author

Karin Hess, president and founder of Educational Research in Action, is a former classroom teacher and school administrator. Dr. Hess is nationally recognized for her research and work with performance and formative assessment, cognitive rigor, and learning progressions. She can be contacted through her website, www.karin-hess.com.

APPENDIX

Using the College & Career Ready Self-Inventory for School Assessment or PLC Teams

As schools move toward implementing approaches that promote deeper learning and foster essential college and career-readiness skills and behaviors, their first step is to self-assess current programs and curricula. The questions in this self-inventory are designed to guide analyses of courses, learning opportunities, or school-defined competencies (e.g., graduation) by examining curriculum, instructional practices, and local assessment systems.

One way to explain how the self-inventory might be used is with a possible scenario and sample inventory template. In this scenario, grade-level and special subject teams meet to begin an analysis of curricular opportunities for all students. Their goal is not to produce a detailed analysis of current curriculum and assessments, but to capture and record where there is general agreement about learning opportunities across the curriculum for deeper and more independent learning. Administrators and team leaders will use the preliminary grade-level and special subject-area reports to prioritize and plan for the time and resources needed to continue the work, both short-term and long-term.

A CCR Self-Inventory Scenario

The K-8 grade level teams at each school in a district have been asked to examine current programs and practices in order to identify areas in the district curriculum and assessment system where they feel they are providing opportunities for students to develop deeper thinking, as framed by these questions:

CCR Skill Set #1: What opportunities are there for all students to Tackle Cognitively Demanding Learning Tasks?
CCR Skill Set #2: What supports and opportunities are there for all students to Develop Independence as Learners?
CCR Skill Set #3: What opportunities are there for all students to Initiate, Sustain, Extend and Deepen Learning?

Preparation: Teachers have already had preliminary readings and work with DOK, a short presentation on the CCR Framework, and an opportunity to use PLC time to discuss and clarify the scope and intent of each CCR Skill Set. Some teachers are clearly a bit nervous about what is being proposed for all students and the time it could take to revise the curriculum or assessments once areas of need are identified. The initial meeting is organized by administrators as a full day designed for each grade level team to meet and begin to examine current practices. Because special subject teachers (e.g., art, music, PE, world languages, technology) serve many grade levels, their first meeting will be used to begin to tease out any common areas of the curriculum across programs or grades (e.g., a spring musical), as well as their own programs, by grade level. It is acknowledged that this will likely take more than one meeting for special subject teachers to identify and integrate their feedback with each grade-level report of findings. Special educators, speech pathologists, and ELL, guidance, and other support staff have been asked to decide how they might "divide and conquer" in order to participate so that each initial grade-level team meeting (K-8) has some input from these areas.

The goal for the first meeting is not to produce a detailed analysis of current curriculum and assessments. Each team will capture and record where there is general agreement about learning opportunities across the curriculum for deeper and more independent learning. Each grade level team brings several things with them that they feel will help them answer the CCR questions: curriculum documents, sample units of study or project outlines with performance tasks and scoring rubrics, project artifacts, etc. Once they list each content area for review on the self-Inventory template, they identify a facilitator/timekeeper and a recorder and begin their discussions. Teams structure their time so that at least an hour will be devoted to summarizing possible next steps. Administrators and team leaders will use these preliminary grade-level and special subject area reports to prioritize and plan for the time and resources needed to continue the work.

A grade level sample (from the grade 5 team) reflects some of what they have identified in their review:

- Use of performance assessments is "uneven" across subject areas. That might be OK if all students have ample opportunities.
- Often deeper/critical thinking is only addressed in class discussions and not actually assessed in some content areas.
- Time management skills are primarily teacher-directed or only provided for struggling students when they fall behind. The team is not sure how to change this if some students lack the motivation to self-regulate or work independently.
- Some members of the team are energized by the ways they might address identified gaps, while others are cautious about making any major changes too quickly.

