ALL HANDS ON DECK: TEN LESSONS FROM EARLY ADOPTERS OF COMPETENCY-BASED EDUCATION

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Abstract

The perceived value of postsecondary education to economic competitiveness and individual success is driving innovation in higher education. Competency-based education (CBE) is the latest disruption that seeks to respond to the growing sense of national urgency to boost education attainment. The target audience generally includes those adult learners with some college but no degree already participating in the workforce. Competency-based education also seeks to create greater transparency in learning outcomes to show how well individuals can apply identified competencies in the work-world. Yet, competency-based education is hard to understand and communicate. For those educators who are thinking about initiating competency-based education programs on their campuses, you need to know what others have learned in the process of designing CBE programs and the kinds of questions you should ask yourself at the outset.

We provide a snapshot of seven competency-based postsecondary programs and draw from their pioneering work to better understand how CBE programs can be developed. Program eligibility for federal financial aid appears to be one of the key factors in defining these programs as either course-based with credit equivalency or direct assessment. We review attempts at overall definitions of competency-based education highlighting the higher order level of competency, or mastery, in CBE approaches. We then provide ten lessons practitioners have learned in the design of competency-based education based on interviews, websites, communications, presentations, and other resources. These include lessons related to administration, faculty and student support, data systems, choice of model, business model, and structure. This brief review led us to pose a number of questions to consider for further discussion. Competency-based education provides yet another alternative pathway to degree success, yet it is impossible to overestimate the challenges in designing and implementing a CBE program given that virtually everything has to be reconsidered in the design process.

Introduction

The resurging interest in competency-based educational models during the past year among higher education policymakers and a growing number of institutions is remarkable in its intensity. Barriers to education attainment due to the rising costs of postsecondary education, coupled with unemployment of recent graduates, has students, institutions, employers, and policymakers asking questions about how prepared students are for today’s workplace and how much they are learning. Adults, already in the workforce, with some college but no degree, are also a target audience for innovative models that value what these potential enrollees already know to accelerate their time to degree completion. The recognition that education is the key to both national competitiveness and individual success has fueled a sense of urgency in overcoming affordability barriers to postsecondary education. Competency-based education (CBE) is now increasingly being embraced as a panacea for multiple pressing issues in higher education. It is often seen as having the potential to address
accessibility, affordability, transparency, and improved learning outcomes, all relevant to graduates’ employability and strengthening of the workforce.

It is important to recognize that competency-based models are building upon decades of work by institutions such as Charter Oak State College, Empire State College, Excelsior College, and Thomas Edison State College, to name a few. As Carol Geary Schneider (2013) noted, Alverno College was recognized for its competency-based curriculum in the 1970s. While CBE is in its incipiency, there are other initiatives focused on learning outcomes that have engaged many institutions nationwide. Lumina’s support for the Degree Qualifications Profile, for example, proposes learning outcomes and levels of performance on each of five dimensions for the associate, bachelor’s and master’s degrees. Similarly, the Liberal Education and America’s Promise (LEAP) initiative from the Association of American Colleges and Universities includes learning goals and assessments that more than 150 of its members have adopted. Prior Learning Assessment (PLA) is another related initiative on assessment of military or work experience going back to the 1940s with the American Council on Education’s military credit service. The 1970’s witnessed the founding of the Council on Adult and Experiential Learning (CAEL) and its portfolio assessment. Without all of this pioneering work in self-paced, online learning, and assessment, we would not have the foundational knowledge base to examine the current CBE disruptive innovation and its potential to improve educational outcomes and attainment. Despite all these efforts, it is also important to note that there is no conceptual agreement on what we now mean by the term “competency” across higher education sectors.

Changing the measure of student learning from seat time to mastery is not a trivial task for an institution steeped in a credit hour model that permeates everything from inter- and intra-institutional funding, to faculty workload, to student financial aid. To make such a transition requires significant changes in current policy and practice at the institutional level, state and federal funding, and student aid policies.

The adoption of competency-based approaches by universities such as Northern Arizona University and Southern New Hampshire University has been widely covered by the press and policy community, with attention to new entrants into this model as well. CBE is also emerging at community colleges, perhaps not surprisingly given their close fit with the more career-focused programs typically found at two-year institutions.

