Building a Common Language for Career Readiness and Success: *A Foundational Competency Framework for Employers and Educators*

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A Holistic Approach to Career Success: Moving Beyond Traditional Measures of College and Career Readiness

Efforts to better align the transition between secondary and postsecondary education have gained momentum in recent years with a universal goal of preparing students to be both college and career ready. U.S. Department of Education Secretary Arne Duncan stated, "It is the responsibility of K-12 educators to prepare all students for both college and a career."[1] At the same time, workforce development stakeholders are focused on ensuring that secondary and postsecondary education are aligned with job skill requirements that reflect trends in the global economy. This effort is backed by various national initiatives, such as the President's Council on Jobs and Competitiveness, to ensure that students will graduate with the knowledge, skills, and industry-relevant education needed to get on a pathway to a successful career.[2]

Among education and workforce development circles, much has been discussed about how to ensure that individuals are "college", "career" and "work" ready in order to prepare them for career success. As a result, there is a great deal of confusion in the education and workforce market about what these terms really mean in terms of readiness. ACT released a research report introducing a broader definition of college and career readiness that moves beyond traditional indicators of core academic skills such as high school grade point average, class rank, scores on college readiness assessments and classroom rigor to also include noncognitive skills and workplace competencies that are not addressed in traditional academic settings.[3] Framed by this expanded view of college and career readiness, the next step is to examine the inclusion of foundational workplace competencies, both cognitive and noncognitive, that are important above and beyond just core academic skills as potential additional measures of career success.

Unique Contributions of College, Career, and Work Readiness for Success

This paper reviews ACT's current definition of "college readiness", and presents workable, policy-relevant definitions of "career readiness" and "work readiness" with respect to how they are different and how they intertwine throughout an individual's journey through the world of education and work. A proposed framework is presented to clarify how these concepts uniquely contribute and interact to achieve successful outcomes both in education and workplace settings.

College Readiness

Unlike career readiness and work readiness, there has been less ambiguity around the concept of "college readiness" and the types and levels of skills that are needed for an individual to successfully transition from secondary to postsecondary education.[4]

> **College readiness** is currently defined as the level of achievement a student needs to be ready to enroll and succeed—without remediation—in credit-bearing first-year postsecondary courses.

ACT's definition of college readiness is well-known and has been accepted by the educational community, and was the basis for the definition adopted by the Common Core State Standards initiative. Looking further into the definition of college readiness, the level of achievement needed for college success can be determined through a combination of college education standards and college readiness benchmarks. College education standards are defined as precise descriptions of the essential skills and knowledge that students need to become ready for college. College readiness standards are validated by student academic performance data through their alignment with benchmarks set for college readiness.[5]

College readiness benchmarks are often defined by scores on college readiness assessments, and represent the level of achievement required for students to have a high probability of success in postsecondary education (e.g., attainment of a specific grade level in corresponding credit-bearing first-year college courses).[6] When based on nationally representative samples, benchmarks are intended to be median course placement values for postsecondary institutions

and as such represent a typical set of expectations. The combination of both college readiness standards and benchmarks represents a consistent set of academic expectations for all graduating high school students to be ready to succeed in postsecondary education.

ACT proposes expanding the definition of college readiness to include non-cognitive behaviors in addition to the traditional academic knowledge and skills.[7] Research has shown that the path to academic and workplace success also requires emphasis on the "whole person" and includes nonacademic factors like behavioral tendencies, vocational interests, motivation, and self-beliefs. Teachers, researchers, and policymakers alike are realizing the need to focus not only on academics but also engagement and motivation to enhance learning and performance outcomes.[8]

Career Readiness

To date, "career ready" is most often used to describe the K-16 student population, which largely excludes individuals who have already proceeded through and exited the traditional K-12 education pathway. This has led to an assumption that career readiness is static; that it describes a single universal benchmark to be achieved once, at a particular point in time. This static view of career readiness disregards the likelihood that most individuals in today's workforce will have multiple jobs over their lifetime and will likely need to complete more than one type of post-high school credential (e.g., postsecondary degree, occupational certification, workplace certification) in order for their skills to continue to be relevant in the workplace. ACT proposes that "career readiness" be defined in a way that accounts for a broader population and supports the dynamic nature of career pathways.

