Competency-Based Learning

- Students advance upon mastery of the subject.
- 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 the application and creation of knowledge, along with the development of important skills and dispositions.
Prerequisite Skills and Capabilities for College and Career Readiness

- Proficiency in reading a wide range of materials and informational texts;
- Fluent writing in several modes, most notably expository and descriptive;
- Quantitative literacy through algebra and including geometry, combined with the ability to understand and interpret data;
- Comprehension of the scientific method and organization of knowledge in the sciences;
- Awareness of social systems and the study of these systems;
- Basic proficiency in a second language;
- Basic awareness of other cultures; and
- Experiences in and appreciation of creative and expressive arts.

Source: Educational Policy Improvement Center, 2013
Effective teachers and school leaders are the most critical in-school factors for improving outcomes for students. Now more than ever, teacher and leader development must be appropriately integrated within the framework of college- and career-ready standards, personalized instruction, and richer assessments to serve all students well. While teachers and education leaders strive to bring richer forms of learning experiences into their classrooms, they must also grapple with how to advance students based on demonstrated mastery versus the traditional units of time spent physically seated in a class.

Given the growing national interest around competency-based learning, this report examines efforts under way to redesign high schools in New Hampshire. The Granite State offers the benefit of relatively long-term experience in working with school districts to design competency-based systems, and its student and educator population is easily observable. While New Hampshire is relatively small—a little over 1.3 million residents in 2011—it has 175 school districts and depends on local implementation for any changes to the education system. This report features information gathered from personal visits to two New Hampshire high schools that have transitioned to a competency-based system, including an examination of their pioneering work and the impact on educators’ roles and instructional practices.

In 2005, New Hampshire undertook a sweeping high school redesign initiative that included the introduction of competency-based learning as a means to determine student progress. This report reviews New Hampshire’s efforts to redesign high school education, with a focus on the teachers and leaders charged with engineering new approaches to improving student achievement, especially competency-based learning.

New Hampshire’s experience, although still evolving, holds tremendous promise as an approach for improving student learning outcomes in a system that encourages advancement by demonstrating competency instead of completing seat time.

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New Hampshire was the first state in the nation to eliminate the long-standing Carnegie unit—a measure of the amount of time a student has studied a subject—and replace it with a competency-based system that allows students to demonstrate mastery of course content without regard for seat time. In 2005, in order to create opportunities for local schools to experiment with competency-based models, New Hampshire began actively transitioning from a time-based system. This policy change occurred within the context of a rapidly shifting economic environment in which high-wage, medium-skilled jobs were disappearing. At the time, more than half of the projected new jobs in New Hampshire required college-educated workers. However, the state was nineteenth in the nation in the rate of postsecondary enrollments and relied on the immigration of skilled workers to fill the most lucrative jobs.

A 2005 report on the states’ high schools painted a picture of schools as places where students were “disenfranchised both psychologically and academically and lacking in real-world connections.” The report urged teachers, as part of professional learning communities, to assume a critical role in changing the education system for students. Criticizing commonplace regimens bound by course schedules and traditional classroom teacher roles, the report concluded that “as educators, we need to make sure we are not shutting doors on kids” and called for

- personalized learning that could happen anytime, anywhere;
- greater student engagement in authentic learning opportunities; and
- high standards that encompass the range of knowledge, skills, and dispositions graduates need to succeed as productive members of their communities.

The urgency to redesign high schools mounted with widespread recognition of the dire economic consequences facing young adults who lacked a high school diploma and/or some level of postsecondary education. Beginning in 2006, Governor John Lynch challenged districts to improve high school graduation rates and eliminate all dropouts by 2012. Following the call to action, leaders from the New Hampshire Department of Education (NHDOE) gathered input from more than 600 representatives from nearly every high school in the state and a number of interested groups. A consensus emerged to build the redesign around the essential learning outcomes that students must have upon graduating from high school to be successful and contributing citizens in the twenty-first century. As the NHDOE stated,

Every student deserves a course of study that allows him or her to learn in a deep, meaningful, and practical way. Not only do students need to know

- facts, they need to know how to apply those facts to new situations, how to solve problems, and how to expand their knowledge and opportunities.

A major development occurred in 2005 when the NHDOE revised the state’s Minimum Standards for School Approval. The new standards called for school districts to replace the Carnegie unit with a system that requires students to master essential course-level competencies as determined by a performance assessment. To facilitate the transition, districts had the option of defining the school year based on the number of hours of instructional time each year rather than the traditional 180-day calendar. Districts were encouraged to develop more innovative pathways whereby students could fulfill credit requirements by accessing extended learning opportunities at various times and places not necessarily within the school walls. The goal of the revised standards was to ensure that

- each student would receive a rigorous, personalized education;
- students would fulfill credit requirements by demonstrating mastery of course-level competencies; and
- local educators and community stakeholders would lead the way in developing new high school delivery models.

The responsibility of defining course competencies fell to districts and schools and required significant changes around teaching and learning.

First, educators would need to be much more explicit about what content to teach and what students needed to learn.

Second, they would need to mobilize intense and sustained improvements in instructional practice and learning environments by building professional learning communities.

Third, community and school leaders would need to draw resources from inside and outside the school to connect students’ learning to real-world settings. Ultimately, principals and teachers would have to claim responsibility for the close-in work of reshaping classroom teaching and learning in relation to explicit student learning goals.

States and localities have rarely engaged in the kind of deep-level work that is at the core of the design and implementation of a competency-based system. For its part, the New Hampshire state government designed enabling policies codified in the revised standards for school improvement, developed technical advisories on alternate pathways to high school graduation, and provided
New Hampshire’s Dimensional Elements of College and Career Readiness

To guide local development of competencies, the New Hampshire Department of Education developed the Competency Validation Rubric, which frames college and career readiness in terms of the knowledge, skills, and dispositions students need to succeed beyond high school. Students must demonstrate competency in the understanding and application of content knowledge. Course-level competencies should emphasize the cognitive skills that students need to extend and apply to content learning and incorporate the socioemotional behaviors—or “habits of mind”—associated with success in college and a career.

**Knowledge**

Knowledge refers to mastery of rigorous content knowledge across multiple disciplines (including but not limited to reading/language arts and mathematics) that serve as a foundation for all learning.

**Skills**

Skills refers to the higher-order skills that students need in order to extend and apply rigorous content knowledge in the ways that evidence indicates are necessary for success in college and a career. These skills include, but may not be limited to, the ability to think critically, solve problems, communicate effectively, collaborate with others, and be self-directed in one’s own learning.

**Dispositions**

Dispositions refers to socio-emotional skills or behaviors (sometimes referred to as “habits of mind”) that associate with both college and a career. These include non-cognitive, social-emotional, and other dispositions, such as self-regulation, persistence and tenacity, adaptability, and the ability to plan and manage one’s work and time.


Support through professional learning centers and NH e-Learning for Educators, called OPEN NH. This online professional educator network supports high school redesign efforts by offering courses such as developing competencies, using Web 2.0 tools for twenty-first-century learning and teaching, and engaging students with digital portfolios.

At the same time, the state recognized that major change would have to come from within local systems. In addition to defining course-level competencies, school districts would need to decide on appropriate assessment methods and define the sufficiency of evidence for students to demonstrate mastery of course competencies. High schools received the flexibility to harness local resources and utilize technologies in developing innovative, personalized pathways that allow students to have different options for completing course work and staying on track to graduation.

The NHDOE’s support of policies that encourage competency-based learning and different approaches to professional development spurred substantial innovation across the state. The department’s guidance promoted shared leadership among teachers, students, and communities in setting the vision and direction of the school and called for new approaches to professional development to enable teachers to “step outside the box of the familiar.”

Local high school redesign initiatives yielded positive results at specific sites and demonstrated that a competency-based model is possible and can produce increased student learning and graduation rates. To mobilize strong implementation across districts, the New Hampshire State Board of Education set a three-year window for districts to establish alternate pathways for students to earn a meaningful diploma. By School Year (SY) 2008–09, all local school boards in the state had to ensure that students could earn high school credit by demonstrating mastery of required course competencies.

To maximize educator effectiveness and capacity, Virginia M. Barry, PhD, commissioner of education, is leading the design of a comprehensive teacher evaluation framework with extensive assistance from practitioners, higher education professionals, and other stakeholders. The framework includes the four pillars of

- pre-service education;
- educator induction with mentoring;
- professional development; and
- teacher and leader evaluation.

State and local educational leaders are collaborating to develop coherent teacher development systems that use appropriate formative data to improve teaching quality within a professional learning community environment.
Early Adopter High Schools: Sanborn and Spaulding

To observe firsthand how these state policies are being implemented in New Hampshire’s high schools, the author traveled to the southeastern part of the state to visit Sanborn Regional High School and Spaulding High School. Sanborn serves 754 students in grades nine through twelve from three socially and economically diverse communities—Kingston, Newton, and Fremont—where most residents work in the local seacoast area. Spaulding has a student population of 1,701 students in grades nine through twelve from the tri-city region, which includes Rochester, Somersworth, and Dover. About 10 percent of Sanborn students and 23 percent of Spaulding students receive free or reduced-price lunch.

