

**Shared Design
Elements and
Emerging Practices**
OF COMPETENCY-BASED
EDUCATION PROGRAMS



Shared Design Elements and Emerging Practices of Competency-Based Education Programs:

A Report from Public Agenda with support from The Bill & Melinda Gates Foundation and Lumina Foundation. Available online at www.cbenetwork.org.

Copyright © 2015 Public Agenda.

This work is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported license. To view a copy of the license, visit

<http://creativecommons.org/licenses/by-nc-sa/3.0> or send a letter to:
Creative Commons

171 Second Street, Suite 300,
San Francisco, CA 94105, USA.

The Shared Design Elements and Emerging Practices of Competency-Based Programs were researched, sourced, vetted and validated with support from the Bill & Melinda Gates Foundation and Lumina Foundation and led by a team from Public Agenda. The project was a collaborative of the following organizations:



The ten shared design elements

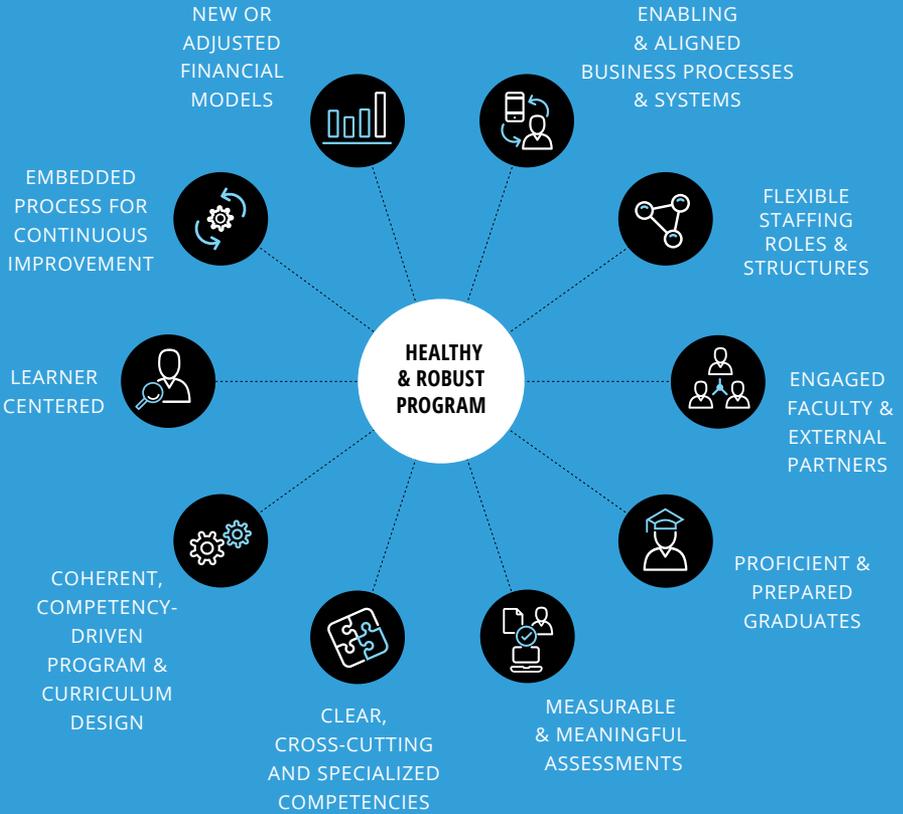
In January 2015, with support from the Bill & Melinda Gates Foundation, Public Agenda set out to find program design elements shared among thriving competency-based education (CBE) programs. Several months of research, and conversations surfaced ten shared design elements. These elements were sourced and vetted in collaboration with project sponsors, partners and CBE program leaders. Then, the elements were validated through a comprehensive field survey. Project sponsors include the Association of American Colleges & Universities (AAC&U), the American Council on Education (ACE), EDUCAUSE, and the Competency-Based Education Network (C-BEN). Council for Adult and Experiential Learning (CAEL) and Quality Matters (QM) serve as thought partners.

The *ten shared design elements* represent the fullness of a CBE program, from organizational viability to the learning experience. Elements are broad and support diversity in practice. They are dynamic. Thriving CBE programs have all ten elements in place, but put into practice in different ways.

To capture the range of activity, we created a companion list of *“emerging practices.”* Each design element contains a catalogue of ways CBE programs carry out that element. We think the shared design elements are permanent pillars of CBE. The emerging practices may change over time. New programs will start while others mature. We will learn more about what works and why.

