DECONSTRUCTING CBE

An Assessment of Institutional Activity, Goals, and Challenges in Higher Education

ellucian

EDUVENTURES

ACE American Council on Education
CEAI Center for Education Attainment & Innovation

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ABSTRACT

Ellucian, Eduventures, and the American Council on Education (ACE) have partnered to conduct a three-year study to help higher education leaders better understand competency-based education (CBE), including the diversity of institutional practices and paths forward.

EXECUTIVE SUMMARY

While competency-based education (CBE) continues to capture the attention of many higher education institutions, the road to broader scale and impact remains unclear. At present, there are more questions than answers. What exactly does the term "CBE" refer to? What pedagogical, delivery mode, and assessment options are available to institutions? Is CBE a superior fit for some types of students, programs, or institutions over others?

In order to better gauge the state of CBE implementation and its prospects for mainstream growth, Eduventures and Ellucian have initiated a three-year study of CBE in U.S. higher education. The partnership is designed to help higher education leaders recognize and better interpret the diverse ways in which institutions implement CBE, and respond strategically to the implementation challenges going forward. In April 2016, the American Council on Education (ACE) joined this effort as a strategic partner.

What is CBE and Why Are Schools Turning to It?

Renewed interest in CBE is a response to widespread concerns about the productivity and affordability of higher education. It is also a response to the quality and work readiness of graduates. In a March 2016 report, the Competency-Based Education Network (C-BEN), a collective of colleges and universities active in CBE, defined CBE as an instructional system in which:

> ***…the time it takes to demonstrate competencies varies and the expectations about learning are held constant. Students acquire and demonstrate their knowledge and skills by engaging in learning exercises, activities, and experiences that align with clearly defined programmatic outcomes. Students receive proactive guidance and support from faculty and staff. Learners earn credentials by demonstrating mastery through multiple forms of assessment, often at a personalized pace.***

CBE seeks to specify learning outcomes at the course and program level, and rigorously and transparently assess student performance against those outcomes. Advocates distance CBE from so-called "seat time" assessment, referring to traditional higher education programs where students study as a cohort and are assessed at the end of a fixed time period. CBE proponents argue that, all too often, traditional models allow students to scrape by without truly demonstrating specific knowledge and skills. These models also prevent individual students from proceeding faster or slower than the norm.

A CBE approach can be positioned as a multi-faceted solution to the complex challenges facing higher education. It has the potential to be both rigorous and affordable, while providing students with a highly personalized and efficient means to obtain a certificate or degree. New technology, notably learning analytics and adaptive learning systems, is viewed as an enhancement to the effectiveness and scalability of CBE.

While there have been a number of informative surveys assessing institutional interest in CBE, there is a need for a systematic analysis of how institutions are designing and implementing CBE at the course, program, or institutional level. Outside of some notable but atypical examples of institution-wide innovation and scale, higher education's current fascination with CBE might best be described as aspirational. Our initiative intends to help close this research gap and advance the conversation about the scale, impact, and varieties of CBE.

Rather than a single, dominant version of CBE, our 2016 survey data reveals a diversity of practice across a spectrum of schools, each deploying and experimenting with CBE in order to meet specific institutional challenges. A portrait of CBE emerges as a menu of tools and practices, rather than a monolithic approach or linear path. These findings underscore the need for institutions to carefully weigh the pros and cons of CBE implementation, and to proactively select the CBE components that make the most sense for their students and mission.

The first phase of our study was an institutional survey, fielded between March and June 2016. It garnered 281 responses from a representative group of colleges and universities; one of the largest samples to date on CBE implementation. After duplicate and partial responses were removed, the sample spans 251 institutions. The survey asked institutional leaders and other informed stakeholders to provide details about the strategies and operations involving CBE at their institutions.

Purpose-Built Scoring Model

Through the survey, Eduventures developed a purpose-built scoring model, which will be used to provide each responding institution with a benchmark report. This will help each institution better understand its current use of CBE, both in absolute terms and in relation to its goals and peer group. This scoring model compares institutions across five dimensions of CBE development, leading to a comprehensive score. The dimensions are:

- **Scope:** extent and range of current CBE activity
- **Attributes:** CBE offerings, characteristics, and features
- **Operations:** CBE governance, roles, support services, and platform tools
- **Outcomes:** CBE performance
- **Commitment:** institutional or departmental support for CBE going forward

Portraits of CBE Practice

Based on the 2016 survey results and scoring model, Eduventures has developed three institutional portraits designed to highlight the diverse ways in which CBE can be implemented. An initial screening question indicated the extent to which each featured institution utilizes a range of CBE components, and the balance of survey questions provided further details. In some cases, these institutions described themselves as defined by CBE, while others focused on a specific department or program. Each of the profiled institutions was interviewed and was able to approve their portrait.

The following portraits are explored in more depth in the full report:

1. **University of Maine, Presque Isle (UMPI):**
   Cohort-driven, Online and Blended Learning for Full-time, First-time Students.
   UMPI is a small, regional public university focused on strengthening retention and completion rates through enhanced support services. UMPI uses CBE as a tool to support the transition from high school to college. CBE is utilized in face-to-face, blended, and online settings.

2. **Salt Lake Community College (SLCC):**
   Self-Paced, Blended, Workforce-Readiness for Underserved Students.
   SLCC is a large community college serving a diverse adult population. SLCC has implemented CBE in face-to-face and blended courses focused on providing technically-oriented certificates and associate degrees. SLCC uses CBE in more than 10 of its certificate and degree programs within its School of Applied Technology and Technical Specialties.

3. **Valdosta State University (VSU):**
   Self-Paced and Blended Learning for STEM Teacher Professional Development.
   VSU is a regional public university serving southwest Georgia. Its CBE programs emphasize employer-driven outcomes and self-paced learning for improved employability. VSU offers CBE programming to local teachers seeking licensure endorsements in STEM.

These portraits showcase diverse models of CBE implementation and can serve as examples for similar institutions.

Summary of Survey Findings

Based on the initial fielding of the survey, several findings stand out regarding CBE:

1. **High Interest; Aspirational.**
   While interest in CBE across a large proportion and wide range of schools is indisputable, the complexities of implementing and defining CBE has kept most institutions wholly or primarily at an aspirational phase of implementation.

2. **A Diversity of Practice; Small Scale.**
   The implementation of CBE is diverse and the utilization of core CBE components is often small in scale with much activity at the sub-institutional level. When disaggregated, CBE components exhibit widely differing patterns of adoption and interest. Greater awareness of CBE diversity will make wider implementation more realistic and downplay the significance of a small number of CBE institutional pioneers as the “only” exemplars.

3. **CBE is Often Prioritized as a Method to Support Non-Traditional Learners.**
   Most institutions look to CBE as a means to expand opportunities and enhance learning for non-traditional students. These students are broadly defined as non-traditional by age, demographics, and/or circumstances that inhibit conventional enrollment. A minority of institutions view CBE as applicable to more traditional students.

4. **CBE is Delivery Mode Neutral; Growing Use of Online Tools.**
   CBE can be and is delivered through a variety of online, blended, and onsite courses and programs. While online platforms and tools often play a major role, more "basic" tools, such as early-alert systems and real-time communication networks, are much more widely implemented compared to novelties like adaptive learning and other CBE-oriented tools. There is considerable interest in next-generation functionality.

5. **CBE vs. Conventional Higher Ed: Too Early to Tell.**
   Although some early indicators point toward favorable comparisons with conventional higher education in terms of workload, quality, and outcomes, most institutions confess that it is too early to draw conclusions. Respondents tended to regard CBE as more work. This perception may be explained in part by a preponderance who reported that faculty tend to create their own competencies and courses from scratch, rather than leveraging—at least in part—pre-existing resources.

6. **Cautious Commitment for Further Development.**
   Despite a variety of perceived barriers (e.g., federal financial aid, funding, and faculty buy-in), many institutions anticipate further exploration and adoption of CBE.

CONCLUSIONS

Based on these findings, several overarching conclusions emerge at this stage of the project. First, while it is abundantly clear that interest in CBE is stronger than ever before, it remains complex territory. CBE is not simply a delivery mode. It challenges long-held conventions regarding how curricula are created, instruction is designed and delivered, and skills and knowledge are assessed.

Secondly, CBE raises critical questions about how institutions could be organized and financed and what roles faculty and other instructional support providers might play. For most institutions, these questions are intriguing, but often fall outside the realm of their current strategic imperatives. They may continue to impede the mainstreaming of CBE.

Finally, while several established institutions may continue to grow their CBE programs, the diversity and complexity of CBE will require most institutions to opt for customized implementation. Near-term opportunities to accelerate the growth and expand the scale of CBE, beyond a set of innovative early adopters, may be limited. Expanded scale and deeper impact will require institutions to carefully assess their needs and align them to specific CBE components, tools, and practices. This complexity emphasizes the merits of a richer array of CBE implementation examples.

Over the next two years, Ellucian, Eduventures, and ACE will continue to examine the prospects for broader CBE implementation and growth. The balance of this study will complement the year-one survey data with interviews and case studies, and a repeat survey in year three to gauge institutional progress and direction.

FULL REPORT

BACKGROUND AND RATIONALE

This report, and the underlying study, grew out of discussions between Eduventures and Ellucian. In recent years, Eduventures has published a series of reports on the opportunities and challenges posed by competency-based education (CBE). Ellucian entered the CBE realm with its acquisition of what is now Ellucian Brainstorm, a purpose-built CBE solution for continuous lifelong learning. In April 2016, the American Council on Education (ACE) joined the study as a strategic partner.

Although a small number of institutions had pioneered CBE programs, the study sponsors agreed that bigger questions remain about the prospects for achieving broader scale and impact. This perception was underscored by the recent surge of interest in CBE across higher education. CBE is seen anew as a way to affect everything from more rigorous assessment of student learning to enhanced student employability and radically lower tuition. CBE is anything but new. While CBE programs and institutions have existed for decades, renewed interest warrants fresh thinking about the conditions under which CBE might become mainstream.

Since 2013 alone, there have been a variety of CBE surveys launched by publishers, research organizations, associations, and technology vendors. Major foundations, such as the Lumina Foundation and the Bill and Melinda Gates Foundation, have directed significant funds toward efforts to better understand CBE and support its wider adoption. The U.S. Department of Education has made a concerted effort to deepen its inquiry into CBE through an expansion of the Experimental Sites Program, waiving certain financial aid requirements for innovative programs and institutions. The first peer-reviewed academic research journal solely focused on CBE, the *Journal of Competency-Based Education*, debuted recently.

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graduates. In a March 2016 report, the Competency-Based Education Network (C-BEN), a collective of colleges and universities active in CBE, defined CBE as an instructional system in which:

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CBE seeks to specify learning outcomes at the course and program level, and rigorously and transparently assess student performance against those outcomes. Advocates distance CBE from so-called "seat time" assessment, referring to traditional higher education programs where students study as a cohort and are assessed at the end of a fixed time period. CBE proponents argue that, all too often, traditional models allow students to scrape by without truly demonstrating specific knowledge and skills. These models also prevent individual students from proceeding faster or slower than the norm. A CBE approach can be positioned as a multi-faceted solution to the complex challenges facing higher education. It has the potential to be both rigorous and affordable, while providing students with a highly personalized and efficient means to obtain a certificate or degree. New technology, notably learning analytics and adaptive learning systems, is viewed as an enhancement to the effectiveness and scalability of CBE.

