“[A]spirations for deeper learning pose a multi-pronged challenge to current practice. At minimum, they suggest the importance of a long-called-for but thus far unachieved increase in the cognitive demand of the tasks that most students, particularly high-poverty students, are asked to complete.

From this vantage point, the kind of rigor present in the Common Core... is a critical step for realizing deeper learning because those standards increasingly call for fewer topics, more depth on each topic, and more opportunities to integrate knowledge and make conceptual connections than previously has been the case.”

—Jal Mehta and Sarah Fine

**Brief description:**

- These MyWays competencies are defined as “deep English learning and application across settings, aligned with the Common Core and similar standards,” and “deep math learning and application across settings, aligned with the Common Core and similar standards.”

- Addressing the **ELA Core** includes helping students:
  - Master key components of the **ELA standards**: reading (text complexity, growth of comprehension); writing (text types, responding to reading, research); speaking/listening (communication, collaboration); and language (conventions, effective use, vocabulary).
  - Develop the abilities to interpret and create a range of text types, including fiction and informational text.
  - Develop the seven “**capabilities of the literate individual**”, including demonstrating independence, comprehending as well as critiquing, and coming to understand other perspectives and cultures.

- Addressing the **Math Core** includes helping students:
  - Master key components of the **math standards**: number and quantity; algebra; functions; modeling; geometry; statistics; probability.
  - Demonstrate procedural skill and math understanding.
  - Develop varieties of expertise using the eight Mathematical Practices, including making sense of problems and persevering in solving them, and reasoning abstractly and quantitatively.

**Where to look for ideas:**

- Jeff Heyck-Williams, Director of Curriculum and Instruction at **Two Rivers**, a high-performing, competency-based EL Education school in Washington, DC, transformed math learning at the school through a culture change that leverages many forces, including the Common Core and its emphasis on conceptual knowledge and mathematical habits of mind. See **Problem-based Tasks in Math Deep Dive**:
  - “sharing the CCSS mathematical practices... helps us name important expectations, such as making sense of problems, persevering, and effectively critiquing one another’s reasoning” and the workshop “Cultivating a Love of Math in the Era of the Common Core.”

- High Tech High supported its teachers’ transition to Common Core, asserting that doing so “helped to structure our conversation”; it also provided resources to support this transition.

- See how projects can inspire and address Common Core ELA and math standards by using the **Buck Institute for Education’s Project Search** offering, which you can refine by school network and Common Core topics.

**Additional resources as food for thought:**

- Bob Lenz, et al.’s **Transforming Schools Using Project-Based Learning, Performance Assessment, and Common Core Standards** is an excellent source for how to “honor the whole” learning experience while covering standards.

- **Crosswalk Analysis of Deeper Learning Skills to CCSS**, by David Conley and EPIC, for the Hewlett Foundation.

- Learning progressions and rubrics for CCSS ELA and Math are available in SCALE/SCOPE/CCSSO’s **Performance Assessment Resource Bank**.

- Some CCSS ELA performance tasks, rubrics, and sample student work are available in the **EPIC College & Career Readiness Task Bank**.

- Check out this **video playlist** of deeper learning and CCSS from the Teaching Channel and the Hewlett Deeper Learning Network.

**FOR MORE RESOURCES**, see the **MyWays website**.
“[M]uch is made of the need to help our students grow up into adults who are creative and innovative. But what does it take to do that? Experts in creativity...think that one of the major wellsprings of creativity consists of the application of the conceptual framework from one field or discipline to the problems being worked on in another field or discipline. That only works, though, for people who have a deep knowledge of both fields.... But where does the deep understanding of the concepts and frameworks from these fields come from? The answer, of course, is the kind of understanding that lies at the heart of a sound education in the liberal arts.”

— Marc Tucker

"The Arts must be at the heart of every child’s learning experience if...they are to have a chance to dream and to create, to have beliefs, to carry a sense of cultural identity."

— James D. Wolfensohn

“Note too that a faithful study of the liberal arts humanizes character and permits it not to be cruel.”

— Ovid

Brief description:

- This MyWays competency is defined as “active learning of core disciplinary concepts and their application in a broad selection of liberal arts and sciences, and language and performing arts.”

