



SOLVING THE FOUR BIG PROBLEMS FACING CBE FOR UNDERPREPARED COLLEGE LEARNERS



JUNE 2018



BY TOM HILLIARD, DEB BUSHWAY
STEPHANIE KRAUSS, NATE ANDERSON

ACKNOWLEDGEMENTS

This publication was made possible through generous support from the ECMC Foundation.

The authors would like to thank our editor, Carol Gerwin, for her tireless patience and strategic guidance, and Joe Deegan for his top-notch feedback, research support, and overall contribution to this project. We are grateful as well to the host of experts, practitioners, and policymakers who contributed content during the research and development of this series. Thanks also to the JFF communications team for editorial review and graphic design.



JFF is a national nonprofit that drives transformation in the American workforce and education systems. For 35 years, JFF has led the way in designing innovative and scalable solutions that create access to economic advancement for all. Join us as we build a future that works. www.jff.org

ABOUT THE SERIES

JFF is leading an effort to explore how competency-based education (CBE) can be adapted to meet the needs of underprepared adult learners, in order to help members of this large and economically vulnerable group earn college credentials and advance in the U.S. workforce. With support from the ECMC Foundation, JFF is reaching out to national experts, policymakers, and practitioners to help identify key issues that can frame a national conversation about expanding and strengthening CBE for students who have been historically underrepresented in higher education. *Next-Generation CBE* zeroes in on this key question: what specific design elements are needed to realize the potential of CBE for the nation's underprepared college students? Read the entire series at jff.org/nextgencbe.

ABOUT THE AUTHORS

TOM HILLIARD is senior fellow for economic opportunity at the Center for an Urban Future, where he writes studies and commentaries on postsecondary education, adult literacy, workforce development, and other pathways to economic opportunity. He has also written numerous reports on a variety of topics related to postsecondary education for organizations including JFF, Achieving the Dream, the John J. Heldrich Center for Workforce Development at Rutgers University, and the Council on Foreign Relations. Mr. Hilliard previously served as senior policy associate at the Schuyler Center for Analysis and Advocacy in New York State and director of health policy for the Public Advocate of the City of New York.

DEB BUSHWAY is a consultant for Lumina Foundation on CBE. She has been deeply involved in the CBE movement, including the launch of Capella University's CBE direct assessment program and service as senior advisor for educational innovation to the undersecretary of the U.S. Department of Education. She recently testified regarding higher education innovation and federal policy in front of the U.S. Senate Committee on Health, Education, Labor & Pensions. Bushway has a PhD in psychology, and currently serves as the provost at Northwestern Health Sciences University. She previously has served in a variety of higher education faculty and leadership roles, including provost, vice president of academic innovation, associate dean, and professor at Capella University, University of Wisconsin–Extension, and Metropolitan State University in St. Paul, Minnesota.

STEPHANIE MALIA KRAUSS is director of special projects at JFF. She develops, shapes, funds, and manages cross-team and cross-strategy projects that further JFF's ability to best serve its target populations, ensuring their education and economic advancement. Previously, Ms. Krauss served as a senior fellow with the Corporation for a Skilled Workforce, the Forum for Youth Investment, and JFF. In these roles, she took on various national and state-level initiatives focusing on postsecondary credentialing, CBE, youth readiness, and opportunity youth. She also has served as campaign director of Connecting Credentials and co-director of The Readiness Project. In addition, Ms. Krauss founded and served as CEO of Shearwater Education Foundation, where she successfully pushed for state policy change and the cultivation of partnerships to enable CBE and flexible learning opportunities for St. Louis City's disconnected youth, including those in foster care, coming out of the justice system, or experiencing homelessness.

Ms. Krauss has been a guest commentator on PBS NewsHour, StoryCorps, and public radio. She holds a master's degree in education curriculum and instruction from Arizona State University and a master's degree in social work from Washington University in St. Louis. One of the youngest-ever recruits to Teach For America, Ms. Krauss began her career as a fifth-grade teacher, at age 18, servicing a mostly Latino migrant community in Phoenix, Arizona. While teaching, she spent her summers training teachers in rural and impoverished communities in East Africa.

NATE ANDERSON is a senior director at JFF, focusing on how improvement to career pathway design, implementation, and policy can drive stronger outcomes for low-income and low-skilled adults and lead to family-supporting careers. Mr. Anderson manages several bodies of work concentrating on credentialing, labor market information technologies, CBE, and the future of work. In addition, he has extensive experience providing technical assistance to community colleges, state postsecondary systems, adult education providers, and workforce organizations.