> **Career readiness** is defined as the level of "foundational skills" an individual needs for success in a career pathway or career cluster, coupled with the level of "career planning skills" needed to advance within a career path or transition to other career paths.

The combination of foundational cognitive and non-cognitive skills, along with career planning skills, provides a framework for career readiness that has been proposed previously,[9] and all three have been shown to contribute to career success. Two types of foundational skills make up

career readiness. (1) **Cognitive skills** include both academic and workplace domains. The necessary level of cognitive skills is contingent on the career path and an individual's location on that path at any point during an individual's career. Examples include reading, math, critical thinking, and problem-solving. (2) **Non-Cognitive skills**, also known as personal effectiveness or soft skills, are personal characteristics and behavioral skills applicable across a broad range of settings. Examples include adaptability, communication skills, cooperation, discipline, and integrity.

These skills are *foundational skills:* they are the fundamental, portable skills that are critical to training and workplace success. These skills are fundamental in that they serve as a basis—the foundation—for supporting more advanced skill development. And they are portable because, rather than being job-specific, they can be applied at some level across a wide variety of occupations. Individuals who develop these skills are more likely to be successful in training and in the workforce and are more competitive in the job market. Reading a technical manual, listening to instructions, showing up to work on time, writing a memo, putting forth extra effort, and giving an oral presentation are all examples of using foundational skills on the job.

Career planning skills are used to engage in informed exploration and make effective education and career choices. Research shows that the degree to which career interests fit a planned choice of college major or career impacts measures of success, such as academic success and persistence, job satisfaction and performance, and earnings.[10] In both the K-12, postsecondary and workforce arenas, there should be an understanding of how to obtain information on career opportunities, how to assess interests, and how to interpret the information to help individuals develop a viable career pathway.

Work Readiness

Within the context of career pathways, "work readiness" describes the skill needs and demands of a specific occupation or job. "Work ready" describes what it takes for an individual to be considered as a viable applicant for a given job. While the level of foundational skills varies between career paths, the mix and level of foundational skills required for a specific occupation are even more diverse.

> **Work readiness** is defined as the level of "foundational skills" an individual needs to be minimally qualified for a specific occupation/job as determined through an occupational profile or job analysis.

Similar to **Foundational skills** for career readiness, work readiness include both workplace cognitive and non-cognitive skills. The difference is that foundational skills needed for career readiness are portable across all occupations (e.g., reading for information, applied mathematics, problem solving, and critical thinking). The foundational skills needed for work readiness are occupation-specific, *vary both in importance and level for different occupations*, may include more and different skills than just the foundational cognitive skills, and depend on the critical tasks identified via occupational or job profiles. Furthermore, an individual must achieve a level of career readiness needed for a career path before they can be considered ready to work in a specific occupation.

Occupational profiles are descriptions of the key skill areas and levels of skills required to enter an occupation and successfully perform tasks. Occupational profiles are usually developed via job analysis, or the process of identifying in detail the particular job duties and requirements and the relative importance of these duties for a given job.[11] One source of occupational profiles is the Occupational Information Network (O*NET) which identifies and describes the key knowledge, skills, and abilities for over 1,100 occupations.[12] ACT also publishes occupational profiles based on the WorkKeys® system which contain the combination and level of skills needed to be successful in target occupations.[13] The occupational profiles were developed by combining information from the job profiles for groups of jobs that share the same identification numbers in the O*NET database.