College & Career Ready Self-Inventory for School Assessment or PLC Teams

As schools move toward implementing approaches that promote deeper learning and foster essential college and career-readiness skills and behaviors, their first step is to self-assess current programs and curricula. The questions are designed to guide analyses of courses, learning opportunities, or school-defined competencies (e.g., graduation), examining practices and assessments.

List Subject Areas, Courses, Units of Study, Projects, or Competencies (for each Grade Level) Grade 5	**CCR Skill Set #1: What opportunities are there for all students to Tackle Cognitively Demanding Learning Tasks?** Indicate Frequency, Strengths, Formats		**CCR Skill Set #2: What supports and opportunities are there for all students to Develop Independence as Learners?** Indicate Systemic (rather than idiosyncratic) Supports Which are emphasized for all? Or for special populations?			**CCR Skill Set #3: What opportunities are there for all students to Initiate, Sustain, Extend and Deepen Learning?** Are expectations and opportunities consistent across classrooms/courses? Which are emphasized for all? Or for special populations?		
	Assessments of Domain-Specific Communication?	Assessments of Critical Thinking/ Problem Solving?	Integrating Organizational & Study Skills	Infusing Metacognition Practices	Developing Academic Perseverance	Transfer and Construction of New Knowledge	Disciplined Inquiry Practices	Creative-Productive Thinking
Math	Pre-Mid-Post Performance tasks in each unit of study/see task rubrics		Special Ed and ELLs only			G&T students only		G&T students only
ELA	Unit tests	Reading-Writing workshop, writing portfolio	Peer conferencing—all students	Quarterly portfolio reflections—all students	Peer conferencing—all students	G&T students only		G&T students only
Social Studies	Unit tests	Class discussion only	Explorers unit-group research-all students				Explorers unit-group research-all students	
Science	Unit tests	Quarterly investigations	Special Ed and ELLs only					
Art	Teacher-Student conferencing	Ongoing, not assessed	Teacher directed	Peer- & self-critiques			Developing artifacts for art portfolio	
Music	Unit quizzes, Performance		Teacher directed					
PE/Health	Unit quizzes, Performance	Class discussion only						
Community Service Projects		Class project	Teacher directed for Class project	Community mentor feedback			Class project—all students	
Notes & Next Steps	What might we target first? Building in more performance tasks and/or metacognitive skills across content areas beyond ELA, math Longer-term? Not sure. Maybe look at Speaking-Listening across subject areas Where are we lacking coherence and consistency? We're not sure whether all students can think deeply or work more independently. What are the implications for resources or professional development needed (e.g., assessment development work)? We'd like to see places where this works, and ask about staffing and successful models. Need help with design/ use of/ time for performance assessments							

College & Career Ready Self-Inventory for School Assessment or PLC Teams

As schools move toward implementing approaches that promote deeper learning and foster essential college and career-readiness skills and behaviors, their first step is to self-assess current programs and curricula. The questions are designed to guide analyses of courses, learning opportunities, or school-defined competencies (e.g., graduation), examining practices and assessments.

List Subject Areas, Courses, Units of Study, Projects, or Competencies (for each Grade Level)	**CCR Skill Set #1: What opportunities are there for all students to Tackle Cognitively Demanding Learning Tasks?** Indicate Frequency, Strengths, Formats		**CCR Skill Set #2: What supports and opportunities are there for all students to Develop Independence as Learners?** Indicate Systemic (rather than idiosyncratic) Supports Which are emphasized for all? Or for special populations?			**CCR Skill Set #3: What opportunities are there for all students to Initiate, Sustain, Extend and Deepen Learning?** Are expectations and opportunities consistent across classrooms/courses? Which are emphasized for all? Or for special populations?		
	Assessments of Domain-Specific Communication?	Assessments of Critical Thinking/ Problem Solving?	Integrating Organizational & Study Skills	Infusing Metacognition Practices	Developing Academic Perseverance	Transfer and Construction of New Knowledge	Disciplined Inquiry Practices	Creative-Productive Thinking
Notes & Next Steps	**What might we target first? Longer-term?** **Where are we lacking coherence and consistency?** **What are the implications for resources or professional development needed (e.g., assessment development work)?**							

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