



HOW TO ENHANCE EDUCATION  
THROUGH INNOVATION

# Learners Become Masters

Answering Five Key Questions About  
Competency-based Education



# **What**

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# **is competency-based education?**

“I hear and I forget. I see and I remember.  
I do and I understand.” - Confucius

## A learning model gaining new momentum

The concept of competency-based education (CBE) has been around for more than 40 years. It was first popularized in the 1960s in America. Originally, CBE emerged as a reaction to concerns that students weren't being taught the skills they would need in life after school.<sup>1</sup>

Put simply, CBE is a learning model that prioritizes competence over seat time.

## Mastery of skills versus time in class

In many traditional learning models, the time spent in class is fixed (such as a semester) and a student's mastery of a skill or subject is variable (based on an end-of-term assessment, for example).

In a **competency-based** learning model, the opposite is true. Students are assessed based on their “mastery” of skills and/or learning outcomes. As a result, the pace of learning is much more individualized. It can even be dramatically accelerated.

| Traditional                            | Competency-based                        |
|--|---|
| Time is <b>fixed</b>                   | Time is <b>variable</b>                 |
| Learning (mastery) is <b>variable</b>  | Learning (mastery) is <b>fixed</b>      |
| Content/material is <b>generalized</b> | Content/material is <b>personalized</b> |
| Pace is <b>fixed</b>                   | Pace is <b>variable</b>                 |
| <b>Some</b> students succeed           | <b>All</b> students succeed             |

<sup>1</sup> Malan, SPT. "The 'new Paradigm' of Outcomes-based Education in Perspective." *Journal of Family Ecology and Consumer Sciences / Tydskrif Vir Gesinsekologie En Verbruikerswetenskappe* 28.1 (2000): n. pag. Web.

# The challenges and impacts of CBE

CBE can be more challenging to implement than some other educational philosophies. It requires students, faculty, and institutions to completely rethink their own approaches to learning.<sup>2</sup>

## It creates opportunity and change for students<sup>3</sup>

While a competency-based approach offers students more flexibility in terms of timeframe, a greater variety of tools to use, and (potentially) a more marketable skillset, it also means learning “differently.” In addition to adapting to a self-directed online learning format, students who present ideal targets for CBE—adult learners—are often required to maintain their commitment to learning in addition to juggling work and other life demands.

## It means a different way of teaching<sup>4</sup>

Competency-based education also demands a shift in thinking for the faculty of an institution. Some instructors—for example, those experienced in online learning or who deal in technical course matter where there is a practicum component—will adapt readily to the change. Others will be slower to embrace the concept and others may resist the model completely.

Essentially, CBE requires instructors to approach course design with a different mindset. They move away from what they want to teach and toward what they want students to learn—and what outcomes/behaviors/results stand as proof of a student’s mastery of the subject matter. For many instructors, this will require a top-to-bottom overhaul of course materials and a change in teaching styles.

Outside the classroom, a move to CBE also has labor implications that may add to a faculty’s resistance to change. Traditionally, instructors are compensated on the basis of time and number of credit hours they are expected to teach in a term. But how does that compensation model work in a competency-based scenario where there are no credits, students learn at an accelerated pace, and the role of the instructor moves from teacher to coach?

<sup>2</sup> *Ibid.*

<sup>3</sup> Kelchen, Robert. *The Landscape of Competency-Based Education*. Rep. American Enterprise Institute, Jan. 2015. Web.

<sup>4</sup> Feldstein, Michael. “What Faculty Should Know About Competency-Based Education.” Web log post. E-Literate. Michael Feldstein, 23 Oct. 2014. Web.

# So what are the advantages of a CBE model?<sup>5</sup>

Institutions are better able to cater to the needs of non-traditional students (such as adult learners)

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Non-traditional students can learn more flexibly, affordably, and at their own pace

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Students are more marketable as mastered competencies are highly relevant to employers, and directly transferable to the workplace

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Faculty are able to become coaches, advisors, and mentors and remain hands-on and integral to student persistence and successful demonstration of mastery

<sup>5</sup> Klein-Collins, Rebecca, and Elizabeth Baylor. *Meeting Students Where They Are: Profiles of Students in Competency-Based Degree Programs*. Rep. Center for American Progress, Nov. 2013. Web.

**Who**

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**is CBE for?**

“As more students choose less traditional paths to a college degree, the population of those who stop out along the way stands to grow. Many colleges and national organizations are interested in drawing this population back to complete their degrees, but research to inform these efforts is still emerging.”

- Doug Shapiro, Executive Research Director, National Student Clearinghouse Research Center<sup>6</sup>

<sup>6</sup>Shapiro, D., Dundar, A., Yuan, X., Harrell, A., Wild, J., Ziskin, M. Some College, No Degree: A National View of Students with Some College Enrollment, but No Completion. Rep. National Student Clearinghouse, 29 July 2014. Web.

# Fitting education around life

38% of all post-secondary students entering a fall semester are adult learners, 25 years of age or older.<sup>7</sup> That percentage is expected to climb to 42% by 2020.<sup>8</sup>

This changing demographic has implications for the education system. Students are often older and frequently hold down part-time jobs while attending school. They are often commuters. They are likely also taking care of other family obligations.<sup>9</sup> Many will never see the inside of a college dorm room, preferring to interact with the campus through an online learning program.

The goal of the vast majority of students, however, remains the same. Ultimately, it's about getting a degree and finding employment.

According to the 2012 Cooperative Institutional Research Program (CIRP) Freshman Survey, 87.9% of college

freshmen cited getting a better job as a vital reason for pursuing a college degree. This represents a rise of approximately 17% from 2006 when the same survey question was asked.<sup>10</sup>

Students are just going about getting that degree differently these days.

<sup>7</sup> National Student Clearinghouse. More Than One Third of College Students Are Over 25. National Student Clearinghouse, 19 Apr. 2012. Web.

<sup>8</sup> Weise, Michelle R., and Clayton M. Christensen. "Introduction: Got Skills?" Introduction. Hire Education: Mastery, Modularization, and the Workforce Revolution. Clayton Christensen Institute for Disruptive Innovation, 2014. Web.

<sup>9</sup> Casselman, Ben. "Number of the Week: 'Non-Traditional' Students Are Majority on College Campuses." The Wall Street Journal. Dow Jones & Company, 6 July 2013. Web.

<sup>10</sup> John H. Pryor, Kevin Eagan, Laura Palucki Blake, Sylvia Hurtado, Jennifer Berdan, and Matthew H. Case. The American Freshman: National Norms Fall 2012. Rep. Higher Education Research Institute, UCLA, 2012. Web.

