



REALIZING THE POTENTIAL OF COMPETENCY-BASED LEARNING AND BADGES

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Though not new, competency-based learning (CBL) has recently captured the attention of the education community—and for good reason. When millions of people have been unable to attain credentials while juggling work, families, and other responsibilities, learners need flexibility in their educational opportunities. The large segment of first-generation, low income students also benefit from innovative pedagogical approaches and lower cost options, and in this arena CBL provides many advantages. However, CBL is not one specific thing, and when combined with the potential of badges and micro-credentials, it is part of a growing range of opportunities for learner-centric innovations in education policy and practice.

As part of a joint research initiative, the American Council on Education and Blackboard have generated a series of resources to foster broader understanding of CBL and how various types of CBL practices can contribute to degree completion and workforce readiness. The research deliverables include *Clarifying Competency-based Education Terms: A Lexicon*, CBL models, a white paper, a public forum, and a series of roundtables among CBL thought leaders.

The research is not simply describing the current state of CBL, but more importantly raising challenging questions about scalable, learner-centric approaches that include assessing learning in non-academic settings and the use of open badges to record, certify, and accumulate evidence of learners' competency achievements. The research prompts us to consider critically the role of courses, credits, and other traditional educational structures as CBL provides a different lens for understanding learning achievements, authentic assessment, evidence of learning, and lifelong learning practices. This work addresses how evolutions in policies and practices are changing the landscape of educational delivery and attainment.

Introduction

For over a century, the credit hour has been a unit of measure in U.S. post-secondary education, a recognized “currency” for educational achievement and completion of credentials. Processes built around credit hours are based on industrial-age, highly-structured, time-based educational models, presenting challenges in adapting these processes in an information-age economy that relies on greater flexibility and the ability to apply learning in rapidly changing circumstances. Recent innovations in competency-based education address 21st-century needs by focusing on mastery of competencies regardless of “seat time”, providing opportunities to reconsider how educational systems can be structured around

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learning outcomes. This shift in focus can generate new “currency” based on the value of competencies among stakeholders in our educational ecosystems. This paper investigates the social, practical, and policy implications of competency-based education and how credits *and* competencies both reflect important structures of value for diverse stakeholders: government agencies, educational leaders and administrators, faculty, assessors, students, and employers.

The “Carnegie unit” was originally defined in the late 19th century as a way of standardizing students’ high school work to facilitate college admissions (Shed, 2003). It was broadly adopted in U.S. post-secondary education as an eligibility requirement for the Carnegie Foundation for the Advancement of Teaching faculty pension system (Laitinen, 2012). Soon the “Carnegie unit” was adapted to define time-based “credit hour” units for determining faculty teaching load, as part of the standardization of educational processes and degrees in an industrial era. The credit hour was never intended to measure student learning, but over the years it accrued value as a proxy for student outcomes and as a well-understood, common unit of course and credential time-based processes.

The Carnegie Foundation as early as 1906 explicitly stated the distinction between time spent in a learning process and the learning results attained (Harris, 2002). And Ernest Boyer, then president of the Foundation, re-iterated this point in 1993 and went on to state that “for far too long education in this country has been based on seat time, not on learning ... the time has come to bury once and for all the old Carnegie Unit” (Boyer, 1993). Nonetheless, so many educational processes rely on the fixed, standardized unit of the Carnegie credit hour that a massive retooling would be necessary to use different methods of measurement.

Competency-based education programs can be designed to address these issues. Given the broad implications of federal, state, and institutional policies and practices based on the credit hour, CBE faces fewer barriers when outcomes-based approaches are compatible with credit-hour systems and processes. Federal guidelines for direct assessment and experimental sites can provide a context for more extensive future changes in our educational systems, but in the short term, the reach of these initiatives will extend to few students. Innovating “within an existing frame,” as Amy Laitinen (2012) points out in *Cracking the Credit Hour*, is also an effective approach, and one that can rapidly provide benefits for large numbers of students.

Considering these key issues, this paper raises questions concerning the broader implications of CBE and philosophical challenges surrounding the credit hour and competencies. These questions and implications are framed by illustrations of the currency value of credits and competencies in educational ecosystems.

Credits as currency

Do we need a new currency for measuring post-secondary outcomes and achievement? Credits are well-understood currency, used throughout administration, management, and funding processes among post-secondary education stakeholders. The longevity and ubiquity of credits implies tacit understanding of their value, but a deeper understanding of this value requires analysis of how it is derived and validated.

Just a few representative examples illustrate how credits provide practical value and address some critical needs of key stakeholders in post-secondary ecosystems.