STUDY VISION

The core goal of the first phase of this study is to deconstruct how CBE is implemented in U.S. higher education institutions. Many recent CBE studies err on the side of documenting awareness of and interest in the modality. As this survey confirms, there is no shortage of interest among colleges and universities. The real question is: what does this interest amount to? Higher education's current fascination with CBE can be best described as aspirational, with some notable, but unique, examples of institution-wide innovation and scale. What versions or components of CBE have caught the attention of these institutions? What kinds of students, programs or institutions are a good fit for CBE? Is the sector on the brink of a CBE revolution or will CBE quickly return to the margins?

Much commentary on CBE is monolithic and unidirectional, presenting CBE development as a linear pathway toward models embodied by institutions such as Western Governors University (WGU) and Southern New Hampshire's College for America (CFA). Such institutions are characterized by wholly online delivery, few conventional faculty, self-paced study, and low tuition. These institutions are a long way from the circumstances of the vast majority of colleges and universities in the United States. While both WGU and CFA are innovative, high quality institutions that deserve emulation, this report argues that a broader variety of CBE futures must be envisioned if the modality is to move to the mainstream.

The likes of WGU and CFA should be understood as versions of CBE, but not the only versions. These institutions have made pedagogic choices within a CBE framework; choices that might be decided differently to match the needs of particular programs, students, or institutions. CBE does

not have to be delivered online, and need not be entirely self-paced. A CBE program might value student cohorts, and might target traditional-age students rather than the working adults favored by WGU and CFA.

There is a tension between widespread enthusiasm for the CBE idea and the fact—demonstrated by this survey and those of other organizations—that CBE practice remains fragmented and small in scale. This report asserts that an overly narrow definition of CBE explains this tension, leading the average college or university to struggle to connect the CBE ideal with institutional reality at any scale. Many of the principles of CBE strike a chord across higher education, from community colleges to research universities, but a lack of appropriate models can endanger nascent projects and innovative programs.

Additionally, it is far from certain that highly individualized, low price CBE programs lead unequivocally to strong student outcomes. There is no question that many such CBE programs are academically rigorous and a great fit for some students; but there is not yet evidence that such programs are consistent with high graduation rates. Leading CBE institutions and programs do not, even after decades in some cases, lead with quantitative outcomes data. The versions of CBE implemented by these institutions may prioritize flexibility and low cost, but adjustments may be needed to improve completion rates. The motivation and discipline to thrive in an entirely self-paced environment may be challenging for even the average traditional student, never mind many non-traditional populations.

To enhance the impact of CBE, in terms of both quality and quantity, we must disaggregate the modality into its component parts. We must then explore multiple ways those parts might be reassembled to match the characteristics and needs of particular types of students, programs, and institutions. To position CBE as one model could confine it to be no more than a bit player in the higher education landscape. This positioning would fail to capitalize on the potential for fresh conceptions of CBE to address the sector's central challenges.

In summary, this three-year study is designed to:

1. Analyze the range and diversity of CBE implementation, and assess prospects for scalability.
2. Identify and evaluate the ways in which CBE can be shaped and adapted to distinct institutional circumstances.
3. Utilize a purpose-built scoring system to enable institutions to measure CBE goals, plans and activities in a peer and national context.

SURVEY AND SCORING MODEL

The first step in our study was to survey a wide range of institutions and to disaggregate CBE practice and interest into its component parts. What is the spread of CBE activity in terms of academic level, student type, and delivery mode? What is the balance between institution-wide and department-level activity? How many CBE courses and programs do institutions currently offer? What dimensions of CBE—such as prior learning assessment (PLA), direct assessment, and self-paced study—do institutions use? Which features and tools characterize particular CBE offerings? In which areas do institutions plan to invest, and where do they have no interest?

The survey was targeted at a range of institutions and roles, across ACE's leadership network, Ellucian's customers, and Eduventures' client base. We developed a scoring model to reveal varieties of CBE and associated models of CBE maturity while also acknowledging diverse institutional goals. Maturity was explored across several dimensions:

- **Scope:** extent and range of current CBE activity
- **Attributes:** CBE offerings, characteristics, and features
- **Operations:** CBE governance, roles, support services, and platform tools
- **Outcomes:** CBE performance
- **Commitment:** institutional or departmental support for CBE going forward

The intention was to avoid a simple linear definition of maturity. The goal was to map CBE activity and ambition on a number of spectra, but not make value judgments. A school with a high score overall or on a particular dimension should not be regarded as necessarily "better" or "more mature" than schools with lower scores. A high score may indicate a particular school is more active than average in terms of a particular kind of CBE, or is more ambitious than average in this area. It does not necessarily indicate that this model is a good fit for similar institutions. A high score may say little about the quality of CBE implementation or the outcomes of the model for students or others.

Under "**Scope**," higher scores may be attributed to a larger number and wider range of CBE courses and programs, and to CBE enrollment and conferral scale (both current and planned). CBE offerings targeted at a broader swathe of institutional challenges and student types also garnered a higher score.

Under "**Attributes**," higher scoring institutions were characterized by routine use of features such as learning outcomes, direct assessment, prior learning assessment, personalized curricula, self-paced study, learning analytics, and the co-development of competencies with employers. Use of early-alert systems, badging and other micro-credentials, mobile access, student/faculty and student/student interaction tools, and the ability to manage non-standard financial aid also merited higher scores. A high score indicates use of multiple tools, but not necessarily effective use or use of the"right" tools within a given context.

Under "**Operations**," higher scores drew from the relative stability of CBE arrangements, scope for rapid expansion, and availability and use of CBE student data. Other factors were course development that made use of third party materials, employer input, and the extent of faculty and non-faculty roles and support.

Under "**Outcomes**," higher scores speak to CBE implementation resulting in reduced faculty and staff effort, enhanced faculty/student and student/student interaction, and improved student outcomes compared to those of conventional offerings. CBE graduate support services were also included.

Under "**Commitment**," higher scores were awarded for institutions that indicated institution-wide CBE ambition, a major role for CBE as part of strategic planning, significant dedicated funding, clear senior leadership, and many years of CBE experience. Access to federal financial aid for CBE offerings was also viewed as a marker of commitment.

Responses were computed to create an overall maturity score and a score for each dimension. In general, survey questions were allotted a maximum of 10 points and a minimum of zero.

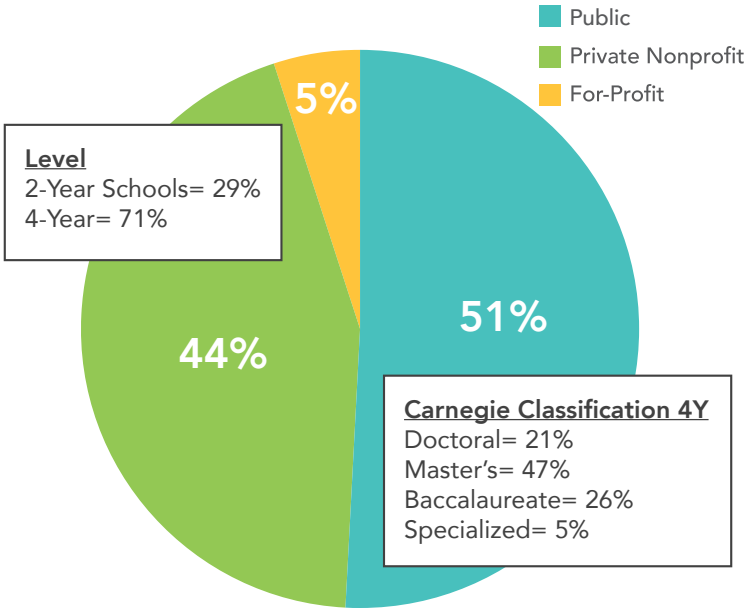
Some survey questions were of a descriptive nature and were not included in the scoring. Schools that indicated little CBE activity or interest were exited from the survey and asked a few questions about rationales and perceived barriers. Responses to these questions were included in the scoring for these institutions. Responding institutions will be sent their score profiles in the weeks following the publication of this report.

YEAR ONE SURVEY FINDINGS – RESULTS AND ANALYSIS

Sample Size. The year-one survey produced 251 complete institutional responses, representing one of the largest surveys to date of institutional interest in and implementation of CBE. Respondents match the diversity of U.S. higher education:

Many leading CBE institutions and institutions with CBE programs submitted their responses and ranked high on the scoring model, including Western Governors University, Northern Arizona University, Excelsior College, and Brandman University. The majority of respondents have a more limited CBE history, or none at all. Although this sample is skewed toward institutions that are active or interested in CBE, the sample's diversity by institutional control, level, and Carnegie Classification strongly suggests that enthusiasm for CBE is quite mainstream and not confined to particular types of institutions. Respondents were senior administrators, including presidents, provosts, vice presidents of teaching and learning, deans, and directors.

Figure 1. Survey respondents match the diversity of US higher education



This section of the report is organized under the five headings discussed above: scope, attributes, operations, outcomes, and commitment. Portraits of three institutions that encompass a diverse mix of CBE models follow this section.

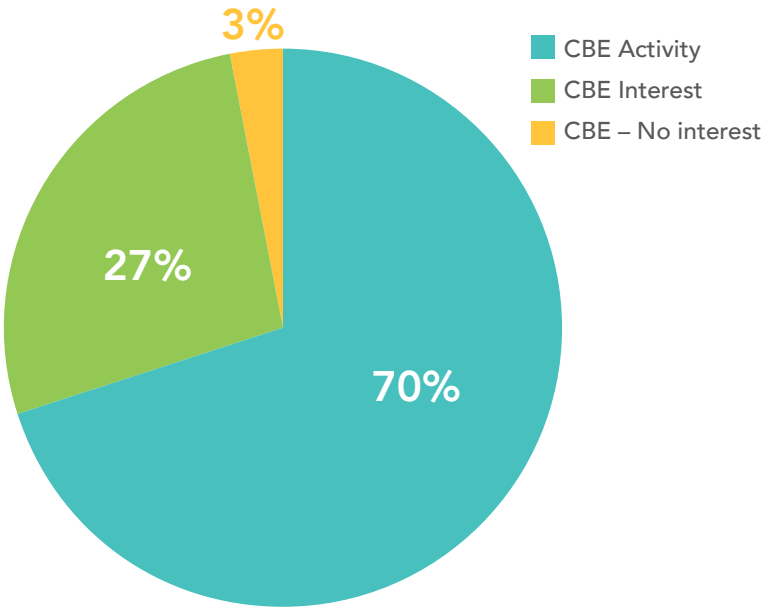
SCOPE: PROGRAMS, COURSES AND BEYOND

The survey invitation encouraged responses from CBE advocates, skeptics, and everyone in-between. The goal was to better understand evolving attitudes and rationales, whatever their stripe. The survey also used a deliberately broad definition of CBE in an attempt to capture the full range of practice.

Almost all responding institutions—over 95%—indicated some level of CBE activity or interest (**Figure 2**). This speaks to CBE as a multifaceted approach to curriculum, teaching and learning, and assessment. The principles of CBE—such as clarity about learning outcomes, prior learning assessment, and a role for self-paced study—are difficult to object to.

The small number of institutions that indicated little or no interest in CBE (3% of the sample) was diverse, spanning master's, baccalaureate, associate, and specialized schools. The main reasons for non-interest included little perceived value in moving away from the credit hour, significant pedagogic benefit seen in student cohorts, and doubt that self-paced offerings are a good fit for many students.

Figure 2. Interest in CBE is not the problem
(N= 251 institutions)



Another 27% of the sample pointed to early-stage interest in CBE but little direction or progress to date, and no active plans. This sub-group was also very diverse, but baccalaureate and specialized institutions were somewhat over-represented. Interest in CBE was driven primarily by a belief that "competencies" are a way to increase the rigor of student assessment and student employability. Many of these institutions believed that adult learners would value a more self-paced learning experience, and that self-paced learning would aid student completion.