This white paper will provide a snapshot of the two dominant models of CBE and share lessons learned in the design of these models from select institutions that are pursuing either the course-based with credit equivalency CBE model or the direct assessment model, or in some cases, both. We will look at the course-based models of Western Governors University, the University of Wisconsin Flexible Option, Kentucky Community and Technical Colleges Learning on Demand, Northern Arizona University’s Personalized Learning, and Texas A&M-Commerce’s and South Texas College’s Texas Affordable Baccalaureate Program. The paper will then review the two direct assessment approaches used by Southern New Hampshire University’s College for America and Capella University’s FlexPath program model, both of which have been formally approved by their respective regional accrediting bodies and the U.S. Department of Education (US ED) for Title IV federal financial aid.
Course-based with Credit Equivalency and Direct Assessment Models

CBE models have been described as either course-based with credit equivalency or direct assessment models, based on how they relate to federal financial aid. The course-based model links student progress ultimately to the Carnegie Unit that has traditionally measured seat time in direct instruction and related learning activities. A predetermined number of credits are identified to satisfy academic progress and degree requirements. In the course-based model, institutions translate competencies defined at the program level into topics that can be formulated into courses of the appropriate length and complexity (Johnstone and Soares 2014). The process shows that the same material is covered in the CBE assessment as you would expect in a college course in that discipline. Students can proceed at their own pace and accelerate time to degree. Programs are typically online.

The other model, referred to as direct assessment, seeks to be untethered from course material, seat time, and the credit hour. In the direct assessment model, learners demonstrate competencies, particularly mastery, at their own pace, typically online, and progress through academic programs when they are ready to do so.

In either case, degrees are based on demonstrated competencies gained from a variety of sources. The U.S. Department of Education (US ED) states that institutions “may use direct assessment of student learning, or recognize the direct assessment by others of student learning.” US ED suggests examples of direct assessment measures to include: “projects, papers, examinations, presentations, performances, and portfolios.” Degrees are conferred based on mastery of defined competencies, and may or may not be translated into the amount of credits accumulated, depending on the categorization of the program and its approval by US ED.

Prior Learning Assessment (PLA) is a related practice to competency-based education. Established providers include the American Council on Education’s military credit and ACE CREDIT programs, the Council on Adult and Experiential Learning’s portfolio assessment, College Level Exam Program (CLEP), Excelsior Exams, and Defense Acquisition for Non-Traditional Education Service (DANTES). Credit recommendations from learning gained outside the traditional classroom and recommended through these approaches may or may not be included in competency-based education degree programs. Broader acceptance of PLA could facilitate institutions and accrediting bodies in implementation of CBE.

No one has tried the direct assessment model to qualify for federal financial aid until recent initiatives at reform. In fact, the 2005 amendment to the Higher Education Act of 1965 afforded for financial aid to be administered by direct assessments, but no institutions applied (Bergeron 2013). To date, only two institutions have formally received both regional accreditor approval and US ED approval for use of Title IV funds for direct assessment competency based programs – Southern New Hampshire University and Capella University. We are using this as the definition to categorize these two institutions in the direct assessment model, that is, the SNHU and Capella models are differentiated from the others based on how they relate to federal financial aid. In the other cases, the CBE model is based on courses that have credit equivalencies to qualify for federal financial aid under US ED’s normal rules.

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Models used in CBE

| Course-based with Credit Equivalency: Institutions translate competencies defined at the program level into topics that can be formulated into courses of the appropriate length and complexity. (Johnstone and Soares 2014) |
| Direct Assessment: Untethered from course material and credit hour, learners demonstrate competencies, particularly mastery, at their own pace, typically online, and progress through academic programs when they are ready to do so. |
Our Goals in Lessons Learned and Comparisons

In this paper, we will provide a brief snapshot of a few institutions in an effort to illustrate the course-based with credit equivalencies and the direct assessment approaches and derive some lessons learned as institutions designed their model. This selection is not intended to suggest they are best practices or the best models to illustrate these approaches but simply to serve as examples to illustrate the approaches. Klein-Collins (2012) provides a more exhaustive list of examples that includes community colleges (e.g. Delaware County Community College, Rio Salado College) as well as examples from several public 4-year institutions and several private 4-year institutions. Johnstone and Soares (2014) also share WGU’s work over the past year sharing principles for designing CBE models and how they have been adapted at eleven community colleges across the country. For those partner community colleges launching their own CBE programs, the initial enrollments far exceeded expectations.