# Why CBE works for the new student demographic

The CBE approach is highly personalized and self-paced. It's ideally suited for the millions of adult students who juggle competing priorities while trying to fit school into life's demands. That's a big part of the reason why, in recent years, CBE has gained traction with policymakers and educators.

Students can earn credit in CBE programs in two forms. For newer coursework, they progress toward a degree as they demonstrate mastery of new skills and knowledge. They can also gain credit for things they have previously mastered through portfolio assessments—or something called a “prior learning assessment” (PLA).<sup>11</sup>

Portfolio assessments and PLAs allow adult learners to reduce the amount of time needed to earn a degree. They can apply existing knowledge gained through life experiences in the workplace, apply previously earned college credits toward their degree, and submit a portfolio of work for review.

<sup>11</sup> Klechen, Robert. The Landscape of Competency-based Education: Enrollments, Demographics, and Affordability. Rep. American Enterprise Institute, 25 Jan. 2015. Web.

“The drivers for implementing CBE are two-fold. **First**, it allows us to serve a new market, the ‘new traditional student’ such as adults who are looking to return to school to attain new credentials. **Second**, it allows us to offer our students a more affordable option, as CBE provides the option for students to obtain credit for prior learning.”

- Wendy Lampner, Manager of Design & Development Services,  
University of Akron

Carla Lundeen knew she needed to work towards a degree in nursing to realize her career goals. But, as a busy working mother, she needed an educational experience tailored to her life. The University of Wisconsin Flexible Option is helping her realize educational goals through a competency-based learning program delivered online.



**Video: Keeping Work, Life, and School  
in Balance with the UW Flexible Option**

# Characteristics of adults as learners<sup>12</sup>

They have a desire to take more control over their learning.

They will draw upon their experiences as a resource in their learning efforts.

They are typically more motivated in learning situations.

They are more pragmatic in learning.

The learner role is secondary to other life demands.

They must fit learning into life's 'margins.'

They may lack confidence in their learning.

They can be more resistant to change.

They will come to college with a more diverse background.



<sup>12</sup> "10 Characteristics of Adults as Learners." n.d. Houston Community College. Web.

In addition to providing the flexibility that older students need, CBE can also help them save significant costs. Here are just a few economic benefits:<sup>13</sup>

Students can progress through coursework more quickly than they would in a traditional credit-based structure. As long as the price per credit between traditional and competency-based models is similar, CBE programs can lower the opportunity cost of being in school.

Students can transfer credits previously earned from other sources and earn lower cost credits through PLAs and portfolio examinations.

Some educational institutions offer CBE “all you can eat” tuition pricing in which students pay for a set period of time and can earn as many credits as they want during that period. This may allow students to drive down the price per credit by taking more credits.

CBE courses can be less expensive for colleges to offer than traditional coursework—and the lower cost of delivery can subsequently be reflected in tuition prices.

<sup>13</sup> Kelchen, Robert. The Landscape of Competency-Based Education. Rep. American Enterprise Institute, Jan. 2015. Web.

“Focusing on competencies isn’t just a nice thing to do for our own purposes in the academy. It also provides an enormous opportunity to have higher education respond to what the American public reported to Gallup in a recent poll: 87% said that students should be able to receive credit for knowledge and skills learned outside the classroom and 70% believe that mastery, not time spent in the classroom, is what matters in awarding ‘credit.’”

- Jamie Merisotis, CEO/President, Lumina Foundation<sup>14</sup>

## Beyond the student

Students aren’t the only ones who benefit from a competency-based education program. Instructors become mentors. Employers get more qualified workers. The system also saves time and money.<sup>15</sup>

**Instructors** are better able to step into more of a coach or mentor role because the competency-based model is self-paced. It’s automated through the use of technology. That gives them more time to work on a more personal level with students and provide individualized attention based on their students’ specific needs.

**Educational institutions** also gain new abilities to address diversity challenges. CBE, with its potential for flexibility and personalization, can help make post-secondary education more accessible, more appealing, and more successful for all.<sup>16</sup>

**Employers** can actively participate in partnerships with educational institutions to create competencies directly tied to emerging fields of study. They can be part of the validation of new types of learning.<sup>17</sup>

<sup>14</sup> Merisotis, Jamie. “Competency-Based Learning: A Big Deal, But Not Because of the Feds.” Web log post. *Huff Post College*. HuffPost Education Group, 6 Feb. 2013. Web.

<sup>15</sup> “Competency-Based Learning or Personalized Learning.” *Competency-Based Learning or Personalized Learning*. U.S. Department of Education, n.d. Web.

<sup>16</sup> Mili, Fatma. “The Multi-Faceted Potential of Competency Based Education: Four Benefits of CBE.” Web log post. *The EvoLLLution*. The EvoLLLution, 30 Jan. 2015. Web.

<sup>17</sup> Johnson, Diane. “Why Companies Want Competency-Based Education.” Web log post. *The EvoLLLution*. The EvoLLLution, n.d. Web.

# From instructor to mentor: How faculty roles are changing at Western Governors University (WGU)<sup>18</sup>

At Western Governors University, full-time faculty members are employed as mentors and content experts. They work alongside students to offer one-on-one advice, support, mentorship, and subject matter assistance. Unlike a traditional model, where a single faculty member is responsible for curriculum, teaching, advising, and grading, faculty responsibilities at WGU are split into four groups:

1

Teams of faculty members and administrators design all of the curriculum and assessments and provide IT support. For example, instructional materials are posted on the web so that faculty members who serve as course mentors don't need to design any curricular materials.

2

Mentors meet with students regularly to make sure they are on track to graduate. These mentors serve as counselors more than anything else.

3

A group of faculty members serves as course mentors for specific topic areas. They spend their time conducting small-group learning and one-on-one tutoring to teach students the material.

4

Grading of assessments is done by a fourth group, without faculty status, who are hired on a per-assessment basis.

<sup>18</sup> Mendenhall, Robert W. "Chapter 9: Western Governors University." *Game Changers*. EDUCAUSE Publications, 2 May 2012. Web.

# Students as mentors

Instructors aren't the only ones transitioning into a mentorship role at WGU. Students also play a crucial role in the university's competency-based model as mentors and coaches. WGU sits at a one-year retention rate of 76% in its CBE programs—they attribute this strong performance to their unique student-mentorship model.<sup>19</sup>

Student mentors generally hold a master's degree, often in the subject or course area that the other CBE students are studying. They play an important role in helping WGU students establish a pace of learning and support the student on an individual basis. Student mentorship is built on a one-to-one premise. Mentors begin with a new student on day one and remain at their side until they graduate.<sup>20</sup>

Course mentors typically have a doctorate degree in their subject area and are available to students for content-specific help and outreach as needed. Students work with different course mentors for each subject area.<sup>21</sup>



<sup>19</sup> *Ibid.*

<sup>20</sup> *Ibid.*

<sup>21</sup> *Ibid.*

**Where**  

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**is CBE gaining traction?**

“They (students) will emerge with proven competencies. Businesses will not have to guess whether these students really are ready for the market, ready for their business, ready for the world.”