Why are schools interested in CBE?

Institutions that indicated some level of current CBE activity were asked this question.

Figure 3. Why CBE?

(N= 175 institutions. Associate= 56 institutions; Doctoral= 26)

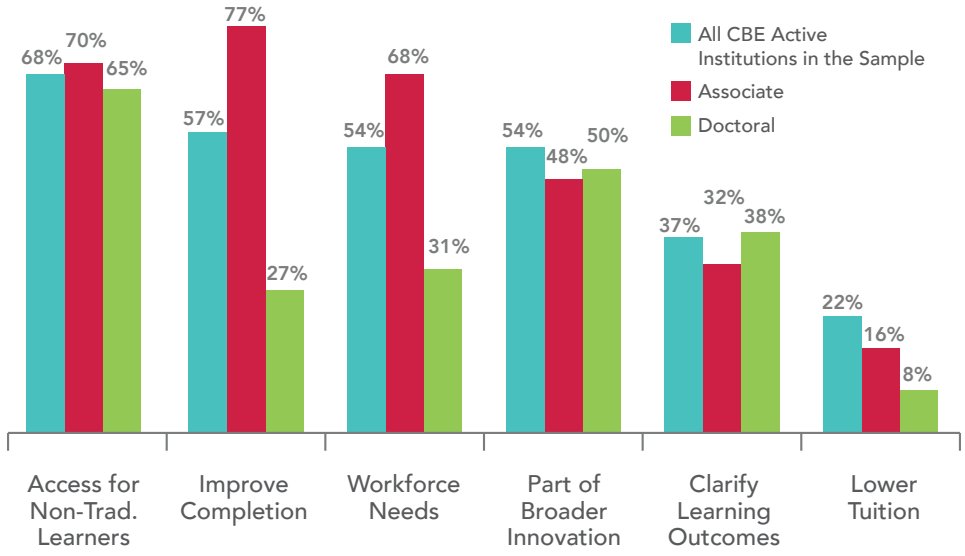


Figure 3 illustrates the range of benefits associated with CBE—from access for non-traditional learners, to enhanced graduate employability, to lower costs. It is striking that access and completion are much more likely to be priorities than the clarification of learning outcomes or reduced tuition. This may speak to a simplistic view of CBE as another tool to grow enrollment. CBE may increase demand from some prospective students, but it may be a mistake to think of CBE as beneficial only in terms of access to conventional higher education.

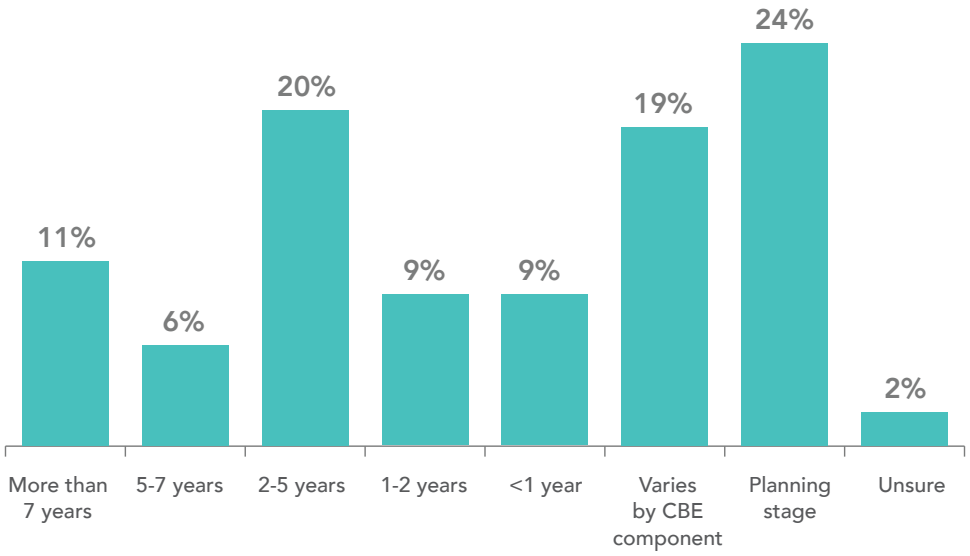
CBE is a pedagogic and assessment model to enhance the rigor, personalization, and nature of the student experience. CBE is designed to change higher education, not simply provide access to it. The lower ratio for "clarify learning outcomes" may reference the fruits of longstanding learning outcomes initiatives, but also may be further evidence that many institutions take a market-oriented stance.

Associate institutions see much more potential for CBE to aid completion and workforce efforts, compared to doctoral schools. Neither, however, appear to be very interested in using the modality to lower tuition or underlying costs. In fact, private nonprofit master's institutions were most likely to cite reduced tuition as a motivator. This finding is consistent with the growing challenge that some unranked, high-tuition, high-discount schools face in demonstrating return on investment.

The fact that about half of respondents position CBE as part of broader innovation reiterates the breadth of the CBE message. It also reiterates the general confusion about terminologies, definitions, and questions about integrating CBE components into existing arrangements.

How long have schools utilized CBE?

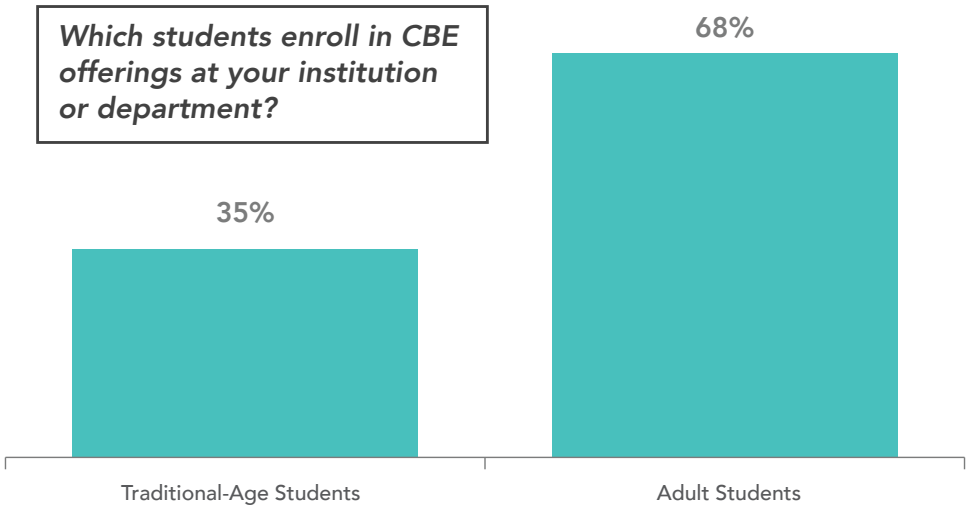
Figure 4. CBE at an Early Stage
(N= 175 institutions that indicated some level of current CBE activity)



Over 80% of self-reported CBE-active institutions have a CBE history that is fewer than five years old or is uneven depending on particular CBE components. This confirms the exploratory and iterative nature of CBE activity at most institutions at present. There were few differences by institutional type.

What kinds of students are CBE-active schools targeting?

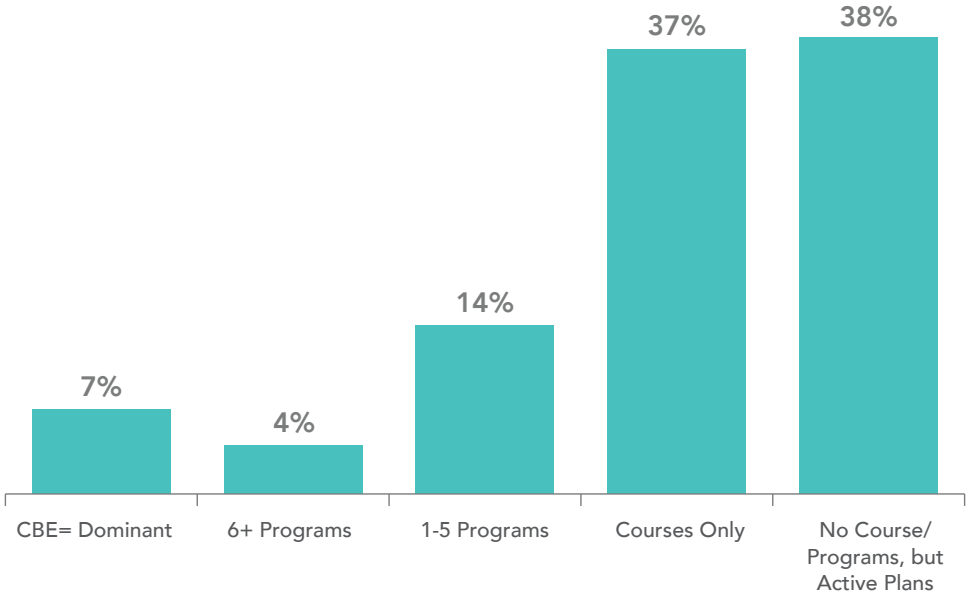
Figure 5. CBE for Adults Only?
(N= 175 institutions)



Sample schools were far more likely to report that adult learners, rather than traditional-age students, are their prime CBE target. Associate-level institutions were most likely to see the latter as a market for CBE. **Figure 5** represents the mirror image of higher education enrollment, where about two-thirds of students are traditional age (defined as 24 years old or younger). Is the drive to serve adult learners rather than traditional-age students through CBE reflective of institutional instinct or an explicit strategy rooted in evidence?

About 70% of the sample (175 schools), indicated some level of CBE activity. What is the scale and scope of CBE program at these schools? **Figure 6** breaks this sub-group by CBE course and program volume.

Figure 6. Most CBE Activity is at the Course Level or Below
(N= 175 institutions that indicated some level of current CBE activity)



Only 7% of CBE-active schools in the sample maintain that CBE is their dominant mode of instruction. This finding is a reminder that many schools deploy CBE in just one program or department, and continue to operate most programs outside of a CBE framework. The institutions that said CBE is dominant were far from uniform in terms of both type and reported CBE activity. About half are two-year colleges, and the rest are universities. Some schools in this category offer courses and programs formally designated as "CBE," while others view their institution as embodying certain CBE principles and practices (e.g., learning outcomes statements or direct assessment), even if they do not use the term "CBE" to describe them.

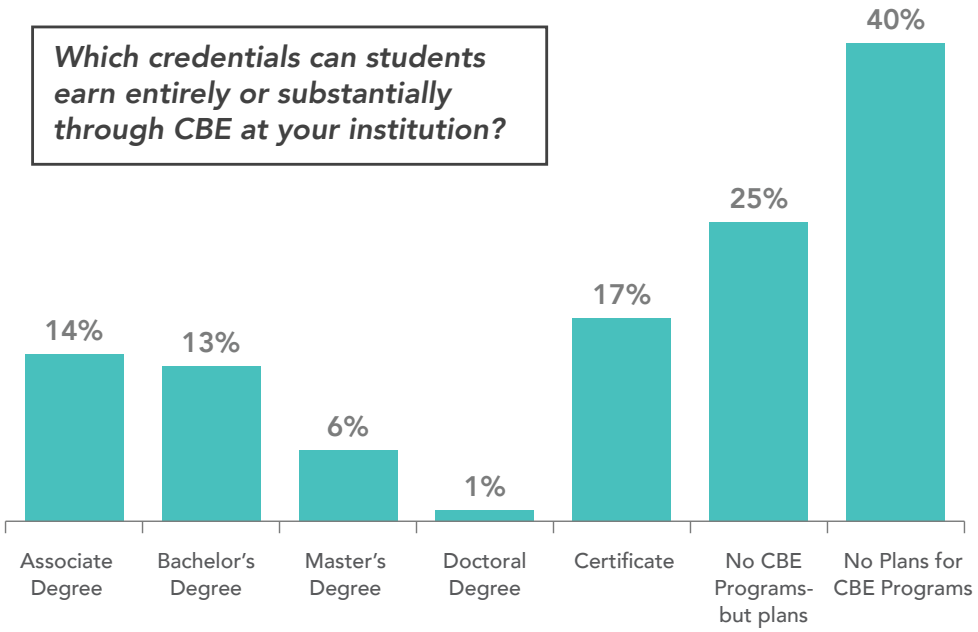
This highlights the challenge of succinctly identifying and naming "CBE." The very richness of the CBE ethos, much of which overlaps with broader accounts of pedagogic innovation, permits some institutions to use "CBE" to name longstanding practices that other schools might call something different. Some schools use the term "CBE" as a synonym for longstanding or particular practices.