Much like college readiness, the level of achievement needed for work success can be determined via a combination of work readiness standards and benchmarks.[14] Work readiness standards, as determined by the level of foundational skills profiled for a nationally representative sample of jobs in a given occupation, could serve as precise descriptions of the essential skills and knowledge that individuals need to become ready for an occupation. Likewise, work readiness benchmarks should be defined by scores on work readiness
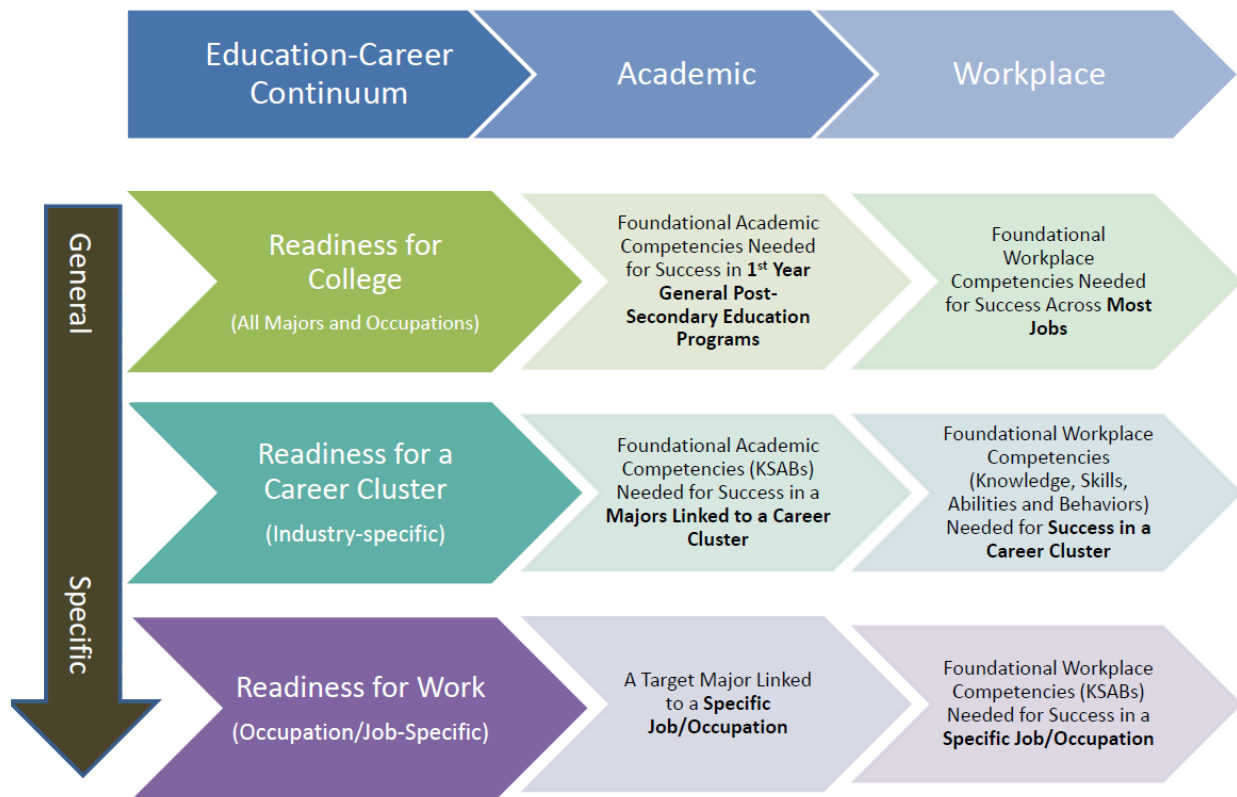
assessments which would represent the level of skill achievement required for individuals to have a high probability of success in a job.

The Interplay of College, Career and Work Readiness for Success

While the terms college, career and work readiness are distinct, they are also complementary. For example, in order for an individual to be work ready for a specific occupation, they will also need to satisfactorily meet the levels of career readiness needed for that occupation's career pathway. Without the necessary education and training credentials needed for a career (including academic degree, occupational certificates, and workforce certifications), most job seekers would not be considered to be fully qualified to enter a job or to be able to successfully perform on-the-job duties. Individuals will need to achieve different levels of career readiness for a given career pathway as they enter and exit the education and workforce development systems throughout their lifetime, a pathway that at some point will likely necessitate the need to achieve college readiness.

Figure 1. below provides a framework for how college, career and work readiness are complimentary. It expands on past models that are limited to measures of only academic and workplace cognitive skills, as opposed to competencies, which take into account knowledge, skills, abilities and behaviors that are important for career success.