- Addressing this competency includes helping students:

  - In science. 1) Develop disciplinary core ideas across four domains (the physical, life, and earth and space sciences, and engineering, technology, and applications of science); 2) understand crosscutting concepts (such as patterns, cause and effect, and stability and change); and 3) engage in practices – the behaviors that scientists engage in when doing scientific inquiry and engineering design (the Next Gen Science Standard’s three dimensions of learning).

  - In social studies. Develop an understanding of key concepts across the subjects of civics, economics, geography, and history (as well as beyond, to anthropology, psychology, sociology). Relate that understanding to social studies themes such as culture; time, continuity and change; individual development and identity; and power, authority, and governance. Approach this by 1) developing questions and planning investigations; 2) applying disciplinary concepts and standards to ensure that teachers understand how to link science standards and core concepts across other disciplines and tools; 3) gathering, evaluating, and using evidence; and 4) working collaboratively to communicate conclusions and take informed action. (See 10 themes in the National Curriculum Standards for Social Studies, and the four process dimensions in the College, Career, and Civic Life (C3) Framework.)

  - In the arts. Develop increasing competence within one or more arts area (dance, media arts, music, theater, and visual arts) through the artistic processes called out by the National Core Arts Standards: 1) creating (generating, organizing, and refining work); 2) performing, presenting, and producing (selecting, developing, and conveying meaning through the presentation of artistic work); 3) responding (analyzing, interpreting the intent of, and evaluating artistic work); and 4) connecting (synthesizing personal experiences to make art, and relating artistic ideas to cultural and historical contexts).

  - In languages. Develop the competence to communicate effectively and interact with cultural understanding in a second language in real-world settings, in alignment with standards such as the American Council on the Teaching of Foreign Languages (ACTFL) “World-Readiness” Standards for Learning Languages. The 11 standards are clustered within the Five C’s goal areas: communication, cultures, connections, comparisons, and communities.

Where to look for ideas:

Science

- Read this Getting Smart blog on the Barrington, RI P21 exemplar school, which boasts a student-led iCreate Lab that develops products to serve local business needs. The author says that the Next Generation Science Standards (NGSS) have helped the school bring the “shift to inquiry-based instruction to their classrooms... Performance expectations are built right into these.”

- The NGSS provide an excellent example of a next gen Content Knowledge approach. Besides the three dimensions of learning mentioned above, the NGSS also uses phenomena as the starting point to raise questions, and is built on the notion of learning as a developmental progression.
Where to look for new ideas: Science, continued from previous page.

- Check out the hands-on (simulated) learning taking place at Harvard Medical School with students from the Urban Science Academy through [HMS MEDscience](http://www.hmsmedscience.org) HS STEM program.
- NGSS plays well with the maker movement.

Social Studies

- **Place-based education (PBE)** serves many disciplines, with social studies as a natural focus. In City High School’s 9th grade Self and Place module, students learn about urban development by investigating Tucson’s city plans. For more, see [Getting Smart’s PBE initiative](http://www.gettingsmart.com/pbeinitiative).
- The National Council for the Social Studies’ C3 framework incorporates many elements of the Content Knowledge approach highlighted in this report: the framework is composed of “deep and enduring understandings, concepts and skills from the disciplines,” and includes an “inquiry arc” with four dimensions. It is also linked to action, interdisciplinary application, and the integration of the arts.

The Arts

- Two Rivers Public Charter School’s video (6m) [Arts Integration: Deepening Understanding of Core Content](http://www.edutopia.org/blog/arts-integration-deepening-understanding-core-content) explores deeply how this leading EL Education school integrates art through the curriculum, including expeditions. Alexandra Eaton (NAfME) writes that music education is what students want and the workforce needs.
- Explore the connection between the performing arts and maker mindsets in this blog by Mary Ryerse, who notes how performing arts “fosters cross-curricular learning and builds an innovation mindset” — combining effort, initiative, and collaboration. Specifically, the notion of the arts developing maker mindsets stood out because, through powerful experiences, students learn that they can take the initiative to create something special.”

Languages

- Howard County Public Schools [built a world language program](http://www.hcpss.org) that targets communication skills and intermediate proficiency for all students by graduation. For dual- and two-way immersion program examples, see these [Edutopia](http://www.edutopia.org) and [Hechinger Report](http://www.hechingerreport.org) blogs.