Prior work at JFF includes building postsecondary on-ramps for low-skilled students and connecting education and training programs with federal programs for low-income people. Mr. Anderson has taught English in Japan to middle school, high school, and adult students as part of the Japanese Exchange and Teaching Program. He holds a bachelor's degree from Bowdoin College, a master's degree in Japanese history and Asian Pacific studies from the University of Toronto, and a master's degree in education from the Harvard Graduate School of Education.

01

INTRODUCTION

03

FLEXIBLE PACING

05

ONLINE LEARNING

07

ASSESSMENT

09

CURRICULUM, COMPETENCIES, AND CAREER

13

CONCLUSION

14

ENDNOTES



INTRODUCTION

This report is the final in a series exploring the potential of competency-based education to increase college and career success for underprepared learners. Our hope is that educators and policymakers will use the series to start developing CBE programs that meet the distinct needs of the millions of students required to begin community college in remedial classes each year.

The stakes are high. Currently a tiny fraction of these students ever finishes enough credit-bearing courses to earn a credential, let alone one that leads to a good job.¹ More effective intervention could boost economic advancement for many people, who for a wide variety of reasons enroll in college with below-college skills in reading, writing, or math.

CBE models differ from traditional college experiences in several key ways (see box, “What is CBE?”). They are flexibly paced, which enables learners to progress at their own speed, and customized, which allows learners to focus on the topics most relevant to their goals. Most important, students advance to the next level as soon as they demonstrate they have mastered material, rather than waiting until the end of a unit or term.

Our approach for this series is to combine the strengths of CBE with strategies proven to improve outcomes for underprepared learners (or more specifically, students who enroll in developmental education courses). We advocate the design of CBE

programs that integrate a relatively new model of developmental education that has strong evidence of success (see box, “What is a ‘Corequisite Model’ of Developmental Education?”).

What Is a ‘Corequisite Model’ of Developmental Education?

Students enroll directly in college-level math and English courses, despite low scores on placement tests, and are required to take supplemental instruction designed to support the college-level coursework. This model differs from traditional developmental education in that it is not a prerequisite to college-level courses, the curriculum is tailored to a student’s need to build specific skills, it does not necessarily take the form of a course, and it provides support services.⁴



What Is Competency-Based Education?

CBE models are flexibly paced programs of learning in which progress toward a degree is determined by what students demonstrate they know and are able to do, regardless of the amount of time spent in a classroom.

CBE has four key elements:²

- **Flexibility**—Coursework is delivered at a variable pace, controlled by the learner, allowing for the right match with work, family, and other personal responsibilities.
- **Customization**—Course content is tailored to student interests, learning styles, educational history, academic service and support needs, and credentialing goals.
- **Mastery**—Students progress through a course or credentialing program as they master the content, providing a solid foundation for the work ahead.
- **Transparency**—Learners can see clear connections between their course content and their academic and career goals.

About this Paper

This paper concludes our series by acknowledging—and addressing—the four biggest concerns identified by our research about CBE for underprepared learners. Our research shows that while CBE holds great promise, it can also present barriers to student success. Higher education experts we interviewed repeatedly mentioned several distinct challenges that CBE programs might pose for this vulnerable population (see box, “Who are Underprepared Learners?”).

The four most significant issues raised were:

- **Flexible pacing**, which for some students can accelerate progress, can stall progress for others.
- **Online delivery models**, which are common among CBE programs, show weak outcomes for underprepared learners.
- **Assessment**, which is frequent in CBE models, can create high-stakes environments that impede the success of underprepared learners who have a history of test anxiety.
- **Competencies**, which form the foundation of CBE, can disadvantage underprepared learners if they do not directly align to future education or employment.

These are valid concerns, and it is critical to take them into consideration when designing programs to increase student success. In this report, we examine each of the four issues and propose ways to mitigate the problems they can pose, specifically within CBE approaches to corequisite developmental education.

Who Are Underprepared College Learners?

Underprepared college learners are individuals who enter postsecondary education without college-level skills in at least one foundational area: reading, writing, or math. Roughly 2.4 million community college students each year—about 60 percent of the incoming population—are required to take at least one remedial course in English or math before starting college-level coursework. Only 28 percent of these students earn a credential within eight years.³ Many juggle school with work and family responsibilities.