Figure 1. Readiness Along the Education to Career Continuum

Education-Career Continuum	Academic	Workplace
General → Specific		
Readiness for College (All Majors and Occupations)	Foundational Academic Competencies Needed for Success in **1st Year General Post-Secondary Education Programs**	Foundational Workplace Competencies Needed for Success Across **Most Jobs**
Readiness for a Career Cluster (Industry-specific)	Foundational Academic Competencies (KSABs) Needed for Success in a **Majors Linked to a Career Cluster**	Foundational Workplace Competencies (Knowledge, Skills, Abilities and Behaviors) Needed for **Success in a Career Cluster**
Readiness for Work (Occupation/Job-Specific)	A Target Major Linked to a **Specific Job/Occupation**	Foundational Workplace Competencies (KSABs) Needed for Success in a **Specific Job/Occupation**

Readiness for college and career are similar in that an individual needs to acquire certain academic foundational skills and competencies to be successful in a 1st year general post-secondary education programs as well as workplace competencies needed to be successful across most occupations. While the majority of new jobs created in the United States will require at least some form of post-secondary education or training, U.S. employers have indicated that a substantial percentage of college graduates are not adequately prepared to perform in entry-level jobs that require post-secondary education. As a result, it is important to recognize the value of acquiring both foundational academic and workplace competencies needed for workplace success.

Once an individual identifies a career cluster or pathway to pursue, the type and level of academic and workplace competencies required become more specific to the requirements of those academic majors and occupations within the target career cluster. Within the career cluster, an individual may identify a specific occupational target and the skill level and requirements

become even more specific to a target major linked to a specific occupation. This model provides the basis for identifying academic and workplace competencies needed to acquire stackable credentials that will support an individual's career progression.

Expanding the Current Readiness Framework to Include Foundational Academic and Workplace Competencies

This section provides an overview of various definitions of competencies and the concepts of knowledge, skills, abilities and behaviors which are important for career and workplace success.

Skills vs Competencies:

There is much confusion in the human capital marketplace on whether it is more appropriate to develop and measure competencies versus skills as part of an organization's talent management and development process. A review of the literature on the use of competencies versus skills in the workplace yields different interpretations of these terms. For example, the U.S. Office of Personnel Management (OPM) defines a competency as *"a measurable pattern of knowledge, skills, abilities, behaviors, and other characteristics that an individual needs to perform work roles or occupational functions successfully."* [15] According to OPM, competencies represent a "whole-person" approach to assessing individuals and specify the "how" of performing job tasks, or what the person needs to do the job successfully.

OPM also breaks out competencies into general or technical categories. *General competencies* reflect the cognitive and social capabilities (e.g., problem solving, interpersonal skills) required for job performance in a variety of occupations. On the other hand, *technical competencies* are more specific as they are tailored to the particular knowledge and skill requirements necessary for a specific job. A job analysis can be used to identify job tasks that are then linked to both competencies and skills.

According to a technical assistance guide on competency models developed for the U.S. Department of Labor - Employment and Training Administration for workforce development practitioners, a competency is *"the capability to apply or use a set of related knowledge, skills, and abilities required to successfully perform critical work functions or tasks in a defined work*

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setting."[16] Competency is not to be confused with "competence" which describes a level of performance. For example, competencies often serve as the basis for skill standards that specify the *level* of knowledge, skills, and abilities required for success in the workplace, as well as potential measurement criteria for assessing competency attainment. To document competencies, a competency model can be used to specify what is essential to select for or to train and develop individuals for specific jobs and job clusters, or across organizations and industries.

Within human resource (HR) circles, such as the Ohio HR Roundtable, discussions around competencies versus skills centers on how they are used during the talent management process.[17] For example, skills are "tangible" and competencies are the effective "application of skills." HR professionals say that skills are easier to define; job candidates either have them or they don't. Competencies are broader, up for interpretation, and more difficult to measure. As a result, when employers are in hiring mode, they prefer to use measures of skills and work experience, which are easier to validate than competencies.