Additional resources as food for thought:

Science

- In addition to the framework mentioned earlier, NGSS offers the [3 Dimensions](http://www.nationalgeographiceducation.org/3dimensions) video series and a sample science grade-level progression.
- EPIC’s [College & Career Readiness Task Bank](http://www.epiclearning.org) offers science performance tasks, including procedures, student prompts, scoring rubrics, and student work samples.

Social Studies

- Find Next Steps Resources at [C3 Literacy Collaborative](http://www.c3litracy.org).
- See examples of performance tasks and rubrics for history and social studies in SCALE/SCOPE/CCSSO’s [Performance Assessment Resource Bank](http://www.scalableassessment.org).
- EPIC’s [College & Career Readiness Task Bank](http://www.epiclearning.org) offers social studies performance tasks, including instructor procedures, student prompts, scoring rubrics, and student work samples.

The Arts

- The [National Core Arts Standards Matrix](http://www.coreartsstandards.org) provides a unified view of the standards for the five arts disciplines, helping educators throughout the nation work toward common ends by recommending worthy goals for students as they progress.

Languages:

- The ACTFL World-Readiness Standards [encourage equity and access for all students](http://www.actfl.org).

For more resources, see the MyWays website.
Interdisciplinary & Global Knowledge

“What does a new multidisciplinary, integrated curriculum look like? It looks like the real, thorny, and exciting problem solving that engages professionals in their daily work lives. It brings authenticity to students’ workplace.... In their mathematics and health sciences classes, Arthur A. Benjamin Health Professions High School students... learn about the calculations insurance underwriters make, while they ponder a highly relevant question: how do high-risk lifestyle decisions and behaviors affect access to and premiums for health insurance?... Spanish class provides a venue for studying differences in mortality rates and causes of death in Spanish-speaking countries and across ethnic groups in the U.S.”

— ConnectEd

Brief description:

• This MyWays competency is defined as “integrated interdisciplinary thinking and empathetic development of global, cross-cultural, civic, environmental, and economic literacies.”

• Addressing this competency includes helping students:

  • Develop knowledge and skills related to interdisciplinary thinking, such as abilities to recognize the core concepts and the strengths and weaknesses of multiple disciplines; understand and synthesize different perspectives on the same content; and apply approaches from multiple disciplines to real-world problems by integrate existing ideas and generating novel, multi-faceted solutions.

  • Develop the capacity to understand and act on issues of global significance by investigating the world beyond their immediate environment; recognizing perspectives (others’ and their own); communicating ideas effectively with diverse audiences; and taking action to improve conditions.

  • Demonstrate knowledge and understanding of civic literacies (such as understanding governmental processes and exercising the rights and obligations of citizenship); environmental literacies (such as understanding society’s impact on the natural world, and taking individual and collective action on environmental challenges); and economic literacies (such as understanding the role of the economy in a global society, and how to make appropriate personal economic choices).

Where to look for ideas:

• Four-Dimensional Education research cites the following as the most widely applicable future-ready interdisciplinary areas: tech and engineering, bioengineering, media, entrepreneurship and business development, personal finance, wellness (physical and mental), and social systems (sociology, anthropology).

• See Sanborn teacher Donna Harvey-Mosely’s Lessons from a Social Studies Teacher: The Power of Interdisciplinary Work in a Competency-Based School.

• Learn about Finland’s decision to mandate that phenomenon-based (or thematic) learning be used alongside traditional subject-based learning.

• In this EdWeek blog, Heather Singmaster provides a trove of digital tools to help you connect your students to others around the globe and promote action. Asia Society has additional examples of classroom projects.

• The International Baccalaureate model features interdisciplinarity, a global context for learning, and cross-cutting literacies.

• On civic literacies, see these Edutopia and Hechinger articles; on environmental literacy, see the California approach; on economic literacy, see the Council for Economic Education; and on financial literacy, see Report 8’s Practical Life Skills primer.

Additional resources as food for thought:

• Designing Multidisciplinary Integrated Curriculum Units, from ConnectEd, home of Linked Learning.

• SCALE/SCOPE/CCSSO offer interdisciplinarian learning progressions and rubrics in their Performance Assessment Resource Bank.