- Mitch Daniels, President,  
Purdue University<sup>22</sup>

<sup>22</sup> Fain, Paul. “Big Ten and the Next Big Thing.” *Teaching and Learning*. Inside Higher Ed, 28 Oct. 2014. Web.

# Universities and colleges across the US embrace CBE

While it is still an emerging concept, competency-based education is gaining traction in schools across the US. As of fall 2014, three of the “[Big Ten](#)” post-secondary institutions offer degrees in CBE programs: University of Michigan, Purdue University, and the University of Wisconsin System.<sup>23</sup>

## *Did you know?*

There are nine colleges in the US today that are entirely competency-based. These colleges alone enroll more than 140,000 undergraduates and 57,000 graduates.<sup>25</sup>

### **“Patient zero” graduates at College for America of Southern New Hampshire**

Launched in January 2013, College for America of Southern New Hampshire University graduated “patient zero” from its self-paced (CBE) associate degree in June of that year. A 21-year-old sanitation engineer from Ohio began his degree in March 2013 and, over the next three months, earned the equivalent of 60 credits and mastered 120 competencies. The student earned his associate degree while continuing to work upward of 56 hours a week at his job.<sup>24</sup>



### **Video: CfA grads reflect on their CBE experiences**

<sup>23</sup> Fain, Paul. “Competency-based Education Arrives at Three Major Public Institutions” *Teaching and Learning*. Inside Higher Ed, 28 Oct. 2014. Web.

<sup>24</sup> Fain, Paul. “Experimental College’s First Graduate.” *Teaching and Learning*. Inside Higher Ed, 16 Aug. 2013. Web.

<sup>25</sup> Kamenetz, Anya. “Competency-Based Degree Programs On The Rise.” Web log post. *nprEd*. NPR, 26 Jan. 2015. Web.

# Flexibility is the option at University of Wisconsin System

Over 20% of the working age population of Wisconsin has some college education, but no degree.<sup>26</sup>

The University of Wisconsin System recognized that a more flexible educational structure was needed to better serve this predominantly working-adult demographic. In November 2013, they launched the “UW Flexible Option” (UW Flex)—a direct-assessment CBE program that’s delivered entirely online.

The UW Flex option enables students to attain five degrees: an Online Associate of Arts and Science from University of Wisconsin Colleges, a Bachelor of Science in Information Science and Technology, a Bachelor of Science in Nursing, a Bachelor of Science in Diagnostic Imaging degree completion program, and a Business and Technical Communications certificate from University of Wisconsin-Milwaukee. Students across all five degrees use online learning to demonstrate mastery of competencies.<sup>27</sup>

UW Flex, delivered through University of Wisconsin-Extension (UW-Extension), enables students to remotely attain the exact same credentials as their counterparts studying on campus.

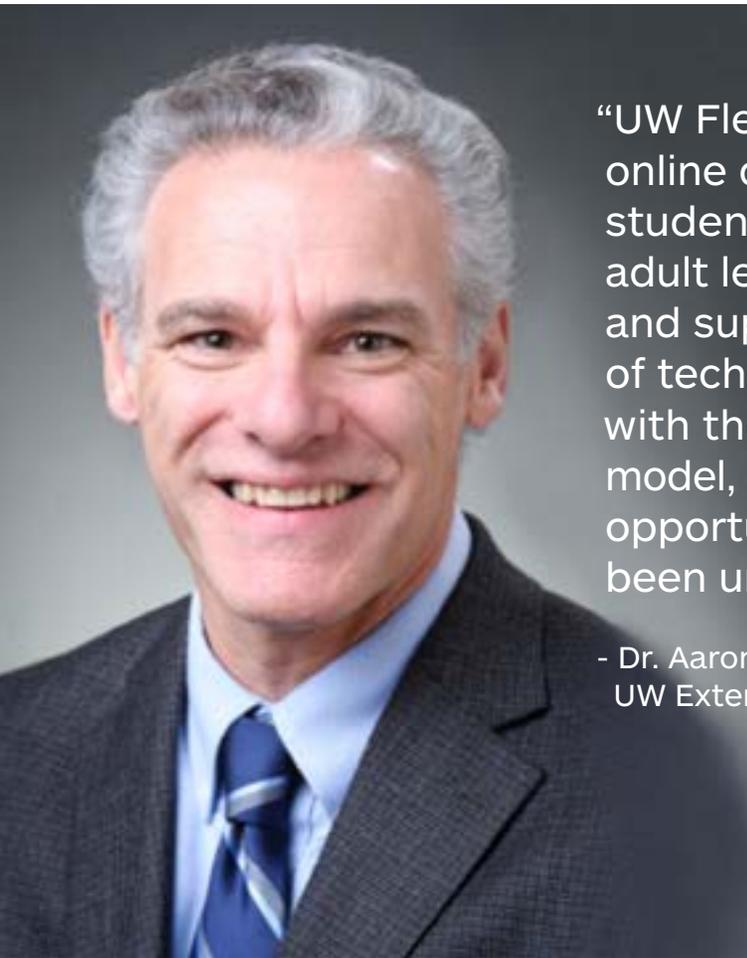
“A number of other schools embracing CBE are standalone, and the degrees students earn are unique to that facility. We’ve taken a different approach. Degrees granted through our UW Flex program are the same degrees that are granted by our bricks and mortar campuses, offered to students by UW-Extension through the Flex option,” explains Dr. Aaron Brower, Provost and Vice-chancellor, UW-Extension.

Currently, around 300 students are enrolled in UW Flex. That’s almost double UW-Extension’s estimates at the time of the program’s inception.<sup>28</sup>

<sup>26</sup> *A Stronger Nation Through Higher Education: Wisconsin Data*. Rep. Lumina Foundation, Apr. 2015. Web.

<sup>27</sup> Brower, Aaron. "Flexible Option: A Direct-Assessment Competency-Based Education Model." *EDUCAUSE Review*. EDUCAUSE, 10 Nov. 2014. Web.

<sup>28</sup> Brower, Aaron, (2015, May 23) Telephone interview.



“UW Flex’s entire model is predicated on online delivery. For the most part, the students we target with this program are adult learners who are working full-time and supporting families. The availability of technology for online learning, coupled with the competency-based education model, offers these students new educational opportunities that previously would have been unattainable.”