In the examples examined in this paper, the tuition rates and model, degrees offered, start date, structure, and accreditation are noted for comparative information purposes (see chart pages 7-9). However, as these initiatives are in the design phase, it is very difficult to categorize them into one or the other of these two dominant models. Some of these new programs are between course-based and direct assessment as is the case with the University of Wisconsin, which is in the process of seeking approval from the US ED for federal financial aid eligibility based on direct assessment.

Western Governors University has been held up as the standard CBE model. It was an early model when there was no clear direct assessment pathway for federal financial aid. Founded in 1997, WGU started using direct assessment but later backwards mapped everything to a course-based model with variable credit equivalencies in response to student needs, e.g. to transfer or matriculate into a credit-based program, and to qualify for federal financial aid. Their degree programs include bachelor’s and master’s degrees with a “subscription tuition” plan based on type of degree and six-month periods.

CBE models, whether credit-based or direct assessment, may have advisors or mentors, such as the University of Wisconsin’s Academic Success Coach, or Northern Arizona University’s faculty mentors, supporting students in this process. They are also characterized by disaggregation of faculty roles. Different faculty, or other qualified professionals, may play the role of content developer, pedagogical designer, student mentor or advisor, and/or assessment designer and evaluator.

Definition of Competency-Based Education

There is no commonly accepted definition of competency-based education extant in higher education, which is problematic in terms of quality standards and transferability. Is competency to be established at the course level or the curriculum level? Consensus is that we can’t count on standardized tests in all cases because that method of assessment would fall short in revealing mastery, or levels of mastery, of some defined competencies. While the credit hour standard is a shared framework across higher education sectors, competency-based education does not have such an accepted standard. Many have written about the essential elements of a competency-based education. Klein-Collins (2012) provides an excellent review of attempts at definition. In any case, a competency-based system for higher education provides a significant
contrast to a credit-hour-based system, especially when the direct assessment approach is employed.

As Klein-Collins writes, competencies are seen as “clearly defined and measurable,” while the credit hour “can be many different things to many different people” citing Wellman and Ehrlich (2003, p. 16). She goes on to note that “credit hours do not inherently convey the amount of student learning that has taken place” (Klein-Collins 2012, p. 9) while “competencies, on the other hand, are seen as having inherent meaning or objective value,” she notes. For that reason, Klein-Collins suggests, competency frameworks are seen as providing a more meaningful description of what a postsecondary degree means in terms of demonstrated student learning (Klein-Collins 2012: 9).

Klein-Collins rightly points out that the terms learning outcomes and competencies are often used interchangeably. She suggests however, that there is an important distinction that should be made. As Peter Ewell (2001) noted, student learning outcomes can be defined in terms of “the particular levels of knowledge, skills, and abilities that a student has attained at the end (or as a result) of his or her engagement in a particular set of collegiate experiences,” but when describing learning outcomes in terms of competencies, “such goals describe not only what is to be learned but also the specific levels of performance that students are expected to master” (Ewell, 2001, p. 6). Similarly, according to Klein-Collins, Boyatzis (1982) earlier defined a competency as “the ability to demonstrate a system or sequence of behavior that is functionally related to attaining a performance goal” (as described in Bradley, Seidman, & Painchaud, 2012, p. 28).

