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Communicating the Value of Competencies

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Leadership and Advocacy

Communicating the Value of Competencies

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ACKNOWLEDGMENTS

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Introduction

Higher education faces many challenges today. Some employers think that graduates are not well-prepared for the professional roles aligned to their credential. This is contributing to what some are calling "credential inflation," as employers require higher levels of credentials than what were previously required for the same positions (Burning Glass Technologies 2014). Policymakers have grown increasingly concerned about the cost of higher education. Students and their families encounter a system that is ripe with possibilities and options, but also fragmented, particularly as to how diverse credentials and their programs of study align (or do not) with their professional goals and aspirations (Lumina Foundation 2015b).

These big picture concerns play out in the individual struggles students face when they attempt to apply their educational achievements to employment and career advancement processes. The transitions that students make from education to employment can be fraught with uncertainty, poor communication, and inefficiencies. Students have difficulty articulating their knowledge, skills, and abilities in their resumes and online profiles, and their evidence of learning from academic activities often does not "translate" into employment processes. Employers often do not understand what is included in credentials; they then make assumptions about what certain credentials mean, and what graduates should know and be able to do. Improved communication about the competencies that are included in credentials can help to address these problems for students, academic institutions, and employers.

It is important to note up front that this is not about competency-based education (CBE) per se, or specifically about the restructuring of academic

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programs to focus on mastery of competencies rather than focusing on time. The argument in this paper is about the importance of competencies in all academic programs. CBE programs are inherently valuable in their explicit articulation of competencies and how they are embedded in the curriculum. CBE programs also have a vested interest in making sure stakeholders understand the value of these competencies. But it is not necessary to revamp other academic programs to make them time-independent or time-flexible in order to reap the benefits of clear articulation of competencies.

This paper emerged from a project by the American Council on Education (ACE) Center for Education Attainment and Innovation, which convened dozens of experts to analyze how to improve the quality and value of CBE. The project and this resulting paper are part of the ACE **Alternative Credit Project**, sponsored by the Bill & Melinda Gates Foundation.[1] The project considered the quality of CBE in general, and then focused on how employers view CBE. This led to the recognition that employers value competencies, but do not get clear signals from higher education institutions about the competencies of graduates. CBE programs may begin to address this problem; but in general, better communication about competencies in all academic programs is needed. This paper provides higher education decision makers with insights into the needs of employers as they seek to hire and promote employees, and how competencies can help.

> *Improving the value of competencies is a targeted set of approaches in the broader context of improving the value of credentials.*

This paper is closely related to another resource from ACE's Center for Education Attainment and Innovation, *Quality Dimensions for Connected Credentials* (Everhart et al. 2016), which focuses on the value of credentials, and in particular on dimensions of quality that support healthy ecosystems of connected credentials: transparency, modularity, portability, relevance, validity, and equity. "Credentials" include degrees, diplomas, licenses, certificates, badges, and professional/industry certifications. "Connected credentials" refers broadly to connections and relationships among credentials, as well as connections to opportunities for credential earners. Two premises of connected credentials are that the competencies a credential represents should be clearly defined, and that these competencies could carry independent value, including the possibility of individual competencies having currency value as very granular credentials. The connected credentials paper dovetails with this paper in that understanding and improving the value of credentials are

directly applicable to improving communication of the value of competencies (and vice versa). Therefore, improving the value of competencies is a targeted set of approaches in the broader context of improving the value of credentials. Definitions, concepts, and the dimensions of quality are shared across these two papers, with different focuses.

The potential benefits of improving credentials to include effective communication of competencies are significant. Students need to be able to communicate what they know and what they can do with that knowledge—i.e., their competencies—not only for specific employment opportunities, but also to understand and articulate their achievements across a lifetime of career advancement. Employers need to understand the competencies of applicants in order to make appropriate hiring and promotion decisions, thereby increasing the value and effectiveness of their organizations. Higher education institutions need to articulate the competencies represented in their credentials in order to demonstrate the specific relevance, applicability, and value of these credentials for helping students achieve their goals. These are not different needs—at their core, they all reflect the value stakeholders place in well-articulated competencies, and by extension, individuals' abilities to demonstrate these competencies. But the potential to achieve this shared value is dependent on clear definition of competencies, effective embedding of competencies in academic programs to yield valid evidence of learning, students' understanding of their own achievements, and employers' trust in the authenticity and reliability of institutions' assessment of students' competencies.

The primary challenge is clarity and communication. Employers are challenged to clearly articulate the competencies they require from employees, and higher education institutions are challenged to clearly articulate what competencies students have when they graduate. In addition, there is a sense on both the employer side and on the higher education side that employees and graduates respectively should be more than the sum of their competencies. Employers want to hire people who are competent, socially adjusted, smart, creative, and who have specific professional skills; higher education institutions want to produce graduates who are learned, diverse, smart, creative, socially engaged, and who have specific disciplinary skills. How are these desirable characteristics articulated? How do higher education institutions know if they have produced graduates with these characteristics? How do employers know if potential employees have these characteristics? Clearly communicated competencies can help.

When articulated clearly, competency statements identify what the holder of

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the competency knows and can do with that knowledge. For higher education institutions, this should not be new or unfamiliar. Educators who utilize Bloom's taxonomy and hierarchy of learning (Anderson and Krathwohl 2001) can structure competency statements without any significant restructuring of their curricula, according to the levels of knowledge students have acquired and how they can demonstrate that knowledge (Schejbal 2015). Some institutions leverage tools such as the Degree Qualifications Profile (DQP) (Adelman et al. 2014) and the Association of American Colleges and Universities' (AAC&U) Liberal Education and America's Promise (LEAP), (Association of American Colleges and Universities 2016a) to support the articulation and scaffolding of relevant learning outcomes and competencies across the curriculum (for clear examples of the relationship between learning outcomes and competencies, see Davis and Warner n.d.). These institutions are in a strong position to communicate competencies to employers and other stakeholders.

Institutional diversity makes it unlikely that any monolithic approach to competencies can work. Approaches to competencies will be more effective as they emerge from communities of practice that bridge academic and employment perspectives. This paper provides context to help higher education decision makers understand and improve the value of competencies among higher education institutions, students, and employers. It includes:

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- Definitions of key terms
- Research insights
- Problems stakeholders currently encounter
- Challenge questions to stimulate dialogue and visualize potential futures that address these problems
- A fictitious scenario that depicts one possible journey from current state to future benefits

It concludes with a call to action.

What Are Competencies?

KEY DEFINITIONS

"What are competencies?" may seem like a straightforward question, but the rise of CBE has brought with it multiple interpretations of the terminology (for a lexicon, see Everhart et al. 2014). In the context of this paper, we also need to consider the differences between how academics use terms such as "competency" and "assessment" and how employers use them, because these differences contribute to miscommunications among stakeholders.

A competency is commonly described as what an individual "can do." If an individual can demonstrate a given competency, it means that the individual possesses the knowledge, skills, and abilities to do a certain "job" or "task." Competency is more valuable when it is not simply the ability to generate the desired behavior, but also includes a grasp of the theories and concepts underlying the desired behavior. Competency is also more valuable when the individual demonstrates the professional attributes of a holistic approach and worldview that mediate the how, what, and why of the task. Academics and employers generally share this broad understanding of "competency."

Further analysis of how competencies are valuable in academic and employment contexts benefits from a more specific breakdown of "competencies." A number of initiatives are working to increase understanding among stakeholders about competencies and also about the relationships between competencies and credentials (for an overview of some of these initiatives and related resources, see Everhart et al. 2016). Part of this work involves defining

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structure for what types of competencies are documented in different types of credentials. One such resource is the Connecting Credentials Framework, which has incorporated many different perspectives from experts in higher education, industry, policy, certification, and accreditation (Lumina Foundation 2015a, 3). It is aligned with related resources such as the Degree Qualifications Profile (Adelman et al. 2014) and the Employability Skills Framework (U.S. Department of Education 2016).