- Dr. Aaron Brower, Provost and Vice-chancellor,  
UW Extension

Photo by Bryce Richter/UW-Madison



**[Video: University of Wisconsin Flexible Option](#)**

# US government paves the way for broader CBE adoption

In the summer of 2014, the United States House of Representatives unanimously passed a bipartisan bill (HR 3136) that supports the development of CBE programs in up to 30 colleges and universities.<sup>29</sup>

The “experimental sites” initiative waives certain rules for federal aid programs, allowing institutions to test new approaches—such as CBE—without losing aid eligibility. Each demonstration project is required to enroll a minimum of 50 and a maximum of 3,000 students.<sup>30</sup>



<sup>29</sup> Advancing Competency-Based Education Demonstration Project Act of 2014, HR 3136, 113th Cong. (July 23, 2014).

<sup>30</sup> *Ibid.*

# **How**

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# **does CBE work?**

“Measuring student learning by ‘seat time’ in this new educational era most certainly seems obsolete.”

- Carnegie Foundation for the Advancement of Teaching<sup>31</sup>

Establishing a competency-based education program takes a tremendous commitment on the part of an educational institution. It requires a substantial investment, a fundamental change in philosophy, and a substantially different business model. Let’s break down some of the essential building blocks for CBE.

## Establishing credentials

CBE programs enable students to earn credentials by establishing a mastery of competencies (a blend of knowledge, skills, and abilities). It reverses the traditional learning model where outcomes take a backseat to courses and credits.

The credit-hour standard is still used in most US-based CBE programs, however, typically mapping competency achievements to a recognized number of equivalent credit hours. Because CBE competencies are not yet standardized, this bridging back to the standard credit hour is still necessary. It allows students to secure reimbursement from an employer, receive financial aid, or transfer credits between institutions.<sup>32</sup>

<sup>31</sup> Silva, Elena. "The Carnegie Unit – Revisited." Web log post. *Carnegie Foundation for the Advancement of Teaching*. Carnegie Foundation, 28 May 2013. Web.

<sup>32</sup> Bushway, Deb, and Deborah Everhart. "Investing in Quality Competency-Based Education." *EDUCAUSE Review*. EDUCAUSE, 8 Dec. 2014. Web.

# Defining a competency framework

A competency framework clearly states what a person will be able to do upon completing a credential. How to establish such a framework, however, is debated in educational circles. Because CBE is a philosophy (rather than a prescriptive method), there are a lot of approaches to establishing a competency framework and they vary across educational institutions.

A competency framework can sometimes be prescribed by a third-party source, such as an accreditation authority or agency. These organizations define the outcomes they will assess and work with the educational institution to help establish a minimum standard.

Other educational institutions create their own competency frameworks based on the educational programming they currently deliver and reinvent them as CBE programs.



Ultimately, a competency framework needs to realize the primary objective of student learning. Educators need to define what those statements of learning are going to be, which courses are required to address those learning objectives and outcomes, and structure the competency framework and curriculum accordingly.

This also means mapping learning and content elements into modules that fit with the defined CBE architecture.

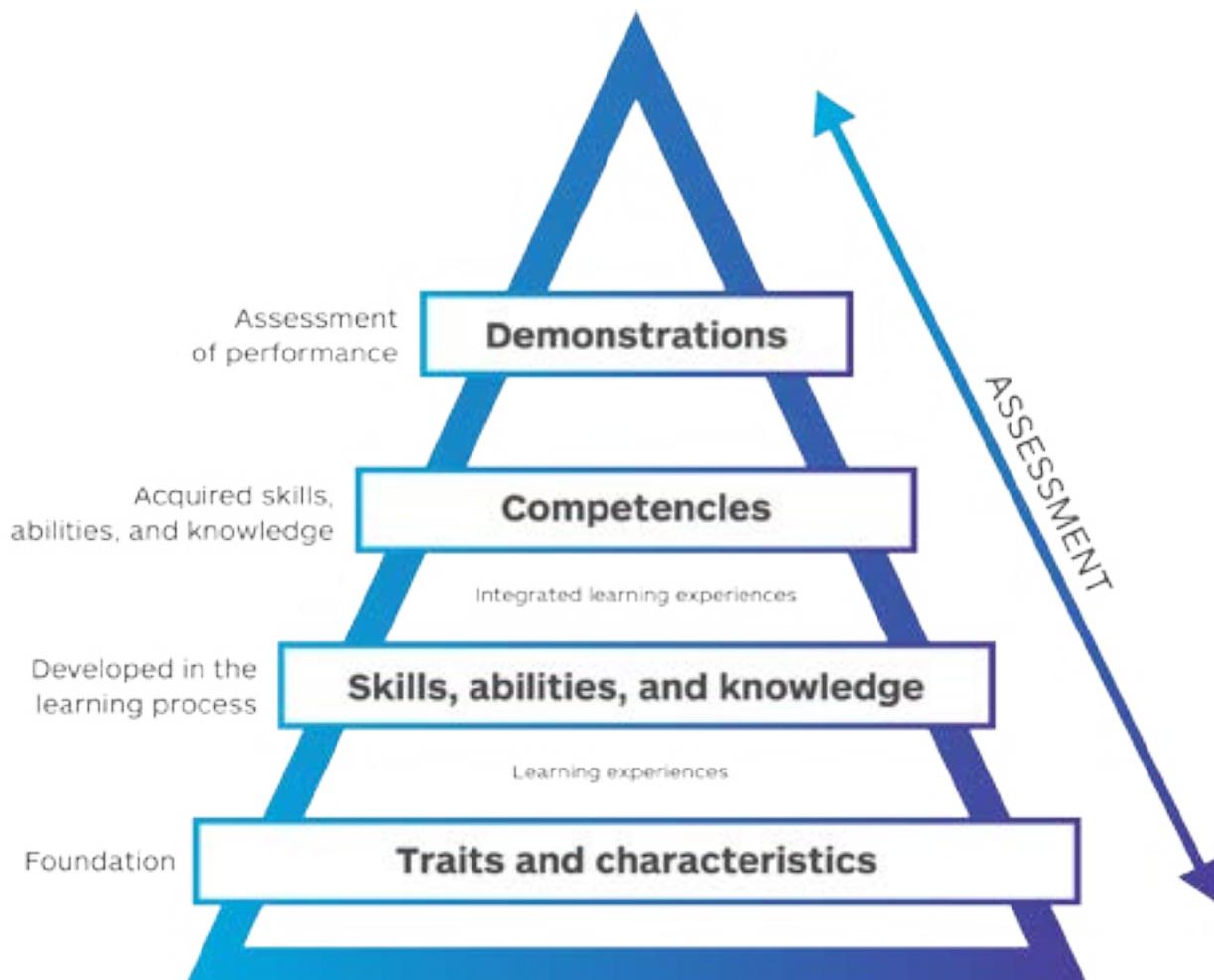


Figure 1: A Conceptual Learning Model<sup>33</sup>

<sup>33</sup> Soares, Louis. A 'Disruptive' Look at Competency-Based Education. Rep. Center for American Progress, June 2012. Web.