In order to test for tensions between CBE activity and nomenclature, the survey asked respondents to give the name for relevant activity used by the institution. The terms "learning outcomes" and "prior learning assessment" were as commonly cited as "competency-based education." Many institutions cited two or more names as widely used, underlining the richness of the CBE palette and confusion over definitions and naming.

Another 4% of schools in **Figure 6** cited a suite of CBE programs (six or more). Even when CBE is not institution-wide, program scale remains rare. A further 14% of this sample mentioned a smaller number of CBE programs. CBE courses were much more prominent. Thirty-seven percent of schools that claimed to be CBE-active reported running CBE courses. The preponderance of CBE courses over programs emphasizes the history of CBE in higher education as a specialized, rather than mainstream, pursuit. Finally, more than a third of this sample reported no CBE courses or programs currently in place, but pointed to active plans.

The survey asked schools to describe the kinds of degrees or certificates students could earn from a CBE program or course:

Figure 7. A Diverse Range of Programs and Courses
(N= 175 institutions)



Today, about a third of sample institutions offer at least one program they consider CBE. Twenty-five percent plan to do so, but 40% of this sample—consisting of institutions that self-identified as CBE-active—have no plans to create CBE programs. For many institutions, interest in CBE is not a matter of creating a program called "CBE," but rather a means to enhance and adjust existing programs. Only 9% of the schools that claim to be CBE-active have actually awarded any credentials badged as CBE.

ATTRIBUTES: YOU SAY CBE, I SAY….

A central objective of the study is to disaggregate "CBE" into its component parts to both better understand institutional activity and better connect the power of this modality to institutional reality. Respondents were asked to identify the extent to which their institution is engaged with each CBE component. Institutions could indicate well-established use across an entire institution, or at the department level. They could also indicate if there were plans to implement a component institution-wide, within a department, or whether there was "little or no interest."

Figure 8. Is Your Institution Using CBE?
(N= 251 institutions)

To what extent is your institution involved in the following types or features of CBE?						
Survey Responses (N= 251)	**ENTIRE INSTITUTION** well-established	**INSTITUTION** early days	**DEPARTMENT** well-established	**DEPARTMENT** early days	**INTEREST** but no clear direction	**LITTLE OR NO** interest
Learning outcomes – program	46%	15%	21%	7%	10%	1%
Learning outcomes – course	47%	17%	19%	7%	9%	1%
Learning outcomes – sub-course	19%	12%	16%	14%	24%	16%
Direct assessment – no seat time	24%	12%	13%	11%	33%	8%
Maps competencies to credit	12%	8%	13%	11%	39%	17%
PLA – placement	13%	9%	19%	16%	32%	10%
PLA – personalization	5%	7%	12%	13%	44%	19%
PLA – for credit	20%	12%	14%	16%	26%	12%
Substantially self-paced courses	6%	5%	10%	12%	42%	24%
Substantially self-paced programs	6%	4%	6%	8%	41%	35%
Third party competency partners – course	11%	6%	16%	10%	39%	18%
Third party competency partners – program	12%	7%	16%	12%	37%	16%
Adaptive learning	4%	6%	8%	10%	52%	20%

Shade	% of respondents
	>40%
	15 – 40%
	<15%

Figure 8 is coded to highlight areas where institutional use of a CBE component is consistent and where it is divergent. For example, learning outcomes at the course and program levels command a large minority of respondents, indicating that these practices are well established across the institution. Similar ratios indicate interest in PLA for learner personalization, self-paced courses and programs, and adaptive learning. All other CBE components are more fragmented, with institutions split between institutional and departmental activity, well-established arrangements and recent innovation, and early interest with no clear direction. It is striking that no single cell captures a majority of the study sample. This further emphasizes the long history, complex nature, and recent surge of interest in CBE.

For all components, except learning outcomes at the course and program level, the most common response was "interest but no clear direction." Some CBE components—such as PLA for placement and learner personalization, self-paced courses, and partnering with third parties to adopt or co-develop competencies, exhibit more activity at the department rather than the institutional level. This suggests a perception of better fit between such components and particular subject areas, programs, or students.

Direct assessment is subject to many definitions. It is possible, as shown in **Figure 8**, that 24% of the sample employ true "direct assessment" at scale. This would mean that at these schools, most students test out of courses based on their personal knowledge and preference. In the survey, this CBE component is described as "assessment that measures learning without reference to seat time." Of course, no institution literally awards credit for seat time. Given the broad range of definitions and practices related to "direct assessment," however, there could be mixed signals in this finding. Some respondents may have cited institution-wide practices that others might not regard as "true" direct assessment.

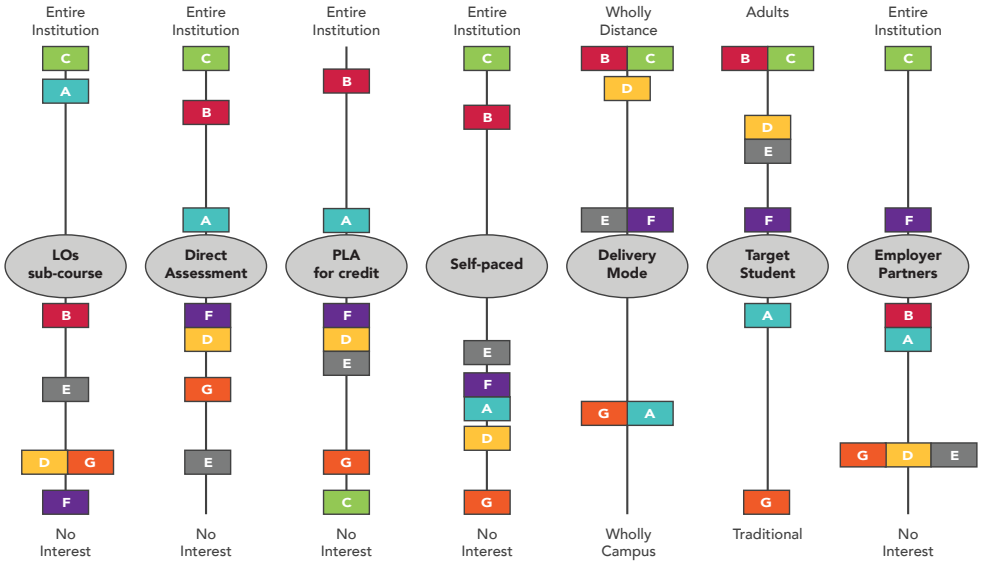
Figure 8 divides CBE into its component parts, laying out the nature and extent of institutional adoption. **Figure 9** examines seven sample institutions that completed the survey—each designated by a letter—and shows the diverse combinations of CBE components and characteristics (e.g., learning outcomes at the sub-course level, direct assessment, etc.).

For example, **School A** employs learning outcomes at the sub-course level across the institution and uses direct assessment in a growing number of programs. Its CBE offerings, however, are cohort-driven rather than self-paced, primarily on-campus, and targeted to traditional-age students.

By contrast, **School B** employs less granular learning outcomes, but direct assessment and self-paced study are routine. The delivery mode is wholly distance and almost all students are adults.

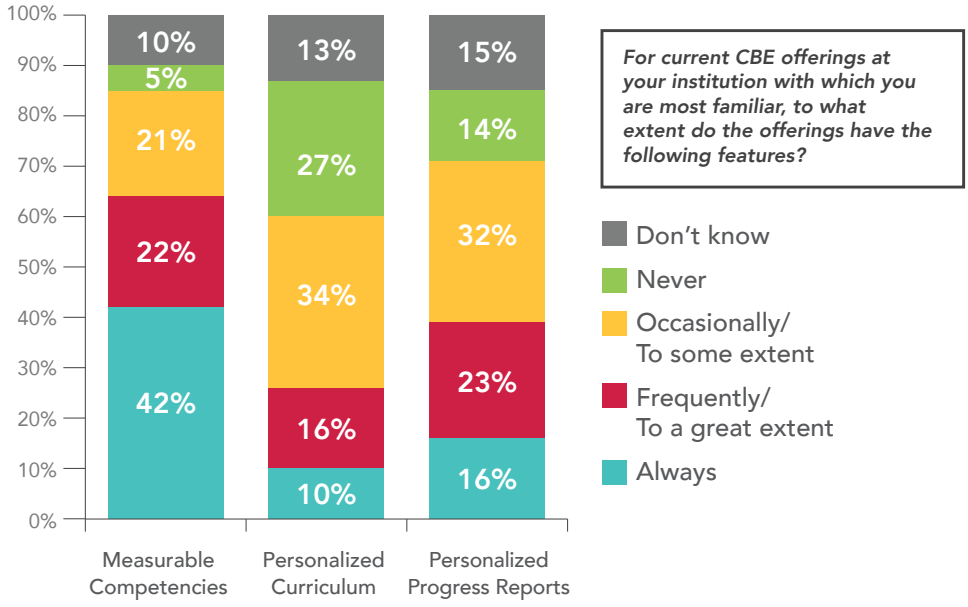
Figure 9 illustrates that "CBE" presents schools with pedagogic choices and may be used to serve a variety of students across a range of delivery modes. The potential of CBE should be framed in terms of fit by student, program, and institution type. Its potential should also be framed by demonstrated efficacy over time compared to conventional arrangements. What is important about **Figure 9** is not the precise CBE components and characteristics included or the particular institutions profiled, but rather the idea that CBE is a toolkit and not a uniform approach.

Figure 9. Choices & Fit: the True Complexity of the CBE Landscape



Findings from another survey question reiterated the diversity of CBE offerings across the sample. Schools were asked to what extent measurable competencies, personalized curriculum, and personalized progress reports were part of their CBE portfolio:

Figure 10. Competencies Are Just the First Step
(N= 168 schools that indicated some level of CBE activity)



Among the schools that cite current CBE activity, even "measurable competencies" are not universal. This underscores the finding that CBE offerings at many schools are relatively new and still under development. It also highlights ambiguity about what a "measurable

competency" is and is not. Furthermore, it shows that just because a school organizes curriculum around competencies does not necessarily mean that the curriculum is personalized for each student or that the student benefits from a personalized progress report.

There is a strong association between CBE and online learning. Among CBE-active schools, 29% said their CBE offerings are entirely online, while 60% indicated some sort of hybrid between in-person and online. Twelve percent of respondents said their CBE offerings are entirely face-to-face. This mix of delivery modes highlights diverse definitions of "CBE" in the sample, but also serves as a reminder that CBE components can be applied regardless of delivery mode. There may be an affinity between adult learners and online delivery. It is an open question, however, whether online delivery aids or hinders CBE, or whether it is pedagogically neutral. Of course, the specific instance of "online learning" must be understood to address such a question.