The Connecting Credentials Framework provides structure for profiling credentials according to "levels that indicate the relative complexity, breadth and/or depth of learning achievement," enabling transparency and comparison of different types of credentials (Lumina Foundation 2015a, 2). This framework is based on competencies, which "are broken into two learning domains: knowledge and skills. The latter domain is broken into three sub-domains: specialized skills, personal skills and social skills" (Lumina Foundation 2015a, 2), as defined below:

> **Competency:** "A learnable, measurable [and/or observable], role-relevant, and behavior-based characteristic or capability of an individual" (Lumina Foundation 2015a, 11).

>> **Knowledge:** "What a learner knows, understands and can demonstrate in terms of the body of facts, principles, theories and practices related to broad general or specialized fields of study or work" (Lumina Foundation 2015a, 11).

>> **Skills:** "What an individual can do in applying knowledge, completing tasks and solving problems (involving the use of logical, intuitive and creative thinking). Skills can be described in terms of types and complexity and include cognitive, technical, communication, interpersonal and practical skills (involving manual dexterity and the use of methods, materials, tools and instruments)" (Lumina Foundation 2015a, 12).

>>> **Specialized skills:** "Skills that are occupational and discipline-specific" (Lumina Foundation 2015a, 12).

>>> **Personal skills:** The ability to "act in an independent and responsible manner in various situations, to exercise judgment, demonstrate critical thinking and problem solving, reflect on one's own actions and on the actions of others, and to continue to develop his/her own competencies" (Lumina Foundation 2015a, 12).

Social skills: "An individual's ability to be aware of the behavior of others and of differing viewpoints, to communicate with others effectively, and to work effectively with people from diverse backgrounds and points of view" (Lumina Foundation 2015a, 12). By extension, this also includes to be aware of how differing viewpoints affect communication and collaboration, to act accordingly, and to understand and be in control of one's behavior and emotions to contribute to a professionally appropriate social and interpersonal climate.

Competencies demonstrated in all of these domains of knowledge, skills, and abilities are important to employers, though they use different frameworks and vocabulary to communicate these concepts, including industry-specific frameworks. Foundational competencies that are included in most competency frameworks are generally valuable across contexts, e.g., "leadership, ethical practice, critical evaluation, cultural effectiveness, and communication" (Society for Human Resource Management 2012), and "teamwork, critical thinking, problem solving, adaptability, and communication" (from the Advanced Manufacturing Competency Model, U.S. Department of Labor 2010). The Competency Model Clearinghouse sponsored by the U.S. Department of Labor provides models for numerous industries and guides for defining competencies and developing models, including foundational competencies that are common to all models (U.S. Department of Labor 2016). In this paper, we use the phrase "cross-cutting competencies" to refer to knowledge, skills, and abilities that are not specific to a particular field or discipline—competencies which are generally valuable across most if not all educational programs and employment environments.

Also useful for context are definitions of other terms related to credentials:

A credential is a "documented award by a responsible and authorized body that has determined that an individual has achieved specific learning outcomes relative to a given standard. Credential, in this context, is an umbrella term that includes degrees, diplomas, licenses, certificates, badges, and professional/industry certifications" (Lumina Foundation 2015a, 11).

Badges in this paper refer to "open badges" and therefore include technical and conceptual frameworks for openness, transparency, and interoperability (for more context on open badges, see Derryberry, Everhart, and Knight 2016). "Badges signify accomplishments such

as completion of a project, mastery of a skill, or marks of experience (Casilli and Knight 2012, 1)," and can be created and awarded by institutions, organizations, groups, or individuals. Badges are flexible with regard to how issuers create them, define their use, and develop their criteria (which are publicly viewable, embedded in the badge, and verifiable). Therefore badges can be used in numerous ways to meet a community's needs, to represent granular competencies as well as deeply linked, rich experiences and complex learning. Badges are being used in conjunction with and/or as modular components of traditional credentials such as degrees. In some cases, especially when badges link to evidence, they are being used as representations of credentials (for context, see *Quality Dimensions for Connected Credentials*, Everhart et al. 2016).

"**Career pathways:** The career pathway approach connects progressive levels of education, training, support services, and credentials for specific occupations in a way that optimizes the progress and success of individuals with varying levels of abilities and needs. This approach helps individuals earn marketable credentials, engage in further education and employment, and achieve economic success. Career pathways deeply engage employers and help meet their workforce needs; they also help states and communities strengthen their workforces and economies" (Lumina Foundation 2015a, 10).

Other terms related to educational and assessment processes also provide useful context:

Competency-based education (CBE) aligns curriculum, instruction, and assessment to articulate the knowledge, skills, and abilities students will able to demonstrate. CBE programs offer students the opportunity to demonstrate competency levels and build on their knowledge and skills to earn high-quality degrees, certificates, and other credentials. CBE provides an alternative to traditional time-based education by focusing squarely on learning outcomes. CBE programs are designed to improve student learning by providing curriculum, instruction, and assessment based on well-defined learning outcomes, enhanced professional alignment, and validated critical knowledge and skills, while also communicating clear, transparent evidence of learning for stakeholders.

Assessment is the process through which an individual's competencies are evaluated and verified. In higher education, assessment is often done by a faculty expert or a trained assessor. The assessment process generally results in the assignment of a mark, e.g., a grade, a score, and/or a profi-

ciency level, as well as specific comments on the individual's performance. In employment situations, the term "assessment" includes not only structured evaluation and testing processes, but also formal and informal evaluation of an individual's abilities through personal interactions such as interviews and observations. Employment assessments may be done by a hiring manager, a supervisor (particularly in internships or on-the-job training), human resources personnel, and/or third-party intermediaries such as screening and training agencies.

"Authentic assessment is the assessment of competencies in a manner that as closely as possible approximates the way in which that competency will be demonstrated in the individual's professional and/or civic life" (Everhart et al. 2014).

Research Insights

ABOUT THIS RESEARCH

ACE's Center for Education Attainment and Innovation convened dozens of experts from academia, workforce, and industry to analyze how to improve the quality and value of competency-based approaches. The group decided to leverage ACE's connections to employers through ACE's College Credit Recommendation Service (CREDIT®) to ask employers how best to signal competencies.

The group formulated investigative questions about how institutions define competencies within degree programs, as well as how competencies can be transcribed and whether they are communicated in ways that are useful for employers to determine graduates' suitability for the workplace. Then research was constructed to ask employers how higher education institutions can increase employer confidence in student competency outcomes and better signal students' abilities. What definitions, processes, and communication tools would they trust or value in their hiring decisions? The final results were not expected to be comprehensive, but rather to provide context and key themes for how academia can communicate competency attainment to employers, as well as what is needed in the assessment of competencies for employers to consider the evaluation of competencies credible. This quali-tative research indicated that employers value competencies but do not get clear signals from higher education institutions about the competencies of graduates.

Employers value competencies but do not get clear signals from higher education institutions about the competencies of graduates.

A survey was developed; reviewed by subject matter experts; and sent to employers, 53 of whom responded. These employers represented different industries, but there were some notable gaps in representation. The employers varied in size from one to 50,000 employees, but the majority of the respondents had 500 or fewer employees. Respondents were geographically dispersed across the United States.[2]

Following the survey analysis, a focus group with experts from national education and industry organizations was convened. The themes identified below emerged from a synthesis of the quantitative and qualitative analyses. While the differences among the employer respondents allow us to see themes across employer groups, differences between types of employers may be obfuscated by the analysis process used. Additionally, the small number of respondents in each category (size, location, and industry) makes it impossible to meaningfully segment the data and analyze differences between the different types of employers. Thus, we see this research as providing preliminary evidence. The emergent themes can be used as a basis for future research as well as for consideration by institutions of higher education as they engage more deeply with employers on this topic.