FLEXIBLE PACING

The pace of learning in CBE models varies for each individual. Students may attempt to demonstrate competencies whenever they feel ready, accelerating or slowing down in response to the challenges of the curriculum or outside obligations. Students who can show mastery of competencies without completing any related coursework may save time by skipping those subjects.

The American Institutes for Research has identified two distinct types of CBE students.⁵ “Sprinters” take advantage of the opportunity to speed through the program, while “flexers” take advantage of the opportunity to work at their own, usually slower pace. Students may shift from one mode to another within a single program—accelerating to take advantage of prior knowledge, and then flexing to focus on a difficult topic or deal with a family emergency. Underprepared learners, who often face challenging life circumstances and uneven skill development, stand to benefit greatly from this flexibility.

Yet there are also risks to personalizing the pace of learning for this group of students. Developmental education experts we interviewed cautioned that the flexibility allows students to advance too slowly or even become stuck. Studies show that this is especially true for students who are relatively young or from low-income backgrounds, who are less likely to enter college with college-level skills. Participants in a Young Invincibles survey of students in competency-based postsecondary education “emphasized that younger, less mature, or less motivated individuals could face challenges completing the program.”⁶

Strategies for Finding the Right Pace

Fortunately, several strategies are emerging to help learners find a comfortable pace and avoid stalling. Setting effective program standards (i.e., metrics for measuring student advancement), maintaining a high level of support, and using data-driven tools to track individual progress will make it more likely that underprepared learners will succeed in a CBE program.

Determine an appropriate degree of flexibility for each program

CBE programs offer varying degrees of flexibility in pacing, from entirely self-paced designs on one end of the spectrum to more strictly guided designs on the other end. One survey of CBE-practicing colleges found that only one-third of respondents were implementing fully self-paced courses, and only one-fourth were taking the next step to convert an entire program of study to self-pacing.⁷

Rather, as Myk Garn, the assistant vice chancellor for new learning models at the University System of Georgia says, the pacing of most CBE models would be better described as a “negotiated flexibility, with milestones, deadlines, and absolute limits, arbitrated between course designers, faculty, learners—and regulators.”⁸ In other words, negotiating the appropriate degree of flexibility in a competency-based program is critical to ensuring that developmental learners can realize its rewards while maintaining satisfactory academic progress and remaining eligible for federal financial aid.

Use pacing guidelines to set a ‘minimum speed’ requirement

Some flexibly paced CBE programs enforce a kind of “minimum speed limit” to keep students from procrastinating or falling too far behind. In one consortium of three CBE programs at community colleges, program coaches worked with each learner to create a personalized pace chart, which specified benchmarks for satisfactory progress.⁹ Faculty and support staff monitored the learner’s progress against the benchmarks and intervened with additional supports when necessary to get the student back

on track. The development and evaluation of similar pacing templates, specifically adapted to the needs of underprepared learners, is an urgent need for CBE programs serving these students.

Implement short periods of self-pacing within a term

Many underprepared students may lack the self-regulation skills to set their own pace of instruction across an entire semester. “Time flexibility allows the learner more latitude to procrastinate, and that can be problematic for developmental education,” says Brooks Doherty, assistant vice president for academic innovation at Rasmussen College in Bloomington, Minnesota. Although a college-level CBE course might be self-paced for a whole 14-week term, Doherty recommends setting shorter self-paced intervals of 4 to 6 weeks. “The longer you leave them on their own, the more risk of procrastination kicking in.” Allowing shorter periods of self-pacing may help developmental education students increase their ability to manage their work appropriately.

Engage students in their own pacing

Regardless of the format, pacing recommendations and individual progress should be transparent to students, so that they can seek help and adjust as needed. Coaches working closely with underprepared learners can help them take control of their pacing, accelerating when possible, but spending more time on concepts they find difficult. An effective pacing strategy will enable students to manage their own progress, leaving room for faculty and coaches to offer guidance along the way.