# 21st century initiatives for long-term student success

The Association of American Colleges and Universities' General Education Maps and Markers (GEMS) initiative is a large-scale, systematic effort to provide "design principles" for the twenty-first century and long-term student success.

Supported by a grant from the Bill and Melinda Gates Foundation, GEMS is creating a competency-based general education framework to help students develop and demonstrate essential competencies to succeed in a variety of industries.<sup>34</sup>

An interrelated initiative, Valid Assessment of Learning and Undergraduate Education (VALUE), is engaging state and academic leaders to evaluate learning outcomes. It hopes to establish a common pathway for competency-based education within, and potentially across, state systems.<sup>35</sup>

**"93% of employers agree, 'A candidate's demonstrated capacity to think critically, communicate clearly, and solve complex problems is more important than their undergraduate major.'"**

- 2013 online survey of 318 employers, conducted on behalf of Association of American Colleges and Universities<sup>36</sup>

<sup>34</sup> "General Education Maps and Markers (GEMS)." *Association of American Colleges & Universities*. 26 Nov. 2013. Web.

<sup>35</sup> "Competency-Based, Marketable Credentials - Bill & Melinda Gates Foundation - Post-secondary Success." *Post-secondary Success*. Bill & Melinda Gates Foundation, n.d. Web.

<sup>36</sup> Hart Research Associates. "It Takes More Than a Major: Employer Priorities for College Learning and Student Success." *Liberal Education*. Association of American Colleges & Universities, Spring 2013. Web.

# Creating valid and reliable assessments

What does a competency-based assessment look like? Can a multiple-choice assessment truly test the knowledge of a student? If educators and students don't understand assessment practices, or they lose confidence in the assessment method, a CBE program can fail.

**There are three models of assessment commonly associated with competency-based education:**



Let's break down the pros and cons of each assessment model.<sup>37</sup>

| Assessment Model              | Pros   | Cons  |
|-------------------------------|--|---|
| Standardized, objective exams | <ul style="list-style-type: none"><li>• Strong psychometric data to support validity and reliability</li><li>• Easy comparability across settings and institution</li></ul>                    | <ul style="list-style-type: none"><li>• General concerns around usefulness for learning</li><li>• Relevance to demonstrating competencies</li><li>• Focus on what a student knows, versus relative strengths and weaknesses within the content area</li></ul> |
| Traditional assignments       | <ul style="list-style-type: none"><li>• Familiar to most people</li><li>• More trust in an expert assessor's ability to determine if an assignment demonstrates competency</li></ul>           | <ul style="list-style-type: none"><li>• Relevancy—a student's ability to perform on an assignment may not equate competency</li></ul>   |
| Authentic assessments         | <ul style="list-style-type: none"><li>• Clear relevance to stakeholders</li><li>• Transparency for students</li><li>• Greater validity and reliability over other assessment methods</li></ul> | <ul style="list-style-type: none"><li>• Challenging and time consuming to create assessments relevant to the learning experience</li><li>• Assessor training is essential</li></ul>   |

<sup>37</sup> Bushway, Deb, and Deborah Everhart. "Investing in Quality Competency-Based Education." *EDUCAUSE Review*. EDUCAUSE, 8 Dec. 2014. Web.

# Using CBE to teach the teacher

Western Governors University (WGU)'s online competency-based education model is the largest provider of math and science teachers in the United States.<sup>38</sup> It is the only online university accredited by the Council for the Accreditation of Educator Preparation (CAEP, formerly NCATE) and licenses teachers in every US state. Since its inception, its enrollment has grown to over 11,000 students.<sup>39</sup>

WGU's student teachers perform above average on Praxis and state-licensure tests. The program's flexibility increases their likelihood of completion and allows motivated students to finish early.

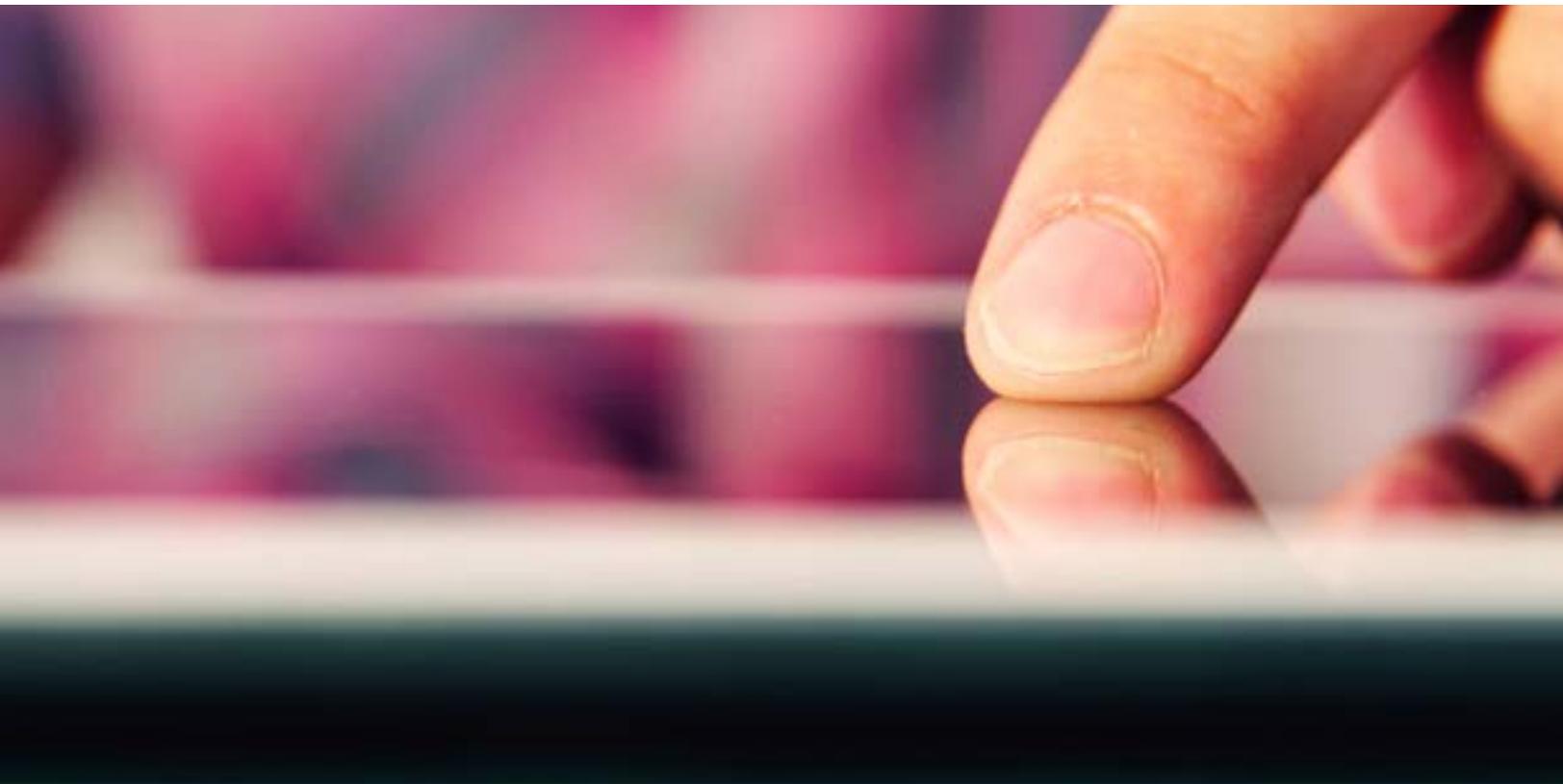
The majority of WGU's teacher/college students are between 35 and 45 years old and are working full-time. Many are changing careers. The flexibility of the program also means that WGU can tailor instruction to meet national standards, as well as state, district, or network needs.<sup>40</sup>