Schools that offer wholly online CBE are much more likely to report wholly self-paced CBE. This matches the asynchronous nature of much of online learning to the asserted pedagogic virtues of self-paced study.

Findings from a final survey question offered more insight into the detail of CBE offerings. Schools that self-identified as CBE-active were asked about the availability of a variety of additional tools and features commonly associated with CBE:

Figure 11. CBE Today and Tomorrow
(N= 162 institutions that indicated some level of CBE activity)

WHICH OF THE FOLLOWING ARE AVAILABLE AS PART OF YOUR CBE OFFERINGS?					
	YES, FOR ALL CBE STUDENTS	YES, FOR MANY CBE STUDENTS	YES, FOR SOME CBE STUDENTS	PLANNED	NOT PLANNED
Learning analytics dashboard for faculty	12%	10%	8%	42%	28%
Early intervention alert system	31%	10%	15%	27%	17%
Badges or other micro-credentials	4%	4%	6%	39%	46%
Faculty-to-student real-time collaboration	26%	13%	18%	25%	17%
Student-to-student real-time collaboration	20%	14%	18%	23%	25%
Mobile-optimized interface	13%	6%	13%	30%	38%
Manage non-standard financial aid	11%	11%	7%	27%	48%

Shade	% of respondents
	>40%
	15 – 40%
	<15%

Figure 11 indicates that there is no single feature or tool universally available for all CBE students from responding institutions. The most common tools were early intervention alerts and collaboration tools. Tools and features were more often in the planning stages than currently in place. In some cases (e.g., micro-credentials and non-standard financial aid), the largest number of respondents said they had no plans to implement certain CBE features or tools. For many institutions, CBE is seen to be consistent with standard financial aid models and conventional credentials.

OPERATIONS: WHAT NEEDS TO CHANGE?

A portion of survey questions asked CBE-active institutions about the role of faculty. For some, CBE is associated with significant change to the faculty role, emphasizing a student mentor role rather than direct instruction. These institutions also indicated an emphasis on assessment of competency over course creation. How did institutions in the sample describe the faculty role? The response options in **Figure 12** are ordered from the most to the least commonly-cited faculty role.

Figure 12. Business as Usual?
(N= 162 institutions that indicated some level of CBE activity)

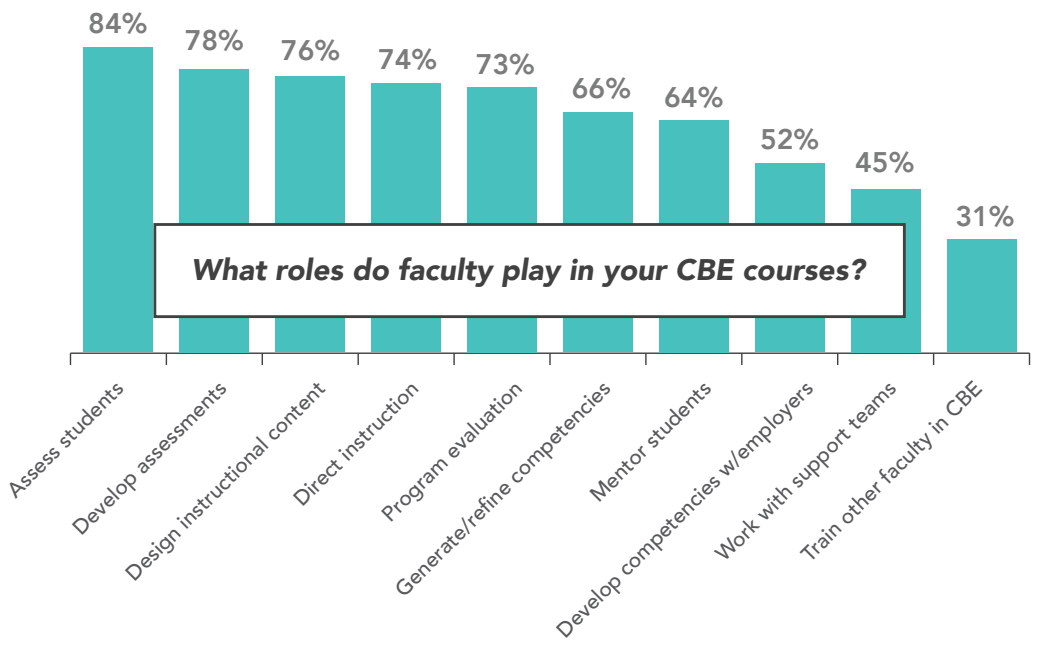


Figure 12 is consistent with the notion that designing and then delivering assessments are the core roles of faculty in many models. Similar proportions of faculty build content and deliver instruction. This is yet another sign that for many institutions, CBE can be compatible with traditional faculty roles. It is notable that the number of respondents who chose "mentor students" is 10 percentage points lower than "direct instruction," while the number who chose "work with support teams" is lower still. A large minority of the faculty engaged in CBE does not appear to work with relevant employers to shape competencies and curriculum. These tensions and differences may hint at the early-stage development of much CBE in colleges and universities, but also the complexities of definition and attempts to marry the old and the new.

Relatively few sample institutions could point to a well-developed group of non-faculty support staff for CBE offerings playing roles beyond standard advising. This is consistent with arrangements driven by conventional faculty roles and assumptions.

Another question addressed how CBE course content and competencies are created:

Figure 13. Who Defines Competencies?
(N= 162 institutions that indicated some level of CBE activity)

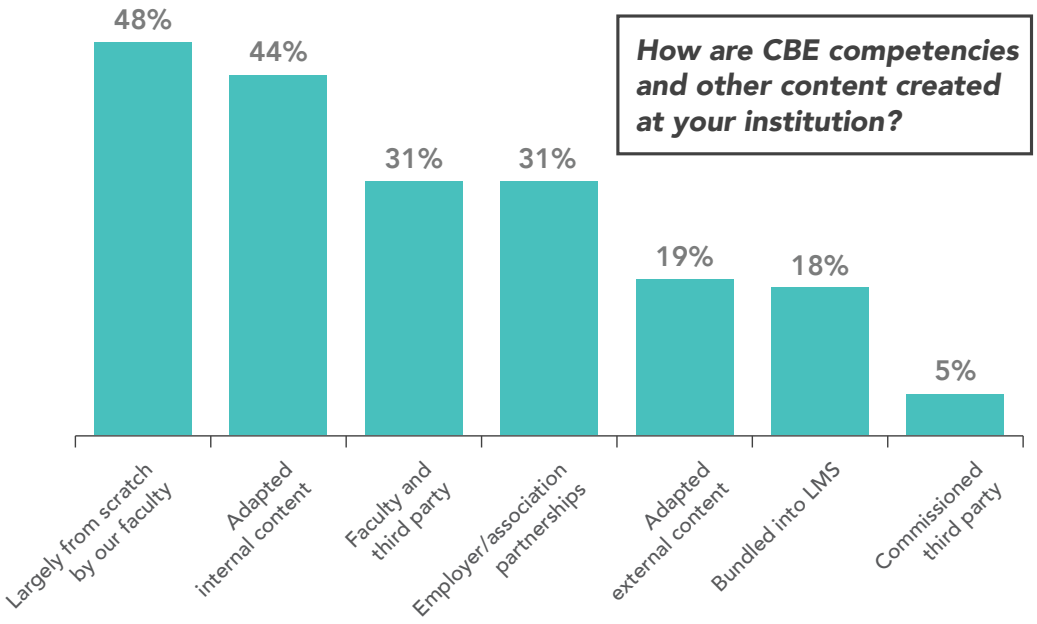


Figure 13 reveals that CBE competencies and other content are most likely to be created largely from scratch by in-house faculty. The logic of CBE—emphasizing clarity of learning outcomes and assessment—suggests a different balance between localized and standardized approaches. It makes the case for institutions to look beyond their walls when it comes to course and program building blocks. The idea that every institution and every faculty member might embrace CBE by inventing their own competencies and assessments, rather than strategically leveraging collective good practice when high quality materials already exist, runs counter to a major part of the modality's potential. The second most common source in **Figure 13** is the adaptation of existing internal content.

The three externally-oriented sources, adapted external content, bundled into a LMS, and commissioned by a third party, exhibit the lowest response rates. In response to a different question, only 1% of respondents said they only employ open educational resources (OER) for their CBE offerings, and 50% said they never use such materials. Ten percent say use is frequent and 39% say it is occasional.

What about CBE training for faculty and instructional support staff?

Figure 14. Are Faculty Competent?
(N= 162 institutions that indicated some level of CBE activity)

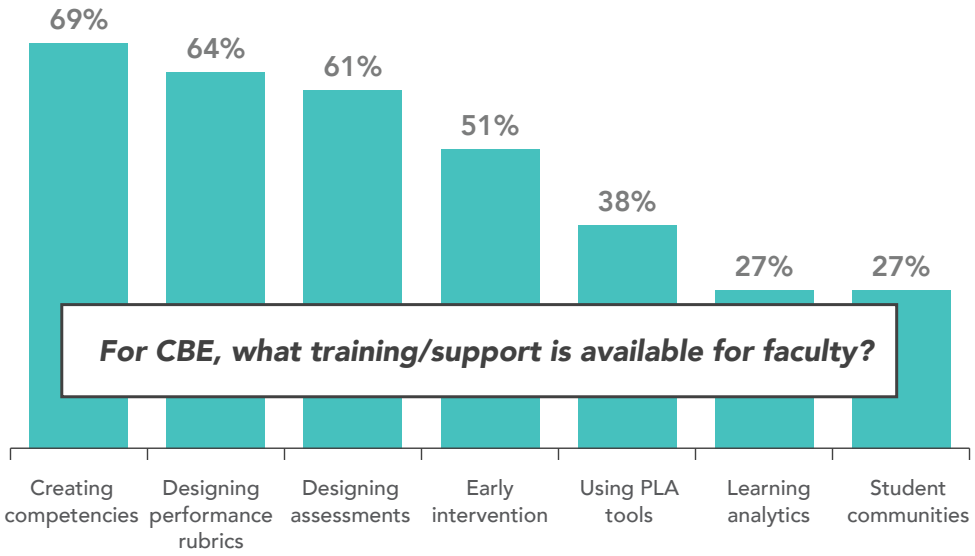
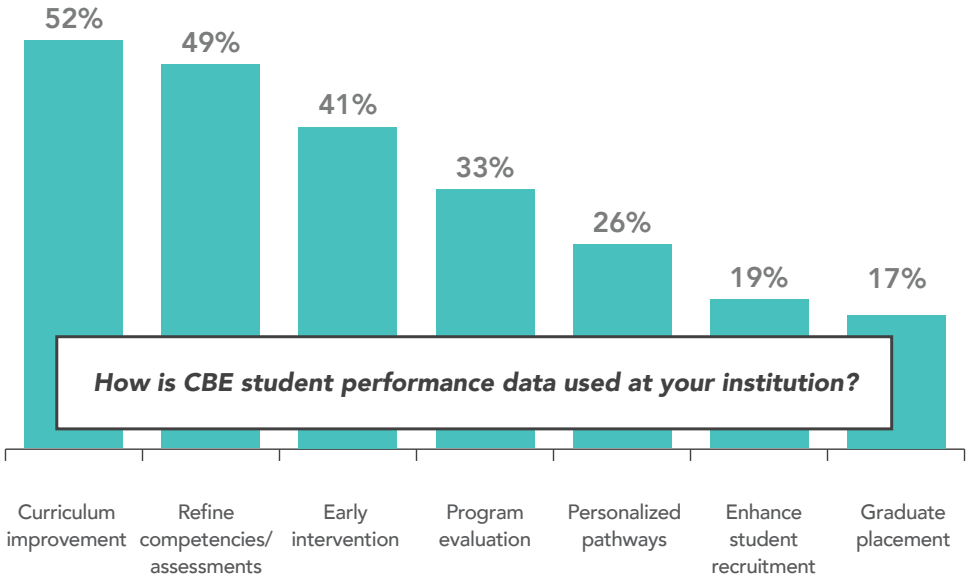


Figure 14 suggests that for many institutions, opportunities for faculty training may not be consistent with the roles that faculty members play in CBE programs. For example, although 78% of institutions report that faculty plays a lead role in assessment (**Figure 12**), only 61% receive training in designing these assessments. This may indicate a lag between what faculty members do, and what training and support is available to them. Other dimensions or features of CBE, such as early intervention protocols, PLA, and learning analytics appear to be less commonly supported by training. Barely a quarter of respondents indicate availability of training and support for faculty to strengthen student communities. This reflects the prominence of self-paced study in CBE, which treats cohorts and communities more informally.