The experiences of competency-based programs at the high school level may be instructive. For example, an interdisciplinary research team led by Matthew Lewis of RAND Education proposes these support services: individualized tutoring or assistance from small-group learning facilitators, diagnostic software that measures skills, and instruction to strengthen self-awareness and self-regulation.¹⁰ An earlier report in this series highlights the value of comprehensive student supports in a CBE design for developmental learners.¹¹



ONLINE LEARNING

In its recent resurgence, CBE is often delivered through or enhanced with online instruction. But research has found that online learning does not suit underprepared learners well. They appear to earn lower grades, learn less, and experience higher dropout rates than their peers in face-to-face classes.¹² Technological literacy is uneven across this population, and many low-income and rural students have limited access to computers and the Internet.¹³

Set the Appropriate Role of Technology in Serving Underprepared Learners

Computer-mediated learning can play an important role in serving underprepared learners, and that role can grow as students build learning momentum. In fact, the number of traditional institutions that utilize either instructional technology, course management technology, student support technology, or some combination of these to serve developmental education students is significant and growing.¹⁴ CBE practitioners will have to carefully consider the delivery mode that best serves their students' goals.

Where necessary, implement in-person approaches

Despite the recent focus on virtual delivery models, CBE works well in a face-to-face classroom. In-person competency-based models have been in existence for over 40 years at pioneering institutions such as Alverno College, Empire State College, Excelsior College, and others.¹⁵ These institutions rely on a semester schedule but allow advancement

when a learner demonstrates mastery of course content. Newer CBE practitioners have also applied competency-based design principles to in-person classrooms. For example, computer science faculty at Austin Community College, who implemented an online, competency-based curriculum alongside a traditional in-person format, decided to convert all of the in-person classes to a competency-based design as well.¹⁶

Historically, however, underprepared learners have struggled in purely virtual environments. They earn lower grades, learn less, and experience higher dropout rates than their peers in face-to-face classes.¹⁷ It is therefore critical that course designers not build online-only CBE developmental education courses, but rather implement just the features appropriate for their students.

In an in-person CBE learning environment, courses are broken down into distinct competencies, which align to a degree pathway that learners traverse at a personalized pace. The classroom is learner directed

with support from faculty members and coaches. Technology can be an instructional tool, enabling students to receive support. Or it can be one of several instructional approaches, implemented in real time by a qualified faculty member and accessible when class is not in session.

The program design could also be partially in-person and partially online, depending on subject area. Studies of technology-mediated developmental education have found that developmental mathematics is much more likely to be delivered online than reading and writing, and that instructional technology solutions are often better suited for math-centric courses.¹⁸ Practitioners could choose which subjects to teach in person, based on knowledge of their own student body and currently available resources and supports.

Build quality assurance practices tuned to developmental education

Online modalities have evolved in recent years to produce an emerging set of best practices. The process of instructional design for online courses in higher education is highly professionalized, and independent agencies such as Quality Matters have developed advanced techniques for measuring and improving the quality of online courses. Quality assurance processes utilize rigorous peer review, and examine key elements such as learner interaction, educational resources, available supports, accessibility, and continuous course improvement.¹⁹ Instructional designers and quality assurance reviewers should incorporate developmental education subject matter experts to build rubrics that take the unique characteristics and challenges of developmental learners into account.

Engage online learners proactively

Faculty teaching in an online environment should engage learners proactively throughout the learning experience, shaping asynchronous discussions and interacting frequently to offer supports.²⁰ This interaction could begin before the start of the course, through online “boot-camp” style programs

where students can get to know one another, refresh themselves on introductory or prerequisite material, and prepare for upcoming course content. Later, online interactions may also include opportunities for synchronous, “live” classroom events. Rasmussen College has successfully implemented live classroom sessions focused on specific competencies across its CBE programs. These sessions, typically offered three to seven times per week on a flexible basis, provide opportunities for students to engage each other and faculty on critical content.

Develop more evidence of best practices

Postsecondary CBE models across the country have given rise to a growing body of literature on the use of technology to support flexible and customized learning. Self-directed learning doesn’t always come naturally to students. Instructors may need to incorporate explicit instruction into their curriculum to ensure students learn how to take advantage of the acceleration opportunities inherent in CBE.

It will be necessary to run pilot programs to test successful approaches. Likewise, new initiatives and trials will be needed to develop an evidence base pointing the way toward effective use of technology for underprepared learners. “I would imagine that really strong, computer-based curriculum structured in the right way—with the instructional delivery fully optimized, the associated means of practice and application being robust and meaningful for students, the forums for interaction being more robust, and assessment being good—could be effective,” says Nicole Edgecombe of the Community College Research Center (CCRC). “I just don’t think we’ve seen that in the market.”