The field is young and growing. Amid such rapid change it is striking to see these ten shared design elements and their emerging practices show up again and again. These design elements and practices are meant to instruct rather than prescribe. We hope our findings guide and support your CBE program design process, leading you and your team to the most robust and quality program possible.

SHARED DESIGN ELEMENTS AND SUGGESTED PRACTICES OF COMPETENCY-BASED EDUCATION PROGRAMS





CLEAR, CROSS-CUTTING AND SPECIALIZED COMPETENCIES

In a thriving CBE program, competencies are clear, precise and easy to understand. Competencies provide common and unambiguous instructions for what the learner must know and be able to do in order to progress. CBE program competencies draw a full picture of what the proficient and prepared graduate looks like. This means competencies cover the specialized and technical aspects of a field of work or study, along with cross-cutting abilities needed to navigate the complexity and change of the real world.

Percentage of CBE programs that think this is an important practice to include when starting a program.¹

Emerging Practice

Description

Competencies adopted from national norms or other credible standards

93%

CBE programs identify competencies by reviewing and choosing essential standards, skills and norms for their affiliated field(s) of work or study. To identify these essential competencies, CBE programs look to authoritative sources, like the Lumina Foundation's *Degree Qualifications Profile*, AAC&U's *LEAP* and industry standards.

Competencies include critical theory, knowledge, skills, behaviors and attitudes for the education level and related fields of study or work

99%

CBE program competencies include the theories, knowledge, skills, behaviors and attitudes a given field expects from a graduate with the CBE program's offered credential. These field essentials are organized and written with the learner in mind. Rather than programs having a list of content to be covered, they have a set of competencies to be mastered.

What percent of CBE programs agree this design element is needed to be a healthy and robust program?

100% 

Competencies connect to and build on each other to support the demonstration and transfer of learning in multiple and novel contexts

83%

Competencies function as the CBE program's basic architecture. Learners can see and understand how competencies connect and relate. Competency language is accessible and actionable. Learners should be able to practice competencies in the learning environment and real world.

Competencies are specialized (field specific) and/or cross-cutting (i.e., problem solving, critical thinking)

90%

Competencies reflect real demands of the associated field(s) of study or work. A CBE program's full set of competencies cover technical demands as well as broader professional abilities. Competencies enable learners to develop specific expertise and the ability to navigate complexity and change in their field(s) and in society.

¹ The provided data are combined percentages of those who reported that the practice was either "very important" or "important" and is referred throughout as important.



COHERENT, COMPETENCY-DRIVEN PROGRAM AND CURRICULUM DESIGN

In a thriving CBE program, the program structure and curriculum are designed to flex in support of the learner as he or she develops and demonstrates various program competencies. CBE programs are planned with the ultimate goal of learners being proficient in the full range of program competencies and prepared for post-graduation demands. All aspects of the CBE program are meant to help the learner practice and master the competencies.

Percentage of CBE programs that think this is an important practice to include when starting a program.¹

Emerging Practice

Description

Alignment to national norms or other credible standards (i.e., Degree Qualifications Profile)

99%

CBE programs align their program structure and curriculum to practices proven to support learner-centered programming. Many CBE programs integrate national norms and frameworks, like the Lumina Foundation's *Degree Qualifications Profile* (DQP) and AAC&U's LEAP. The DQP and LEAP both offer CBE programs guidance on competency selection and curricular design. Many CBE programs also adopt industry and discipline-specific standards.

Curriculum includes multiple and varied opportunities to develop and demonstrate select competencies

97%

The CBE curriculum lays out multiple ways and opportunities for learners to learn, develop and demonstrate each competency. It accommodates flexible learning arrangements, enabling learners in the same program to progress in different ways, often in different places and at different paces.

Curriculum is clearly articulated and predictable, with multiple learning pathways for learners to accomplish a range of learning opportunities

86%

CBE programs design their curriculum like a roadmap. A CBE curriculum maps various routes learners can take to work through experiences and content, to develop and demonstrate all program competencies. Many CBE programs use their curriculum as a transparent and predictable guide to direct the CBE faculty, staff and learners.

What percent of CBE programs agree this design element is needed to be a healthy and robust program?

99% 

Curriculum sequence reflects different stages of learning and growth

99%

CBE programs live out the belief that learning happens anywhere and it looks different depending on what the learner needs and what level of learning and application a competency requires. The CBE curriculum builds in high levels of intentional scaffolding and high levels of differentiation. The curriculum scaffolding considers each competency and its various stages (sometimes called levels) of learning and progression. Designing for differentiation makes sure each learner, no matter his or her learning style or needs, can engage and progress.