Despite its limited scope, this research yields some key insights that help to characterize how employers assess and value competencies. Those insights are summarized below. The sections that follow the research summary extrapolate from these insights into potential approaches to improve understanding of the value of competencies; these approaches are not explicitly based on the research.

SURVEY RESULTS

The survey included questions about the employer, the types of credentials held by its employees, the importance of certain competencies, how they assess these competencies, and to what extent prospective employees have these competencies. The competencies included in the questions were:

- Communication: ability to communicate well when speaking, writing, and listening to others
- Teamwork: ability to work well in teams as both team leaders and as productive members of teams

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2   Further information about the research: The survey was sent out to approximately 800 employers with explanation of the goals of the project. It was also distributed via various email communications and web newsletters. There were 53 respondents, and 31 fully completed the survey. Respondents were geographically dispersed, with the largest percentage from the southern United States and the smallest from the Midwest.

- Problem identification: ability to identify problems well
- Problem solving: ability to propose viable solutions to problems
- Technical knowledge: technical knowledge and skills to succeed in the workplace

The survey also asked about whether the type and institutional source of credential held by the prospective employee matters in determining certain competencies.

Employers were asked about how well certain types of assessment reflect students' ability to apply their knowledge in the workplace and what they would consider effective assessments.

To ascertain how employers evaluate the competencies of prospective employers, the survey asked what types of information are useful for predicting work performance and what additional types of information would be helpful in determining if a prospective employee who is a recent graduate has the knowledge and skills needed to succeed. The survey also explicitly asked employers how higher education institutions can best communicate to employers what students know and can do.

The survey yielded insights in three areas, all of which are backed up by the findings from the focus group:

- Competencies that employers value
- The usefulness of certain methods of evaluating the competencies of applicants
- The usefulness of certain types of information for signaling whether an applicant has the competencies needed for the job

All of the cross-cutting competencies (communication, teamwork, problem identification, and problem solving) as well as technical knowledge in the survey were highly ranked as important or very important to employers.

COMPETENCIES THAT EMPLOYERS VALUE

All of the cross-cutting competencies (communication, teamwork, problem identification, and problem solving) as well as technical knowledge were highly ranked as important or very important to employers.

METHODS OF EVALUATING COMPETENCIES

- In questions about the usefulness of certain types of information for predicting work performance, responses showed reliance on methods that include human interaction with the prospective employee: interviews, recommendations or referrals, personal knowledge regarding his/her work, and job performance. This is also supported throughout the survey results by references to interviews as a key way of assessing candidates' competencies.

- When asked how they assess candidates' competencies, respondents selected the following methods:
    - Communication: interview
    - Teamwork: interview, portfolio
    - Problem identification: interview, portfolio
    - Problem solving: interview, simulation exercise, portfolio
    - Technical knowledge: portfolio, interview
- For all types of competencies, transcripts were *not* selected as a method used to assess competencies.
- Open-ended responses supported the conclusion that employers largely draw upon and trust interviews over other types of assessments to determine competencies.

SIGNALING COMPETENCIES

- When asked what additional pieces of information would be helpful in determining if a prospective employee who is a recent graduate has the knowledge and skills needed to succeed, the following items were selected:
    - A list of job-related competencies, e.g., "able to communicate clearly and effectively through writing, speaking, and PowerPoint presentations"
    - A portfolio of a student's work
    - Specific certifications earned by the student
    - A list of certificates or badges that a student earned
    - Jobs the student held while in college
- When asked to rank ways institutions test students' knowledge, according to how well each reflects students' abilities to apply their knowledge to the workplace, the following were highly ranked:
    - A project conducted only by the student
    - Clerkships/internships associated with a course or courses
    - Portfolios
    - Group projects
- When asked whether the type of credential and the institution issuing the credential matter in determining certain competencies, results were consistently weighted toward "doesn't matter" or "some of the time." The type of credential and institution mattered somewhat more for technical knowledge, but these were still weighted toward "some of the time."

FOCUS GROUP FINDINGS

As is common in mixed methods research, the results of the survey served as the basis for questions presented to expert focus group participants. ACE convened a focus group to discuss the skills and knowledge employers seek in prospective employees, how employers assess the presence of those skills and knowledge, and how employees and higher education institutions can signal to employers that prospective employees possess these skills and knowledge. The participants came from national education and industry organizations, including the U.S. Department of Education. The focus group yielded insights for the same three themes identified in the survey.

COMPETENCIES THAT EMPLOYERS VALUE

The following were points from the discussion:

- Focus group members confirmed the survey results regarding the need for cross-cutting competencies across sectors. Participants highlighted some competencies such as adaptability, teamwork, problem solving, cultural sensitivity, and reading.

- There is great variability among employers, regions, and needs. Skills that might be expected in one population, for example those without a postsecondary degree, might not be those expected in another population, such as those with a degree. Likewise, variation in the employment sector, including whether an industry is local or national or whether a particular firm is large or small plays a significant role in what skills and knowledge are needed to succeed. Both technical skills and cross-cutting competencies are viewed as essential, with a different mix depending on the employer, region, and industry.

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METHODS OF EVALUATING COMPETENCIES

The participants discussed how employers assess whether prospective employees have the requisite skills and knowledge to succeed in a job. Participants also discussed ways to improve those assessments.

The following emerged from the discussion:

- The discussion confirmed employers' overall reliance on interviews to assess competencies and fit for employment.

- Different kinds of assessments are required for different populations and in different employment sectors. Some assessments are more formal while some are less formal. On the more formal side are tests administered by employers to assess a prospective employee's cross-cutting competencies, such as his or her ability to

work with others. On the more informal side are ongoing assessments of a prospective employee during an internship. A supervisor may assess how an intern handles the responsibilities of a job, but never administer a test.

- Intermediaries can play an important role in helping employers assess the skills and knowledge of prospective employees. For example, industry associations work with employers, postsecondary institutions, and/or training organizations to match students with employers. Having a trusted intermediary recruit and screen prospective employees mitigates some of the risk employers take in hiring an individual.

- Participants stressed that any approach to assessing prospective employees' competencies needs employer buy-in. Without employer buy-in, employers are likely to continue assessing prospective employees in the same manner as they have in the past.

SIGNALING COMPETENCIES

Participants discussed a traditional college or university degree as a signal to employers of the qualifications of a prospective employee. They also discussed communications between higher education institutions and employers.

The following are highlights from that discussion:

- There was general agreement that higher education institutions could do more to reach out to employers.

- By establishing relationships with local employers, an institution can facilitate placement of its graduates in local jobs. Other relationships, such as apprenticeships, internships, and workplace learning, can help students learn and demonstrate the skills and knowledge needed to succeed in a job.

- Although in the survey employers indicated less interest in the institutional source of a degree or credential, in the focus group it was clear that this is still used as an important proxy for quality. Degrees from top-tier institutions are interpreted as denoting that graduates have certain skills and knowledge. Whether this is due to these institutions teaching students these skills and knowledge or due to an institution's reputation was debated in the discussion.

- From the perspective of an employer, a transcript provides little useful information. Employers are interested in what employees can do—not necessarily what courses they have taken. Higher education can do more to help students translate the language of transcripts into specific competencies.

Apprenticeships, internships, and workplace learning can help students learn and demonstrate the skills and knowledge needed to succeed in a job.

Communicating the Value of Competencies

- Portfolios and competency score cards were noted as ways of showing students' skills and knowledge in ways that can be useful to employers. But as with any other approaches, employers need to accept these in order for them to succeed.

- Stackable credentials were noted as a useful way to combine programs of study from different sources to create career pathways. It was also noted that employees need to continue to learn over time.

- Badges were noted as a viable record of competencies, and in some cases, such as for IT jobs, badges can have more relevance than traditional credentials.

- There have been a number of efforts in the past to address many of the issues raised in this focus group. Getting employer buy-in is essential in order for changes to be successful.