Over the past several years, these high schools have been deeply involved in making the transition to a competency-based system. Principals Brian Stack of Sanborn and Ron Seaward of Spaulding embraced the opportunities and flexibility the new state policies provide to achieve a common purpose. Both are leading a complex process to redesign school structures and competency-based learning and assessment that will afford every student a meaningful and rigorous learning experience. These high school leaders share with their faculty a passionate commitment to placing students at the center of the learning process and finding ways for students to pursue their interests and passions inside and outside the traditional educational environment.

The response and role of teachers and teacher leaders were a critical part of implementing a competency-based learning system that embraced being able to “learn in a deep, meaningful and practical way.” The initial phase required teams of educators—including subject-area teachers, curriculum specialists, and special educators working within a single high school or throughout the district—to establish approximately three to five competencies per course that students must demonstrate to earn credit. These are accompanied by rubrics that link levels of learning with the types of questions and assessments students will need to complete to demonstrate mastery. Performance tasks requiring lower levels of cognitive demand call for students to identify, illustrate, and calculate. At the upper levels, students must analyze, design, and apply concepts. At the lower levels, for example, students would be required to identify three ways in which humans impact and alter the stability of ecosystems; at the upper levels, they would analyze the impact of human disturbance on ecosystems using a case study. To show a course competency, students must demonstrate deeper learning, which includes the mastery of academic content and the application of knowledge and skills in novel and non-routine ways. The focus shifts from content coverage to performing curricular tasks, assessing learning, and providing feedback on students’ progress toward mastery. Even though students must meet a specified proficiency level on formative and summative performance assessments, they receive recurring and varied opportunities over different time periods to acquire and demonstrate the knowledge and skills they need to earn course credit.

Designing these competencies required a shared understanding of expected performance within and across subject areas and agreement about what would constitute sufficient evidence of student mastery. The competencies called for inquiry-based approaches that encourage doing with understanding rather than focusing on broad content coverage and recall of discrete facts. Their design and implementation invokes ongoing discussion and inquiry about student work and how content and curricular activities can reinforce each as part of interdisciplinary projects.
To ensure common expectations for student learning and performance, teachers communicate the expectations for mastering course competencies to students and repeatedly refer to them during instruction and assessment.

Along with the newly developed course competencies and assessments, both Sanborn and Spaulding instituted new grading policies based on a growing body of research that shows that course performance, rather than standardized test scores, matters most in predicting high school and college success. Instead of a zero or an F, students receive a rating of “Not Yet Competent” or “Insufficient Work Submitted.” Students who receive one of these ratings have additional opportunities to master the subject matter and skills related to a specific competency rather than having to repeat the entire course. To further support this change in course performance, teachers use “second-chance assessment opportunities” and common formative assessments to make instructional adjustments based on students’ knowledge and skills. Both Sanborn and Spaulding use a “rolling grade” system that provides multiple snapshots of students’ progress toward course proficiency. In addition, students are given separate ratings for academic dispositions that are essential for deeper learning and success in school and beyond. Students receive ratings on their abilities to self-monitor, collaborate, set goals, and persist in meeting challenging goals—called “Twenty-first Century Expectations” at Sanborn and “Student Professionalism” at Spaulding. These important competencies are shown to have a direct positive relationship to students’ school performance as well as to future academic outcomes.

Principals Stack and Seaward voice similar perspectives on reinforcing what matters most through the school’s grading policies. The new grading system includes distinct ratings of student attainment of course competencies, based on common rubrics for assessing student growth and ability to set goals, organize their time, and self-assess their work. Resetting grading structures aligned to a competency-based model is essential to fostering student engagement and commitment in pursuing challenging learning goals. It also requires a strong professional development effort to help teachers transition to new roles as coaches, mentors, and facilitators of student learning. To empower teachers to become more active designers of curriculum and student-centered learning environments, they must have extensive opportunities to learn and improve their practices.

Leadership teams including subject-area teachers, curriculum specialists, instructional and assessment coaches, and special educators at each high school examined the meaning of grades, the feedback they provide, and their impact on students’ motivation and opportunity to learn. Stack and Seaward both strongly challenge fundamental assumptions about the legitimacy of using failing grades to punish poor performance.

Under the new policies, students get help when they need it, receive different types of support, and play an active role in designing experiences that accelerate and extend their learning. Spaulding students who do not achieve competency within the expected amount of time are guided in a process of learning using a range of face-to-face or digital options to address knowledge and skill gaps. For example, recovery systems using the online learning system PLATO have been reconfigured for competency completion. Students have reported that the adapted versions are more rigorous and aligned to course content than the initial credit recovery programs. Both schools reported significant drops in course failures and dropout rates since implementation began in SY 2009-10.

Starting in SY 2009-10, Sanborn phased in the competency-based system with a new cohort of students, beginning with the freshman class. Spaulding instituted the system in all grades. In both high schools, students undertake cross-disciplinary assignments that require a mix of independent work, teamwork, and study groups to complete. Recognizing that students progress at different rates, the schools provide multiple and varied opportunities to demonstrate progress and receive ongoing feedback. Students at Spaulding reported that as the expectations and demands for course work increased, they had to calibrate differently what effort would be required to advance. Even as the specter of failure receded, the students reported that the work was far more challenging. Yet they welcomed the increased rigor and the opportunities to interact with teachers and their peers in ways that deepened their understanding and challenged their ideas.

Building on competency-based advancement, the no-zero policy set in motion the design of personalized instructional models and pathways that would embrace students’ experience and identity. For example, Spaulding offers students an extensive set of program options, including

- dual enrollment;
- Advanced Placement courses;
- “running start” programs through community colleges and technical schools;
- adaptive online, blended, and distance learning options through virtual high schools; and
- learning academies.
In addition, students may select from an array of career and technical education programs, independent study, career internships, work study, and community education programs.

Expanding Professional Learning Communities That Support Competency Advancement

In addition to providing a similar array of programs, Sanborn also created small learning communities to provide students with more personalized and coherent learning experiences based on team-wide, course-level competencies. Based on research linking the social capital that educators produce through collaboration to gains in student achievement, Sanborn launched a freshman learning community (FLC) under the leadership of Assistant Principal Ann Hadwen. A core group of teachers, including English language arts, social studies, science, mathematics, technology, information literacy, and wellness instructors, work collaboratively to develop course competencies, design integrated units of study and common performance assessments, monitor students’ individual progress, and provide support as needed.

The Sanborn FLC connects teachers across subject areas, focuses attention on how to integrate competencies into daily teaching practices, and develops a common understanding of what student success looks like. To advance student learning to high levels, teachers continuously answer these four essential questions:

1. What do students need to know and be able to do?
2. How will we know when they have learned it?
3. What will we do when they have not learned it?
4. What will we do if they already know it?

The emphasis on constant learning and collective responsibility for every student’s progress has challenged educators to reflect on their practice and its impact on student learning. The effort produced improvements in student engagement and learning. Over a five-year period, the number of reported discipline issues for ninth-grade students at Sanborn decreased, going from 433 in SY 2007–08 to 295 in 2008–09, 190 in 2009–10, 129 in 2010–11, and just eighty-four in 2011–12. The number of course failures for freshmen declined as well, dropping from fifty-three students in SY 2007–08, prior to the start of the pilot program, to nineteen in 2008–09, fewer than five in 2009–10, and two in 2010–11. Once the program was fully implemented, the total number of overall course failures for freshmen decreased from seventy-two in SY 2010–11, prior to the start of the full FLC program, to just thirty in 2011–12.

Building on the FLC pilot, Sanborn Assistant Principal Turmelle will lead the phase-in of a sophomore learning community comprised of social studies, English, and science classes. In subsequent years, juniors and seniors will have the option to participate in “career pathway” learning communities to connect student learning and career goals with real-world experiences. Teams of teachers work interdependently to improve students’ engagement, ownership of learning, and mastery of course-level competencies. These professional learning communities have the autonomy to collectively define course work, determine the duration and location of instruction, and create innovative approaches to interdisciplinary, applied learning. As Principal Stack says,

“In most traditional high schools, both time and instructional supports are closely tied to the school schedule, which is often extremely rigid. If a school lacks flexibility, answering questions about how to intervene or provide students with extended learning opportunities to meet their learning needs becomes difficult, if not impossible.”

Moving from delivering content as an autonomous act within the traditional classroom (what’s taught) to a collective, results-orientation environment (what’s learned) calls for educators to take on new roles as designers, facilitators, coaches, and mentors. Effective teachers facilitate the mastery of content and skill development, and identify and employ appropriate strategies for students who are not attaining mastery. Achieving these improvements in both the learning process and student outcomes requires comprehensive and consistent teacher collaboration.
Unfortunately, as documented in the 2009 MetLife Survey of the American Teacher: Collaborating for Student Success, U.S. teachers spend an average of 93 percent of their workday in isolation from their colleagues.\textsuperscript{30} School leaders moving to a competency-based model must create structures for teachers to work collaboratively to design meaningful learning opportunities for all students.

Recognizing the importance of collaboration in a competency-based environment, Spaulding Principal Seaward created a decisionmaking structure that constantly fosters opportunities for all staff to participate in advancing the school’s mission of achieving high levels of learning for all students. For example, cadres of coaches, drawn from the ranks of high school faculty and led by district-funded curriculum and assessment specialists, have expertise in competency-based assessment and instruction and provide support to content-area teachers as part of a learning community. The high school provides substitutes on a rotating schedule so teachers can come together to understand both the goal and the path to competency-based learning by examining student work and formulating sound judgments about what students know and can do.