<sup>38</sup> Cator, Karen, Carri Schneider, and Tom Vander Ark. Preparing Teachers for Deeper Learning: *Competency-Based Teacher Preparation and Development*. Rep. Getting Smart, Apr. 2014. Web.

<sup>39</sup> *Ibid.*

<sup>40</sup> *Ibid.*



## How does technology help?

To recap: in a competency-based learning scenario, students are encouraged to learn at their own pace as they progress toward mastery of specific competencies. Most competency-based programs are aimed at adult students who have work and family obligations and for whom traditional “bricks and mortar” schooling is not a good fit.

To enable this style of learning and reach students who cannot be physically present in a classroom, CBE programs rely heavily on online learning. This is possible through technology such as a learning management system (LMS) that helps educators craft personalized learning paths and give learners anywhere/anytime access to course materials.

There are several different ways this technology help educational institutions implement a CBE program successfully.

## Instructional design

In instructional design, educational institutions have traditionally put the focus on quality of instruction by establishing instructional specifications, associated learning materials, and delivery systems. There are a variety of models for instructional design, such as ADDIE (Analysis, Design, Develop, Implement, and Evaluate), Rapid Prototyping, and others.<sup>41</sup>

In a competency-based education model, however, instructional design is about facilitating a learner's mastery of a competence. That mastery is determined by a combination of the student's knowledge, attitude, and skills.<sup>42</sup> For CBE to work in an online learning environment, we must adapt instructional design to create a course flow that supports a more methodical, self-paced learning style.

### Here are just some of the ways learning must be redesigned to suit CBE:

- Create simulated task-based environments to provide students with a safe place to practice their skills
- Leverage learning management systems that support rich digital content to create a multi-media learning experience
- Implement frequent assessments and feedback loops to diagnose learner progress<sup>43</sup>

## Online Learning

Online learning serves as the primary delivery method for CBE programs. It supports the model in a variety of ways:

- Online delivery offers a continuum of learning that supports a flexible, self-paced learning style
- Students learning online can be tested on-demand, if and when a student is ready to be assessed
- Curriculum can be delivered in a modular manner, offering students multiple pathways to mastery
- Educational institutions can scale the CBE model by providing tools to personalize learning paths for individual students.<sup>44</sup>

<sup>41</sup> Choo, Buay. *Instructional Design for Competence-based Learning*. 18 Jan. 2013. SlideShare Presentation.

<sup>42</sup> *Ibid.*

<sup>43</sup> Van Merriënboer, Jeroen J. G. "ID for Competency-based Learning: New Directions for Design, Delivery and Diagnosis." *ResearchGate* 3 (2001): 12-26. Oct. 2001. Web.

<sup>44</sup> Freeland, Julia. *Blending toward Competency: Early Patterns of Blended Learning and Competency-based Education in New Hampshire*. Whitepaper. Clayton Christensen Institute for Disruptive Innovation, May 2014. Web.

## *Analytics*

Analytics tools are indispensable to the competency-based learning process. They provide faculty and student mentors with ongoing feedback about a student's progress through the curriculum. This helps instructors to coach learners and personalize their individual learning paths.

Analytics also help educators identify patterns of behavior by monitoring aspects such as learner engagement and student performance on assessments. These key metrics, coupled with alerts driven by an LMS, can serve as early warning systems for instructors and student coaches. This allows instructors to proactively intervene when a student is falling behind or struggling with the subject matter.



## How does an LMS support CBE?

Very simply, an LMS serves as the backbone for online learning and for the delivery of a CBE program. Here are just some of the ways an LMS supports a competency-based learning model:

| Need                            | Why?   | LMS Functionality   |
|---------------------------------|--|---|
| Defining competencies           | Must articulate the knowledge, skills, and attitudes students will be expected to demonstrate  | Communicates defined competencies through learning modules  |
| Flexible pacing                 | CBE learners may spend more or less time on a particular competency, depending on their previous knowledge and experience  | Releases new module or competency based on completion of or performance on the previous one   |
| Continuous intake               | Learners may need to begin a program or course mid-year and not on a traditional semester schedule   | Tracks “days since enrollment” for groups and individuals so content can appear based on time elapsed since enrollment  |
| Progression by mastery          | Unlike completion/submission triggering progress in regular courses, learners in a CBE course need to demonstrate mastery before proceeding  | Releases content based on competency completion (or based on a student’s performance on an assessment)  |
| Demonstration of competence     | Competence generally requires more authentic assessment methods and demonstrations of knowledge  | Documents and tracks learner progress and supports multiple methods of assessment (quizzing, media submissions, etc.)   |
| Feedback and encouragement      | Self-paced courses can become isolating without regular communication with an instructor   | Includes private discussions and intelligent agents to automate feedback and propose next steps upon completion of a task   |
| Structure and support           | Learners find it difficult to keep track of their progress and stay on their own set timelines without pacing support and prompts  | Checklists can be conditionally released based on a learner’s progress so that the next set of tasks appears as the learner completes the previous  |
| Remediation                     | Instructors may not be immediately available when learners are working irregular hours   | Unmet thresholds on competencies or assessment performance can trigger an email that’s sent to learners with targeted support tips, resources, and common challenges that learners experience   |
| Prior Learning Assessment (PLA) | Learners returning to school from the workforce often have additional skills they may wish to receive advanced credits for<br><br>Learners benefit from pre-assessments to determine where gaps in their knowledge exist | Portfolio functionality can capture, organize, and present prior knowledge in relation to competencies<br><br>Pre-assessments within courses provide feedback to learners about their knowledge gaps or trigger the release of content<br><br>Provision of alternate assessment tools such as quizzes |

## *Other back-office system considerations*

In an educational world oriented around the credit unit, a shift to CBE requires a fundamental change in thinking. That has significant implications for an educational institution's back-office systems and business processes that are also geared around the credit unit. In many cases, adapting them to the new model isn't easy.