RESEARCH SUMMARY

In summary, employers in this research are highlighting the need to build stronger alliances between institutions of higher education and employers in order to gain deeper buy-in from employers regarding the competencies to be built into academic programs, the assessment methods to determine competency demonstration, and the methods used to communicate what has been learned to the employer. It is recognized that this is not a new recommendation, and employers also suggest that any techniques developed need to be both efficient and effective in order to be adopted by employers.

Any techniques developed need to be both efficient and effective in order to be adopted by employers.

Communicating the Value of Competencies across Education and Employment

How do we use the insights from this research to consider action? In some cases, CBE programs in the planning/development phases or already in progress will have already invested significantly in effectively communicating the value of competencies. We can learn a great deal from their examples in the Competency-Based Education Network, EDUCAUSE's Next Generation Learning Challenges, the Council for Adult and Experiential Learning's Jump Start, and other initiatives. In other cases, the approaches below will provide useful ways of starting or furthering discussions about competencies in any academic program. In all cases, the insights in this paper aim to help clarify the need for better communication of the value of competencies and practical approaches for getting there.

- What can student support staff and students themselves do at the level of specific learning achievements to improve communication of the value of competencies?

- What can administrators and registrars do at the level of administrative processes and credentials to improve communication of the value of competencies?

- What can academic leaders and faculty do at the level of academic programs and curriculum to improve communication of the value of competencies?

To address each of these questions, this section includes:

- A description of the typical current state, including problems with communicating the value of competencies

- Challenge questions to use in dialogues at your own institution, offering visualizations of some potential futures that help to address the problems described above

These descriptions of the current state, as well as the challenge questions, might not depict your circumstances, but both the differences and the similarities can help frame discussion. In particular, the challenge questions are intended to stimulate productive dialogue among stakeholders, challenging us to think beyond our own perspectives and assumptions. These are not easy questions to discuss—let alone address—and a single question could provoke months of debate or years of work. But these questions aim to provide ideas for getting started, for visualizing potential futures, and for progressing toward improved communication of the value of competencies. Not all of these questions will be relevant for your institution's specific needs. Mix, match, and revise to suit unique processes and goals at your own institution.

STUDENTS AND EVIDENCE OF LEARNING

A job after graduation is not the only important outcome of a postsecondary education, but it is a very important one—especially from the perspective of students. Hence, regardless of whether a higher education institution is a community college, a liberal arts institution, or a research-intensive institution, it has a vested interest in helping its graduates find gainful employment.

The interactions between employers and potential employees are extremely diverse. But in general, students who are able to effectively articulate their own strengths improve the likelihood that they will find jobs. In order for students to provide more useful signals to employers about the value of the competencies they have mastered, one important approach is to help each student understand his/her own competencies and to be able to apply them to career goals.

If the competencies included in courses and programs are not communicated to students, they do not have a framework for understanding what they are achieving in the courses, other than progress toward other courses and degree completion. This can lead to an attitude of rote completion, meeting the requirements and getting a grade, rather than focusing on specific learning outcomes and their value. If students do not understand the competencies they are achieving, they are also unlikely to be able to articulate the value of specific learning artifacts they are generating in the courses. Writing projects, team collaboration, lab experiments, and other common academic assignments can yield very useful evidence of competency mastery. The more students understand the alignments of competencies to learning activities, the

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more effectively they can curate their own evidence of learning and apply it to their goals both in educational and employment contexts.

Some courses and programs require or encourage students to collect and reflect on their own evidence of learning, for example via a portfolio, a capstone project, or a collection of badges. However, if students do not see beyond the requirements to recognize the broader, longer-term value of this evidence, they can lack motivation for these types of collections. Without a framework for students to understand the value of competencies, they are unlikely to manage effectively their own evidence of learning. Yet this evidence of learning, if well curated, can be very valuable for demonstrating specific strengths and signaling them to employers. In fact, the quotations below from different employers in this research indicated that such artifacts would be useful evidence in the hiring process:

> *"The ability to actually build or complete something demonstrable is the most useful. Depending on the student's major, this may be demonstrated with a portfolio, or possibly a prototype, a lab notebook, or other proof of concept."*

> Other useful evidence could include *"badges or certification to show job qualifications; internships; or a portfolio."*

> *"It is the individual student who must learn to display what he or she has learned, and be able to provide meaningful solutions to work-related problems. That is best communicated to the employer by the candidate, not by the college."*

Students can document their own competencies using learning artifacts such as writing projects, work produced with a team, experiment results, creative works, and other assignment and assessment artifacts. These can be collected in portfolios and/or added to online profiles. But in order for the process of collection and the collection itself to be meaningful, students need to be able to articulate what the learning artifacts represent and why they are important. This is considerably easier when students understand the competencies in their academic programs and how these artifacts demonstrate those competencies. This understanding, combined with transparent frameworks that align the competencies in academic programs with career pathways, allows students to have a much better understanding of the value of the competencies and why documenting mastery of these competencies benefits them.

Applying this evidence of learning to employment processes presents another set of hurdles for students. What opportunities do students at your institution have to learn about effective job search strategies? Are effective career

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counseling services available? If these services are focused on the value of the degree per se, they could be missing opportunities for students to match their competencies and evidence of learning to job requirements in much more specific ways.

Effective resume writing is critical, particularly since many employers screen applicants based on keywords and phrases in digital resumes and cover letters. Do students know what vocabulary to use in describing their strengths and achievements? In many cases, the same keywords and phrases included in competencies are relevant in resumes, particularly if the competencies are aligned to employers' needs. Employers often do not request portfolios of students' learning artifacts, but having curated them and being able to refer to them helps students match and articulate their competencies to job requirements. Students' statements about their achievements on the resume can also link to their own evidence of learning where there is clear alignment and relevance. This can help applicants stand out from others who have less targeted or undocumented achievements.

In some circumstances, students' self-documented competencies will not be considered valid. Employers will expect to get verification from the institution, from a trusted third party, and/or from their own assessment processes. But students usually do not have options for what they can get from the institution to document their competencies. Competency records and extended transcripts could address this problem, but they are not available at most institutions. Badges could provide open, portable, verified records of competency mastery, but they are not widely adopted.

This research indicates that employers continue to highly value interviews, references, and other personal interactions or networks as assessment methods for hiring. In these situations, students' documented competencies might count for little. But students' ability to articulate the value of their own competencies, use relevant vocabulary, and describe their own learning achievements can serve them very well. Even before the interview processes, the confidence gained through this understanding can help students be more likely to have strong references, professional networks, and well-articulated resumes.

What can student support staff and students themselves at your institution do at the level of specific learning achievements to improve communication of the value of competencies?

Students' ability to articulate the value of their own competencies, use relevant vocabulary, and describe their own learning achievements can serve them very well.

Challenge Questions and Visualization of Potential Futures

TRANSPARENCY

(For context on these dimensions, see *Quality Dimensions for Connected Credentials*, Everhart et al. 2016.)

- Do your students have a clear picture of how their credentials and competencies align to employment and career opportunities?

- Do students have clear pathways to job and career success? How are these pathways communicated to them?

- Are the career paths of graduates publicized? Are general information and data supplemented with testimonials from the graduates themselves and social networks for prospective students to connect with graduates?

- Are students able to see the curricular structure and competency framework for their particular academic program?

MODULARITY

- Do your credentials include competencies that carry independent value?

- Do your credentials include badges for specific competencies students master while earning the credential? Do the badges represent evidence of learning that can be used outside the institution at any time?

- Are students provided with guidance for using the Global Learning Qualifications Framework (State University of New York Empire State College 2016) to define their own competencies and learning achievements?

PORTABILITY

- Do clear definition of competencies and the badges that represent them provide information that makes it easier for different types of employers to understand what students know and can do?

RELEVANCE

- Does information about the career paths of graduates freely circulate in social networks and online sites?

VALIDITY

- Do social networks illuminate aspects of your credentials' value, e.g., do students communicate with peers about their competencies, how they represent valid, relevant achievements, and how they are useful?