In addition, the coaches help teachers to understand learning progressions—progressive sequences by which most students acquire specific core concepts and skills within a subject area—which enables teachers to determine how students are progressing toward mastery. Coaches facilitate reflective dialogue to help teachers answer questions such as “What feedback is most appropriate?” and “What instructional adjustments make sense?” The goal of these collaborative efforts is to improve teachers’ individual and collective practice so they can help all students learn and master deeper learning skills, and also apply their knowledge and skills to novel situations.

New Hampshire: Next Steps in System Design Incorporating Competency-Based Advancement

Paul Leather, the deputy commissioner of the NHDOE, leads the state’s high school redesign within a competency-based system. In an interview with the author he talked about the department’s effort to move away from a compliance orientation to one that focuses on developing the knowledge and skill of frontline practitioners.\textsuperscript{31} Specifically, Leather identified three steps for advancing this work:

1. Integrate the Common Core State Standards (CCSS) as part of the state’s competency-based system.

2. Devise a comprehensive networked strategy to build on and expand the design work of early implementers of a competency-based system.


Leather notes that since 2005 local districts and schools have grappled with how to design a competency-based system, with different levels of success. “Schools are floundering to create support for deeper learning through the design of student-generated assessments,” he observes. “There is a general cry for increased support and capacity to develop course-level competencies and a clear need to ensure greater commonality across the state.”

The NHDOE is committed to creating a balanced and robust system of assessments by 2015 that will include the assessments being developed by the Smarter Balanced Assessment Consortium, for which New Hampshire is the governing state.\textsuperscript{32}
A critical second component will include performance assessments to evaluate students’ competencies that cover rigorous academic content, adaptive skills, and critical dispositions. The NHDOE plans to work with local districts in developing comparable rigorous classroom-embedded performance assessments aligned to the CCSS.

Under the state’s direction, the Center for Collaborative Education (CCE), in partnership with the National Center for the Improvement of Education Assessment, will work with statewide committees of leaders, practitioners, higher education professionals, and content experts to design high-quality, common performance tasks for a three-year rollout at the high school level in mathematics, English language arts, social studies, and science. The CCE has worked with Rhode Island and Massachusetts in building the capacity of high schools to use performance assessments as a driver of authentic student learning. Leather emphasizes that the performance tasks will “sit under all other design elements—course content, extended learning opportunities, and use of digital learning—to make curriculum as transparent and as portable as possible.”

The early move to competency-based education gives New Hampshire’s school districts a head start in preparing for the new demands of the CCSS, which were adopted by the state in July 2010. The NHDOE plans to create a web-based bank of local and common performance assessments aligned to the CCSS, procedures for regional scoring sessions and local district peer review audits, and a regional network of support to districts and schools. This department assistance will allow educators to focus their time on using content, curricular tasks, and digital learning to meet the needs of individual learners. Leather says that high schools can best ensure the personalization of learning by designing varied methodologies and systems for students to attain and demonstrate competencies as part of pathway approaches and expanded student options. He adds that “current measures of college and career readiness often fall short in assessing readiness dimensions that are meaningful for the individual learner.”

Leather also emphasizes the need to build the capacity of educators to have deep levels of content knowledge, discipline-specific pedagogy, and assessment literacy to teach and assess a rigorous common core-aligned curriculum using complex performance tasks. To that end, New Hampshire is developing a fully “networked” approach to connect districts to one another and to provide targeted forms of support and expertise for high school educators. The NHDOE will provide an information platform to facilitate virtual collaboration among leaders, practitioners, higher education, and communities while at the same time seeding the transformation of structures, practices, and technology tools.

In addition, online data systems will support research-based collective improvement and the design of cutting-edge, innovative, student-centered approaches to learning. These systems, in conjunction with multi-site professional learning communities, will enable educators to accelerate the pace and productivity of students’ progress and yield models that are more personalized, rigorous, and, ultimately, cost-effective. These smart online systems will help guard against a competency-based approach resulting in some students being stranded on a lower-level track or falling behind.

More than a decade has passed since New Hampshire first experimented with competency-based approaches as a foundation for improving student learning outcomes, changing pedagogy and the educational process, and driving the creation of a truly collaborative professional learning community. Now the state has put forward this model as the centerpiece of its Elementary and Secondary Education Act waiver application to the U.S. Department of Education, submitted in September 2012. As states and districts across the country receive the flexibility to reimagine new forms of schooling, competency-based approaches like those undertaken in New Hampshire are increasingly being developed and demonstrating initially promising results. New Hampshire’s experience provides an excellent opportunity for other states to review the effective design, systems, practices, and policies needed to ensure the capacity of teachers and leaders to implement competency-based learning for all of the nation’s students.

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The Alliance for Excellent Education is a Washington, DC-based national policy and advocacy organization that works to improve national and federal policy so that all students can achieve at high academic levels and graduate from high school ready for success in college, work, and citizenship in the twenty-first century.

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Endnotes


3. Ibid.

4. Ibid., p. 10.


6. Ibid., p. 8.

7. Ibid.

8. Ibid.

9. Ibid.; interviews with administrators and faculty at Sanborn Regional High School and Spaulding High School, September 15, 2012.


12. Ibid., p. 12.


15. Interviews with administrators and faculty at Sanborn Regional High School and Spaulding High School, September 15, 2012.


22. Interviews with leadership team at Spaulding High School, September 24, 2013.


26. Ibid.

27. Sanborn Regional High School, “Assessment and Grading Guidelines.” Students earn an overall course grade for each high school course that represents a compilation of performance over the whole range of educational experiences within a course. The student must earn 65 percent or higher in each of the individual course competencies and an overall course grade of 65 percent or higher to earn course credit.


34. Leather interview.

35. Ibid.

36. In response to a question about individual learning plans, Leather discussed the policy work of David Conley, professor at the University of Oregon and chief executive officer of the Educational Policy Improvement Center. In his work with the Council of Chief State School Officers Innovation Lab Network (of which New Hampshire is a member), Conley recommends thinking in terms of student profiles that capture readiness across multiple dimensions, including students’ skills, interests, and postsecondary objectives.
What Motivates The “Net” Generation?

- Accustomed to instant gratification and “always-on” connection
- Use the web for 1) extending friendships, 2) interest-driven, self-directed learning, and 3) as a tool for self-expression
- Constantly connected, creating, and multitasking in a multimedia world—everywhere except in school
- Less fear and respect for authority—accustomed to learning from peers; want coaching, but only from adults who don’t “talk down” to them
- Want to make a difference and do interesting/worthwhile work
Mastering the Competencies of “Just in Time Learning”

- **Rigor** is figuring out the right question/problem to be solved
- Exploring new questions/problems **within and across disciplines**
- Learners **working in teams**
- Motivated by **intrinsic rewards**
- Taught by teamed coaches through **exploration and discovery**
- Assessed through **auditing strategies, portfolios, and exhibitions of mastery**

Wagner, 2009
Introduction

Key Design Consideration

Students Who are College and Career Ready in Reading, Writing, Speaking, Listening, & Language

How to Read the Standards

Anchor Standards

Reading: Literature

Reading: Informational Text

Reading: Foundational Skills

Writing

Speaking & Listening

Language

Standard 10: Range, Quality, & Complexity

History/Social Studies

Science & Technical Subjects

Writing

ELA Appendices

English Language Arts Appendix A

English Language Arts Appendix B

English Language Arts Appendix C

English Language Arts Standards » Introduction »

Students Who are College and Career Ready in Reading, Writing, Speaking, Listening, & Language

The descriptions that follow are not standards themselves but instead offer a portrait of students who meet the standards set out in this document. As students advance through the grades and master the standards in reading, writing, speaking, listening, and language, they are able to exhibit with increasing fullness and regularity these capacities of the literate individual.

They demonstrate independence.

Students can, without significant scaffolding, comprehend and evaluate complex texts across a range of types and disciplines, and they can construct effective arguments and convey intricate or multifaceted information. Likewise, students are able independently to discern a speaker’s key points, request clarification, and ask relevant questions. They build on others’ ideas, articulate their own ideas, and confirm they have been understood. Without prompting, they demonstrate command of standard English and acquire and use a wide-ranging vocabulary. More broadly, they become self-directed learners, effectively seeking out and using resources to assist them, including teachers, peers, and print and digital reference materials.

They build strong content knowledge.

Students establish a base of knowledge across a wide range of subject matter by engaging with works of quality and substance. They become proficient in new areas through research and study. They read purposefully and listen attentively to gain both general knowledge and discipline-specific expertise. They refine and share their knowledge through writing and speaking.

They respond to the varying demands of audience, task, purpose, and discipline.

Students adapt their communication in relation to audience, task, purpose, and discipline. They set and adjust purpose for reading, writing, speaking, listening, and language use as warranted by the task. They appreciate nuances, such as how the composition of an audience should affect tone when speaking and how the connotations of words affect meaning. They also know that different disciplines call for different types of evidence (e.g., documentary evidence in history, experimental evidence in science).

They comprehend as well as critique.