Klein-Collins (2012:9) summarizes important points about competencies versus learning outcomes and suggests that:

1. Competencies are at a **higher categorical level** requiring students to process learning in a way that enables them to apply it in a variety of situations;

2. **Competencies are assessed at different levels** that a student might be required to demonstrate depending on the educational level of the student; and,

3. Competencies are considered more objectively **measurable**.

Again, there is no commonly accepted definition of competency-based education. Some question whether we are talking about education at all or whether we are, in fact, providing competency-based credentialing. In either case, learning in these models is guided and validated. The institution’s value-add is in the assessment of “mastery” – what does the learner know and can they apply that knowledge, or demonstrate it, at a level of proficiency that is meaningful in the workplace.
## Competency-based Education: A Sample of CBE Programs

### Course-based/Credit Equivalency

<table>
<thead>
<tr>
<th>Western Governors University</th>
<th><a href="http://www.wgu.edu/">http://www.wgu.edu/</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Start Date</td>
<td>1997.</td>
</tr>
<tr>
<td>Tuition</td>
<td>$2,890 per six-month term.</td>
</tr>
<tr>
<td>Degrees</td>
<td>B.A., M.A., M.S. in education; B.S., M.S. in information technology; B.S., B.S.N., M.S.N. in nursing ($3,250-$4,250); B.S. in business; M.B.A. ($3,250).</td>
</tr>
<tr>
<td>Structure</td>
<td>Institution-based.</td>
</tr>
<tr>
<td>Sector</td>
<td>Private, non-profit.</td>
</tr>
<tr>
<td>Accreditation</td>
<td>Northwest Commission on Colleges and Universities.</td>
</tr>
<tr>
<td>You Should Know</td>
<td>WGU has scaled CBE to serve 44,000 students, based on strong student support structures, producing better student persistence metrics than typically seen in online programs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>University of Wisconsin (Flexible Option)*</th>
<th><a href="http://flex.wisconsin.edu/">http://flex.wisconsin.edu/</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Start Date</td>
<td>January 2014.</td>
</tr>
<tr>
<td>Tuition</td>
<td>All-You-Can-Learn-Option is $2,250 per three-month term; Single Competency-Set Option is $900 per three-month term.</td>
</tr>
<tr>
<td>Degrees</td>
<td>B.S.N. in nursing; B.S. in diagnostic imaging, information sciences, technology; A.A.S. in general education; certificate in technical communication, sales, geographic information systems, alcohol and drug abuse counseling, among others (some certificates for non-credit). Some stackable to bachelor’s degree tracks.</td>
</tr>
<tr>
<td>Structure</td>
<td>Multi-campus institution-based, currently led by UW Milwaukee, UW Extension, and UW Colleges.</td>
</tr>
<tr>
<td>Sector</td>
<td>Public, four-year and freshman-sophomore campuses.</td>
</tr>
<tr>
<td>Accreditation</td>
<td>The Higher Learning Commission of the North Central Association of Colleges and Schools.</td>
</tr>
<tr>
<td>You Should Know</td>
<td>The University is in the process of seeking approval from US ED to be able to offer financial aid via the Direct Assessment model.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Kentucky Community and Technical College System (Learn On Demand)</th>
<th><a href="http://learnondemand.kctcs.edu/">http://learnondemand.kctcs.edu/</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Start Date</td>
<td>2011.</td>
</tr>
<tr>
<td>Tuition</td>
<td>$144/credit hour (course or module) within three to five weeks.</td>
</tr>
<tr>
<td>Degrees</td>
<td>Associate degrees (AA, AS), Business Administrative Systems, Computer and Information Technologies, Integrated Engineering Technology, AD in Nursing.</td>
</tr>
<tr>
<td>Structure</td>
<td>Multi-campus institution-based.</td>
</tr>
<tr>
<td>Sector</td>
<td>Public, two-year.</td>
</tr>
<tr>
<td>Accreditation</td>
<td>Southern Association of Colleges and Schools.</td>
</tr>
<tr>
<td>You Should Know</td>
<td>Learn on Demand uses a series of self-paced, competency-based modules that are the sub-credit level.</td>
</tr>
</tbody>
</table>
## Course-based/Credit Equivalency (continued)

### Northern Arizona University (Personalized Learning)  [http://pl.nau.edu/](http://pl.nau.edu/)
- **Start Date**: May 2013.
- **Tuition**: $2,500 per six-month term.
- **Degrees**: B.A. in liberal arts, small business administration, computer information technology.
- **Structure**: Stand-alone Extended Campuses (centralized delivery and academic authority, independent unit).
- **Sector**: Public, four-year.
- **Accreditation**: The Higher Learning Commission of the North Central Association of Colleges and Schools.
- **You Should Know**: NAU found that student support and administrative processes were so different for CBE that they needed to create a separate unit.