• Asia Society/CCSSO’s Educating for Global Competence: Preparing Our Youth to Engage the World includes a Global competence matrix in the appendix that maps to a range of subjects.

For more resources, see the MyWays website.
Career-Related Technical Skills

“College and work are not an either/or option. They are intertwined. We truly want to take all levels of students and set them on a pathway that gives them the option to go straight into the workforce better prepared, with industry credentials, and with the skills that can help them earn high wages. This may involve postsecondary education, too — a two-year or a four-year path. And, it may not. We value all pathways.”

— Shane Haggerty, Tolles Career Center, Ohio

Brief description:

• This MyWays competency is defined as the “integration of academic, technical, and employability skills in at least one existing career area or emerging problem space of personal interest.”

• Addressing this competency includes helping students:
  • Gain knowledge and skills in one or more career clusters (see Advance CTE’s Common Career Technical Core (CCTC) 16 clusters, from Health Sciences to STEM, each with specific pathways such as Therapeutic Services and Engineering & Téch).
  • Know and be able to demonstrate competencies within a cluster or pathway; those competencies include necessary academic knowledge; demonstration of practices and use of systems; understanding roles within an organization; evaluating hazards and ethical issues; and familiarity with potential careers.
  • Refine, through developmental experiences, broad career-ready skills that employers expect (and that overlap with skills required for higher education and life). See Advance CTE’s 12 Career-Ready Practices, such as acting as a responsible and contributing citizen and employee; considering the environmental and social impact of decisions; and modeling integrity, ethical leadership, and effective management.

Where to look for ideas:

• CTE pairs well with competency-based learning efforts. The Every Student Succeeds Act (ESSA) facilitates the implementation of high-quality CTE through use of a number of approved funding routes.

• P-TECH has more than 60 schools and is showing highly promising results while costing no more than other high schools. It is a grade 9-14 model, where students take college courses beginning in grade 10 while completing high school, and work their way through industry-recognized associates degrees at their own pace. Graduates are first in line for positions with IBM and other companies. It includes mentoring, paid internships, and rigorous academics and workplace skills.

• California’s Linked Learning (LL) is a proven approach that integrates rigorous, college-ready academics with sequenced, high-quality CTE, work-based learning, and support to help students stay on track. The LL website offers an excellent summary of its core components, guiding principles, and the characteristics of successful LL pathways.

• Leadership High School Network focuses on developing leaders in architecture, construction, and engineering (ACE), health, technology, and entrepreneurship.

• National Academy Foundation offers career academies in finance, hospitality, IT, engineering, and health.

• Mature practice from other countries with “dual systems,” where, starting at age 15 or 16, most young people learn about, prepare for, and experience the workplace. In Switzerland, for example, 70% of teenagers move between workplace and school and are paid for three-year apprenticeships.

A few additional resources as food for thought:

• Creating Pathways to Prosperity: A Blueprint for Action and related resources from Jobs for the Future.

• MDRC’s New Pathways to Careers and College: Examples, Evidence, and Prospects provides an excellent overview of dual college and career initiatives. See Appendix A’s comparative analysis of the top 12 models.

• Advance CTE’s CCTC includes knowledge and skills, plans of study, and relevant credentials for its career clusters and pathways.

• Videos: In Linked Learning: The Documentary, see The Story of Whoa (2m) and Pathways Overview (1m)

For more resources, see the MyWays website.
Endnotes


2 The English Core competency description draws on the Common Core ELA standards, as linked in the section.

3 The Math Core competency description draws on the Common Core Math standards, as linked in the section.


5 James D. Wolfensohn, former chairman of The Kennedy Center, quoted on the website of Arts for Learning, the Indiana Affiliate of Young Audiences.

6 Ovid, Epistulae Ex Ponto (Black Sea Letters), II, ix, l. 47.

7 The Science, Social Studies, Arts, Languages competency description draws on the disciplinary curriculum standards and other documents from national disciplinary associations, as linked in the section.


11 The civic, environmental, and economic elements of the Interdisciplinary & Global Knowledge competency description draw on the Partnership for 21st Century Learning (P21) frameworks elements on civic literacy, environmental literacy, and financial, economic, business, and entrepreneurial literacy.

12 Fadel, Bialik, and Trilling, Four-Dimensional Education, p. 94.