“It was a surprise to us how much our operational infrastructure had to change in our move away from the credit hour. When we enroll a student right now in a traditional degree, we charge tuition based on credit. Our computer systems simply can't handle a CBE model that is self-paced and built on a flat-fee subscription. It is the same thing with transcripts, registrar functions, and financial aid. They are all processes built around the credit hour. So many crosswalks needed to be developed to allow for a CBE program. I would easily say that in our move to a direct-assessment CBE model, our back office implementation demanded 4 times the effort of our educational implementation.”

- Dr. Aaron Brower, Provost and Vice Chancellor, UW-Extension

# How does a student know if they're CBE-ready?

University of Wisconsin System's UW Flexible Option offers prospective students a self-evaluation tool called "Flex Fit" to help them figure out if a competency-based learning model is right for them.

## **Taking about 30 minutes to complete, the assessment measures:**

- An individual's key personality traits, such as level of motivation, procrastination, and preferred learning styles
- External lifestyle factors, such as the amount of time available per week for study, support from employers and family, and the person's health and financial situation
- Whether or not the prospective student has the technical skills necessary for online learning<sup>45</sup>

**Put yourself in a learner's shoes and take the test.**

<sup>45</sup> "Flex Fit Self-Evaluation." *University of Wisconsin Flexible Option*. University of Wisconsin System, n.d. Web.



## Lessons learned for educators

Stephen R. Porter, Professor of Higher Education, North Carolina State University, and Kevin Reilly, President Emeritus and Regent Professor, University of Wisconsin System and Presidential Advisor for Leadership, American Council on Education, have conducted an expansive research project on education costs. The study focused on strategies that universities can use to improve affordability and college outcomes for low-income students. Their paper, "[Competency-based education as a potential strategy to increase learning and lower costs](#)," details their findings. It looks at the CBE concept, examining its impact on institutional and student costs as well as successful implementation strategies.

Here are some of the ways CBE may affect costs:<sup>46</sup>

|  |  |
|--|--|
| <b>CBE cost savings for students</b>             | <p>As credit is granted for prior achievements, students may take fewer courses to obtain a degree</p> <p>Some CBE programs provide all needed content through the LMS, avoiding additional textbook costs</p> <p>Students can rapidly establish competencies without having to spend seat time in a course</p> <p>Students spend less time in college, lowering tuition bills</p> |
| <b>CBE cost impacts for students</b>             | <p>Students only save money if they make significant progress towards their degree each semester</p>   |
| <b>CBE growth opportunities for institutions</b> | <p>Universities and colleges can boost their appeal within their potential applicant pool and to potential employers of graduates</p> <p>CBE programs are often congruent with an institution's historical mission</p> <p>CBE offers a way to improve efficiency in a time of limited resources</p>  |
| <b>CBE cost impacts for institutions</b>         | <p>Competency-based programs usually involve restructuring of curriculum and new assessments, which requires faculty engagement and increases faculty costs</p> <p>CBE requires significant restructuring of back-office systems, which are normally configured around traditional credit-hours systems</p>  |

<sup>46</sup> Porter, Stephen R., and Kevin Reilly. *Maximizing Resources for Student Success: Competency-Based Education as a Potential Strategy to Increase Learning and Lower Costs*. Rep. HCM Strategists, LLC, July 2014. Web.

# 10 takeaways from successful CBE programs<sup>47</sup>

Competency-based programs demand significant change at institutional, faculty, and student levels. What can be learned from those who have pioneered the way and succeeded?

- 1.** Ensure steady support from the top to mitigate internal resistance.
- 2.** Engage faculty through early involvement and building assessments, course content, and pedagogy.
- 3.** Decide early about employing existing or new faculty.
- 4.** Build supportive data systems.
- 5.** Determine whether there will be credit equivalencies.
- 6.** Engage student support services early regarding student advising, financial aid, and transcripts.
- 7.** Integrate CBE with traditional data systems.
- 8.** Choose vendors carefully, including learner support and data systems.
- 9.** Create a pricing model to meet financial and program goals.
- 10.** Consider stand-alone operations.

<sup>47</sup> Book, Patricia A. *All Hands on Deck: Ten Lessons From Early Adopters of Competency-Based Education*. Rep. WICHE Cooperative for Educational Technologies (WCET), May 2014. Web.