- Government agencies use credits to define how financial aid is awarded.
- Educational institution leaders use credits to understand key performance indicators at their institutions, such as enrolments, progress toward degrees, and degree attainment.
- Institutional administrators use credits to manage enterprise education business processes and to track key components, such as full- and part-time student status, faculty teaching load, and the definition of degree requirements.
- Subject matter experts use credits to define the units in curriculum structures that become degree requirements.
- Teaching faculty use credits to measure their teaching load, what counts as overload, and full-time/part-time status, which applies to retirement and other benefits.
- Assessment stakeholders both inside and outside the educational institution use credits as units that encapsulate learning achievements to be evaluated and measured, both for individual students and across programs and degrees.
- Students use credits to understand degree requirements and progress toward degrees.
- Employers see credits as components of degrees and as units of measurement for tuition reimbursement programs.

The value of education, of course, goes far beyond these practical needs. The validation of credits and evaluation of how well they meet the needs of 21st-century educational ecosystems is complex and multi-faceted, emerging from shared values in communities of stakeholders. Validation requires collectively answering questions such as:

- Do the credits accurately represent the learning achievements they're designed to represent?
- To whom are the credits meaningful, and how is that meaning applied in ways that provide value for stakeholders?
- Does the provider have the authority to issue the credits?
- Has the learning represented by the credits been accurately assessed?
- Are the credits valuable in contexts other than the institution issuing the credits?
- Are the learning achievements represented by the credits applicable in multiple contexts, and what is their "exchange value" in various contexts?

Addressing these questions goes beyond the practical utility of credits in order to evaluate the breadth and depth of their validation. This evaluation is complicated by the fact that the values in our educational ecosystems are changing in response to 21st-century needs. The shift from industrial models of education to information-age innovations is exposing fissures in systems that assume the value of credits.

Representative examples illustrate how credits fail to address some critical needs of key stakeholders in post-secondary ecosystems.

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- Government stakeholders: Credit-hour systems and their corresponding financial aid requirements work against students who cannot complete a degree in one stretch of time and at a single educational institution, thereby hindering degree attainment, employment, and economic growth.
- Educational institution leader stakeholders: Credits do not represent educational quality, the validity of learning achievements in multiple contexts, or the ability of graduates to succeed in lifelong learning and careers.
- Institutional administrator stakeholders: Credit systems are rigid and difficult to adapt to changes in curriculum and flexible models for degree requirements.
- Subject matter expert stakeholders: Credits do not adequately represent the complexity of learning achievements in a body of knowledge and how those achievements are applicable in multiple contexts.
- Teaching faculty stakeholders: Credits do not accurately represent the complexity of a teaching load or the investments faculty make in helping students achieve learning outcomes.
- Assessment stakeholders: Credits do not represent educational quality, and they are rather arbitrary units to encapsulate learning achievements to be evaluated and measured, both for individual students and across programs and degrees.
- Student stakeholders: Credits do not transparently represent students' learning achievements, and they are often not portable or applicable across multiple contexts.
- Employer stakeholders: Credits do not adequately represent learning achievements or what a potential employee can do.

Can competencies provide a new currency that augments the value of credits in educational ecosystems? How do competencies address the needs of 21st-century educational ecosystems?

The implications of competency-based education

Competency-based learning (CBL) models and competency-based education (CBE)¹ programs are evolving rapidly as stakeholders throughout our educational ecosystems confront the complex implications of focusing on learning outcomes.

The United States Department of Education has been taking a long, hard look at creating alternative pathways for college completion for post-traditional learners. This federal examination has led to recommendations regarding CBE programs and their value for students facing barriers to completing a college degree in the traditional manner. Federal guidance now includes structured opportunities for direct assessment and experimental sites for deeper exploration of the value of CBE². Regional accreditors have examined both their

¹ For the distinction between competency-based learning and competency-based education, as well as definitions of other terms, see Clarifying Competency-based Education Terms: A Lexicon (<http://bbbb.blackboard.com/Competency-based-education-definitions>).

² Steps taken by the Federal government include Direct Assessment (<http://ifap.ed.gov/dpccletters/GEN1310.html>), Experimental Sites (<http://www.ed.gov/news/press-releases/us-department-education-expands-innovation-higher-education-through-experimental>), and funding incentives through the Trade Adjustment Assistance Community College and Career Training (TAACCT) grants (<http://www.doleta.gov/taacct/>).

philosophies and their guidelines regarding competency-based degree programs and credentials in order to foster innovation while ensuring quality³.