- Can graduates actually demonstrate the competencies represented by your credentials?

EQUITY

- How specifically do competencies in and of themselves provide value to help people advance in careers and other contexts? Can students who do not complete a credential still use badges earned as modular evidence of competencies?

- How does transparency about competencies help students understand and document their own learning pathways to employment and further growth?

- Are students provided with formal career guidance and mentoring services throughout their progress toward credentials?

- Do student services staff understand the value of competencies and how to communicate this value to students?

- Are the career paths of graduates documented so that students have information about the value of your credentials for their own decision making? Are general information and data supplemented with testimonials from the graduates themselves and social networks for prospective students to connect with graduates? Are prospective students socialized into the challenges and opportunities of achieving competencies and completing the credential before they even begin?

INSTITUTIONAL ADMINISTRATORS AND CREDENTIALS

What are the ways in which your institution communicates with employers? Do only specific people from specific units communicate with employers? Is there a culture of collaboration with employers and industry associations? Do these collaborations include discussion of specific content and competencies included in academic programs and their relevance in career pathways?

The goals of many institutions, in practical terms, focus on the production of degree earners. More granular, modular credentials and/or articulation of specific competencies as part of a degree are not typical, and therefore there is no obvious need for more detailed communication with employers about students' competencies. This leads to a classic chicken-and-egg problem—employers do not request specific information about students' competencies because educational institutions don't have that information; they don't have it because they assume the lack of requests reflects a lack of need or demand. All parties also assume that a degree includes certain competencies, without

specific articulation of what those competencies are, how they were assessed, or whether graduates can actually demonstrate expected competencies. These assumptions lead to miscommunication and exacerbate a lack of trust. This comes out when employers complain that educational institutions are not producing graduates with the competencies employers need.

In general, employers request very little information from educational institutions. Employers do not often request transcripts, and this research confirms a commonly held assumption about employers' behavior, i.e., they do not request transcripts because transcripts do not have information that is useful to employers. Quotations from different employers in the research include:

> *"There is no way for the employer to see from the degree what the person's competencies are. A transcript doesn't show competencies, and the students might not even know the competencies."*

> *"If the university gave you a degree and a competency scorecard, there would be something worth looking at."*

Therefore, the only evidence of learning typically communicated from educational institutions to employers is to verify that a specific student has completed a credential. The verification might even be communicated to a third-party screening agency as a simple checkpoint in the application process. If employment personnel think about any particular aspect of the credential, it is likely that they make assumptions based on the reputation of the institution or what they think is included in a type of credential, major, or specialization.

Furthermore, students don't have options for what they can get from the institution to help them articulate their own competencies. Specific evidence of learning—other than course completions and grades, which are not useful to employers—is typically not documented. The competencies represented in academic programs are generally not communicated to students, and students do not have options for competency mastery records or verification of associated evidence of learning.

Employers rely heavily on interviews to assess the competencies of potential employees. However, few applicants get to the interview stage, so the competencies of all of the other applicants are largely unknown to employers and hence cannot be included in hiring decisions. Blunt screening mechanisms, such as eliminating all applicants who do not have a specific degree or specialization, substitute for consideration of applicants' specific competencies and associated achievements.

Students don't have options for what they can get from the institution to help them articulate their own competencies. Specific evidence of learning is typically not documented, other than course completions and grades, which are not useful to employers.

What can administrators at your institution do at the level of administrative processes and credentials to improve communication about the content of degrees and the value of competencies?

Challenge Questions and Visualization of Potential Futures

TRANSPARENCY

- Do your students have a clear picture of how your credentials and their competencies align with employment and career opportunities? Do they have clear pathways to achieve job and career success?

- How are the competencies in your credentials documented, and how is this communicated to stakeholders?

- Are you using the Connecting Credentials Framework to profile the levels and types of competencies your credentials represent?

- Are you using clearly defined descriptors from the Credential Transparency Initiative (Credential Transparency Initiative 2016) to characterize the value of your credentials, including competencies, labor market value, career pathway connections, etc.?

- Do you provide verified extended transcripts that show not only a student's courses and grades, but also links to competencies and the student's own specific evidence of learning? Are the extended transcripts machine-readable, facilitating searching and filtering via systems as well as by using manual click-throughs?

MODULARITY

- Do you provide competency records that not only outline the competencies included in a credential, but also provide verified records of mastery of specific competencies by individual students? Do these records include verified evidence of learning, such as links to learning artifacts?

RELEVANCE

- How do your credentials and the competencies they include address market and economic trends?

- Do employers see the value of the competencies of your graduates, as demonstrated in their job performance, aptitude, ability to learn on the job, longevity with the company, and other factors? Are they more likely to seek your graduates or even change their hiring practices to explicitly recommend or require specific competencies?

VALIDITY

- Are your credentials endorsed by industry organizations and/or employers?

- Have reputation networks, including new types of endorsers, emerged around your credentials, providing insights into their value? Do these endorsements specifically call out the value of competencies?
- Do analytics illuminate the value of competencies, e.g., data showing use of extended transcripts or alignment of competencies to job placement?

EQUITY

- What types of educational, social, and/or economic mobility do your credentials enable?

FACULTY AND ACADEMIC PROGRAMS

Competencies acquire value through the way they are woven into academic programs. The curriculum, courses, and assessments in an academic program all need to be clearly aligned to competencies in order to provide a useful structure for learning processes and competency mastery. When these alignments not only provide coherence within a program but also extend to career pathways, the value of the competencies is correspondingly extended.

Administrators' efforts to transparently articulate the competencies represented by credentials have little basis without the core value of the competencies in learning processes. And students have little basis for articulating their own competencies without evidence of learning. Therefore administrators, faculty, and student support staff all need to work together to build frameworks for the value of competencies across different parts of the institution.

A key component for establishing the value of competencies in an academic program is a well-defined framework articulating competencies that are relevant for the discipline, the profession, and the needs of employers (portions of this section are adapted from Bushway and Everhart 2014). The development of this type of framework can be very challenging, incorporating the perspectives of different types of stakeholders. The framework needs to reflect the body of knowledge, usually with several different levels of competencies, sub-competencies, and criteria for assessment of mastery. Academic leaders need to understand how the competencies map to credentials. Faculty need to understand how to define and deliver a curriculum that supports achievement of the competencies. Students need to understand what it means to master individual competencies as well as how the whole framework applies to their academic progress and career goals.

A competency framework lacks value if it is not supported by reliable and valid methods of assessing students' demonstrations of competencies. If there

A key component for establishing the value of competencies in an academic program is a well-defined framework articulating competencies that are relevant for the discipline, the profession, and the needs of employers.

is not transparency as to the types of assessment and what is being evaluated, stakeholders will not have confidence in students' competencies. Academic leaders need to understand the rigor of the assessments as representative of the goals of the program. Faculty need to understand how to define, deliver, and judge performance on assessments. Students need to understand how they will be assessed and how these assessments represent their mastery of the competencies. And employers will have confidence in the competency mastery of students only if they understand the assessments to be relevant to their needs.

Authentic assessment adds value because it "approximates demonstration of the competency in the real world—workplace or community—requiring a work product very similar to the type of work product an employer would expect" (Bushway and Everhart 2014). But in many cases authentic assessment requires significant investment to develop, sometimes requiring specialized equipment and environments as well as thorough understanding of how the competency is applied in non-classroom contexts. Educators often find it difficult to define assessments that require applied learning, but quotations from this research indicates that this is what employers expect for relevant assessments:

> *"A project involving research . . . and completion of a report or project is a way to walk a learner through the knowledge needed, and creates a long term memory of the information. Being able to answer multiple choice questions is the easiest way to assess, but not the best."*

> *"Requiring the student to actually perform a task is the best way to assess mastery of the task."*

What can academic leaders and faculty at your institution do at the level of academic programs and curriculum to improve communication of the value of competencies?