CBE is associated with superior data on student performance. The combination of discrete competencies, personalized pathways, and tracking technology support data-driven efforts to improve learning. The survey asked CBE-active schools how CBE student performance data is used.

Figure 15 cautions that use of CBE student data lags behind data generation. CBE has the potential to create a stronger feedback loop between demand and supply, through channels such as personalized pathways for individual students based on prior experience or curriculum refinement following employer feedback on graduate placements. Survey data suggests that, in reality, use of such feedback is still emergent. Only 26% of respondents said that data is used to create personalized pathways, and only 17% use data to help place graduates in employment. Even more rudimentary uses of data, such as early intervention to boost student retention or evaluation of program positioning and viability, remain minority pursuits at present.

Figure 15. What Do We Do With All of this Data?
(N= 162 institutions that indicated some level of CBE activity)



When asked whether CBE student data is integrated with the institution's student information system (SIS), one-third said it is not currently possible. Only 23% said integration is routine.

OUTCOMES: IT'S EARLY DAYS

The ultimate question is: does CBE work? Does it outperform conventional approaches? Which CBE components have the biggest impact? As with any innovation, prospective adopters look for proof of efficacy earlier than the necessary maturation can provide. CBE is at that stage, at least in terms of recent enthusiasm. Few providers have offered CBE for long enough at any scale to permit robust outcomes data. Even among established CBE providers, some of which have been in operation for decades, conspicuous, unambiguous performance data can be hard to find. Conventional metrics tend to exclude non-traditional providers, students, and modalities (e.g., the federal undergraduate graduation rate is a case in point).

To answer these questions, the survey asked respondents for their opinion about:

- the comparative level of effort required by faculty and other instructional staff in CBE offerings versus conventional education.
- the quality of communication between faculty and students.
- learning outcomes and completion rates.

Figure 16 compares the level of effort between CBE and conventional programs for faculty and other instructional staff:

Figure 16. CBE is Hard Work, but Does it Have to Be?
(N= 162 institutions that indicated some level of CBE activity)

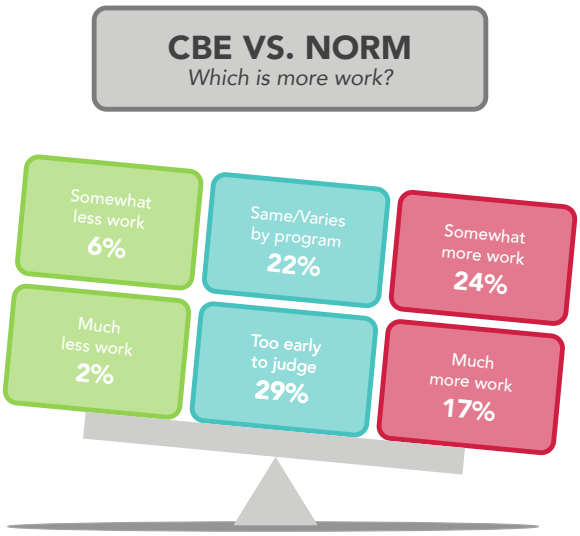


Figure 16 reflects the preliminary nature of much CBE activity. Only 19% of the sample holds a strong view on the relative effort required, while 51% say either that the level of work is similar, varies by program, or that it is too early to judge. It is striking that 17% regard CBE as much more work, and only 2% regard it as much less work. "Somewhat more work" garnered four times the number of responses as "somewhat less work." This may be consistent with earlier findings suggesting that many faculty members create competencies and other content largely from scratch with limited training and poor access to student data.

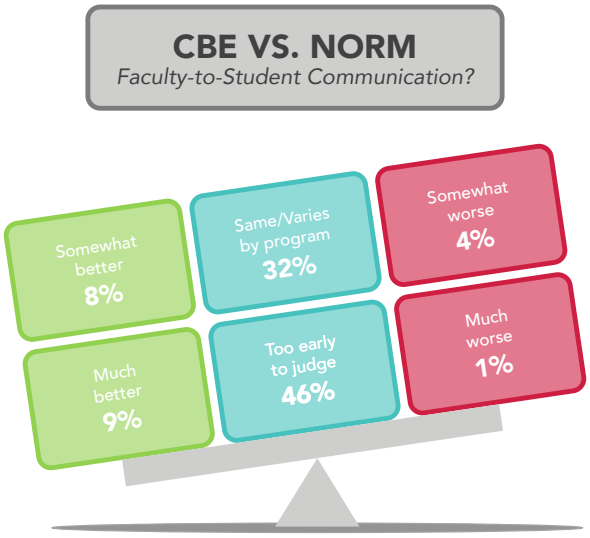
For schools with a decentralized academic culture, CBE implementation may prove patchy and uneven, fostering pockets of innovation that are difficult to institutionalize. The diversity of CBE practice must also be a variable in real and perceived effort, making it difficult to tease out cause and effect. Indeed, 7% of respondents pointed to programmatic, demographic, or other variables within their CBE offerings that determine relative effort.

None of the institutions that view CBE as their dominant mode of instruction or have five or more CBE programs regards the modality as much less effort than conventional alternatives. Two-thirds reserve judgment or regard the effort as uniform. Just one respondent found CBE to be somewhat less effort. This institution—a large online for-profit—may be more able than most to squeeze efficiency from the modality. It may also achieve more standardization and re-use of competencies, assessments, and courses, and can anticipate further gains at scale.

Respondents took a more positive view of the quality of faculty-student communication: **Figure 17** indicates that the majority of CBE-active schools consider it premature to come to a conclusion about the quality of faculty-student communication, or see little or no difference. Unlike perceived effort, more see communication gains (17%) than declines (5%). Fully 40% of schools that regard

CBE as their dominant delivery mode or have more than five CBE programs report communication as stronger, and none as weaker. These results may be due to the "mentor" model of the faculty-student relationship championed by many CBE advocates, reserving precious faculty time for high-quality, one-on-one interaction at the expense of often less-impactful, one-to-many activities, such as lectures. The fact that 14% of the sample said communication varies by program points to the inevitable tension between CBE in principle and in practice.

Figure 17. The Power of Mentorship?
(N= 168 institutions that indicated some level of CBE activity)



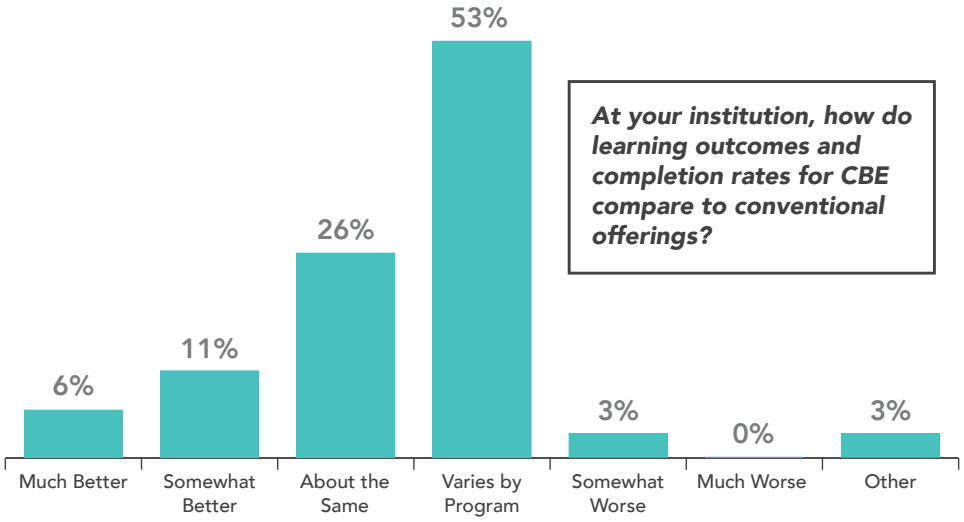
What about student outcomes?

Akin to the view on faculty-student communication, the balance of opinion on learning outcomes and completion is positive. **Figure 18** shows that 17% think CBE's performance is superior, while only 3% think the opposite. Similarly, the bulk of respondents sees either no difference or cites program-level variation as more influential than the CBE label by itself.

Among institutions that regard CBE as their dominant approach or have more than five CBE programs, 30% have a positive take on this question, while 60% see either no change or program-level variation. This is encouraging, but it is also a further reminder that CBE implementation must contend with many cultural, demographic, and programmatic factors that will shape or undermine its success.

The "other" respondents indicated either that learning outcomes are better under CBE but completion rates are worse, or vice versa.

Figure 18. CBE Against the World
(N= 140 institutions that indicated some level of CBE activity)



COMMITMENTS AND FUTURE PLANS

What are institutional plans for CBE going forward? What is the level of institutional commitment? For most schools, CBE is a relatively new undertaking or is still on the horizon.

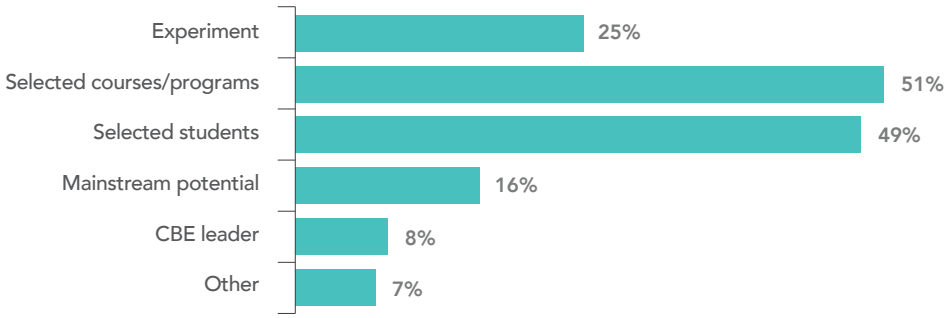
The survey gathered perspectives from two sub-groups, including:

- schools that reported as currently CBE-active.
- schools that are interested in CBE, but not yet active.

Figure 19 outlines future plans for the CBE-active subgroup and indicates both a relatively small number of institutions that see mainstream potential in CBE, and a much higher ratio that view CBE as appropriate for some programs or students but not others. This speaks to the question of whether CBE is an inherently better fit for certain types of students, such as adult learners, or in certain academic areas, such as quantitative fields. Is CBE an option schools might offer students, or is CBE a "better" way? Is CBE a matter of personal preference or should it be a recommended or required route?