Individual colleges, universities, and even university systems have initiated programs incorporating competencies as the central focus of those programs⁴. These examples of CBE are provoking strong discussions among academics about how competencies map to their current programs and goals. Participants in the CBE movement are beginning to realize the many broad implications of these innovations, including:

- **Societal implications:** Competency-based models open up possibilities for long-needed renewal of higher education and institutional opportunities to participate in: (a) transitioning from an industrial to an information society; (b) restructuring the economics of higher education, and (c) democratizing access for underserved populations.
- **Practice implications:** Competency-based models may solve the issue of outcomes and achievement accountability with which institutions now struggle, as assessment and accountability are inherent in the structure of a competency framework.
- **Policy implications:** If competency-based systems are ultimately supported by federal and state policies to the extent of credit hour-based systems, the systems can inform each other and work against the forces of stagnation and obsolescence. If federal and state policy makers formally recognize the value of competency-based systems, this would encourage the potential for growth of CBE programs and hasten evolution of the currency value of competencies.

Philosophical challenges regarding credits and competencies as currency

One of the issues that often comes up in the debates over credit hour-based learning and competency-based learning concerns validation of learning achievements. Assuming both models employ assessments of student learning and achievement, the controversy is really about what is being assessed in each instance. To put it most boldly, what is important to validate in a student's learning experience – the amount of time put into a chunk of instruction and the student's ability to reiterate what was contained in that instruction, or mastery of a competency that is demonstrated by the student's ability to apply it in a given situation?

Of course, this binary represents two ends of a spectrum of thought about the goals of instruction, learning, and certification of learning. Few would be in agreement with the

³ For example, regional accreditors are providing guidance for review of competency-based programs: Southern Association of Colleges and Schools Commission on Colleges (<http://www.sacscoc.org/pdf/081705/DirectAssessmentCompetencyBased.pdf>), Higher Learning Commission (<http://ncahlc.org/Monitoring/monitoring-and-reporting.html>), and Middle States Commission on Higher Education (<http://www.msche.org/?Nav1=POLICIES&Nav2=INDEX>).

⁴ For examples of institutions and the organizations supporting collaboration in CBE, see CBE Jumpstart (<http://www.cael.org/what-we-do/competency-based-education>), administered by the Council for Adult and Experiential Learning (CAEL), the EDUCAUSE Next Generation Learning Challenges Breakthrough Models Incubator (<http://www.educause.edu/events/breakthrough-models-incubator>), and the Competency-Based Education Network (<http://www.cbenetwork.org>).

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former in its strictest form, as almost all higher education professionals would agree that a rote repetition of what was learned is not a sufficient demonstration of student achievement. So the philosophical debate is actually more subtle. It is about degrees of competency demonstration, and degrees of competency leading to actual mastery. And it is about how different assessors choose the types and degrees of competency to which credits are assigned. Thus, how credits correlate (or not) to competencies is really the nexus of the philosophical debate.

Digging a little deeper, the discussion becomes more subtle yet, as there are degree and licensure programs that have always had to measure and assess competency and mastery – such as in medicine, nursing, law, accounting, education, and a number of other disciplines. Is it the case that credits in these disciplines hold a greater value than in other disciplines, because the need for basic comparability across degree programs has always been greater for these disciplines?

Considering the transferability or portability of knowledge, credits, and competencies, one practical implication is the use of credits from one institution to another. Credits are rather easily transcribed and transferred, although students often do not get the full value of these credits at a different institution. How are competencies as units of knowledge and/or ability transferred? Are there new methodologies or technologies that can assist with this? If none exist as of yet, what are the specifications needed for such innovations? The basic university transcript does not seem like a solution, especially in the case of transfer of competencies between institutions that use different sets of competencies or different assessment methodologies for competencies.

Naturally, this leads to the notion of possibly sharing or standardizing competencies as open assets. Wouldn't competencies transfer more easily if they could be standardized across university programs? Does this imply that every university program should follow the model of licensure programs which require a comprehensive licensure examination or assessment, for example? Are standardized competencies a requirement to establish their value? And would standardization of competencies contribute to higher education ecosystems of trust and validation? (Soares, 2012)

Other key philosophical challenges pertain to faculty performance and responsibilities. Under a competency-based system, how are faculty performance and load defined? How are faculty trained and their performance measured? Should the measurements be based on the competency achievements and mastery of their students? Given the recent trends in disaggregation of faculty roles in CBE programs, what new models for faculty responsibilities are evolving, and how well do these models meet the needs of stakeholders in our educational ecosystems? Are these models more scalable than those used under standard credit-hour teaching systems? Are they less so?

- **Policy implications:** Because a competency-based system can make learning more visible, the portability or transferability issue, particularly around basic skills assumed

to be delivered through general education programs, could be greatly simplified. With minor differences between institutions in criteria for evaluating critical thinking, written communication, information literacy, quantitative reasoning, oral communication, scientific reasoning, etc., a competency-based medium for transfer could be much more straightforward than in current practices.