Students are engaged and open-minded—but discerning—readers and listeners. They work diligently to understand precisely what an author or speaker is saying, but they also question an author’s or speaker’s assumptions and premises and assess the veracity of claims and the soundness of reasoning.

They value evidence.

Students cite specific evidence when offering an oral or written interpretation of a text. They use relevant evidence when supporting their own points in writing and speaking, making their reasoning clear to the reader or listener, and they constructively evaluate others’ use of evidence.

They use technology and digital media strategically and capably.

Students employ technology thoughtfully to enhance their reading, writing, speaking, listening, and language use. They tailor their searches online to acquire useful information efficiently, and they integrate what they learn using technology with what they learn offline. They are familiar with the strengths and limitations of various technological tools and mediums and can select and use those best suited to their communication goals.
They come to understand other perspectives and cultures.

Students appreciate that the twenty-first-century classroom and workplace are settings in which people from often widely divergent cultures and who represent diverse experiences and perspectives must learn and work together. Students actively seek to understand other perspectives and cultures through reading and listening, and they are able to communicate effectively with people of varied backgrounds. They evaluate other points of view critically and constructively. Through reading great classic and contemporary works of literature representative of a variety of periods, cultures, and worldviews, students can vicariously inhabit worlds and have experiences much different than their own.
A First Look at the Common Core and College and Career Readiness
A First Look at the Common Core

Forty-one states have adopted the Common Core State Standards. Now, implementing the Standards—to realize their purpose of increasing the college and career readiness of our high school graduates—takes on primary importance. This transition to implementation introduces a number of challenging questions: What is the baseline of student performance on the Common Core State Standards, and what reasonable expectations should we hold for students moving forward? What does student college and career readiness look like today through the lens of the Standards?

ACT is pleased to provide this first look at student performance relative to the Common Core State Standards and college and career readiness. The report establishes a baseline of performance on the Standards by using a sample comprising a quarter-million typical high school students, and then discusses how states, districts, and schools can support the implementation of the Common Core State Standards going forward.

The period between Common Core adoption and Common Core implementation offers an important opportunity to evaluate and reframe education policy and practice at all levels. ACT believes this report provides information that stakeholders can use to understand the current state of college and career readiness of students and to begin implementing programs and policies that best support the Common Core.

Now is the time to provide students with more effective opportunities to prepare for education and workplace success.
A Baseline for College and Career Readiness
According to the Common Core State Standards

The Common Core State Standards and College and Career Readiness

The Common Core State Standards Initiative represents one of the most significant reforms to U.S. education in recent history. The efforts of 48 states, two territories, and the District of Columbia have—for the first time—given consensus to educators on the essential knowledge and skills necessary for the college and career readiness of our nation’s students. As of October 2010, 41 states have adopted the Common Core State Standards.

ACT is pleased to have played a leading role in the development of the Common Core State Standards. Not only did the initiative draw on ACT’s longitudinal research identifying the knowledge and skills essential for success in postsecondary education and workforce training, but ACT’s College Readiness Standards™ were also among the resources used in the creation of the Common Core State Standards.

As states begin to implement the Common Core and raise expectations for what students should know and be able to do by the end of high school, it is important to understand the level of college and career readiness of today’s students and use all available data to inform decisions related to education policy and practice. Recognizing that no state has fully implemented the Common Core State Standards, ACT identified a way to estimate performance relative to the Common Core. This report summarizes those findings.

Given ACT’s leading role in the development of the Common Core State Standards, we classified ACT test items to the standards, clusters, and domains of the Common Core State Standards (e.g., Key Ideas and Details in Reading, Number and Quantity in Mathematics, Conventions of Standard English in Language) to best estimate student performance on the Common Core in advance of state implementation efforts.¹ Our work was driven by three basic questions that have implications for the implementation of the Common Core State Standards:

1. Given the lack of available data, what is the best estimate of current student performance on the Common Core State Standards using ACT college and career readiness data?
2. What are students’ current strengths and weaknesses on the Common Core State Standards?
3. What steps can district, state, and federal policymakers and education leaders take to help ensure an effective transition to the Common Core State Standards?
A Unique Opportunity

These three essential research questions framed ACT’s analysis of the test results of 256,765 11th-grade students in several states who were administered selected forms of the ACT® Plus Writing (i.e., multiple-choice tests in English, Mathematics, Reading, and Science, plus the ACT Writing Test) in spring 2010. The students represented in this report were not self-selected, as traditional ACT examinees are, but rather represent all students who took the ACT as part of their states’ annual testing programs. The group spans the full range of abilities and college aspirations, reflects a range of communities and schools, and includes students tested under standard conditions as well as under accommodations. In other words, the sample comprises typical 11th-grade students like those found in high schools all across the United States. (See Figure 1.)

Methodology

Since performance indicators have not yet been established for the Common Core State Standards, this report uses ACT’s research-based College Readiness Benchmarks to estimate college- and career-ready performance levels on each of the clusters of Common Core State Standards. For each cluster for which ACT has data (i.e., all but Speaking & Listening and Research), we report the percentage of students in the 11th-grade sample who met or exceeded the performance level of college- and career-ready students on the test items associated with that Common Core cluster. We report this information for the total group and for Caucasian, African American, and Hispanic students.

So how well are students performing on the content clusters of the Common Core State Standards? Helping to raise awareness of the answer to this question allows educators and policymakers the opportunity to focus efforts on improving student performance on the Common Core and increasing the college and career readiness of all students.

Overall Results

The results of this analysis should be used with caution, as they are based on results of students who were administered the ACT as

The ACT College Readiness Benchmarks are the minimum scores required on the ACT subject tests for high school students to have approximately a 75 percent chance of earning a grade of C or better, or approximately a 50 percent chance of earning a grade of B or better, in selected courses commonly taken by first-year college students: English Composition; College Algebra; social sciences courses such as History, Psychology, Sociology, Political Science, or Economics; and Biology. The Benchmark scores on the ACT tests are 18 in English, 22 in Mathematics, 21 in Reading, and 24 in Science; on the ACT Writing Test, a score of 7 or above indicates readiness for college-level writing assignments.
part of their statewide assessment at a time prior to the adoption of the Common Core State Standards. Given that states were teaching to and assessing different sets of standards, it can be argued that students were not adequately prepared for an assessment of the Common Core State Standards. We agree, however, the analysis is intended not to focus on student performance on current state standards, but to shed light on current student achievement levels relative to the Common Core State Standards. As states adopt the Common Core State Standards and begin aligning instructional practices, resources, and assessments to college and career readiness—as some have been doing for a number of years—the expectation is that all students will be adequately prepared for such an assessment. Until such time, this analysis serves as a starting point for assessing achievement relative to the Common Core in advance of full state implementation efforts.

Figure 2 shows the overall percentage of students in the report sample who met ACT’s College Readiness Benchmarks compared to the percentage of all ACT-tested 2010 high school graduates. In all three areas of the Common Core State Standards—English, Reading, and Math—the percentage of students in the sample is less than what we see in the 2010 ACT-tested group. This is to be expected, as mentioned previously, the report sample includes all students who took the ACT as part of their statewide assessment and includes students with a range of abilities who tested under normal and accommodated conditions.

Our analysis indicates that across all Common Core domains, strands, and clusters, only one-third to one-half of the 11th-grade students are reaching a college and career readiness level of achievement. Moreover, for each Common Core domain, strand, and cluster, the percentages of Caucasian students who met or exceeded the performance of college- and career-ready students were uniformly higher than the corresponding percentages of African American or Hispanic students.

These results indicate that we must begin immediately to strengthen teaching and learning in all areas of the Common Core, with particular focus on raising college and career readiness rates of African American, Hispanic, and other underserved students.

**Detailed Results**

The following pages report student performance within each Common Core State Standards category in English Language Arts & Literacy (pp. 4–5) and Mathematics (pp. 6–7), reported for all students and by three racial/ethnic subgroups. Student performance is reported as the percentage of all students in the study who met or exceeded the performance level of college- and career-ready students in each category of that Standard.
A First Look at Common Core ELA & Literacy

- **Too few students are able to understand complex text.** Relative to the Common Core, only 31% of students are performing at a college- and career-ready level with respect to successfully understanding complex text. The Common Core State Standards define a “staircase” of increasing text complexity designed to move all students to college- and career-ready levels of reading by no later than the end of high school. To help prepare all students for the challenges of reading at the college and career readiness level, states should ensure that students are reading progressively more complex texts as they advance through the grades.

- **Increased focus is needed on some key aspects of language.** Two areas of emphasis in the Common Core State Standards for Language are (1) students’ knowledge of language varieties and ability to use language skillfully and (2) students’ ability to acquire and use a rich vocabulary. Relative to the Common Core, only 35% of students are performing at college- and career-ready levels with respect to these skills. To help all students develop a sufficient command of these language skills, states should ensure that students gain sufficient understanding of how language varies by context; how to use language effectively for different audiences, purposes, and tasks; and how to gain and use a vocabulary adequate for college and careers.

  - Students should master the grade-specific standards for Common Core Language Standard 3, which, beginning formally in grade 2 and building throughout the grades, focuses on such areas as recognizing differences between formal and informal English and between spoken and written English, using language precisely and concisely, and maintaining consistency in style and tone.