ASSESSMENT

Many experts told us that assessment is the biggest challenge facing CBE for underprepared learners. Students often enter a developmental education setting with a fragile or negative academic self-image. Many have experienced stigmatizing failure in high school, particularly on tests. Practitioners interviewed for this report identified test anxiety as a challenge that CBE providers must prepare to meet. Making progress in a CBE program would require developmental learners to engage with course content that has previously eluded them, potentially needing multiple assessment opportunities in order to demonstrate mastery (see box, “What Does ‘Mastery’ Mean?”).

On an institutional level, the assessment strategy for competency-based developmental education would need to align with its broader standards of readiness. Nicole Edgecombe of CCRC argues that CBE programs must be able to document that they meet learning objectives in articulation agreements between colleges, so that students will receive credit for CBE programs if they transfer to another institution.

In California, expansion of accelerated alternative math programs through the New Mathways initiative, which focuses on statistics and quantitative reasoning rather than algebra, was halted for months until it could be demonstrated that course rigor matched that of traditional math programs. More broadly, assessment measures student academic success. Stakeholders in assessment of developmental education outcomes include not only the students, but faculty who teach college-level academic or technical subjects, and administrators in the college’s regional or statewide ecosystem of postsecondary education.

Optimizing Assessment

Use performance assessments to empower learners

In a CBE program, assessments can be used to guide learning as well as to validate mastery. Known as formative assessments, they identify where students already demonstrate competency and where they need more time and support to master the material.

Implemented properly, they allow a developmental learner to see real-time progress data and to become familiar with the process of assessment. Formative assessments also alert instructors about whether and how to adjust their teaching.

Experts interviewed for this paper emphasized the importance of making formative assessments transparent to students, so that they understand what the assessments measure and how they relate to the goals of the program. For example, formative assessments can take the form of portfolios that document several iterations of a key project, illustrating changes learners incorporated while refining their thinking.²¹



Another important area of focus in CBE is the development of authentic assessment, in which the mode of assessment reflects the kind of performance a student will need to demonstrate in both subsequent academic study and in the workplace. Authentic assessments—sometimes called performance assessments—allow learners to demonstrate mastery in a real-world context.

What Does ‘Mastery’ Mean?

In a CBE program, students move forward as they master competencies. Mastery can be assessed in multiple ways. Most CBE programs use some version of authentic assessments, also known as performance assessments, to determine what students know and when they are ready to advance. Activities such as completing tasks, creating portfolios, or performing simulations are common ways for CBE students to demonstrate and apply proficiency.²²

What’s a Competency?

Competencies are measurable actions that someone can demonstrate: I can communicate, I can organize and plan, I can manage projects. Generally, competencies draw from some combination of knowledge, skills, and habits.

For example, a math assessment could involve calculation of treatment dosages or nurse-patient staffing ratios. Authentic assessment can not only reduce test anxiety by moving the assessment modality away from a high-stakes, standardized test

framework, it also can increase engagement by clearly linking performance to the learner’s education and career goals. Both authentic assessments and direct assessments attempt to prioritize the measurement of actual learning over time spent in the classroom as a metric of student progress.²³ However, authentic assessment has an advantage in that it also allows instructors to gain a more complete picture of what learners know and can do.

Incorporate techniques of self-regulated learning

In the CBE context, the challenges of continuous assessment, feedback, and revision mirror the self-regulated learning method in traditional developmental education, where it has shown promising results.²⁴ Teaching students to be self-regulated learners involves making them aware of their own learning processes. Self-regulated learning instructors ask students to estimate their likelihood of success on a task and build strategies to prepare based on previous performance information.

For example, students may be asked to make judgments about their level of preparedness before solving a math problem on a quiz, and then estimate their accuracy after completing it. Once quizzes are graded, students go back to compare their predictions with their outcomes and generate new written strategies for succeeding in subsequent attempts. One study of a self-regulated learning intervention in developmental mathematics showed significant gains in the course passing rate, and a 25 percent gain in pass rates on the math portion of the COMPASS placement examination compared to a control group.²⁵

Create a varied assessment strategy that documents rigor

As stated in the Competency-Based Education Network’s Quality Principles and Standards for Competency-Based Education Programs, “Individual assessments in CBE programs must be built within and aligned to an overarching assessment strategy for the credential being earned.”²⁶ This overarching set

of assessments should provide multiple opportunities and ways for learners to demonstrate competency, including both assessments for theory and for the ability to apply or transfer that knowledge in novel contexts. The assessment should be authentic, transparent, and reliable across graders, so that “passing” documents genuine mastery of that competency.