### Texas A&M - Commerce, South Texas College (Texas Affordable Baccalaureate (TAB) Program)
- **Start Date**: 2013.
- **Tuition**: $750 per seven-week term; six academic terms per year.
- **Degrees**: Bachelor of applied sciences in organizational leadership.
- **Structure**: Multi-campus institution-based; degree offered by both institutions.
- **Sector**: Public, four-year and public two-year.
- **Accreditation**: Southern Association of Colleges and Schools.
- **You Should Know**: Program development coordinated by the Texas Higher Education Coordinating Board and College for All Texans Foundation.

## Direct Assessment

### Southern New Hampshire University (College for America)  [http://collegeforamerica.org/](http://collegeforamerica.org/)
- **Start Date**: September 2013.
- **Tuition**: $1,250 per six-month term.
- **Degrees**: A.A. in general studies.
- **Structure**: Stand-alone “College for America”
- **Sector**: Private, non-profit.
- **Accreditation**: New England Association of Schools and Colleges.
- **You Should Know**: Students complete projects, not courses, to demonstrate mastery of multiple competencies. Student work is submitted to trained reviewers who evaluate the projects using rubrics. Students can revise and resubmit their work. This is a business-to-business model.
Direct Assessment (continued)

**Capella (Flex Path)**  [http://www.capella.edu/online-learning/flexpath](http://www.capella.edu/online-learning/flexpath)

<table>
<thead>
<tr>
<th>Start Date</th>
<th>October 2013.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition</td>
<td>$2,000 per three-month term.</td>
</tr>
<tr>
<td>Degrees</td>
<td>B.S. in business administration; M.B.A. ($2,200 per term).</td>
</tr>
<tr>
<td>Structure</td>
<td>Institution-based.</td>
</tr>
<tr>
<td>Sector</td>
<td>Private, for-profit.</td>
</tr>
<tr>
<td>Accreditation</td>
<td>The Higher Learning Commission of the North Central Association of Colleges and Schools.</td>
</tr>
</tbody>
</table>

**You Should Know**  They offer CBE at both the undergraduate and graduate levels and do not use objective tests but, instead, have focused on authentic assessments that simulate work-world activities.

**Lessons Learned in Design of CBE**

Those who have been involved in the design and development of these CBE models learned some things along the way that might be helpful to others considering the approach. A summary of these lessons learned are noted below:

1. **Ensure steady support from the top.** Stable institutional leadership is a critical success factor in launching an initiative of this kind. This would include an initial assessment of institutional readiness. If members of the faculty and staff have a voice in deciding upon developing a CBE model, that will mitigate internal resistance.

2. **Engage faculty.** Faculty resistance can be anticipated, particularly given the nature of CBE and its disaggregation of faculty roles. Most initiatives have been very attentive to faculty concerns, if not initially, certainly as faculty raise issues. Earlier involvement of faculty is better than later. For those hiring faculty within an independent unit, their workload expectations have been defined differently than the tri-partite expectations of tenure-track faculty. Their focus is on engaged scholarship and application of theory and methods to practice. There are arguments that this may be harmful to the faculty member’s long-term career, but program leaders disagree as these faculty are on a different career path. Nonetheless, existing faculty have been helpful in building assessments, course content, and pedagogy even though in some cases they cannot devote full-time to the competency-based initiative.

3. **Decide early about employing existing or new faculty.** Related to lesson 2, how these programs are staffed is a critical issue to be addressed upfront and should be based on the approach taken. Programs may rely on existing faculty or turn primarily to adjunct or non-tenure track faculty for curricular and assessment roles.

4. **Build supportive data systems.** A CBE model is based on assessment not only of learning but mastery. Those who are working with students need to have accessible data systems on students who are proceeding in a self-paced manner in order to advise them properly and guide them. Students need to be supported to
progress at a reasonable rate. Advisors need information to identify when a student is struggling and needs help. Faculty need to know how well each process and all learning resources are working.