- **Practice implications:** Competency-based systems and the disaggregation of the roles of faculty offer renewal for faculty through a shift from being responsible for everything that occurs in a course to focusing on specific skills and passions: designing and curating powerful environments for students' construction of knowledge; mentoring; evaluating student performance; and evaluating program performance.

Competencies as currency

How can competencies provide a new, complementary currency for professional credentials, just as credit hours already have recognized currency value? In order for competencies to have currency value, they need to provide real benefits in complex ecosystems of stakeholders and processes.

Just a few representative examples illustrate how competencies provide practical value and address some critical needs of key stakeholders in post-secondary ecosystems.

- Government agencies benefit when competencies are well-aligned with workforce development, providing direct economic/employment benefits.
- Educational institution leaders benefit when competency-based programs improve student satisfaction, retention, and degree attainment.
- Institutional administrators benefit when competencies are mapped to clear, logical degree requirements and provide scaffolding for the relationships among stackable credentials.
- Subject matter experts benefit from competencies that clearly articulate the learning outcomes within and across disciplines.
- Teaching faculty benefit from transparent understanding of targeted student learning outcomes.
- Assessment stakeholders benefit from well-defined competencies that reflect learning achievements to be evaluated and measured, both for individual students and across programs and degrees.
- Students benefit from transparent understanding of the competencies required for credentials.
- Employers benefit from transparent understanding of the competency mastery of graduates.

The validation of competencies and evaluation of how well they meet the needs of 21st-century educational ecosystems can be honed by collectively answering questions such as:

- Do the competencies accurately represent the learning achievements they're designed to represent?

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- To whom are the competencies meaningful, and how is that meaning applied in ways that provide value for stakeholders?
- Has the learning represented by the competencies been accurately assessed?
- Are the learning achievements represented by the competencies applicable in multiple contexts, and what is their “exchange value” in various contexts?

These are some of the same questions as can be applied to the value of credits, and the responses will not be the same for credits and competencies, as these representations of learning achievements serve different purposes. Competencies are more variable and more prone to change over time than the fixed-unit representation of credit hours, which is both a strength and a weakness. So it's not surprising that competencies also present challenges for key stakeholders in post-secondary ecosystems, as these examples illustrate.

- Government stakeholders: Competencies are not equal units of measurement, and students pursue different paths to competency mastery, complicating processes for determining financial aid and other types of student support.
- Educational institution leader stakeholders: Competencies change over time, requiring ongoing investment in redefinition of degree requirements and alignment to workforce needs.
- Institutional administrator stakeholders: Because competencies are not equal units of measurement and students pursue different paths to competency mastery, institutional reporting, financial, and time/term-based processes are more complex.
- Subject matter expert stakeholders: Changes in competencies over time require ongoing revision of learning resources, curriculum, and competency scaffolding.
- Teaching faculty stakeholders: Students' progress toward competency mastery and their need for support is variable, unlike the predictable pacing and load of terms with final grades delivered at an end-date.
- Assessment stakeholders: As competencies change over time, assessments and related resources also require ongoing revision, complicating assessment research and longitudinal analysis.
- Student stakeholders: Lifelong learning requires ongoing mastery of new/additional competencies, unlike the fixed credits represented in a terminal degree.
- Employer stakeholders: Alignment of competencies to job requirements needs periodic revision and investment in ongoing collaboration with education providers for workforce development.

The requirements for a terminal, credit hour-based degree can be relatively static for decades, providing stability and certainty for stakeholders in our educational ecosystems. But the cost of this stability can be stagnation and a lack of dynamic interactions between academic institutions and other stakeholders. A balance between the benefits of credits and competencies can provide a basis for ongoing revision, rejuvenation, and investments in innovation, making post-secondary credentials living, breathing reflections of the needs of a 21st-century world.

References

1. Boyer, E. (1993). *In Search of Community*. Available online at <http://www.21learn.org/archive/in-search-of-community/>
2. Harris, J. (2002). *Brief History of American Academic Credit Systems: A Recipe for Incoherence in Student Learning*. Available online at <http://files.eric.ed.gov/fulltext/ED470030.pdf>
3. Laitinen, A. (2012). Cracking the Credit Hour. In *New America Foundation Blog*, September 5, 2012. Available online at http://newamerica.net/publications/policy/cracking_the_credit_hour
4. Shed, J.M. (2003). The History of the Student Credit Hour. In J.V. Wellman & T. Ehrlich (eds.), *How the Student Credit Hour Shapes Higher Education: The Tie That Binds*. San Francisco: Jossey-Bass.
5. Soares, L. (2012). A Disruptive Look at Competency-Based Education. In *Center for American Progress – Higher Education Blog*, June 7, 2012. Available online at <https://www.americanprogress.org/issues/higher-education/report/2012/06/07/11680/a-disruptive-look-at-competency-based-education/>