Curriculum design is flexible enough to accommodate personalization and modification

65%

The curriculum scope is the full set of program competencies. The curricula sequence depends on the competency complexities and connections as well as learner needs. This enables many CBE curriculums to be delivered online, in person or both. CBE programs appeal to adult learners and others in part because the design supports flexibility and/or accommodations.

Program requirements and anticipated learner outcomes correspond to selected competencies

98%

CBE programs establish program and graduation requirements with the learner in mind. On one hand, requirements ensure learner engagement and graduate preparedness. On the other hand, requirements create opportunities for flexibility and learner-centeredness. CBE programs identify learner outcomes that are ambitious and achievable. Outcomes consider different competency components and their interrelatedness. Learner outcomes can serve as mile markers on the curriculum roadmap, indicating how close a learner is to graduation.



EMBEDDED PROCESS FOR CONTINUOUS IMPROVEMENT

In a thriving CBE program, faculty and staff commit to what works. CBE programs encourage responsible innovation, adjustments and reflection. Everyone shares a commitment to continuous improvement and learning. CBE programs value transparent and data-driven practices. CBE professionals and learners are invested in the program's success and serve as active contributors.

Percentage of CBE programs that think this is an important practice to include when starting a program.¹

Emerging Practice

Description

Articulated and transparent program goals and measures of program quality serve as performance benchmarks

92%

CBE programs recognize how much can change and be learned between starting and running a program. To ensure quality, CBE professionals establish program goals and performance metrics that are clear and widely known. In CBE programs, performance metrics have less to do with process (i.e., the number of students attending a particular session) and more to do with outcomes (i.e., how many students have demonstrated a required set of competencies).

Ongoing attention to evaluation and continuous improvement built into program design and delivery of curriculum

99%

CBE programs understand the benefits of program evaluation. CBE programs have multiple ways to evaluate the program and learner experience. Program evaluation and continuous improvement are informal and formal, ongoing and summative. Data collection is embedded into curriculum design to prove program quality. Program evaluation is an essential part of strategic plans, curriculum designs, and overall program goals.

What percent of CBE programs agree this design element is needed to be a healthy and robust program?

99% 

Safe and structured spaces for innovation created and supported at multiple levels

95%

CBE professionals are supported, even encouraged, to try new things. CBE programs are safe places for professionals to design and launch innovations with promise to positively impact the program and learner. CBE professionals see themselves as part of a learning community, who work together and innovate as a team.

Processes in place to listen to and learn from the learner

95%

CBE programs focus on the learner. To do this well, CBE programs must listen to and learn from past and present program participants. CBE professionals recognize how busy people are, and how challenging honest sharing can be. As a result, they find a variety of ways to invite, facilitate and act on candid learner feedback.

notes



ENABLING AND ALIGNED BUSINESS PROCESSES AND SYSTEMS

In a thriving CBE program, business processes and systems communicate with each other and work together to best enable various program components. CBE professionals adjust their business models, vendor relationships and technology systems to maximize automation and ease. Aligned and automated business processes and systems may save money, time and effort while streamlining and making sense of various program-level activities.

Percentage of CBE programs that think this is an important practice to include when starting a program.¹

Emerging Practice

Description

Business processes and technology enable aspects of program design (i.e., online classes)

85%

CBE programs leverage existing and emerging technologies to support and enhance program functions and the learner experience. Technology serves as one of the most important enablers of CBE programming. Increasing interoperability enables business and technology systems to work together in unprecedented ways. This may save time, money and effort, allowing institutional resources to be spent in direct support of the learner.

Technology and data systems align to program structure and needs

98%

Technology allows a wide range of learners to enroll and engage in a CBE program. CBE programs serve students online, in person or both. Technologies help reduce manual processes and improve the learner experience. Many CBE professionals partner with vendors to create new management, data collection and reporting tools that encourage learner success. Both CBE professionals and learners benefit from these technologies.

What percent of CBE programs agree this design element is needed to be a healthy and robust program?

97% 

Data systems are automated or compatible with each other

98%

Whenever possible, CBE programs automate and align data and technology systems. This includes systems specific to the CBE program, as well as larger institutional systems that effect program participants (i.e., systems for admissions, enrollment, registration or financial aid). System automation and alignment can save money and time, create more transparent and seamless programming, and allows CBE programs to have an increasingly accurate picture of activity and outcomes.

Process for vendor and product selection prioritizes program alignment and support

88%

CBE programs partner with vendors who customize products so that they best enable and support unique program features, such as personalized or adaptive learning. CBE programs are typically unable to use a product “out of the box”. CBE programs look for vendor partnerships that offer positive and ongoing relationships.