  - Students would also benefit from greater and more systematic attention to vocabulary development. This can include direct vocabulary instruction and a steadily increasing emphasis on helping students acquire vocabulary through reading. Particularly important is that students gain what the Standards refer to as general academic vocabulary: words and phrases that are often encountered in written texts in a variety of subjects but that are rarely heard in spoken language.

- **Content-area reading needs strengthening.** Students struggle when reading texts in content areas, especially in science, where only 24% of students are able to work with science materials at a level that would make them college and career ready. To help all students achieve sufficient literacy skills in history/social studies and in science and technical subjects, as well as in English language arts, states must ensure that teachers in these subject areas use their unique content knowledge to foster students’ ability to read, write, and communicate in the various disciplines.

  - Specifically, English language arts teachers in middle and upper grades should incorporate a particular type of informational text—literary nonfiction—into the traditional curriculum of stories, dramas, and poems.

  - Teachers in other subject areas should use their own subject-area expertise to help students learn to read, write, and communicate effectively in their specific field.

  - The Common Core State Standards in reading are explicitly modeled on the idea of shared responsibility for students’ literacy development. States and districts should therefore prepare middle and high school content-area teachers for this role by providing professional development opportunities that build the reading instruction capacity of content-area specialists.
Common Core Mathematics

**Number & Quantity**
Real Number System; Quantities; The Complex Number System; Vector & Matrix Quantities

- **All 11th graders**
  - Caucasian: 34%
  - African American: 42%
  - Hispanic: 10%
  - Others: 16%

**Algebra**
Seeing Structure in Expressions

- **All 11th graders**
  - Caucasian: 35%
  - African American: 41%
  - Hispanic: 11%
  - Others: 21%

Creating Equations

- **All 11th graders**
  - Caucasian: 33%
  - African American: 39%
  - Hispanic: 13%
  - Others: 20%

**Functions**
Interpreting Functions; Building Functions; Linear, Quadratic, & Exponential Models; Trigonometric Functions

- **All 11th graders**
  - Caucasian: 42%
  - African American: 48%
  - Hispanic: 22%
  - Others: 32%

**Geometry**
Congruence

- **All 11th graders**
  - Caucasian: 33%
  - African American: 40%
  - Hispanic: 8%
  - Others: 18%

Similarity, Right Triangles & Trigonometry; Circles

- **All 11th graders**
  - Caucasian: 44%
  - African American: 51%
  - Hispanic: 22%
  - Others: 30%

**Statistics & Probability**
Interpreting Categorical & Quantitative Data; Making Inferences & Justifying Conclusions; Conditional Probability & the Rules of Probability; Using Probability to Make Decisions

- **All 11th graders**
  - Caucasian: 37%
  - African American: 42%
  - Hispanic: 16%
  - Others: 30%

Mathematical Practices

1. Make sense of problems and persevere in solving them
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure
8. Look for and express regularity in repeated reasoning
A First Look at Common Core Mathematics

- Increased focus is needed on the foundations of mathematics. The low performance by students on Number & Quantity (34%) in the Common Core is of particular concern because these skills are the foundation for success in the other Common Core mathematics conceptual categories (e.g., Algebra, Functions, Modeling, Geometry, and Statistics & Probability). Students need to make meaning of numbers, operations, and arithmetic expressions, and to use their understanding to solve problems, reason about mathematics, and explain their thinking. To increase math performance, states need to ensure K–8 curriculum and instruction require rigorous understanding of the concepts in Number & Quantity from the earliest grades.
  - In the early grades, students will benefit from problem solving in novel contexts and hands-on experiences with increasingly sophisticated quantities and their measurement.
  - In middle school and high school, teachers should lead students to see connections between Number & Quantity and other Common Core mathematics conceptual categories, particularly Algebra.

- Math interventions are needed for students who are falling behind at the earliest grades. Across the board, Hispanic and African American students performed well below their Caucasian counterparts in all Common Core math domains. States must ensure that teachers and students have the resources necessary to identify struggling math students as early as possible (K–4) so that proper interventions are made. Providing teachers and students with adequate opportunities to collect achievement data that function diagnostically—data collected frequently and from both formative and summative assessments—is crucial to supporting students' learning progressions and for optimal growth to occur.

- Greater understanding of mathematical processes and practices is needed. For each of the Common Core Mathematical Practices standards, only about one-third of students reached the college- and career-ready level. States and districts must ensure that conceptual understanding is emphasized for all students in mathematics. More specifically, students at all grade levels need to be:
  - working and solving challenging nonroutine problems;
  - explaining methods and justifying conclusions;
  - predicting and conjecturing about things like unknown numbers, measurements, quantitative relations, the behavior of functions, how well a model fits reality, the effectiveness of different solution methods, and the way probabilistic events occur; and
  - looking for patterns and structure in places like diagrams, equations, number systems, proofs, problems, tables, graphs, and real-world objects.
Where Do We Go from Here?

Clearly there is room for increased student achievement relative to the Standards—and to college and career readiness—across all Common Core domains, strands, and clusters; so where do we start? What instructional strategies and diagnostic tools are necessary for districts, schools, and classroom teachers to articulate the Standards to students, identify students in need of improvement, and target instructional interventions? What policy changes are required at the state and federal levels to enable those changes? These are the complex questions that educators and policymakers at all levels of our education system need to answer before implementing the Common Core.

Recommendations for Instructional Strategies and Interventions

The findings in this report indicate that much work must be done to prepare all students for the rigors of postsecondary education and workforce training programs by the time they graduate high school. But improving the preparation of students for life beyond high school is larger than simply focusing on results at the high school level—this is a systems issue that must be addressed by all levels (P–16) of our education systems. Improving college and career readiness is crucial to the development of a diverse and talented labor force that can maintain and increase U.S. economic competitiveness throughout the world. It is our collective responsibility—educators and policymakers alike—to ensure that each and every student is prepared and on target for success from the earliest grades through high school graduation and beyond.

ACT recommends that state and local education practitioners and policymakers begin now to align current curricula with the Common Core State Standards. This process should result in the development of high-quality lessons and instructional units aligned to the Standards. Beyond that initial step, we must also make every effort to help educators effectively incorporate these Standards into daily instruction and practice, to ensure that the quality, consistency, and rigor of the curriculum are aligned with those Standards.

ACT recommends that states provide training and resources to districts and classroom teachers to create rigorous instructional units and curricular tools for moving students to higher levels of performance as required by the Common Core State Standards. Teachers need to have access to model lessons and instructional units aligned to the Standards. Teachers need to have access to formative assessment item pools that provide useful feedback about student progress toward meeting the Standards. Teachers also need to be able to use the results of such formative assessments to guide instructional interventions for students who are not yet college and career ready. Perhaps most critical of all—teachers and school leaders need a solid foundation of professional development to support their effective and efficient use of these new resources.

ACT research on the practices of high-performing schools indicates that there are core practices that can help educators overcome the challenges our education systems face in increasing student achievement, while also allowing states to remain true to the high expectations found in the Common Core State Standards. Based on this research, we strongly encourage
education leaders to consider the following practices:

- **Create a school culture of high expectations.** The Standards can identify rigorous learning outcomes, but the real work of meeting those expectations rests in the day-to-day efforts in our classrooms. That work can only succeed if everyone agrees on the goal. ACT research suggests that the inconsistent and sometimes alarmingly low expectations held by our nation’s educators regarding what students can achieve academically pose a serious challenge to meeting Common Core’s goal of having all students college and career ready no later than the end of high school. Our research shows that high-performing schools—including schools that serve a large percentage of low-income students—focus relentlessly on setting high expectations, develop challenging academic objectives systemically, and embody those expectations in all facets of their core work. The learning progressions embedded in the Common Core State Standards can promote those efforts in all schools by providing a framework that teachers can use to develop grade-appropriate instruction that helps advance all students to college and career readiness.

- **Use data to create individualized responses to students’ needs.** The Standards implementation process affords an opportunity to substantially rethink how we approach student monitoring, goal setting, and support programs at the local level. Accelerating the college and career readiness of our students will require that we create new approaches for using student data to empower educators to personalize student learning goals, classroom instruction, and intervention strategies. The past decade has spurred a dramatic increase in the types of student data available, but the next decade will require a dramatic improvement in how we use this data to strengthen instruction, interventions, and decision making.

- **Foster an atmosphere of support and collaboration among teachers.** Focus efforts to increase the quality and intensity of instruction through sustained professional development initiatives and professional learning communities. At the heart of the Standards is the need for high-quality, responsive, and engaging instruction. Necessary efforts to align and improve curricula must be accompanied by a sustained effort to systematically improve the quality of instruction. ACT’s research shows that the incorporation of a challenging curriculum can have a significantly positive impact on students’ college and career readiness, but these gains are even greater when school leaders couple a rigorous curriculum with a comprehensive professional development and support program.

**Recommendations for Policymakers**

In addition to offering instructional recommendations for states and districts, this report also suggests that there are broad implications for policymakers as our nation ramps up for the implementation of the Common Core State Standards. The estimated performance of students relative to the Standards raises the question: What steps can policymakers at the federal, state, and district levels take to help create the conditions in which educators can succeed in accelerating the college and career readiness of our nation’s students?
The period between Common Core adoption and Common Core implementation affords an important opportunity to evaluate and reframe education policy at all levels to provide greater support for educators. During this transitional period, policymakers should invest their efforts in three broad areas.