Challenge Questions and Visualization of Potential Futures

TRANSPARENCY

- Are the competencies in your academic programs clearly defined?
- Are the competencies vetted to meet industry needs?
- Do you use the Degree Qualifications Profile and/or LEAP as a framework for learning outcomes and competencies, and how they are mapped to the curriculum?
- Do you map the competencies in your programs to specific job requirements? Do communication and collaboration with employers illuminate pathways to employment and career advancement?

A competency framework lacks value if it is not supported by reliable and valid methods of assessing students' demonstrations of competencies.

RELEVANCE

- Do the competencies accurately represent knowledge, skills, and abilities that are applicable outside a specific course or academic context?

- Do the academic programs include authentic assessment of competencies?

- Are existing curricular models successful in producing clear, specific, valuable evidence of learning?

- Are your competency frameworks aligned with external standards and industry/employment requirements?

- How can learning activities and assessments be aligned to mastery of competencies that are relevant to industry/employment requirements?

- Are employers and industry associations involved in the improvement and redesign of programs? Do employers help to define the curriculum and competencies?

- Do you map competencies to workplace needs, not only for specific jobs, but also for current and future career opportunities?

- Do students have opportunities for internships and other workplace-embedded learning?

- How frequently is the curriculum updated to ensure it is current? Is that frequency appropriate for the content and field? Is information from the field and specific industries used for updates and improvements?

- Is evidence of learning from specific assessments shared with employers for their feedback on whether this type of learning is relevant in their field or industry?

- Does the curriculum incorporate real-world application and practice of specific, job-relevant skills?

- Do the circulation, endorsements, and uses of badges from this academic program illuminate the specific competencies and how they provide value?

VALIDITY

- Are the competencies well-articulated to the actual, current requirements from the field?

- Do the content and competencies in the curriculum appropriately cover the areas of learning they claim to represent?

EQUITY

- What types of educational, social, and/or economic mobility do your academic programs enable?

Scenario: Communicating the Value of Competencies Among Stakeholders
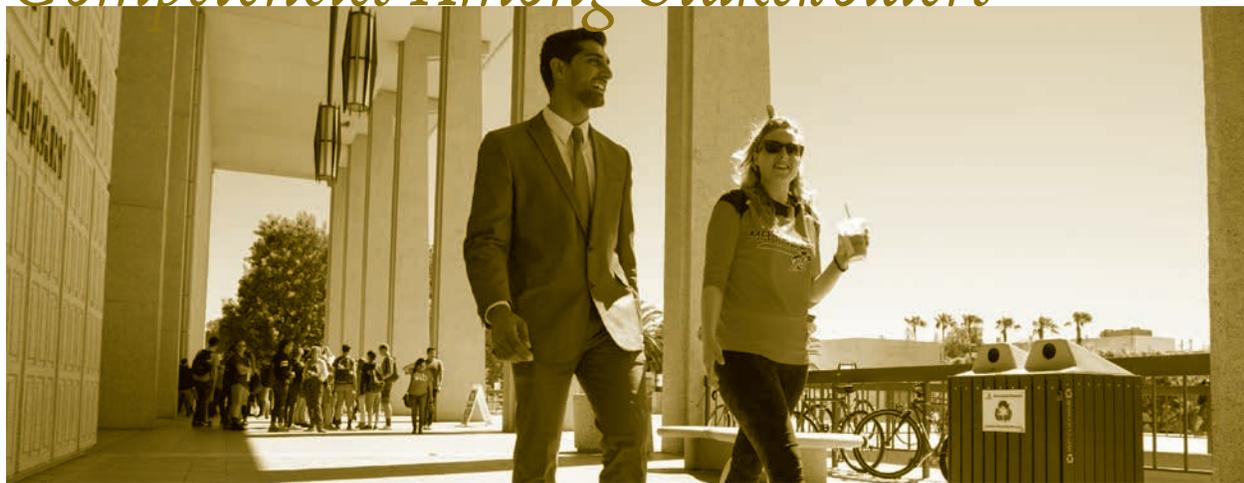
Photo courtesy of ACE member institution California State University, Northridge.

To understand how competencies have value, one needs to consider how they are used in ecosystems of interrelated and interdependent stakeholders and processes. How do we understand the perspectives of different stakeholders? How do the roles of stakeholders change when we innovate with competencies? How do we visualize effective ecosystems that meet stakeholders' needs?

Scenarios illustrate how effective communication of competencies can add value, not only as evidence of student achievement, but also to create meaningful connections between jobseekers and employment, for academic innovation, and for economic development. The following fictitious scenario provides an example of how stakeholders can work together to improve communication about the value of competencies. This scenario is not intended to be prescriptive, but rather to spark ideas and discussion by providing ways of visualizing potential futures. Stakeholders and their perspectives will vary from one context to another, so this scenario simply offers a starting point for discussion of your circumstances and goals. You might find it useful to write your own scenario to depict a process and potential future that works in your context.[3]

Higher education institutions are under pressure on multiple fronts, from decreased revenue and funding to greater demands on their resources as they serve increasingly diverse students and strive to help students graduate career-ready.

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[3]   Portions of the scenario section headings are adapted from a chapter by Deborah Everhart and Deborah M. Seymour, "Challenges and Opportunities in the Currency of Higher Education," in the forthcoming volume *Handbook of Research on Competency-Based Education in University Settings* (IGI Global).

INSTITUTIONAL CONTEXT

Higher education institutions are under pressure on multiple fronts, from decreased revenue and funding to greater demands on their resources as they serve increasingly diverse students and strive to help students graduate career-ready. Institutional stakeholders need to consider the strengths and weaknesses of their credentials and how a focus on competencies could improve program and institutional success.

Mountainside College has long enjoyed a strong reputation locally and regionally, as generations of families have valued its small but welcoming campus, faculty committed to teaching, student communities, and well-rounded liberal arts focus. But Mountainside is increasingly feeling pressure to change. More of its traditional student base is being attracted to online universities and/or credentials that get graduates into specific jobs quickly. The ethnic diversity of the local population is increasing, and with it the number of people who do not have family traditions of going to college. The popular press frequently bashes the liberal arts disciplines upon which the institution was founded, such as philosophy and fine art. Meanwhile, the cost of maintaining the campus and its services increases and students' expectations for Wi-Fi, collaboration spaces, transportation, and safety go up.

Many faculty and administrators at the college are very concerned that changes to address these issues will erode their strengths and the character of the institution. But with enrollments down and costs up, something must change. Some administrators are interested in CBE programs as a potential advantage in attracting and keeping students, but it is not clear how they could fund the design and development of new programs, or whether CBE is even a good match for the institution's needs. Dialogues about change start to coalesce around how Mountainside could leverage their strengths, make changes to existing programs, and get the benefits of being more competency-based.

GOVERNMENT STAKEHOLDERS

State and local legislators are responsible for ensuring that taxpayer dollars are well-invested in education and benefit state and regional citizens and economies. They can provide both incentives and penalties leading to change at educational institutions. Government stakeholders need to consider how their actions will impact student success and career readiness, including analysis of possible unintended consequences.

The state legislature has been struggling with how to bolster the state's economy, especially since recent losses in manufacturing have increased unemployment, and large numbers of veterans are struggling to return to civilian

State and local legislators are responsible for ensuring that taxpayer dollars are well-invested in education and benefit state and regional citizens and economies.

jobs. The average education level of the state's population has fallen, especially among minorities, making it harder to attract new businesses and build a strong, diverse base of science, technology, engineering, and mathematics (STEM), health-care, and other high-paying jobs.

State economic development agencies received funding to work with educational institutions across the state to improve credential attainment levels while also better aligning educational offerings with good jobs (for context on "good jobs," see Carnevale, Jayasundera, and Gulish 2015). They have set up a process for higher education institutions to analyze their credentials with regard to their suitability for career pathways. The process includes collaborations and design-thinking workshops among teams of higher education institutions, industry organizations, and local and national employers to explore how to improve alignment of competencies and credentials across education and the workplace. Ideas generated from these collaborations can be used to apply for funds to develop or revise academic programs and credentials as well as student career services.