Within the field of Industrial and Organizational Psychology, competencies are viewed as encompassing knowledge, skills, abilities and behaviors.[18] In essence, a competency is a broader construct than a skill and has a wider application within the talent management process. Specifically, competency modeling aims at identifying skills and abilities that are important for a variety of jobs in the same organization and across organizations and industries. For example, one may be able to create a list of competencies that might be used for selection, performance appraisal, compensation, and training purposes.

In contrast to competency modeling, a job analysis examines the tasks performed in a job, the competencies required to perform those tasks, and the connection between the tasks and competencies.

How Are Competencies Organized and Measured? *This section provides a framework for documenting competencies that are important for work and career success such as competency modeling and job analysis.*

Competency models can take a variety of forms and typically include the following elements:

- **Competency names and detailed definitions.** For example, a competency model could include a competency called "teamwork" defined as working cooperatively with others to complete work assignments.
- **Descriptions of activities or behaviors associated with each competency.** For example, the following behaviors could be associated with the competency "Teamwork":
  - Abiding by and supporting group decisions
  - Facilitating team interaction and maintaining focus on group goals
  - Handling differences in work styles effectively when working with co-workers
  - Capitalizing on strengths of others on a team to get work done
  - Anticipating potential conflicts and addressing them directly and effectively
  - Motivating others to contribute opinions and suggestions
  - Demonstrating a personal commitment to group goals
- **A diagram of the model.** Competency models may include additional information about skills and abilities required for different level of mastery, or information about the level of competence required at different occupational levels. Figure 2. provides an example of an industry competency model.

While a traditional job analysis can result the documentation of competencies and/or knowledge, skills, abilities and behaviors that are important for the job, it is usually used to define a narrower, more specific set of skills and abilities for personnel selection purposes. Job analysis data are used to:

- establish and document competencies required for a job;
- identify the job-relatedness of the tasks and competencies needed to successfully perform the job; and
- provide a source of legal defensibility of assessment and selection procedures[19].

Information from a job analysis can also be used to determine job requirements, training needs, position classification and grade levels, and inform other personnel actions, such as promotions and performance appraisals.

How Can Competency Models Be Used for Workforce Development? *This section provides an overview how competencies are used for workforce development and introduces the U.S. Department of Labor's Industry Competency Models and associated measures of identified foundational, occupational and industries competencies.*

Competency models are developed as a resource for multiple uses such as:
- Career Exploration and Guidance
- Developing Career Pathways
- Workforce Program Planning and Labor Pool Analysis
- Curriculum Evaluation, Planning and Development
- Certification, Licensure, and Assessment Development
- Industry Models and Registered Apprenticeships