First, policymakers should thoughtfully consider and discuss the complex implications of the shift from existing state standards to the Common Core State Standards, as this shift has implications not only for expectations and education practice, but also for state accountability models. Second, policymakers should use this opportunity to leverage research to better define goals on how much academic growth—at the student and school levels—is reasonable to expect. Third, policymakers should thoroughly consider how to more effectively align education funding programs to meet these ambitious goals, particularly with respect to instructional and curricular practices.

The national dialogue on the Common Core State Standards Initiative has moved quickly from the creation and adoption processes to how to best assess the Standards. This report, however, suggests that the success of this initiative will be largely vested in an area conspicuously absent from the dialogue: the effective implementation of the Standards within schools and classrooms. Ensuring that educators have the resources and support necessary to fully and coherently integrate these Standards into daily practice is a critical prerequisite to making college and career readiness a reality for all students.

As they prepare for implementation of the Common Core State Standards, ACT recommends that policymakers at all levels consider the following:

- **Recognize that adoption of “fewer, clearer, higher” standards is a significant shift in expectations.** While each state’s transition from its current education standards to the Common Core State Standards will be different, our preliminary research suggests that these transitions are not likely to be a matter of incremental change. Rather, such transitions fundamentally reframe what we expect students and school systems to accomplish. Policymakers—and educators—at all levels must be aware of this shift and prepare now for the changes that will need to occur over the next several years of implementation.

- **The shift in expectations has very real implications for education monitoring and accountability systems.** If states, districts, and schools adhere to the Common Core State Standards Initiative’s definition of college and career readiness as the primary metric for defining school success, current monitoring and accountability systems may not fully acknowledge the gap between where students are now and where we expect them to be. If left unaddressed, evaluating school performance based on arbitrary proficiency rates and timelines may undercut incentives for schools to embrace the challenge of preparing all students for college and career. Rather than encouraging states and districts to adopt weakened definitions of college and career readiness, policymakers should improve current accountability systems so that schools embrace challenging yet realistic goals rooted in how well students demonstrate academic growth toward learning meaningful college and career readiness standards.
Federal programs need to have a greater focus on college and career readiness. The reauthorization of the Elementary and Secondary Education Act (ESEA) provides a remarkable opportunity to align federal programs and resources around the goal of college and career readiness. Given the challenges educators will face, ESEA should empower local policymakers and educators to better direct their focus and resources, particularly in strengthening professional development, curricula, and instructional practices to maximize their capacity to incorporate higher expectations into day-to-day practices.

Ensuring sufficient public understanding of the Common Core State Standards is critically important. Based on our preliminary findings, state and district policymakers may need to prepare their stakeholders and communities for a shift in how they understand the notion of student “proficiency.” Because states currently set and define their own proficiency levels, for many states the definition of college and career readiness expressed in the Common Core State Standards Initiative may represent a significant change in how they define proficiency and how they subsequently report to the public on student and school performance. An analogous scenario is the disconnect between the reported percentage of students “proficient” on state assessments and the percentage of students “proficient” on the National Assessment of Educational Progress within the same state. During the transitional period leading up to the implementation of the Common Core State Standards, state and district leaders should engage school and community stakeholders to ensure there is broad and sufficient understanding of what college and career readiness means, why “fewer, clearer, higher” standards are essential, and how these challenging expectations will affect reporting requirements in the short term.

Increasing the percentage of students who are college and career ready is challenging, but possible. Despite the challenges that these new Standards introduce, it is quite realistic for states, districts, and schools to spur meaningful improvement. For example, in two states where every high school graduate (not just self-selected, college-bound students) takes the ACT, we see significant progress. In Colorado, the percentage of students who are college and career ready in all of the core subjects (English, math, reading, and science) has increased by 5 percentage points since 2002, while in Illinois the increase was 4 percentage points. At the local level, we see variation in the pace at which districts improve the percentage of students who are college and career ready in all core subjects, affirming that change is possible. Regardless of the rate of change thus far, from this point forward it is essential that our collective research, policy, and reform efforts focus on how to best accelerate improvement in student readiness relative to challenging and meaningful standards.

To accelerate improvement, states and districts should make concerted efforts now to ensure full and meaningful implementation of the Common Core State Standards. In addition to incorporating the approaches of our nation’s highest-performing school districts,
states and districts should undertake three additional strategies:

1. Conduct research with their best available data to evaluate where students are currently performing relative to the Common Core State Standards. Estimating where a school’s relative strengths and weaknesses lie will allow educators and policymakers to allocate current resources most appropriately.

2. Invest significant efforts in mapping the transition from current state standards to the Common Core State Standards. This interpretive process—perhaps in collaboration with state institutions of higher education and the business community—can create a rational and aligned blueprint for strengthening instructional frameworks, curricula, and professional development models, while deepening the understanding of local stakeholders.

3. Develop challenging yet realistic performance goals based on individual student growth. With this approach, we can evaluate school performance more holistically and rationally against higher, more challenging standards.

**Conclusion**

The results of this study tell us that, as seen through the lens of the Common Core State Standards, far too many of today’s students will likely graduate from high school not ready for college-level work or career training programs without needing some type of remediation in English language arts and mathematics. State, district, and school education leaders now have a clear starting point for implementing the Common Core by targeting those areas of the Standards where student performance is weakest and ensuring that K–12 educators are adequately prepared with instructional strategies, interventions, and training to best support students in becoming college and career ready.

ACT believes that a comprehensive approach to Common Core implementation that incorporates changes in practice and policy is essential for turning the promise of the Common Core State Standards—college and career readiness for all high school graduates—into a reality for our students, schools, districts, states, and the nation. Now is the time to begin.
Note

Items on each ACT Plus Writing test form were coded to the relevant domain, strand, or cluster in the Common Core State Standards. Individual item responses were used to calculate the percentage of items answered correctly. Because the items on each form are unique and one form may differ slightly from another with respect to the number of items in each Common Core State Standards category and in the difficulty of those items, the percent-correct scores for each form were scaled to a common metric to allow combining scores across forms and facilitate future monitoring of trends across time.
The ever-changing demands of the global economy and the desire to remain competitive, coupled with mounting frustration over decades of lackluster academic performance, are converging to create an opportunity for change.

Once a powerhouse, the United States now trails many nations in achievement and attainment in secondary and postsecondary learning. And, increasingly, there is evidence of a mismatch between employer needs and the knowledge and skills of the current and future workforce, on display in employment figures and reports from business and industry leaders.

Policymakers and the public alike are embracing “college and career readiness” as the solution, but what does it mean? Much of the policy debate focuses on college entrance and completion, without remediation, as a solution. However, college readiness is only part of the answer. What is needed is a more comprehensive strategy that bridges the gap between education and workforce preparation.

To find that solution, the Career Readiness Partner Council was formed in 2012. The Council unites leaders from national education and workforce organizations with the goal of bringing clarity and focus to what it means to be career ready. This document highlights the outcome of the collaborative efforts of the Council to help inform policy and practice in states and communities.
These academic and employability knowledge, skills and dispositions are acquired in a range of secondary, postsecondary and workplace settings, and help to address an increasing reality: Today, most career pathways require some form of postsecondary education, whether it’s an entry-level job, a management position for a mid-career professional or perhaps even a shift from practicing a profession to teaching others. A particular job might require a certificate, a two-year degree, a four-year degree, a doctorate or even a handful of courses to hone in on a particular piece of knowledge or a skill. Indeed, the “college and career” tagline that has become part of the education reform rhetoric encompasses all of these postsecondary options. Career readiness also incorporates engaging workplace experiences that allow a person to apply academic and technical learning to real-world projects and problems alongside professionals. This starts with career awareness and exploration and includes job shadowing, internships, apprenticeships and service learning.

Defining What it Means to be Career Ready

A career-ready person effectively navigates pathways that connect education and employment to achieve a fulfilling, financially-secure and successful career. A career is more than just a job. Career readiness has no defined endpoint. To be career ready in our ever-changing global economy requires adaptability and a commitment to lifelong learning, along with mastery of key knowledge, skills and dispositions that vary from one career to another and change over time as a person progresses along a developmental continuum. Knowledge, skills and dispositions that are inter-dependent and mutually reinforcing. These include:

Academic and Technical Knowledge and Skills

A career-ready person is proficient in the core academic subjects, as well as in technical topics. This foundational knowledge base includes competence in a broad range of academic subjects grounded in rigorous internationally-benchmarked state standards—such as the Common Core State Standards for English language arts and mathematics. It also includes a level of technical-skill proficiency aligned to a chosen career field and pathway, and the ability to apply both academic and technical learning in the context of a career. Many careers also require deeper learning and mastery in specific academic or technical subjects.

Employability Knowledge, Skills and Dispositions

A career-ready person has a good understanding of their interests, talents and weaknesses and a solid grasp of the skills and dispositions necessary for engaging in today’s fast-paced, global economy. These include, but are not limited to:

- Goal setting and planning;
- Managing transitions from school to work and back again, and from one occupation along a career pathway to another;
- Clear and effective communication skills;
- Critical thinking and problem solving;
- Working productively in teams and independently;
- Effective use of technology; and
- Ethical decision-making and social responsibility.