5. **Decide on whether there will be credit equivalencies.** Western Governors University learned early on that students will want to change their pathway and will need to have a way to transfer from a CBE program to another degree pathway. This is a major factor in those institutions pursuing the course-based model with credit equivalencies. WGU, for example, has a formula that they use to determine credit equivalencies for their courses. Their CBE assessments allow the student to demonstrate the competencies and mastery of the same material that would be covered in a course.

6. **Engage student support services early.** While designers were attentive to faculty input and ideas, often the student services personnel were late to the design table. The questions for student services personnel regarding support for student advising, financial aid, and transcripting of learning achieved are not trivial tasks.

7. **Articulate CBE and traditional data systems.** Lesson 6 ties directly to student information systems and the challenges inherent in introducing a self-paced, non-semester-based, non-grade based model in a technology environment often hardwired for something quite different. Integration with existing student information systems is a critical success factor to scale CBE programs. Presently, there are no off-the-shelf tools to technologically support CBE programs. Institutions will need to be able to gauge how successful their programs are so they need to agree on metrics for measuring success upfront. The more tied to existing institutional metrics from their student information or learning system, the easier this will be. This information will be critical to both academic and non-academic staff so they know whether or not their learner support and assessment strategies are working.

8. **Choose vendors carefully.** Those designing CBE programs confronted a wide number of vendors offering services to support various aspects of the CBE model, including learner support and data systems. Designers indicated that the learning curve in assessing external service providers was steep and time-consuming. The best advice is to press vendors on issues of integration and to include IT staff in the process to ask the right questions about integration with institutional enterprise systems. This due diligence would include asking for examples of integration and references that can be consulted on their experience with the vendor. As another example, WGU discovered that the institution, not individual faculty members, should mediate negotiations with commercial publishers (Johnstone and Soares 2014).

9. **Create pricing model to meet financial and programmatic goals.** Designers have developed pricing models for these new initiatives but financial models for their sustainability remains a challenge. The goal in some cases, for example the University of Wisconsin system, is to return net revenue to the participating system colleges and to operate on a self-sustaining basis. Yet the program required a large start-up investment and the lack of off-the-shelf technology solutions to support the CBE initiative necessarily limited initial cohort enrollments. Achieving scale will be important to achieving the business model.
10. Consider stand-alone operations. To date, the administrative structure for CBE models seem to thrive in some institutions in separate and independent structures, rather than integrated into academic program structures. This model enabled CBE programs to launch quickly. Ensuring the necessary relationships with institutional faculty will be key to long-term sustainability. Centralizing advising and administrative support systems seems to be emerging as an efficiency factor to support CBE given that virtually everything needs to be reconsidered and redesigned. Also, if learning objectives change, instructional designers need to know to adapt the learning resources to support the objectives. Evaluators also need to know who are responsible for the assessments (Johnstone and Soares 2014). So, whether a stand-alone operation is necessary or not, centralizing or superbly coordinating these inter-related processes is key to success.

Sally Johnstone and Louis Soares (2014) recently published an article that probes more deeply into the principles of good curriculum design in CBE. This article would be recommended reading to guide those looking to design a CBE program at their institution. The five principles focus on: (1) defining robust and valid competencies, (2) designing for individualized pacing, (3) locating or developing quality learning resources with 24/7 availability, (4) having a well defined, explicit process to map competencies to courses, learning outcomes and assessments, and, finally, (5) the criticality of the security and reliability of assessments. Given the importance of aligning CBE programs with labor market needs, WGU uses program councils made up of industry experts as well as academic faculty to create competencies as part of their instructional design. Community colleges typically have industry councils advising on the curricula for their workforce preparation programs so these come into play in CBE design as well.

In summary, for those institutions considering pursuit of the direct assessment model, it is impossible to overestimate the challenges with financial aid. Current policy asks institutions to do a cross walk with credit to determine financial aid eligibility and to show academic progress in a manner that is very much tied to seat time. Neither of these policies is compatible with a direct assessment model. Also, there is no magic student information system that is available off the shelf that can integrate with existing enterprise systems to support CBE delivery models. Institutions cannot take for granted, therefore, in the design phase, that there is an existing technology solution that will work. Finally, the faculty mindset of curriculum development is within a term-based and credit-based model. Designers have to be prepared to do a great deal of work with faculty to help them rethink curricular structure for a competency-based model. For example, Kentucky’s Learn on Demand uses modules that are much smaller than typical courses.