**When**

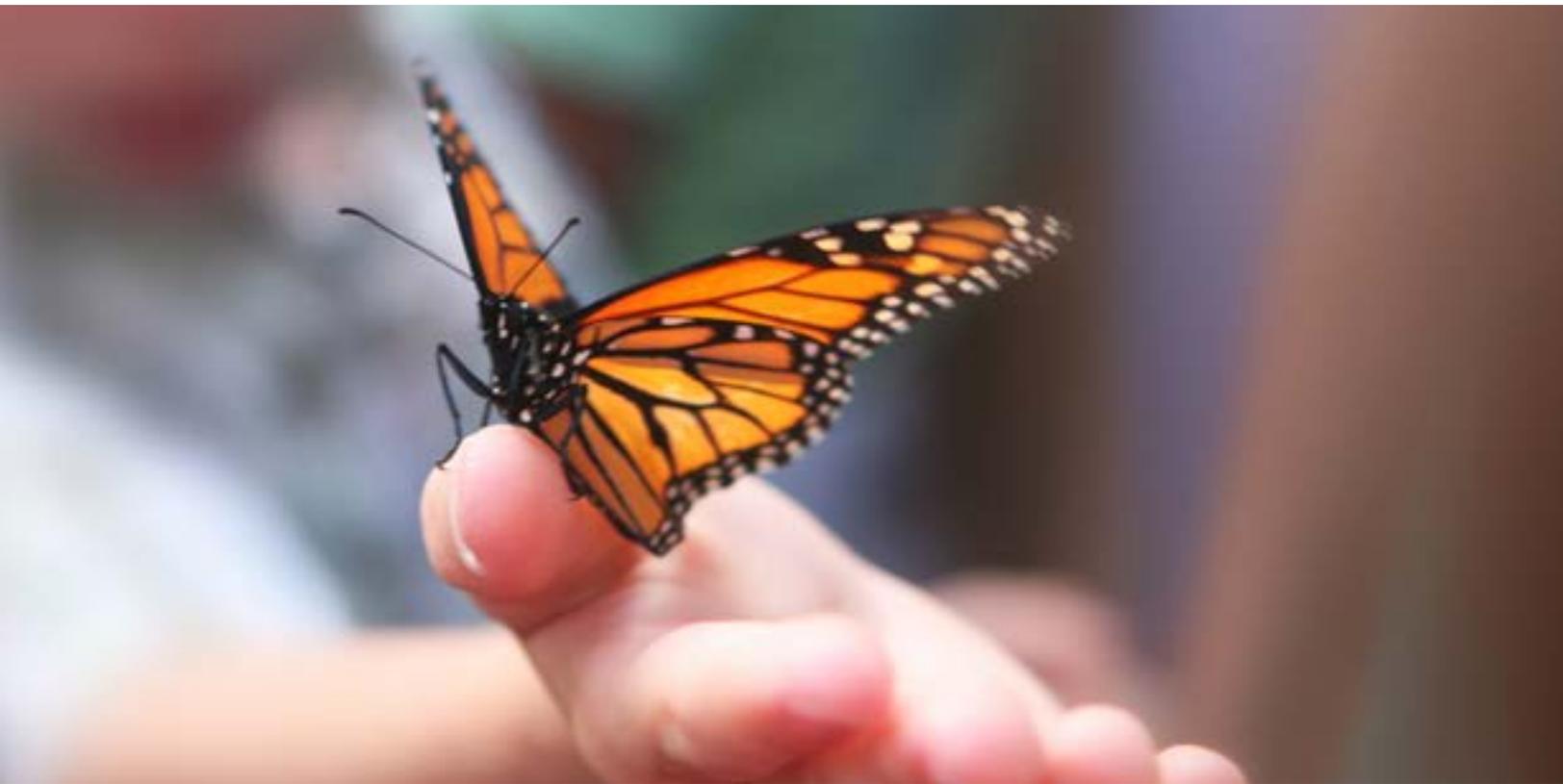
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**(are you ready  
for CBE?)**

Although competency-based education is gathering momentum, educators need be wary of jumping on the bandwagon simply because other colleges and universities are adopting CBE. To fully embrace the model, they must:

- Completely recast their educational philosophy
- Overhaul their internal processes, data, and IT systems
- Fully redesign course curriculum
- Fundamentally alter their teaching practices

*In short: this is a radical change, and it's not for everyone.*



In the paper “All Hands on Deck: Ten Lessons From Early Adopters of Competency-based Education,” author Patricia A. Book of the Western Interstate Commission for Higher Education offers up this readiness questionnaire for administrators of colleges and universities considering CBE.<sup>48</sup>

## 10 questions to ask when considering CBE

- 1 What are the overall goals for adopting CBE? Who is the audience? How will you measure progress and success?
- 2 Is self-paced a necessary pre-condition for CBE? Can it be a CBE mastery model without being self-paced?
- 3 Does CBE have to be online, or are hybrid or resident models possible?
- 4 Is a centralized administrative structure necessary for implementation? Are stand-alone or separate administrative structures versus integrated academic approaches emerging differentially in the community college versus four-year institutional environment? If so, why?
- 5 How vulnerable are these reform models to leadership changes or faculty pushback, especially as the faculty role is disaggregated? If operating in a collectively organized environment, how can contract negotiations afford for faculty workload in a CBE model? In any case, what new models for faculty workload are emerging?

Continued

<sup>48</sup> *Ibid.*

6

How do you look for evidence that CBE is embedded in the institution? Do you examine student communications, the percentage of students availing themselves of the model, the percentage of faculty conversant in the model, or whether or not the IT system is capable of scaling the model? Are faculty contracts including disaggregated roles? Are data systems working to manage the disaggregated roles of advisors and mentors to support student progress? Should CBE be embedded?

7

What will it take to develop and maintain effective assessment methods? How authentic are the assessments? Do they include formative and summative assessments? How secure are the assessments? How robust? Do they measure mastery?

8

How involved are employers in the CBE model? How are relationships with employers sustained over time? How are competencies aligned with workplace skill requirements? How are they kept current?

9

Is external funding, or other incentives, critical to meaningful educational innovation and reform in developing CBE approaches?

10

Can guidelines for ensuring high quality and academic rigor in CBE be developed and circulated and if so by whom?

# University of Akron begins its CBE journey

University of Akron—a thriving campus of more than 27,000 students located in Akron, Ohio—is in the early stages of determining its CBE strategy. Fueled by an Association of Public and Land-grant Universities (APLU) planning grant, with assistance from the Bill and Melinda Gates Foundation, the university is working closely with its faculty members to investigate and understand the benefits and challenges of moving to CBE.



“We believe CBE is a good fit with the mission of The University of Akron and well-matched to the population of students we serve. We are an urban public university, with a large population of ‘new traditional students’ (adults). We have close ties to industry, and we have a heavy focus on real-world learning with our students. While we are at an early stage of our CBE implementation, we believe CBE has the potential to offer our students an alternative model that can shorten time to degree, increase retention, and reduce cost for adult students. It’s a good fit for Akron.”

- Wendy Lampner, Manager of Design and Development Services, University of Akron

# The choice is yours.

An increasing number of colleges and universities are turning to competency-based education (CBE) to support the growing percentage of adult learners who already have an acquired level of knowledge and need more flexibility in their pace of learning.

It can help students attain their educational goals more quickly and save on tuition. Programs such as those being delivered at Western Governors University and University of Wisconsin are proving to be extremely successful.

Educators looking to implement a competency-based approach will need to make sweeping and fundamental changes to course content and program curriculum. It will alter the way faculty teach, assess, and interact with students. It needs a technical infrastructure, such as an LMS, to facilitate delivery and provide students with anytime, anywhere access to self-paced learning. Finally, it will demand costly change to administrative processes and back-office operations.

Every circumstance is unique. Every educational institution is at a different stage of readiness. Educators need to do their own homework carefully prior to embracing competency-based education as an option moving forward.

Are you ready for CBE? We'd love to talk. Join the conversation by sharing your perspectives with us on Twitter @Brightspace.

# ABOUT D2L

D2L is the software leader that makes the learning experience better. The company's cloud-based platform—Brightspace—is not a common one-size-fits-all learning management system (LMS). It's easier to use, more flexible, and smart. With Brightspace, you can personalize the experience for every learner to deliver real results. The company is a world leader in learning analytics: their platform predicts learner performance so that you can take action in real time to keep them on track. Brightspace is used by learners in higher education, K-12, and the enterprise sector, including the Fortune 1000. D2L has operations in the United States, Canada, Europe, Australia, Brazil, and Singapore.

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