ENGAGED FACULTY AND EXTERNAL PARTNERS

In a thriving CBE program, faculty, staff and external partners are invested and involved. This engagement is ongoing and integral to the program. CBE professionals and partners inform and enrich the CBE program, its curriculum and selected competencies. The result is a relevant and rich learning experience that is more credible and sustainable.

Percentage of CBE programs that think this is an important practice to include when starting a program.¹

Emerging Practice

Description

Faculty drive design and delivery of program, curriculum and assessment

83%

CBE programs empower faculty to embed their knowledge and expertise into the DNA of the program, curriculum and assessment. Faculty are deeply invested in the success of students and the integrity of the program, monitoring its alignment to the field and discipline. The CBE program is greatly improved by this involvement, because faculty share contextual insights: what they have learned from teaching a particular population or at a particular institution. These insights guide the curriculum “roadmaps” and make for a more robust overall design.

Employers, alumni and community leaders are informed and involved in appropriate ways

91%

CBE programs aim to prepare their learners for real world demands. From the earliest stages of program development, many CBE programs engage employers, alumni and community leaders. This network of supporters assist in competency selection, validation, and framework design. These supporters help transition the program graduate into his or her field of work or study. That supportive experience incents recent graduates to remain involved. CBE programs end up with a feedback loop of support and external involvement, which anchors the program in real time changes and needs and supports the learners during and after the program experience.

What percent of CBE programs agree this design element is needed to be a healthy and robust program?

99% 

External partnerships provide real life learning, training and assessment opportunities

94%

CBE professionals foster ongoing and mutually beneficial employer partnerships. CBE programs often include experiential and work-based learning opportunities. These partnerships help to facilitate a practical and hands-on delivery approach that ensures learners can practice and apply their competencies in real life contexts they will encounter after graduation. Employers also support program graduates with job opportunities. Employer partnerships are important for the learner.

Aligned program outcomes and field or workforce needs

99%

A primary aim of CBE programs is to prepare competent graduates who can meet the future challenges and opportunities afforded to them because of their credential. To ensure this, CBE programs engage in the competency selection and validation process. Competencies are regularly and frequently reevaluated to verify alignment to field or workforce needs. CBE programs are nimble and make adjustments based on employer feedback. This makes healthy and sustained employer partnerships vital. Employers offer CBE programs critical perspectives and intel into the ever-changing world of work.



FLEXIBLE STAFFING ROLES AND STRUCTURES

In a thriving CBE program, faculty and staff roles are arranged in a way that maximizes individual talent, strengths, and competence, while enriching the learner experience. CBE professional roles and responsibilities are structured to work within institutional requirements and overall organizational environment.

Percentage of CBE programs that think this is an important practice to include when starting a program.¹

Emerging Practice

Description

Staff and faculty roles and responsibilities maximize talent and time

80%

CBE programs place people in roles and positions that maximize talents, spread out workloads and optimize overall contributions. Staffing structures and roles look different across different programs. For some CBE programs, this means a totally new organizational structure, with a new set of professional positions (often including content experts and learning coaches). For other programs, this means minor rearrangements to tasks within more traditional organizational structures. Some CBE programs make only minor adjustments to conform to union, tenure and institution-wide personnel requirements.

What percent of CBE programs agree this design element is needed to be a healthy and robust program?

97% 

Staffing structures enable skillful planning and execution

80%

CBE program staffing structures require a lot of planning, management and skillful execution. With so many variables to consider, CBE programs structure staffing around talent and efficiency needs. The CBE program's human resource functions, including processes for hiring, training, managing and evaluating, are designed to be simple and streamlined.

Learner's interactions with staff and faculty are meaningful, substantive and sustained

98%

CBE programs prioritize faculty- and staff-initiated interactions with learners. CBE programs make it clear where a learner can go for academic or social support, and technical or logistical assistance. From the CBE learner's perspective, the program proactively provides wraparound and ongoing support, authentic care, and meaningful opportunities for mentorship from faculty and staff. Whether a CBE program is offered online or in-person, learners experience community and connection in their programs.



LEARNER CENTERED

In a thriving CBE program, the learner's needs and experience are the focal point. This intentional learner-centered design supports program participants from entry to exit. Learners are engaged, empowered and valued. Learners have the information and supports needed to participate and progress in the CBE program. The interactions, policies and programs support the learning experience and adjust to accommodate learner needs.

Percentage of CBE programs that think this is an important practice to include when starting a program.¹

Emerging Practice

Description

Personalized and experiential learning and supports

91%

CBE programs are tailored to meet the learner whenever and wherever. Far from a "one size fits all" approach to teaching, CBE learners engage in experiences tailored to the learner's unique background and situation. CBE learners receive personalized support, like academic or vocational coaching. CBE professionals take time to get to know learners, understanding their future aspirations and drawing clear pathways between program competencies and future goals.