Open Questions

Educational reform that disrupts the traditional credit-based model in postsecondary education such as CBE is not a simplistic solution to the major challenges we have in a labor-intensive and expensive enterprise called higher education. Yet, it is another modality that is well suited to some learners, helping them overcome barriers to achieving their education attainment goals. The design of CBE approaches represents significant challenges not only in curriculum development and delivery but in a host of services that touch every aspect of the postsecondary institution. The examples noted in this paper and the lessons learned from those designing and implementing CBE raise a number of questions. From the perspective of designing a program, or from a more
operational or practice point of view as opposed to a policy perspective, these are some of the questions we would pose for further discussion.

- **What are the overall goals for adopting CBE? Who is the audience? How will you measure progress and success?**
- **Is self-paced a necessary pre-condition for CBE? Can it be a CBE mastery model without being self-paced?**
- **Does CBE have to be online, or are hybrid or resident models possible?**
- **Is a centralized administrative structure necessary for implementation? Are stand alone or separate administrative structures versus integrated academic approaches emerging differentially in the community college versus four-year institutional environment and if so, why?**
- **How vulnerable are these reform models to leadership changes or faculty push-back, especially as the faculty role is disaggregated? If operating in a collectively organized environment, how can contract negotiations afford for faculty workload in a CBE model? In any case, what new models for faculty workload are emerging?**
- **How do you look for evidence that CBE is embedded in the institution? Do you examine student communications? The percentage of students availing themselves of the model? The percentage of faculty conversant in the model? Whether or not the IT system is capable of scaling the model? Are faculty contracts including disaggregated roles? Are data systems working to manage the disaggregated roles of advisors, and mentors to support student progress? Should CBE be embedded?**
- **What will it take to develop and maintain effective assessment methods? How authentic are the assessments? Do they include formative and summative assessments? How secure are the assessments? How robust? Do they measure mastery?**
- **How involved are employers in the CBE model? How are relationships with employers sustained over time? How are competencies aligned with workplace skill requirements? How are they kept current?**
- **Is external funding, or other incentives, critical to meaningful educational innovation and reform in developing CBE approaches?**
- **Can guidelines for ensuring high quality and academic rigor in CBE be developed and promulgated and if so by whom?**

From the perspectives of these early adopters, CBE signals that all members of an institutional team are required, or as the idiom goes, it’s a cry for “all hands on deck” because virtually everything has to be reconsidered. As University of Wisconsin System notes in WICHE’s Adult College Completion Network (2014), the institution needs to reconsider:

“... how students are admitted, pay their fees, are transcripted; how faculty determine performance standards (mastery threshold) and grade student work; a new model for faculty workload; how student service and support is delivered; a student information system built on competencies, not the credit hour; and an entirely different business model, designed to be cost-recovery but requiring a significant start-up investment.”

Creative problem-solving, coupled with engagement of academic and non-academic staff, is allowing successful navigation of titanic challenges in pursuit of this disruptive innovation in postsecondary education. While WGU is already to scale serving 44,000 students in CBE degree programs, others are experiencing overwhelming response from students eager to accelerate their education attainment goals. The stakes to make college affordable have never been higher. CBE provides yet another alternative pathway to degree success.
About the author

Patricia A. Book, a longtime leader in serving adult learners, is currently the Leadership Fellow with WCET. She served as Assistant Vice President for the Center for Education Attainment and Innovation at the American Council on Education, conducting the first ACE credit recommendation review of MOOCs. She is past president of the University Professional and Continuing Education Association. Book has more than 25 years of senior leadership and management experience in continuing higher education, serving adult learners online, on- and off-campus. Book holds a bachelor’s degree in anthropology from Oakland University (MI), an M.A. in cultural anthropology from the University of Connecticut, and a Ph.D. in medical anthropology, also from the University of Connecticut.
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