A review of assessments in use across leading CBE programs determined that many have developed ways to document competencies, as well as the

kinds of assessments that determine mastery of those competencies. However, CBE programs still must do much more to link assessment tasks with competencies and with subsequent student goals, such as credit accumulation, GPA, and completion.²⁷ Practitioners who wish to implement a CBE approach to developmental education will have to fill in this gap to ensure that assessments are well aligned with institutional and statewide standards of college readiness.

CURRICULUM, COMPETENCIES, AND CAREER

CBE can be an excellent option for serving underprepared learners because it focuses on learning and mastery, rather than time spent in class. Done well, CBE guarantees that students are ready for next-step academic and career opportunities by the time they graduate.

Underprepared learners often enter a postsecondary learning environment without all of the content knowledge or skills needed to succeed. This happens for many reasons, including the trend in low-income communities where students graduate with a high school diploma, but with huge gaps in basic skills. (In the K-12 environment, this is referred to as “social promotion.”) Most community college leaders and developmental educators agree that this is a key reason that remediation levels are so high.

CBE programs tend to start with and focus on a limited set of competencies, connected to whatever credential is offered. In these programs, learning experiences are constructed specifically for students to learn, practice, and eventually master this narrowly defined set of identified knowledge and skills. To be successful in this type of program, students must already possess the requisite information, competencies, and strategies. For students who advanced before they were ready, they may find it hard to persist or succeed in a CBE program, simply

because their last education setting did not prepare them well enough.

“Readiness” Competencies for Success in CBE Settings

Postsecondary programs, including developmental education programs, can help underprepared learners succeed by creating opportunities for students to learn, practice, and strengthen the kinds of competencies used most often in learning and work. Many employers and college leaders agree that some of the most important “readiness competencies” for school and the workplace are not content specific. These include organization and self-management skills, communication, critical thinking, problem solving, and collaboration. They are sometimes called metacognitive skills, “soft” skills, employability skills, or deeper learning outcomes. Not only are these skills valued by employers and education leaders, they make it easier for students to start, stay, and succeed in any academic program or job.²⁸

Historically, developmental education programs have focused on improving students' literacy and numeracy, or on test preparation. If developmental education applied a competency-based approach combined with a co-requisite model, students could improve their basic reading, writing, or math skills, while simultaneously strengthening critically important foundational skills for learning and working in any environment.

Aligning Curriculum, Competencies, and Career

Many underprepared learners attend a postsecondary program while juggling adult responsibilities, such as parenting and employment. Studying for a college degree represents a sacrifice of time and personal finances, in hopes of better career opportunities and the chance to get ahead.

A well-designed CBE program allows students to develop and master a set of competencies that link and lead to this sought-after academic and career advancement. In order for this to happen, program designers must plan with the end in mind. This is sometimes called the process of "backwards design" or "reverse engineering."

Here is how it is done: Program or curriculum designers start by asking what students will do once they graduate. What education or employment opportunities will students be eligible for because of their new credential? From here, the designers determine what students must know or be able to do by graduation in order to be ready for those identified opportunities. This leads to an explicit list of competencies (the competencies required for blueprint reading for welders, for example, or emergency preparedness for nurses) which can be directly mapped back to the target education and employment pathways. With competencies in hand, designers create learning experiences and tasks that enable students to learn, practice, and master those competencies. Matched with the other design elements, including flexibility and online or in-person learning, this pedagogical design process allows



students to focus on the learning that matters most for their careers and lives.

Most underprepared learners attend community colleges and public access universities. These are the same institutions that struggle financially. They tend to be the least able to allocate time and resources to go through this type of backwards-design process.²⁹ Even so, resource scarcity cannot excuse poorly designed CBE programs. When a program's curriculum does not align to future learning and career paths, credentials are proxy for completion, rather than currency for the labor market. Students leave with a credential, but not with the competencies and connections needed to move ahead.