Challenging and engaging learning opportunities (i.e., work- and project-based learning)

99%

CBE programs put the focus on learning and personal growth. As a result, CBE professionals infuse high-impact teaching and learning strategies, such as experiential and work-based learning. These approaches are proven to engage and motivate learners. CBE programs steer clear of the lecture-only delivery model. CBE professionals are encouraged to coach and facilitate learning, rather than only delivering content.

What percent of CBE programs agree this design element is needed to be a healthy and robust program?

100% 

Socially and culturally responsive learning environments

99%

A socially and culturally responsive environment is one where learners feel safe and empowered regardless of their background. CBE programs provide these environments for everyone. CBE programs service many learners who have been unsuccessful in other higher education programs, or who are returning to school later in life, following military service or those with complicated life demands. CBE programs have strategies for evaluating competencies developed through a broad array of learned and lived experiences. CBE programs are a welcoming learning community that create opportunities for all learners to see themselves in the curriculum, connecting learning to their lives.

Learner agency and choice

90%

CBE programs empower learners. CBE learners are intimately involved in the design of a customized learning pathway. They have choices for when, how and where learning happens. They have a deep understanding of the program's outcomes and competencies as well as the learning architecture of their program. Many CBE learners elect into experiential learning or internship opportunities. CBE learners are active contributors not passive recipients.



LEARNER CENTERED continued

Percentage of CBE programs that think this is an important practice to include when starting a program.¹

Emerging Practice

Description

Flexibility in when, where and how learning happens

91%

CBE programs keep learning as the constant and time as the variable. This means that CBE programs flex around when, where and how learners need to engage. CBE learners can access the program at different times and in different ways, taking as much or as little time for mastery as needed. This is especially helpful for adult learners who have many outside responsibilities, like full-time employment and family obligations.

Use of technology enables and enhances the learning experience

99%

CBE programs use technology to enhance and support the learning experience. This allows for more personalized and flexible learning. Often times, CBE programs utilize technologies to facilitate and manage the learner's experience, such as employing predictive analytics or adaptive learning platforms. Many CBE learners engage with the CBE program virtually. They may use video, online portals, and management systems to connect, learn and submit work. Although CBE programs are often online, they do not have to be.

Clear and credential-
appropriate expectations,
requirements and learning
outcomes

99%

CBE programs establish ambitious and achievable expectations, requirements and outcomes. CBE professionals assess what the sought-after credential means and requires. They then craft program expectations and requirements that align and support. CBE learners can draw connections between what is expected and why it matters.

notes



MEASURABLE AND MEANINGFUL ASSESSMENTS

In a thriving CBE program, assessments are designed to measure what matters and inform decision-making. CBE assessments are planned with the end in mind. CBE professionals first ask, “what should program graduates know and be able to do, and in what settings and situations?” This question guides CBE professionals to identify when, where and how learners should be able to demonstrate required competencies. From here, CBE professionals build a suite of formative and summative, informal and formal assessments.

Percentage of CBE programs that think this is an important practice to include when starting a program.¹

Emerging Practice

Description

Assessments measure learning and transfer of learning into multiple and novel contexts

100%

CBE programs assess learners on what they know and can do, during the program and in life after graduation. CBE assessments use a variety of approaches, such as objective, project-based, presentations, behavioral, and simulations. These assessments are designed to reveal how the learner will do in transferring new knowledge, theories, skills, behaviors and attitudes.

Assessments are frequent, informal and formal, formative and summative

100%

CBE programs use assessments for multiple purposes. CBE assessments guide learning, provide feedback, determine proficiency, trigger progression, and signal preparedness. CBE programs maximize assessment benefits by providing a variety of assessments at multiple intervals. Competencies are not only assessed in multiple ways but also by multiple assessors.

What percent of CBE programs agree this design element is needed to be a healthy and robust program?

100% 

Assessments are rigorous with clear and valid measures

100%

CBE professionals use assessments continuously. Assessment questions and tasks draw out information CBE professionals and learners need in order to make well-founded decisions. Assessors utilize consistent rubrics to align demonstrations of learning with required competencies. Assessment measures and their corresponding rubrics are validated against best available evidence and information from the field(s) of work or study.

Assessments provide real-time feedback for reflection and refinement

99%

CBE programs value formative and informal assessments as much as summative and formal assessments. CBE professionals and learners rely on the results of formative assessments to make continuous changes and improvements to the learning experience. Informal assessments are used as a way to drive decisions around teaching and learning.