The *USDOL Competency Model Clearing House* provides a resource on how competency models have been used to support various workforce development efforts described above.[20]
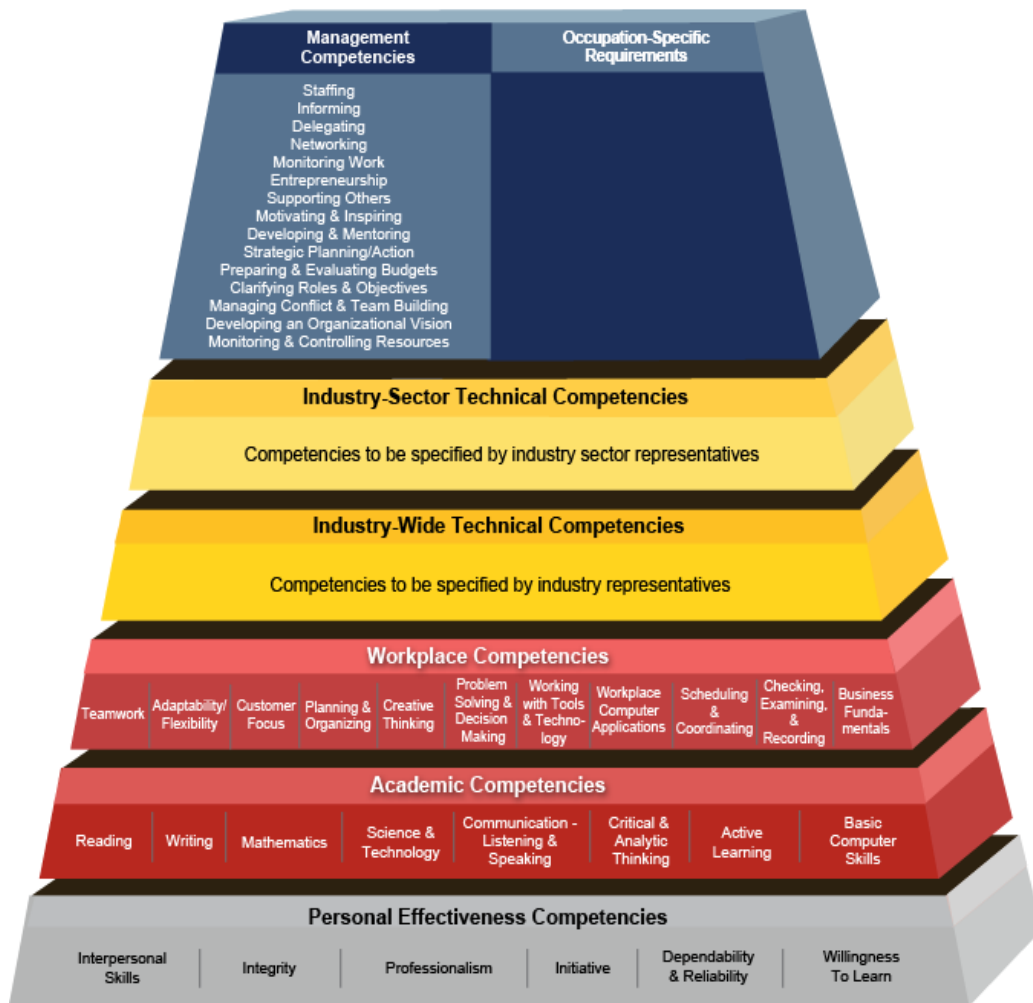
Industry Competency Models

Industry competency models developed by the U.S. Department of Labor depict the common knowledge, skills, and abilities in an industry or industry sector. The resulting models provide the foundation on which career pathways can be developed. The articulation of broad industry-wide knowledge and skill needs supports the development of a workforce that can perform successfully in a variety of cross-functional teams and make the transition from one job to another.[21] These models are called "building blocks" and consist of key competencies and behaviors, and are grouped into the following tiers:

1) Personal Effectiveness Competencies
2) Academic Competencies
3) Workplace Competencies
4) Industry-wide Competencies
5) Sector-specific Competencies

The pyramid-shaped graphic below depicts how competencies become more specific as you move up the tiers. The tiers are divided into blocks representing skills, knowledge and abilities essential for successful performance in the industry or occupation. Each competency is described by key behaviors or by examples of the critical work functions or technical content common to an industry.

Figure 2. U.S. Department of Labor Industry Competency Model

Each USDOL industry competency model is built on a series of tiers. At the base, Tiers 1-3 represent foundational academic and workplace competencies that form the foundation for success in educational settings, as well as in the workplace. Foundational competencies are

portable across many occupations and are important for career success.[22] An example of a national layered credentialing system is the Manufacturing Skills Certification System, endorsed by the National Association of Manufacturers. This system of using industry-recognized credentials to certify competencies and skills begins with the ACT National Career Readiness Certificate at the foundation, followed by increasingly targeted occupation and job-specific skills credentials.[23]

Measuring Foundational Academic and Workplace Competencies Important for Work and Career Success

There are common indicators between college and workplace success. For example, research has shown that cognitive ability is the strongest predictor for both job performance and academic success.[24] In addition, certain personality traits such as conscientiousness and emotional stability, as well as motivational factors such as goal setting, also predict both college and work outcomes. While there are some commonalities among academic and workplace success indicators, there are differences in how these indicators are measured. A report by the National Assessment Governing Board found that measuring reading and math for academic settings does not equate to measuring reading and math for applied workplace settings. While some overlap was found, the results of the study did not support using only academic assessments to measure career readiness.[25] These findings produce further support for incorporating both foundational academic and workplace competencies into secondary and post-secondary education programs so that the targets of instruction are aligned with general job skill requirements. In summary, research shows that college and career success is multidimensional and needs to be assessed using a variety of indicators. How we measure these important indicators depends on the context (academic vs workplace) and there is value in combining these indicators to create a more holistic view of an individual's potential for career success.