Associate institutions were least likely to be in the experimental phase; doctoral institutions were least likely to see mainstream potential. Most CBE active schools (47%) either agree or strongly agree that a senior administrator has responsibility for CBE, and only 15% disagree. About a third said that leadership varies by CBE component.

Figure 19. Where Does CBE Fit?
(N= 174 institutions that indicated some level of CBE activity)



Almost one-third of CBE-active schools said that CBE plays a major part in their current or next strategic plan, or both. This signals still burgeoning interest in CBE, and ongoing review and discussion as to what "CBE" might mean in practice. The direction of contemporary CBE enthusiasm remains far from determined or clear. Another 41% said CBE plays a minor role in their current or next strategic plan. The remaining schools reported that CBE is not part of institution-level strategic planning, which points to CBE as sub-institutional innovation at this stage.

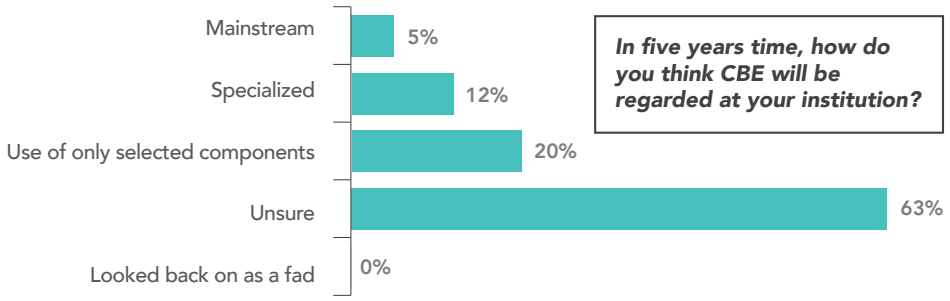
About half of the CBE-active sub-group said that no special funds have been made available for CBE, whether internal or external. The rest did point to some level of special funding: 11% cited major institutional funds and 9% major external funds. Only 6% cited major departmental funding. Forty-one percent mentioned more minor support, whether institutional, departmental, or external. The majority of institutions that cited CBE as a major part of their next strategic plan did not report any major funding. This may suggest early-stage strategic planning, but also a level of uncertainty.

The Lumina Foundation and Council for Adult and Experiential Education (CAEL) were most often cited among the institutions, associations, and groups that helped respondents learn about CBE. EDUCAUSE and Western Governors University were next on the list, followed by the Gates Foundation and the Online Learning Consortium. Only 13% of schools mentioned a state-level initiative. Almost 20% of CBE-active schools said there had been no contact with or use of the resources of any of the organizations listed (including eleven options in total, plus "other").

Schools that said CBE is a major part of their next strategic plan reported interaction with an average of 3.6 external organizations to learn about the modality compared to an average of 2.3 for other schools. Not surprisingly, schools that see CBE as their dominant modality or report a higher number of CBE programs were much more likely to strongly agree that senior leadership is involved.

Among the second sub-group, schools that indicated interest but no current CBE offerings, prospects for the modality were understandably less certain:

Figure 20. Too Soon to Say
(N= 65 institutions that indicated interest in CBE, but no current offerings)



For this sub-group, the complexity, breadth and possibility of CBE inhibit a clear sense of direction at this stage: 63% are unsure where interest in CBE might take them in five years. Only 5% anticipate that CBE has mainstream potential for their institution, compared to 32% who expect CBE to be a specialized offering or to make use of only selected components of the CBE playbook. No respondent thought that in five years current enthusiasm for CBE would be regarded as a fad.

This sub-group was asked about perceived barriers to CBE development at their institution:

Figure 21. Many Questions; Little Time
(N= 65 institutions that indicated interest in CBE, but no current offerings)

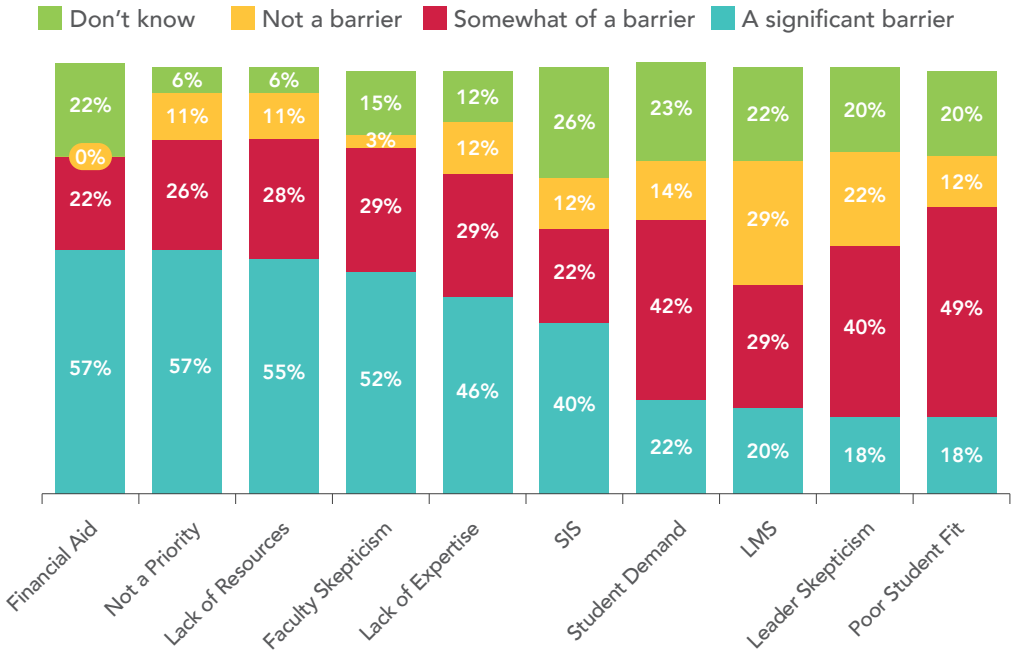


Figure 21 highlights many perceived barriers to the development of CBE at institutions still at the "interest" stage. Compatibility with federal financial aid and competing priorities were

most often cited as significant barriers, closely followed by lack of resources and faculty skepticism. These results underscore the potential and complexity of CBE. If CBE is understood as relevant for only a minority of students, is it worth the expected upheaval to accommodate non-standard federal aid rules?

Equally, many schools may wrongly imagine the only way to "do CBE" and still be Title IV eligible is to get a special waiver from the federal government. Willingness to map competencies to credit hours requires no special permission or disruption to aid. If "doing CBE" is perceived as requiring massive change to course development and pedagogic and assessment assumptions, finite resources and faculty interests may mean CBE never gets sufficient attention. Perceived lack of expertise—cited as a significant barrier by 46% of this sample—speaks to the same tensions.

The capabilities of legacy SIS and LMS systems are also called out as significant barriers, if to a lesser extent. The "don't know" answer choice for SIS was the highest of any option. Lack of clarity as to what "doing CBE" means in practice—radical change versus augmenting standard arrangements—clouds judgment about system compatibility.

Student demand, student fit, and leadership skepticism were among the least cited as significant barriers, although the majority considered all items at least somewhat of a barrier. There were no clear associations between rationales for CBE and perceived barriers.

PORTRAITS OF CBE PRACTICE

A primary goal of this project is to illuminate the range and diversity of how CBE is implemented across a spectrum of higher education institutions. Rather than suggest that there is a single path forward for CBE aspirants, the 2016 data suggests that there are multiple ways in which institutions can leverage CBE.

Based on the 2016 CBE survey scoring model, it is possible to highlight a number of institutions that merit greater attention. These institutions have been selected because they received high scores on an initial screening question, indicating they were actively utilizing a broad variety of CBE components and addressing a diversity of institutional goals. Secondly, their responses to the balance of the survey questions resulted in comparatively high scores across the model, including: commitment, scope, attributes, operations, tools, and outcomes:

- **Scope:** extent and range of current CBE activity
- **Attributes:** CBE offerings, characteristics, and features
- **Operations:** CBE governance, roles, support services, and platform tools
- **Outcomes:** CBE performance
- **Commitment:** institutional or departmental support for CBE going forward

The institutions featured here can serve as examples for other institutions, and point toward patterns of innovative design and practice. Some indicate that CBE is the dominant mode of instruction that defines their institution, while others have had success in implementing CBE within a single department or academic program. These models represent unique yet tangible expressions of how CBE can be operationalized by an institution.

These portraits are designed to provide additional insights into CBE strategy and practice for like-minded institutions. Rather than highlight established and well-known CBE institutions, they are designed to expose the complexities and nuances of CBE. Many of the institutions most frequently associated with CBE, such as Western Governors University, Northern Arizona University, Southern New Hampshire University, and Brandman University, participated in the 2016 survey. By and large, their data indicated a high degree of commitment and successful implementation. Other institutional models, such as a CBE program in biotech sciences at the University of Texas, suggest new pathways for additional research and analysis. Given the breadth of the 2016 respondents and the depth of their responses, the following portraits will shed light on the diversity of practices across the CBE landscape and serve as potential guideposts for other institutions.

Each of the following portraits is derived from data collected through the 2016 CBE survey and scored based on the purpose-built framework developed by Eduventures.

UNIVERSITY OF MAINE, PRESQUE ISLE (UMPI)

Cohort-driven, Online and Blended Learning for Full-time, First-time Students

- Rural, public university
- Course and program level CBE
- Targeting students during transition from high school to college

UMPI is a small school focused on strengthening retention and completion rates through enhanced support services and innovative pedagogical approaches. In the wake of a 2012 State of Maine legislative initiative to introduce "proficiency-based education" in the state's public K-12 schools by 2017, UMPI leadership initiated an effort to develop CBE programming to address the challenges facing first generation, primarily low income, first-time, full-time students. UMPI is working to ensure that more students, many of whom are the first to attend college in their families, successfully complete the transition from high school to college.

According to the 2016 survey results and discussions with UPMI leadership, CBE is expected to be an effective tool to support the transition from high school to college. It is being piloted in face-to-face, blended, and online components of its courses.

When interviewed, UMPI President Linda Schott expressed confidence that students in Maine high schools, which have begun utilizing elements of "proficiency-based education," would thrive in a university environment that incorporates key CBE components. Rather than typical self-paced CBE programs, UMPI relies on an instructor-driven pacing model. Its model, however, combines flexibility and acceleration with the structure needed to support first-generation students. Dr. Schott and her team anticipated that this kind of customized use of CBE would both differentiate UMPI from other New England schools and provide incoming and continuing students with a supportive yet challenging start to their college education.

UMPI is organizing its educational approach around course-level learning outcomes mapped to existing general education requirements and to workforce-focused degree and certificate requirements. UMPI has been exceedingly careful in making sure the design and operation of its

program is transparent to its traditional student population. This approach is being developed in UMPI's required general education courses, and in workforce-focused programs such as education, medical lab technology, athletic training, criminal justice, and social work.

Although some faculty members were initially skeptical of this approach, UMPI leadership reports that it has been able to build a culture of inquiry and trust across departments and programs. Rather than supplant faculty, UMPI's approach allows faculty to remain iteratively involved in the development of course-specific outcomes, rubrics, and assessments. As a result, UMPI leadership reports that the faculty is significantly invested in all aspects of designing, delivering, and assessing courses, and subsequently, improving student outcomes. Within UMPI's programs, the use of a modified grading schema and flexible pacing plans enables students to reverse "non-proficient" scores received during a course and receive a higher final grade once they are able to demonstrate their mastery of required skills.

UMPI has submitted a substantive change proposal to its regional accreditor, the New England Association of Schools and Colleges, to offer all of its academic programs through a "proficiency-based education" model. It is hoping to obtain final approval within the next year.