NEW OR ADJUSTED FINANCIAL MODELS

In a thriving CBE program, financial models must enable accessibility and affordability while ensuring the delivery of a quality program. Meeting the needs of learners and doing so in a manner that is cost effective for both the institution and the learner is paramount. This can require adjustments to current financial models or building entirely new financial models. CBE programs try to be affordable and accessible to many types of learners.

Percentage of CBE programs that think this is an important practice to include when starting a program.¹

Emerging Practice

Description

Pricing models and cost structures align to the program structure and schedule

73%

CBE programs offer creative financial and tuition models that support the flexibility of the program structure. CBE learners may not be able to access traditional forms of financial aid in the pursuit of their education. This is because financial aid and many scholarships are allocated based on the Carnegie unit and other time-based metrics. To make access more affordable, learners may have the opportunity to enroll in a CBE program that utilizes a flat fee or subscription tuition model. These “complete-all-you-can” tuition options allow learners to pay an affordable, one-time amount to cover a set period of time. During this time period, learners take as many classes, courses or modules and complete as many competencies as they can.

What percent of CBE programs agree this design element is needed to be a healthy and robust program?

95% 

Pricing models and cost structures prioritize access and equity and comply with any financial aid requirements

75%

CBE programs may attract adult learners who, due to time constraints, cannot register for what traditional education defines as “full time.” This can limit a learner’s financial aid. To make CBE programs accessible to all learners, programs must keep costs down. CBE program’s financial structures strive to be equitable across learner populations. Some CBE programs participate in the US Department of Education’s “Direct Assessment” initiative while others design programs that allow for more traditional and credit-hour based opportunities to use financial aid. Direct assessment programs create conversion processes to allow learners to transition between their flexible programs and time-based payment and reimbursement structures.

Flexible or alternate revenue sources offset program costs

75%

Some CBE programs institute unique programs to engage employer partnerships. These programs may take the form of a contract or third-party payee arrangement that allows for employees to enroll through their employer. Most notable are CBE programs that offer customized CBE programs for specific employers. In these cases, employers pay all or most of CBE program costs and employees are able to earn a CBE credential.



PROFICIENT AND PREPARED GRADUATES

In a thriving CBE program, graduates achieve proficiency in all required competencies and are prepared for appropriate field demands and career opportunities. CBE programs insist on measuring competencies, and resist using proxies for the demonstration of learning, such as completion for competence and time for progress. Strong partnerships between faculty and employers strengthen the likelihood that CBE graduates leave prepared for the real world challenges and opportunities connected to their credential(s).

Percentage of CBE programs that think this is an important practice to include when starting a program.¹

Emerging Practice

Description

Progress to graduation is determined by the learner's development and demonstration of selected competencies

97%

CBE programs are built so learners progress based on what they know and what they can do, rather than time spent enrolled or in class. In many CBE programs, progress reports, learner dashboards and transcripts reflect learners' achievement of required competencies and/or associated learner outcomes. CBE graduates must be able to demonstrate acceptable required levels of proficiency for all program competencies.

Credential reflects an appropriate level of mastery of selected competencies

100%

CBE programs include specialized and cross-cutting competencies. Some of these, like problem solving or decision making, require varying levels of proficiency (sometimes called mastery) and application, depending on the credential and level of education.

What percent of CBE programs agree this design element is needed to be a healthy and robust program?

99% 

Credential signals the learner's readiness for the next stage of education, work or life

99%

CBE programs consider a credential as an unabashed validation of necessary competence and program completion. CBE graduates should not experience a gap between what is needed to graduate and what is needed for the roles their new credential(s) enables.

Transcripts are credible and reliable reports that accurately reflect the learner's level of mastery of selected competencies

92%

A CBE program designs transcripts to identify learners' proficiencies and reflect what they know and can do. To accommodate employment concerns or transfer and articulation requirements, many CBE programs will offer two transcripts: a traditional, credit-based report and a customized competency report.

notes

SOURCES

The *Ten Shared Design Elements and Emerging Practices of Competency-Based Education* was created through an uncommonly collaborative process. Prepared primarily by Stephanie Malia Krauss, Senior Fellow with the Forum for Youth Investment, with input and direction from Alison Kadlec and Erin Knepler of Public Agenda, and Charla Long, Consultant to Public Agenda and Principal, Go Long Consulting. The content derives from a powerful array of individuals, institutions and organizations dedicated to the healthy development of the field. Members of the Competency-Based Education Network (C-BEN) contributed a large body of primary research on CBE programs, while the broader group of sponsors, thought partners and field leaders graciously opened their conferences and resources to the core project team.¹ The Hatcher Group and Falk Harrison provided design support for this project.