ECONOMIC DEVELOPMENT CONTEXT

Students, parents, legislators, and other stakeholders increasingly expect that investment of resources in education will lead to job and career success. In many cases, postsecondary institutions do not have a clear mapping of their educational programs to the economic and employment context surrounding them. Local, regional, and national collaboration among employers, industry associations, and postsecondary institutions can provide a solid basis for this type of mapping.

The teams collaborating on education-to-workplace alignment as part of the economic development processes collected resources to provide backing for their ideas. The state Chamber of Commerce, as well as regional economic development agencies, offered existing research documenting current employment patterns and future trajectories, skills gaps, and demographic information on education levels and workforce characteristics across the state. The teams also studied national research and identified successful career pathway models in other states.

The Mountainside participants were gratified that their team found research describing employers' need for cross-cutting competencies such as collaboration, negotiation, analysis, synthesis, and ethics—exactly the type of competencies their liberal arts programs focus on. The team took this finding a step further by structuring discussions with local and regional employers to get very useful and specific information on what the employers needed in their employees and what competencies graduating students lacked. Employers

Students, parents, legislators, and other stakeholders increasingly expect that investment of resources in education will lead to job and career success.

emphasized the importance of cross-cutting competencies and employees who can learn and adapt as the job requirements change.

Some of the local employers offered to engage in formal collaboration with the college to help define competencies, applied learning experiences, and internship opportunities embedded in the curriculum. Some of the national employers, particularly those having difficulty hiring highly skilled employees, offered to give students at Mountainside the opportunity to earn badges for competencies mastered through their online professional development programs. In both of these types of collaborations, the Mountainside participants started to see exciting new potential for enriching their academic programs with clearly defined competencies and well-designed applied learning experiences. They initiated a proposal for making their BA in liberal studies competency-based and well-aligned with employers' needs.

INSTITUTIONAL LEADER AND ADMINISTRATOR STAKE-HOLDERS

Institutional leaders and administrators are responsible for decision making and governance to help the institution address both practical needs and strategic goals. They oversee and motivate the work of others, analyzing which programs, credentials, and student support structures are successful, by what criteria, how they can be improved, and what new approaches are appropriate. They are responsible at the highest levels in the institution for learning outcomes and how student success and career readiness define the status and character of the institution. Changes in programs and credentials can have a significant impact on their processes, but innovations can also help them achieve more than was previously possible, for example, providing more expansive records of students' competencies and better pathways into careers.

The president of Mountainside College was very proud when its team's proposal received state funding. Provosts, deans, and faculty leaders formed a task force to oversee the redesign of the BA in liberal studies. They ensured that the project had direct lines of communication with the president and other college leaders, as well as adequate project planning and management staff.

The proposal had outlined stretch goals for improving infrastructure and technology to better support the communication of competencies, including extended transcripts and online peer and alumni networks for students. The president recognized the value of these goals, but she cautioned the task force about trying to do too much with their limited resources. Her primary goals were to redesign the program, successfully launch it in a relatively short time,

> *Institutional leaders and administrators are responsible at the highest levels in the institution for learning outcomes and how student success and career readiness define the status and character of the institution.*

and evaluate the success of the program with regard to student recruitment, retention, graduation, and employment rates. The task force agreed that the redesign could be successful leveraging existing infrastructure and resources and that stretch goals, while not abandoned, would not be allowed to derail the core success goals.

As an additional, important layer of support for the redesign, the president made sure that the registrar, the dean of student services, the director of alumni relations, and other leaders had a seat at the table to contribute ideas and evaluate how their groups could play a role in the success of the redesign. These leaders continuously evaluated how the redesign could help meet their goals; for example, through increased student engagement and retention, improved transparency in career opportunities for graduates, and enhanced alumni engagement and contributions back to the college community.

FACULTY STAKEHOLDERS

All faculty are important stakeholders, including part-time faculty and subject matter experts who design curricula, learning materials, and assessments in academic programs. Faculty deliver the curriculum and provide effective learning environments for students to master competencies. Their expertise is critical for connecting competencies to learning activities.

Faculty gained new perspective when they heard firsthand from employers that they needed employees who could think broadly, write well, analyze critically, and articulate complex ideas—bedrock competencies in the liberal arts. They still had many concerns, but these collaborations with employers helped to address their concerns that the focus on competencies and economic development would squelch liberal arts and the humanities.

A team of faculty began the redesign of the BA in liberal studies and its modular competency credentials. They began by collecting all the learning outcomes that had been defined as part of accreditation processes for all of the courses in the program, including the interdisciplinary capstone project. These provided a great deal of useful material, but they had not previously been mapped to an overall framework of clearly and specifically defined competencies. They began reviewing the learning outcomes through a competency lens, focusing on what value the learning outcomes have to students and what students should expect to be able to do with the knowledge they gain in their studies. They decided to use AAC&U's LEAP resources as a framework, including the VALUE rubrics for authentic assessment practices (Association of American Colleges and Universities 2016b). By using LEAP, they not only avoided the challenges of developing their own framework, but

Faculty deliver the curriculum and provide effective learning environments for students to master competencies. Their expertise is critical for connecting competencies to learning activities.

more importantly, they found valuable communities of practice for working with colleagues on these changes to their curriculum and practices.

The faculty team analyzed their existing courses, learning resources, assessments, and learning outcomes to determine what could be aligned to the framework. Reluctant to dramatically change or drop courses in the existing curriculum, they took a rather conservative approach, but they did a fair evaluation and found that a large majority of the competencies were already included in courses. The gaps that they identified could in many cases be addressed by strengthening or supplementing what they had. In particular, they acknowledged that they needed much clearer communication of how the learning activities and assessments in their courses supported the competencies, not only for faculty use, but also to build students' understanding of their own competencies.

At first the faculty struggled with how to communicate the value of the competencies, while they were also grappling with how to make the BA more modular. They struck upon the idea that badges for individual competencies could address both of these goals. They developed a set of badges that could be used for the whole program, so that students could achieve the badges in any course and see how the competencies were related to each other across courses and in their capstone projects. With this structure, students could see exactly which learning activities and assessments were aligned with the competencies, and they could understand for themselves what they were working to achieve in those activities.

The badges provided a whole new level of transparency in the program and made it easier for faculty to collaborate among themselves with regard to how they would address the competencies in their courses and award badges. But faculty were still stumped about how to align their learning activities and assessments to employers' needs. So they asked them. The economic development team they were participating in kept the lines of communication open. In the prototype stages of the badges, they mocked some up, each including a clear definition of the competency, a link to the rubric used to assess the competency, and a link to real evidence of learning from a prior student (written assignments, videos of debates, maker-space projects, and other learning artifacts collected with the students' permission). Teams of faculty and employers discussed whether these badges and their evidence were useful, and how they could be improved.

The faculty/employer collaborations not only led to improvements in the badges, but also sparked many ideas for how students could work toward the competencies through high-impact practices such as collaborative proj-

ects, community-based learning, and internships (Association of American Colleges and Universities 2011, 8). The faculty already had experience with these practices, but the employers gave them new perspectives on how use the rubrics to consistently assess a wide variety of student work, including workplace-embedded projects. These discussions around specific learning activities and evidence of learning improved everyone's shared understanding of the competencies. For example, the faculty discussed how academic assignments such as a philosophy debate are valuable for demonstrating the critical thinking and oral communication competencies that employers value, while employers' professional development learning resources, such as user experience design training, address liberal studies competencies in creative thinking and problem solving. As a future stretch goal, they began to discuss how they could cross-reference and mutually endorse Mountainside's and employers' badges.