Based on its survey results and scores, UMPI represents an example of how a geographically isolated institution can leverage its small size and committed leadership to develop and implement CBE strategies across its programs and courses.

SALT LAKE COMMUNITY COLLEGE (SLCC)

Self-Paced, Blended, Workforce-Readiness for Underserved Students

- Large, urban community college on multiple campuses
- Certificate CBE programs
- Targeting underserved students entering technical fields

SLCC serves over 60,000 diverse students across multiple locations in the Salt Lake City metropolitan area. Following a two-year strategic planning process and after receiving a Department of Labor, Round IV Trade Adjustment Assistance Community College and Career Training (TAAC-CCT) Grant, SLCC began implementing CBE as part of 20 certificate programs within its School of Applied Technology and Technical Specialties (SAT). As of the date of this publication, 10 of the programs have been successfully transitioned to CBE. SLCC's experience with CBE illustrates how a large, public institution has adopted a "greenhouse" approach to experimenting with CBE in selected programs and courses. As part of a broader strategic plan, SLCC hopes to use these initial CBE projects as a springboard for implementing CBE in other SLCC schools and departments.

SLCC's initial motivation in exploring CBE stemmed from two core institution-wide goals: improving access to certificates and associate degrees for underserved students and strengthening workforce preparedness across all disciplines. The SAT was selected as the "greenhouse" for CBE since, unlike other divisions of the institution, it had greater practical autonomy in designing and delivering new programs. Additionally, SAT's mission, in part, is mandated by the Utah Legislature to enhance workforce preparedness.

According to Dr. Eric Heiser, Dean of the School of Applied Technology and Technical Specialties, SLCC's CBE program development has utilized a backward design process, beginning with end-of-course assessments to identify the core competencies required at a course level. For Dean Heiser, the process is akin to tearing down a curriculum "to the studs," in order to surface the specific competencies required to meet course requirements. Not surprisingly, this is a detailed and complex process. Several lead members of the faculty, with deep awareness of industries and their hiring needs, stepped forward to help lead this effort within the SAT. They did so largely because of their sense that area employers would hire graduates with demonstrated mastery of specific career-focused competencies.

As part of SLCC's broad mission, CBE is being utilized within the SAT to expand access and strengthen support systems for underserved populations seeking entry into technical fields. These areas of study have included computer networking, healthcare sciences, and culinary arts. At SLCC, CBE features outcomes-driven, self-paced, blended courses as part of specific certificate and programs within SAT. Based on this initial approach, SLCC intends to expand its use of CBE components and is evaluating the efficacy of more advanced online instructional tools, such as personalized progress tracking and adaptive learning analytics.

After these initial efforts to implement CBE within the School of Applied Technology and Technical Specialties, SLCC is now moving ahead with plans to introduce CBE in other divisions. These will include a biotechnology associate degree program and the integration of CBE into general education pathways, leading to associate degrees. After helping to meet specific goals within a single division of SLCC, there is a broader awareness and understanding of CBE's applicability among other branches of the institution.

VALDOSTA STATE UNIVERSITY (VSU)

Self-Paced and Blended Learning for STEM Teacher Professional Development

- Mid-sized, regional public university
- CBE for teacher licensure endorsement
- Targeting local STEM teachers complying with state requirements

VSU serves students from throughout southwest Georgia. VSU's CBE programs emphasize employer-driven outcomes and self-paced learning to improve employability for students in a small number of courses in its Dewar College of Education and Human Services (COEHS). This effort is part of a broader initiative to strengthen STEM teaching statewide, and is part of an effort throughout the University System of Georgia. In VSU's case, the initial target population for CBE programming is teachers seeking licensure endorsements in STEM under new Georgia Department of Education requirements.

Although VSU is focused on a relatively small-scale project, it has been able to deploy a robust range of CBE features and program components. In this manner, a highly targeted CBE prototype has enabled VSU to gather significant insights into its program. These insights will prove useful for the COEHS and this immediate program, and are intended to drive the development of other CBE programs within VSU schools and departments.

As a program embedded within a well-known and successful college of education, VSU's CBE initiative effectively leverages existing relationships with local districts and its awareness of the preferences and needs of area teachers. There was an expectation that these older, professionally-focused students would respond to the opportunity to secure additional content endorsements through an outcomes-driven CBE approach. This expectation was reinforced by VSU's reliance on a series of intensive focus groups with students designed to provide ongoing feedback on critical components of CBE programs, such as instructional design and student support services.

In addition to these qualitative tools, the development of VSU's CBE program relied on several key formative assessments in order to gauge student progress toward mastery. According to Dr. Anthony Scheffler, Associate Vice President for Academic Affairs at VSU, "this combined qualitative and quantitative approach to program assessment has helped to define a data-driven, continuous improvement process and has been critical to program improvement."

Based on the 2016 survey results, VSU's CBE implementation reveals a number of important insights. First, VSU is attempting to utilize CBE programming to enhance the career advancement opportunities for area teachers, many of whom are older, experienced professionals who would be unlikely to opt for an additional education degree. Instead, armed with an actionable awareness of what teachers want, VSU's CBE programming attracts highly motivated and qualified students to this STEM endorsement program. This program benefits the employability and advancement prospects for these teachers, and deepens the STEM content and skills of their students.

Secondly, VSU's use of CBE prior learning assessments can effectively prepare teachers to meet or exceed the State of Georgia's requirements for STEM endorsements. The presence of statewide STEM endorsement requirements enabled VSU to map its CBE instruction against highly tangible and concrete outcomes.

Finally, VSU's leadership recognizes that the development of its CBE programming is part of an ongoing and iterative process. A quality CBE approach can't be built overnight, and won't effectively impact students without an ongoing flow of both qualitative and quantitative feedback.

Although the VSU program has incorporated several key technologies, it is also experimenting with early-alert student support systems. VSU indicated interest in other CBE instructional tools, such as learning analytics software and micro-credentials.

IMPLICATIONS FOR CBE: SEEING THE BIG PICTURE

This study offers institutions and other stakeholders an opportunity to step back and reflect on current attention to CBE. Rising interest can be best understood as an expression of widespread concern regarding affordability, completion rates, and graduate employability. While these pressures are undeniable, the survey results underscore the need for institutions to carefully weigh the pros and cons of CBE, and determine their path forward proactively rather than in reaction to a swell of popularity.

When we examine these results as a whole, several overarching takeaways emerge. It is abundantly clear that CBE does not reflect a single learning modality, nor should it be considered simply a delivery mode. Instead, it is a complex and nuanced approach to how education can be enacted and measured. It challenges long-held conventions about how curricula are organized, instruction is designed and delivered, and skills and knowledge are assessed. CBE raises critically

important questions about the roles that faculty and other support providers can play. These issues will not be resolved overnight, but rather require institutions to do something they do not always have the luxury to do: take a step back and assess the applicability of CBE to their own institutional contexts and strategic goals.

There is considerable confusion about what "CBE" is or can be. Particular models of CBE get the lion's share of attention, obscuring how diverse institutions might combine CBE components with traditional assumptions to create something both innovative and practical. Our survey was designed to elicit the full breadth of CBE activity and interest, and the results confirm that mixed understanding and awareness hamper progress.

The survey showed that institutions use the "CBE" name to identify a range of practices, and use other terms to describe what some schools call CBE. This complexity reflects the richness of the CBE palette, and its potential to enhance higher education. At the same time, it may also risk chaos as hundreds of schools and thousands of leaders and practitioners grapple with implementation.

There is a tension between the logic of CBE, which pushes a more standardized approach to establishing competencies, curricula, and course content, and the decentralized culture of higher education. Encouraging each institution—and each department and faculty member—to write their own competencies and content may be the best way to ensure that CBE scales, but will mean a duplication of work and diluted impact. The extra effort CBE often entails comes through strongly in the survey results. This effort will only be exacerbated if every CBE initiative tries to go it alone. Getting the balance right between centralization and decentralization will prove crucial to the future of CBE.

Finally, the survey results suggest that near-term opportunities to rapidly accelerate the growth and expanded scale of CBE, beyond a set of innovative early adopters, may be limited. There is a cohort of institutions with advanced CBE capabilities at scale, which may continue to expand, but generally do not represent a realistic pathway for most institutions. To achieve system-level impact with CBE, program innovators, researchers, and institution leaders must shape the modality into courses, programs, and degree pathways that build on legacy arrangements and address pressing local problems.

Our portraits of diverse CBE implementation point to realistic ways, both large and small, that institutions can take advantage of the CBE idea. CBE has immense potential to help colleges and universities of many stripes enhance existing models to address quality and productivity challenges. The promise of CBE is nothing new. Despite prior interest, it has never become mainstream. New technology adds to the power of CBE but is not sufficient to overcome past obstacles. To make real headway, CBE advocates must be both ambitious and realistic.

Over the next two years, Ellucian, Eduventures, and the American Council for Education will continue to examine the prospects for broader implementation and growth of CBE. While external factors, such as accreditation and financial aid, will affect the pace at which CBE expands, it is anticipated that CBE will be mostly shaped by institutional cultures. A sharper understanding of the accelerators and inhibitors of CBE implementation at the institutional and sub-institutional level will be the focus of the next phase of this study.

BIBLIOGRAPHY

"Activities & Impact C-BEN Year Two Report." ***C-BEN***, Mar. 2106.
<http://www.publicagenda.org/files/ActivitiesAndImpact_CBENYear2Report_2016.pdf>.

Book, Patricia. "All Hands on Deck – 10 Lessons from Early Adopters of CBE." ***WCET.WICHE.edu***, Oct. 2014.
<http://wcet.wiche.edu/sites/default/files/2014-All-Hands-On-Deck-Final.pdf>.

"Is Competency Based Education Worth the Investment? (EdSurge News)." ***EdSurge.com***. N.p., 2016.
<https://www.edsurge.com/news/2016-05-09-is-competency-based-education-worth-the-investment>.

Johnstone, Sally. "The Push Towards Outcome Based Institutional Strategies." CBE Info, n.d.
<http://evolllution.com/revenue-streams/market_opportunities/the-push-towards-outcomes-based-institutional-strategies/>.

Kelchen, Robert. "The Landscape of Competency-Based Education Enrollments, Demographics and Affordability." AEI Series on Competency-Based Higher Education. Center on Higher Education Reform, American Enterprise Institute, Jan. 2015.
<http://www.aei.org/publication/landscape-competency-based-education-enrollments-demographics-affordability/>.

Lacey, Aaron, and Christopher Murray. "Rethinking the Regulatory Environment of Competency-Based Education." AEI Series on Competency-Based Higher Education
<https://www.aei.org/publication/rethinking-the-regulatory-environment-of-competency-based-education/>.

Mallett, Chris. "What's Old in New Again....A CBE Long Read." N.p., Apr. 2016.
<https://www.linkedin.com/pulse/whats-old-new-again-cbe-long-read-chris-mallett>.

"Myths and Misconceptions about Competency-Based Education." Eduventures. May 2015.

"Research Brief on the Survey of the Shared Design Elements and Emerging Practices of CBE Programs." Public Agenda, January, 2016.
<http://www.publicagenda.org/files/SurveyOfSharedDesignElementsAndEmergingPracticesOfCBEPrograms_PublicAgenda_2015.pdf>.

Soldner, Matthew, and Kelly Parsons. "Making the Case for Competency-Based Education: Early Lessons From the Field." American Institutes for Research RSS. Web. 16 May 2016.
<http://www.air.org/resource/making-case-competency-based-education-early-lessons-field>.

The Journal of Competency-Based Education. Western Governors University. N.p., 2015.

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