The *Ten Shared Design Elements and Emerging Practices of Competency-Based Education* is one part of a multi-pronged effort led by Public Agenda, with support from the Bill & Melinda Gates Foundation and Lumina Foundation. This effort responds to calls from institutions of higher education and policymakers for more resources and support to help guide the planning and development of high-quality competency-based degrees, certificates and other postsecondary credentials.

The *Ten Shared Design Elements and Emerging Practices of Competency-Based Education* pull from a variety of scholarly and practical sources. The following books, book chapters, reports, communities of practice, convenings and research were used to help surface and develop the shared design elements and their corresponding emerging practices. Individual citations have not been included, because design elements and emerging practices were present across multiple sources. The list of individuals who contributed their insights to this project is too long to include here, but everyone we spoke with brought critical insights into our work and clarity into what CBE programs should look like and why. We are grateful to each and every person who generously shared their time and thoughts with us.

¹The Association of American Colleges & Universities (AACU), the American Council on Education (ACE), the Competency-Based Education Network (C-BEN) and EDUCAUSE are project sponsors. The Council for Adult and Experiential Learning (CAEL) and Quality Matters are project thought partners. Western Governor's University contributed to the project by allowing the research team to conduct interviews and focus groups at the 2015 CBE4CC in Denver.

BOOKS

- *Anytime, Anywhere: Student-Centered Learning for Schools and Teachers* (2013). Rebecca E. Wolfe, et. al. (Editors), Harvard Education Press.
- *College Disrupted: The Great Unbundling of Higher Education* (2015). Ryan Craig, Palgrave Macmillan Trade, St. Martin's Press.
- *College (Un)Bound: The Future of Higher Education and What it Means for Students* (2013). Jeffrey J. Selingo, Amazon Publishing.
- *Customized Schooling: Beyond Whole-School Reform* (2011). Frederick M. Hess and Bruno V. Manno (Editors), Harvard Education Press.
- *Designing the New American University* (2015). Michael M. Crow and William B. Dabars, John Hopkins University Press.
- *Developing Key Competencies in Education: Some Lessons from International and National Experience* (2004). D.S. Rychen and A. Tiana, UNESCO: International Bureau of Education.
- *DIY U: Edupunks, Edupreneurs, and the Coming Transformation of Higher Education* (2010). Anya Kamenetz, Chelsea Green Publishing Company.
- *Higher Education in America* (2013). Derek Bok, Princeton University Press.
- *Hire Education: Mastery, Modularization and the Workforce Revolution* (2014). Michelle R. Weise, Clayton M. Christensen, The Clayton Christensen Institute for Disruptive Innovation.
- *Learning Reconsidered: A Campus-Wide Focus on the Student Experience* (2004). ACPA and NASPA, NASPA Publications.
- *Measuring What Matters: Competency-Based Learning Models in Higher Education* (2001). Richard A. Voorhees (Editor), Jossey-Bass.
- *Remaking College: The Changing Ecology of Higher Education* (2015). Michael Kirst and Mitchell L. Stevens (Editors), Stanford University Press.
- *Schooling in the Workplace: How Six of the World's Best Vocational Education Systems Prepare Young People for Jobs and Life* (2011). Nancy Hoffman, Harvard Education Press.
- *The Art and Science of Competency Models: Pinpointing Critical Success Factors in Organizations* (1999). Antoinette D. Lucia and Richard Lepsinger, Jossey-Bass Pfeiffer.
- *The End of College: Creating the Future of Learning and the University of Everywhere* (2015). Kevin Carey, Riverhead Books, Penguin Group.
- *The Fifth Discipline: The Art & Practice of the Learning Organization* (2006). Peter M. Senge, Doubleday, Random House, Inc.

BOOK CHAPTERS AND REPORTS

- *Best Practices in Competency-Based Education: Lessons from Three Colleges* (2015). Mathematica Policy Research, InFocus.
- *Beyond the Inflection Point: Reimagining Business Models for Higher Education* (2014). Part of the Presidential Innovation Lab series from the American Council on Education and the Center for Education Attainment and Innovation.
- *Competency-Based Degree Programs in the U.S.: Postsecondary Credentials for Measurable Student Learning and Performance* (2012). Rebecca Klein-Collins, CAEL.