There is an often-confusing mix of definitions, frameworks, policies and implementation strategies for career readiness. Some viewpoints center around learning skills for a specific entry-level job, while others define career readiness as a broader understanding of workplace skills. Still other definitions focus on knowledge and skills for a particular industry sector such as health sciences or marketing. Career readiness is a convergence of all of these definitions.
Career readiness also requires a comprehensive system of supports that deliver learning when it is needed, where it is needed, how it is needed and by a cadre of experts that includes teachers and career professionals. It includes both classroom and workplace experiences, high-quality standards and instructional materials to support learning, a portfolio of assessments that gauge progress using multiple measures along a continuum from being not at all career ready to fully career ready, and finally a policy and funding structure that is aligned across K-12, higher education and business and industry sectors.

Building a Comprehensive System That Supports Career Readiness

No one group or individual can realize change of this magnitude; however, uniting around a common goal is a powerful catalyst for change. Working together there are strategies to ensure our nation’s prosperity and the success of future generations:

Policymakers. Align policy and funding infrastructures that break down long-standing silos between secondary, postsecondary and workforce systems and provide the full spectrum of supports needed to ensure seamless transitions from high school to college and beyond. One step to accomplish this is to clearly define what it means to be career ready in policy and to adopt a set of metrics to measure career readiness that will help to strategically align funding and programs.

High school teachers, leaders and counselors. Engage with business and industry and higher education leaders and faculty to better understand what is expected of high school students and to develop joint goals for college and career readiness. Also, actively engage parents and students in developing long-term goals and strategies around college and career aspirations.

Business and industry. Actively partner with secondary and postsecondary stakeholders to develop shared goals. Also, share expertise and provide engaging opportunities for students and educators to experience hands-on, work-based learning.

Higher education. Engage with secondary educators and business and industry to develop common goals that seek to align systems. Ensure career-readiness knowledge, skills and dispositions are fully integrated into curriculum and instruction, and help students chart a course for career success beyond college.

Parents and students. Expand the goal of “college bound” to include career goals. For students in particular, take responsibility for charting a course that aligns with personal interests and talents. For parents, strive to provide support and guidance in helping students meet education and career goals.

Community. For social service professionals, after school providers, healthcare practitioners, religious leaders and other community leaders, engage with K-12, higher education and business and industry to create common goals that align with the values, beliefs and economic needs of the community. Support the shared goals by aligning community resources and programming.
For too many years, high school graduates throughout the United States faced a fork in the road. One path led to a four-year college, the other to an entry-level job. Some students chose for themselves, while others were tracked based on aptitude and, all too often, on race and income. In today’s 21st century global economy, the choices are much more complex and interconnected, and the fork in the road has been replaced by numerous paths, all of which require a rigorous and rich high school experience that prepares all students—not just some—for college and a career.

The attempt of the Career Readiness Partner Council to bridge diverse viewpoints and develop a joint statement about what it means to be career ready is an important step in leveraging current efforts to transform education and workforce development. But much more is needed. We hope this definition spurs conversation and action in communities across the nation. The inextricable link between education and the economy has never been more apparent; the urgency for change unparalleled. We have a window of opportunity for bold change, and the future of our nation, and each and every citizen depends on it.

Please visit us at CareerReadyNow.org to learn more about the Career Readiness Partner Council.
**What are the Four Keys to College and Career Readiness?**

Through extensive research and years of work in the field, David T. Conley, PhD, and EPIC have identified factors important to college and career readiness that make up the Four Keys to College and Career Readiness. EPIC’s Four Keys conceptual framework has been adopted by national organizations such as the College Board, International Baccalaureate®, and by numerous states and school districts.
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<th>Key Cognitive Strategies</th>
<th>Key Content Knowledge</th>
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<td>Problem formulation, research, interpretation, communication,</td>
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A Definition of College and Career Readiness

A student who is ready for college and career can qualify for and succeed in entry-level, credit-bearing college courses leading to a baccalaureate or certificate or career pathway-oriented training programs without the need for remedial or developmental coursework. However, not every student requires the same proficiency in all areas. A student's interests and post-high school aspirations influence the precise knowledge and skill profiles necessary to be ready for postsecondary studies. Therefore, a single cut score on a test given to high school students does not take into account this individualization of the match between knowledge and skills on the one hand and aspirations on the other.

A secondary program of instruction should be designed to equip all students with sufficient knowledge and skill as identified in the following section. The measure of success should be student success in their chosen field of postsecondary education or post-high school training. Measuring this requires a more specialized and adapted assessment strategy than can be achieved with a single cut score on a single test.

The Four Keys to College and Career Readiness

College and career readiness consists of four “keys.” Students are ready to the degree to which they have mastered all four. They consist of the following:

Key Cognitive Strategies

Key Cognitive Strategies are the ways of thinking that are necessary for college-level work. They include formulating hypotheses and developing problem-solving strategies, identifying sources and collecting information, analyzing and evaluating findings or conflicting viewpoints, organizing and constructing work products in a variety of formats, and monitoring and confirming the precision and accuracy of all work produced.
Key Content Knowledge

Key Content Knowledge refers to key foundational content and “big ideas” from core subjects that all students must know well, and an understanding of the structure of knowledge in core subject areas, which enables students to gain insight into and retain what they are learning. Also included in this key are the technical knowledge and skills associated with career aspirations, the ways in which students interact with content knowledge, its perceived value to them and the effort they are willing to expend to learn necessary content, and their explanations of why they succeed or fail in mastering this knowledge.

Key Learning Skills and Techniques

Key Learning Skills and Techniques consist of two broad categories: student ownership of learning, which includes goal setting, persistence, self-awareness, motivation, progress monitoring, help seeking, and self-efficacy; and specific learning techniques, such as time management, study skills, strategic reading, memorization techniques, collaborative learning, technology skills, and self-monitoring.

Key Transition Knowledge and Skills

Key Transition Knowledge and Skills are necessary to navigate successfully the transition to life beyond high school. This information is often privileged knowledge that is not equally accessible to all students. Least likely to have this information are students from families and communities historically underrepresented in higher education or certain career pathways. This key includes, among other things, knowing which courses to take in high school in order to be admitted to an appropriate postsecondary program, understanding financial aid options and procedures, being focused on a career pathway or major, understanding college-level and workforce norms and expectations, and knowing how to be a self-advocate within the institutional framework of postsecondary programs.

Academic Expression

How Are the Four Keys Expressed in Academic Performance?

Students who are on the path to college and career readiness can do many of the following:

- Read a range of types of material, with an emphasis on informational texts
- Interpret tables, graphs, charts, and pictures as they relate to content contained in text
- Demonstrate fluency in several modes of writing, most notably expository and descriptive, and not just narrative or opinion
- Show quantitative literacy based on an understanding of measurement and number systems and their application through the level of foundational concepts of algebra and geometry
- Be able to locate, organize, understand, and interpret a wide range of types of data through a series of methods that include basic statistics and other means for displaying data
- Understand the scientific method and possess insight into the big ideas and organization of knowledge in the sciences
- Possess awareness of how social systems operate and how they are studied, how history is studied, and some of the major trends and organizers used to describe history
- Engage in career planning through career exploration and the development of career management skills
- Demonstrate some proficiency in a second language and show awareness that languages reflect cultures
- Have experiences in and appreciation of creative and expressive arts
College and Career

Why Is This a Definition of Both College and Career Readiness?

Being college ready and being career ready are similar but not necessarily the same. Analyses of college courses required for degrees and certificates find that the learning skills and foundational knowledge associated with college success overlap considerably those necessary for success in certificate and training programs that lead to careers. Given this overlap, it serves little useful purpose to separate students into two distinct groups in high school (one bound for college, the other for work).

More and more jobs require some amount of post-high school training and, in any event, all workers are going to need to be adaptive learners throughout their careers to cope with changes to their jobs and the way they work. All students aspire to enter the workforce eventually and, to do so, all will need a set of similar foundational thinking skills, content knowledge, and learning strategies if they are to succeed in their careers and be productive members of society. However, some potentially notable differences can be found between college readiness and career readiness.

College readiness generally means the ability to complete a wide range of general education courses, while career readiness refers to readiness for courses specific to an occupational area or certificate. And while the foundational content knowledge is similar in all cases, the precise skill profile associated with success in a career course pathway may be more focused than that required for a bachelor's degree. This means that secondary schools can prepare all students in a common core of foundational academic knowledge and skill while also acknowledging the strengths of students who have passions and interests in particular career pathway areas.

Additionally, many of the attitudinal characteristics necessary for success in the workplace are also vital or taken as a given in postsecondary studies. These include ethical conduct, ownership of one's behavior, initiative, resilience, collaborative teamwork, motivation, and self-regulation skills.

What Isn't In the Definition?

It's possible to identify other important factors not addressed by the definition, such as positive citizenship, parental support, peer group influence and, perhaps most importantly, student financial capability to attend college. These factors and others are indeed important, but schools cannot necessarily teach or influence them as directly as they can the Four Keys. It is important for schools to help students become good citizens, access financial resources, gain parental support, and develop peer networks that support postsecondary readiness. But the areas in need of most direct attention and generally under the most direct control by schools are those enumerated in the Four Keys to College and Career Readiness.