Endnotes

[1] These remarks are taken from Secretary Duncan's prepared remarks at the release of the *Pathways to Prosperity* report from the Harvard Graduate School of Education Pathways to Prosperity Project on February 2, 2011.

[2] Jobs Council Recommendation to Prepare the American Workforce to Compete in a Global Economy. http://www.jobs-council.com/recommendations/prepare-the-american-workforce-to-compete-in-the-global-economy.

[3] Broading the Definition of College and Career Readiness: A Holistic Approach http://www.act.org/research/researchers/reports/pdf/ACT_RR2014-5.pdf

[4] See Reading Between the Lines: What the ACT Reveals About College Readiness in Reading published by ACT (2006) for an early definition of college readiness. This definition of college readiness is also used by the Common Core State Standards Initiative, a state-led effort coordinated by the National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO), http://www.corestandards.org/.

[5] See the ACT report, *College Readiness Standards for EXPLORE, PLAN, and the ACT* (2008).

[6] See the ACT report, *College Readiness System: Meeting the Challenge of a Changing World* (2008).

[7] ACT Working Paper. The Neglected Half: Broadening our definition of readiness beyond core academic achievement across the K-career continuum to more effectively foster education and workplace success.

[8] http://www.edweek.org/ew/articles/2014/06/05/34overview.h33.html?intc=EW-DPCT14-TOC

[9] The report, *Impact of Cognitive, Psychosocial, and Career Factors on Educational and Workplace Success* (ACT, 2007), proposes that the key constructs associated with college and work readiness and success include: cognitive development (academic learning and achievement), psychosocial development (motivation, self-regulatory and social engagement), and career development (ability to engage in exploration and make effective choices).

[10] See *Job congruence, Academic Achievement, and Earnings* by George Neumann, Neal Olitsky, and Steve Robbins published by Labour Economics (2009).

[11] From *Applied Psychology in Human Resource Management* (6th Edition) by Wayne Cascio and Herman Aguinis published by Pearson Prentice Hall (2005).

[12] Occupational Information Network, http://www.onetonline.org/.

[13] http://www.act.org/workkeys/analysis/occup.html

[14] www.act.org/workreadiness

[15] U.S. Office of Personnel Management Personnel Assessment and Selection Resource Center. http://apps.opm.gov/ADT/Content.aspx?page=1-03&JScript=1 .

[16] Technical Assistance Guide for Developing and Using Competency Models – One Solution for the Workforce Development System. http://www.careeronestop.org/competencymodel/Info_Documents/TAG.pdf

[17] HR Roundtable: What's the Difference Between Skills and Competencies? See: http://www.tlnt.com/2011/10/18/hr-roundtable-whats-the-difference-between-skills-and-competencies/

[18] Practice Network: Competency Modeling. See: http://www.siop.org/tip/backissues/tipoct98/7harris.aspx

[19] See: http://www.opm.gov/policy-data-oversight/assessment-and-selection/job-analysis/

[20] See: http://www.careeronestop.org/CompetencyModel/models-in-action.aspx

[21] Technical Assistance Guide for Developing and Using Competency Models – One Solution for the Workforce Development System. http://www.careeronestop.org/competencymodel/Info_Documents/TAG.pdf

[22] http://www.careeronestop.org/CompetencyModel/competency-models/pyramid-home.aspx

[23] http://www.themanufacturinginstitute.org/Skills-Certification/Certifications/NAM-Endorsed-Certifications.aspx#AWC

[24] Broading the Definition of College and Career Readiness: A Holistic Approach http://www.act.org/research/researchers/reports/pdf/ACT_RR2014-5.pdf

[25] The Content Alignment between the NAEP and WorkKeys Assessments. A report prepared for the National Assessment Governing Board.