SOURCES

- *Driving Better Outcomes: Typology and Principles to Inform Outcomes-Based Funding Models* (2014). HCM Strategists.
- *Employer Perspectives on Competency-Based Education* (2015). Chip Franklin and Robert Lytle, Center on Higher Education Reform and American Enterprise Institute.
- *Experimental Sites Concept Paper* (2014). Submitted to the United States Department of Education and written by Alison Kadlec and Mike Offerman.
- *Falling Short? College Learning and Career Success: Selected Findings from Online Surveys of Employers and College Students Conducted on Behalf of the Association of American Colleges and Universities* (2015). Hart Research Associates for Association of American Colleges and Universities.
- *Innovating toward a Vibrant Learning Ecosystem: Ten Pathways for Transforming Learning* (2014). Katherine Prince, KnowledgeWorks.
- *Issues by the Numbers: The solution revolution in education* (2013). Deloitte University Press.
- *Paths to the River: Principles for Competency-Based Learning* (In Press). Richard A. Voorhees and Alice Bedard Voorhees.
- *Postsecondary Education for Adult Learners: Evaluation of a Sleeping Giant* (2011). Michelle L. Maldonado, Esq. and Crystal Jones, from *The Expert's Guide to the Postsecondary Market*.
- *Productivity Strategy Lab Site Visit: Creating a Systemwide, Competency Based Online Degree Program*. HCM Strategists.
- *Reimagining higher education: How colleges, universities, businesses, and governments can prepare for a new age of lifelong learning* (2014). GovLab, Deloitte University Press.
- *Signals and Shifts in the Postsecondary Landscape* (2014). Part of the Presidential Innovation Lab series from the American Council on Education and the Center for Education Attainment and Innovation.
- *The Currency of Higher Education: Credits and Competencies* (2015). Deborah Seymour, Deborah Everhart and Karen Yoshino, American Council on Education and Blackboard.
- *The Changing Landscape of Higher Education* (2011). David J. Staley and Dennis A. Trinkle, EDUCAUSE Review, January/February 2011 edition.
- *The Changing Landscape of Higher Education: The Future of College Admission* (2006). William G. Tierney, written for the National Association for College Admission Counseling.
- *The Landscape of Competency-Based Education: Enrollments, Demographics and Affordability* (2015). Robert Kelchen, Center on Higher Education Reform, American Enterprise Institute.
- *The Lifetime Learner: A Journey Through the Future of Postsecondary Education* (2014). Deloitte Center for the Edge. Deloitte University Press.
- *The Students of the Future* (2014). Part of the Presidential Innovation Lab series from the American Council on Education and the Center for Education Attainment and Innovation.
- *Unbundling Versus Designing Faculty Roles* (2014). Part of the Presidential Innovation Lab series from the American Council on Education and the Center for Education Attainment and Innovation.
- *What will the Learn? 2014-15: A Survey of Core Requirements at Our Nation's Colleges and Universities*. American Council of Trustees and Alumni.

COMMUNITIES OF PRACTICE

- Competency-Based Education Network (C-BEN)
- Council of Adult and Experiential Learning (CAEL) CBE Jump Start Program
- EDUCAUSE Breakthrough Models Incubator
- Western Governor's University Community College initiative

COMPETENCY-BASED EDUCATION CONVENINGS

- February 8 – 10: EDUCAUSE Annual ELI Meeting
- February 3- 5: C-BEN Quarterly Convening
- June 4-6: Western Governor's University CBE4CC Conference
- July 13-15: C-BEN Quarterly Convening
- July 29-31: EDUCAUSE Breakthrough Models Incubator Working Meeting
- September 14-15: CAEL Linking Learning and the Workplace Meeting

NATIONAL AND INTERNATIONAL INITIATIVES

- AAC&U *LEAP*
- European Higher Education Area *Bologna Process*
- Lumina Foundation *Connecting Credentials*
- Lumina Foundation *Degree Qualifications Profile*
- Tuning

RESEARCH

- American Institutes for Research (AIR) survey of Experimental Sites
- C-BEN CBE program interview transcripts
- Competency-Based Education Landscape Project Survey of CBE Programs
- Technical Interoperability Project (TIP) institution survey

Public Agenda is a nonprofit organization that helps diverse leaders and citizens navigate divisive, complex issues. Through nonpartisan research and engagement, it provides people with the insights and support they need to arrive at workable solutions on critical issues, regardless of their differences. Since 1975, Public Agenda has helped foster progress on higher education affordability, achievement gaps, community college completion, use of technology and innovation, and other higher education issues. Find Public Agenda online at PublicAgenda.org, on Facebook at facebook.com/PublicAgenda and on Twitter at [@PublicAgenda](https://twitter.com/PublicAgenda).



PUBLIC AGENDA