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CTE Model Curriculum Standards

Web page for those interested in following the revision of Career Technical Education Model Curriculum (CTE) standards.

CTE Standards

Career Technical Education Standards for California Public Schools

Education Code Section 51226 provides legal authority to develop the CTE standards and framework. This legislation requires the development and adoption of CTE standards that incorporate the integration of career technical and academic education no later than June 1, 2005. The original CTE Model Curriculum Standards were adopted by the State Board of Education (SBE) on May 11, 2005. The standards, written for grades seven through twelve, specify learning goals in 58 career pathways organized around 15 industry sectors.

The California State Plan for Career Technical Education, A BRIDGE TO THE FUTURE 2008–2012, approved by the State Board of Education in May 2008, provides guidance for California’s CTE programs in California. The State Plan states, “CTE programs are dynamic; curricula need to stay current with rapid changes in the workplace, requiring ongoing updates and learning on the part of CTE faculty.” The adoption of the English Language Arts and Mathematics Common Core State Standards furthered the need to revise and align the CTE Standards with this new academic core.

Commencing in May 2011, 117 individuals representing secondary and post-secondary education and business and industry met to review the 2005 standards and make recommendations for improvement. Following the May 2011 meeting, industry sector meetings were held to develop the revised CTE standards based on the recommendations. Subsequently, the revised CTE Standards were share with the general public for public review, comment, and suggestions. Once the CTE Standards were revised, academic and CTE teachers collaborated on the alignment with the Common Core State Standards, Next Generation Science Core Ideas, and the History/Social Science Standards. The newly revised CTE Model Curriculum Standards designed to prepare students to be both Career and College ready were adopted by the SBE on January 16, 2013.

- CTE Standards Introduction (PDF; 4MB) - Executive Summary
- CTE Standards - All Industry Sectors (DOC; 5MB) - Prepublication Version

By Industry Sector

- Agriculture and Natural Resources (DOC) - Prepublication Version
- Arts, Media, and Entertainment (DOC) - Prepublication Version
- Building and Construction Trades (DOC) - Prepublication Version
- Business and Finance (DOC) - Pre-publication Version
- Education, Child Development, and Family Services (DOC) - Prepublication Version
- Energy, Environment, and Utilities (DOC) - Prepublication Version
- Engineering and Architecture (DOC) - Prepublication Version
- Fashion and Interior Design (DOC) - Prepublication Version
- Health Science and Medical Technology (DOC) - Prepublication Version
- Hospitality, Tourism, and Recreation (DOC) - Prepublication Version
- Information and Communication Technologies (DOC) - Prepublication Version
- Manufacturing and Product Design (DOC) - Prepublication Version
- Marketing Sales and Service (DOC) - Prepublication Version
- Public Services (DOC) - Prepublication Version
- Transportation (DOC) - Prepublication Version

Resources

Timeline

<table>
<thead>
<tr>
<th>Activity</th>
<th>Schedule</th>
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<tbody>
<tr>
<td>Industry sector stakeholder meetings</td>
<td>May 2011</td>
</tr>
<tr>
<td>Standards Alignment Project</td>
<td>August 2011</td>
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<tr>
<td>Industry sector writing team</td>
<td>November 2011</td>
</tr>
<tr>
<td>CTE Pathway-Academic Standards Alignment</td>
<td>February 2012</td>
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<tr>
<td>Revisions and academic alignment by Project Team</td>
<td>March – June 2012</td>
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<tr>
<td>Project Team reviews and edits all 15 industry Sector standards</td>
<td>July 2012</td>
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<tr>
<td>Public Input</td>
<td>September 2012</td>
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<tr>
<td>Instructional Quality Commission briefing</td>
<td>September 2012</td>
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<tr>
<td>SSPI issues recommended CTE Standards</td>
<td>December 2012</td>
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<tr>
<td>State Board of Education (SBE) action on Recommended standards</td>
<td>January 2013</td>
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<tr>
<td>Professional Development begins</td>
<td>February 2013</td>
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Project Team

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<thead>
<tr>
<th>Last Name</th>
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<th>Location</th>
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<tbody>
<tr>
<td>Campbell</td>
<td>Bev</td>
<td>California Department of Education</td>
</tr>
<tr>
<td>Weikle</td>
<td>Russ</td>
<td>California Department of Education</td>
</tr>
</tbody>
</table>
Industry Sector Stakeholder Team

In order to accomplish this important work, the California Department of Education (CDE) has requested the assistance of the Solano County Office of Education (SCOE). SCOE is working in concert with CDE to organize stakeholder meetings, review, analyze and edit work completed by the stakeholder groups. SCOE is responsible to the CDE for the organization of the CTE standards product. SCOE and CDE convened industry sector stakeholder meetings to begin the review and revisions to the CTE standards.

SCOE and CDE Team

Questions: Career Technical Education Administration and Management Office | CTEmcstandards@cde.ca.gov | 916-324-5706

California Department of Education
1430 N Street
Sacramento, CA 95814

Last Reviewed: Monday, May 06, 2013
Standards for Career Ready Practice

Standards for Career Ready Practice describe the fundamental knowledge and skills that students need to prepare for transition to postsecondary education, career training, or the workforce. These standards are not exclusive to a career pathway, a Career Technical Education program of study, a particular discipline, or level of education. Standards for Career Ready Practice are taught and reinforced in all career exploration and preparation programs or integrated into core curriculum, with increasingly higher levels of complexity and expectation as a student advances through a program of study. Standards for Career Ready Practice are a valuable resource for CTE and academic teachers in the design of curricula and lessons that teach and reinforce the career-ready aims of the CTE Model Curriculum Standards and the Common Core State Standards.
1. Apply appropriate technical skills and academic knowledge

Career-ready individuals readily access and use the knowledge and skills acquired through experience and education. They make connections between abstract concepts with real-world applications and recognize the value of academic preparation for solving problems, communicating with others, calculating measures, and performing other work-related practices.
2. Communicate clearly, effectively, and with reason

Career-ready individuals communicate thoughts, ideas, and action plans with clarity, using written, verbal, electronic, and/or visual methods. They are skilled at interacting with others: they are active listeners who speak clearly and with purpose, and they are comfortable with terminology that is common to workplace environments. Career-ready individuals consider the audience for their communication and prepare accordingly to ensure the desired outcome.
3. Develop an education and career plan aligned with personal goals

Career-ready individuals take personal ownership of their educational and career goals and manage their individual plan to attain these goals. They recognize the value of each step in the educational and experiential process, and they understand that nearly all career paths require ongoing education and experience to adapt to practices, procedures, and expectations of an ever-changing work environment. They seek counselors, mentors, and other experts to assist in the planning and execution of education and career plans.
4. Apply technology to enhance productivity

Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring and using new technology. They understand the inherent risks—personal and organizational—of technology applications and they take actions to prevent or mitigate these risks.
5. Utilize critical thinking to make sense of problems and persevere in solving them

Career-ready individuals recognize problems in the workplace, understand the nature of the problems, and devise effective plans to solve the problems. They thoughtfully investigate the root cause of a problem prior to introducing solutions. They carefully consider options to solve a problem and, once agreed upon, follow through to ensure the problem is resolved.
6. Practice personal health and understand financial literacy

Career-ready individuals understand the relationship between personal health and workplace performance. They contribute to their personal well-being through a healthy diet, regular exercise, and mental health activities. Career-ready individuals also understand that financial literacy leads to a secure future that enables career success.
7. Act as a responsible citizen in the workplace and the community

Career-ready individuals understand the obligations and responsibilities of being a member of a community and demonstrate this understanding every day through their interactions with others. They are aware of the impacts of their decisions on others and the environment around them, and they think about the short-term and long-term consequences of their actions. They are reliable and consistent in going beyond minimum expectations and in participating in activities that serve the greater good.
8. Model integrity, ethical leadership, and effective management

Career-ready individuals consistently act in ways that align with personal and community-held ideals and principles. They employ ethical behaviors and actions that positively influence others. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the direction and actions of a team or organization, and they recognize the short-term and long-term effects that management's actions and attitudes can have on productivity, morale, and organizational culture.
9. Work productively in teams while integrating cultural and global competence

Career-ready individuals contribute positively to every team, as both team leaders and team members. To avoid barriers to productive and positive interaction, they apply an awareness of cultural differences. They interact effectively and sensitively with all members of the team and find ways to increase the engagement and contribution of other members.
10. Demonstrate creativity and innovation

Career-ready individuals recommend ideas that solve problems in new and different ways and contribute to the improvement of the organization. They consider unconventional ideas and suggestions by others as solutions to issues, tasks, or problems. They discern which ideas and suggestions may have the greatest value. They seek new methods, practices, and ideas from a variety of sources and apply those ideas to their own workplace practices.
11. Employ valid and reliable research strategies

Career-ready individuals employ research practices to plan and carry out investigations, create solutions, and keep abreast of the most current findings related to workplace environments and practices. They use a reliable research process to search for new information and confirm the validity of sources when considering the use and adoption of external information or practices.
12. Understand the environmental, social, and economic impacts of decisions

Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact other people, organizations, the workplace, and the environment. They are aware of and utilize new technologies, understandings, procedures, and materials and adhere to regulations affecting the nature of their work. They are cognizant of impacts on the social condition, environment, workplace, and profitability of the organization.