STUDENT STAKEHOLDERS

At the heart of the ecosystem are the students, including post-traditional (Soares 2013) *and underserved students. It is students who make up the population served in academic programs and who decide in which programs to enroll and whether or not they complete credentials. Students achieve the rewards and bear the burdens of their own personal time, resources, and money invested in academic programs. Most of them make these investments to improve their employment and career opportunities, and so ultimately, it is important for them to be able to persuade an employer that they have the skills and attributes the employer is seeking. Well-defined competencies help them tell their story.*

At the heart of the ecosystem are the students . . .

At first the students were confused by the competencies as they were phased into their current courses. They had not been introduced to the competency framework when they started the BA, and it seemed like an additional layer of complexity. But faculty enthusiastically explained how the competencies provide a new layer of meaning for coursework and new ways of capturing evidence of learning that the students will find valuable across courses and outside the institution. Students partly got it because of their familiarity with the capstone project requirements. But they really got it when they started receiving badges. Suddenly students could see a specific achievement embodied in a badge, and they got excited about how many badges they had received (also competing with their classmates!) and about when they would have opportunities to earn more.

As badges were phased into more courses, more students started joining the learning community that student affairs had created to help students

understand what to do with their badges. The community shared practical information, like how to add the badges to online profiles and portfolios, but more importantly it gave students forums (both online and in person) for sharing their stories about badges. One student talked about how she had proudly shown her oral communication badge and its learning artifact, a recording of her role in a debate, to her mom who hadn't gone to college and wondered what she was learning. She was able to explain to her mom how it wasn't just a debate, but involved research, teamwork, and a quick wit. Another student talked about how she had shared a link to her creative thinking badge, which included a link to her project on the ethics of accessibility, with a user experience designer she had met at a local maker space. They got into a vibrant discussion about embracing the contradictions of simplicity and complexity, and the designer invited her to come to their tech company for lunch with her team. Badges had opened the floodgate to the broader value of competencies.

Over time, student affairs and career services developed additional resources and communities to help students understand and articulate the value of their competencies in various contexts. Some were more academic, like coaching students toward successful mastery of the competencies required for their capstone project portfolios. Others were more employment-oriented, including workshops on incorporating competencies into resumes, cover letters, and online professional profiles. More and more students are using their competencies for employment and career connections, not only to get jobs, but also to articulate what they are learning in internships, or how their coursework relates to their career goals. Faculty are impressed by the way students can creatively visualize these connections, like the student who can explain how the competencies in his logic class are applicable to computer programming, and the religious studies major who is building an app for interfaith dialogue among teenagers to combat extremism. These students are creating their own futures.

Student affairs has also developed better on-ramps and practical supports to help students with varying abilities and preparation, and/or unfinished credentials. As part of the economic development government funding, they are particularly focusing on unemployed veterans and people displaced from manufacturing jobs. These are potential students previously not considered good candidates for the BA in liberal studies. But now that the competencies in the program and their ties to career pathways are clearly articulated, many more people, including staff and recruiters at Mountainside, see the value of this credential for a broader range of students. Mountainside has

adopted credit for prior learning and ACE's CREDIT service, which enables students to apply their military and work experience to their degree progress. The well-defined competencies have made it much easier to do this and have addressed faculty concerns about giving credit for non-academic learning.

All students also benefit from being able to use their competencies as modular credentials that are portable and carry independent value. There are many examples of students getting jobs and promotions by using their badges as evidence of mastery of competencies. This helps them, whether they are traditional-age students working their way through college or post-traditional students juggling family, job, and college responsibilities. Students often find it necessary to stop taking classes before they have completed the BA, but Mountainside has an easy re-entry program that helps students continue their degree progress, applying all of their previously earned competencies.

EMPLOYER STAKEHOLDERS

Employers are important stakeholders, particularly as programs and credentials are improved to reflect competencies that address their needs. Student success is defined in part by whether students are more employable or have greater career opportunities upon credential completion. Employers' collaborations with educational institutions on an ongoing basis can empower all stakeholders to develop healthy ecosystems where academic goals and workforce goals are mutually reinforcing.

The well-defined competencies in Mountainside's BA are informing and supporting a healthy employment ecosystem. Job seekers include their competencies in their resumes, cover letters, and online profiles as part of their employment applications. Employers have much more targeted and relevant information about each applicant and can make more informed hiring and promotion decisions.

Many local employers have started writing job descriptions that describe the work entailed and the requisite skills alongside the competencies that the employer needs in an employee. These competencies include many of the cross-cutting competencies in critical thinking, teamwork, problem-solving, and communication that are in Mountainside's BA in liberal studies. Employers who are growing accustomed to seeing evidence of learning from courses in the arts and humanities have come to expect (and even look forward to) job candidates' explanations of why this evidence is relevant based on the competencies represented. And Mountainside students stand out from other applicants, as well-rounded, articulate masters of their own capabilities and confident innovators ready to tackle the challenges of an ever-changing workplace.

Employers' collaborations with educational institutions on an ongoing basis can empower all stakeholders to develop healthy ecosystems where academic goals and workforce goals are mutually reinforcing.

Conclusion: Call to Action

Approaches to improving communication of the value of competencies will differ widely across our diverse higher education institutions, so this paper has provided a range of ideas that can be used to visualize and shape potential futures in a variety of ways. Dialogue can start among higher education colleagues and branch out to labor market partners. State bodies can play an important facilitative role in furthering this dialogue using their influence across education, workforce, and economic development.

We encourage you to complete the arc of your journey: Identify your stakeholders, articulate the problems they encounter when the value of competencies is not clear, use the challenge questions to discuss and analyze the current state of competencies at your institution, and then establish a realistic plan and timeline for developing more valuable and robust practices around competencies.

The following suggestions can have local impact at your own institution and serve as catalysts in your communities of practice:

- Use the challenge questions above to select a specific approach to a specific problem related to competencies at your own institution.

- Examine your institution's programs in terms of the competencies they include. This analysis can be conducted in any academic program, not just CBE programs. Analyze whether your programs have a coherent taxonomy of competencies and whether these competencies are current and relevant for professional roles.

- Work with career services at your institution to help students include their specific competencies in their resumes, cover letters, and online profiles.

- Create a working group with local higher education institutions to review and implement competency frameworks in a community of practice.

- Form new or strengthen existing partnerships with employers.

- Organize a summit on the value of competencies with local stakeholders, including employers and industry organizations.

- Work with other institutions on a demonstration project that spotlights a deliberate ecosystem where employers, higher education institutions, and students are co-developing the competencies,

We need to capture learning about what works from these innovations and continually refine approaches to create dynamic systems that realize the value of competencies for all stakeholders—employers, government, educators, job seekers, and learners.

embedding them in curricula, hiring for them, and communicating them with a shared sense of value.

- Incubate a new, granular credential that is a representation of a single competency. Create a badge for the credential and award it as part of a program of study. Analyze the uses of this competency credential and its currency value among stakeholders.

- Read the ACE paper *Quality Dimensions for Connected Credentials* and explore the complementary value of competencies and credentials.

- Write scenarios that depict processes for improving communication of the value of competencies through collaboration among stakeholders.

- Host workshops, convenings, and other events on improving the value of competencies.

- Work with a national organization to develop a scorecard or other tools for effective use of competencies so that higher education institutions have a common way of evaluating their efforts.

- Work with quality assurance entities to develop processes for endorsing or certifying quality competency-based curricula.

- Research aspects of the economic impact of well-articulated competencies, such as the economics of higher education institutions, the potential return on investment for individuals, and economic development in specific locales or sectors.

- Network with professional organizations and state agencies, including economic development councils, to share lessons learned and successful policies and practices related to competencies so that they can be more broadly adopted and scaled.

Many national, state, institutional, and private sector initiatives provide examples and guidance on how these ideas can be implemented and scaled within our highly complex and decentralized environments. We need to capture learning about what works from these innovations and continually refine approaches to create dynamic systems that realize the value of competencies for all stakeholders—employers, government, educators, job seekers, and learners.

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