There are a number of free resources available to support these financially strapped institutions. The following three frameworks have been constructed by CBE field leaders and are reputable and recognized across higher education. Any of these could be used to construct an aligned and quality competency-based framework, at little to no cost, for developmental or general education settings. Some examples include:

Degree Qualifications Profile

The Degree Qualifications Profile is an academic framework organized around learning outcomes at the associate's, bachelor's, and master's degree levels.

This framework works for any program, regardless of field or discipline.³⁰

Quality Principles and Standards for Competency-Based Education Programs

The Quality Principles and Standards were developed by the Competency-Based Education Network and sourced from the shared elements and practices of the nation's leading CBE programs. This framework provides specific components of high-quality CBE programs, aiding postsecondary actors to design, deliver, or scale their models.³¹

Connecting Credentials Framework

The Connecting Credentials Framework is a competency-based tool aimed at finding common reference points and alignment between various degrees, certificates, industry certifications, licenses, apprenticeships, badges, and other newer forms of credentials. This framework is particularly useful for providers and programs that serve underprepared learners in nontraditional ways. These can include apprenticeships, work-based learning, or noncredit programs. In the past several years, more than 30 community colleges have used this framework to develop competency-based offerings through the "Right Signals" project of the American Association of Community Colleges.



FIGURE 1: CHALLENGES AND SOLUTIONS IN CBE FOR UNDERPREPARED LEARNERS



CONCLUSION

Careful attention to design is critical to the success of CBE programs for underprepared college students. Fortunately, the fields of higher education and CBE have produced much to draw on to help inform design, including evidence-based practice, effective models, and early research on CBE.

Despite this strong foundation, there is much left to learn about how to meet the needs of underprepared college students in CBE programs. To that end, JFF is calling on the education community to test what works and share those findings. As for JFF, our next step is to pilot a CBE approach to developmental education using a corequisite model. We are actively seeking interested partners to join us in that endeavor.

ENDNOTES

1. Paul Attewell, David Lavin, Thurston Domina, and Tania Levey, "New Evidence on College Remediation," *Journal of Higher Education* 77, no. 5 (2006): 886-924.
2. Anderson, N., *Building on a Strong Foundation: Linking CBE with Innovations in Developmental Education Redesign* (Boston: Jobs for the Future, 2017).
3. Attewell et al.
4. Nate Anderson, *Building on a Strong Foundation: Linking CBE with Innovations in Developmental Education Redesign* (Boston: Jobs for the Future, 2017).
5. Kelle Parsons, Jessica Mason, and Matthew Soldner, *On the Path to Success: Early Evidence About the Efficacy of Postsecondary Competency-Based Education Programs* (Washington DC: American Institutes for Research, October 2016), 19.
6. Jennifer Wang, "We Did Research on the Student Perspective on Competency-Based Education. Here is What We Learned," *CompetencyWorks*, January 6, 2016, <http://www.competencyworks.org/higher-education-2/we-did-research-on-the-student-perspective-on-competency-based-education-here-is-what-we-learned/>.
7. Richard Garrett and Howard Lurie, *Deconstructing CBE: An Assessment of Institutional Activity, Goals, and Challenges in Higher Education* (Boston: Eduventures, 2016), 16.
8. Myk Garn, "Why We Need to Stop Using 'Self-Paced' in CBE Descriptions," *FRONTIERS*, August 10, 2016, <https://wcetfrontiers.org/2016/08/10/stop-using-self-paced-in-cbe/>.
9. Ann Person, *Best Practices in Competency-Based Education: Lessons from Three Colleges* (Princeton: Mathematica Policy Research, 2015); The three colleges are Sinclair Community College (Ohio), Broward Community College (Florida), and Austin Community College (Texas). They are participating in Round 2 of a Trade Adjustment Assistance Community College and Career Training grant.
10. Matthew Lewis et al., *Equity in Competency Education: Realizing the Potential, Overcoming the Obstacles* (Boston: Jobs for the Future, 2014).
11. Joe Deegan, *Next-Generation CBE: Supporting Success for Underprepared College Learners* (Boston: Jobs for the Future, 2018).
12. Eric Bettinger and Susanna Loeb, "Promises and Pitfalls of Online Education," *Evidence Speaks Reports* 2, no. 15 (June 2017); Shanna Smith Jaggars, *Online Learning: Does It Help Low-Income and Underprepared Students?* (New York: Community College Research Center, 2011).
13. Markeisha Grant, Rebecca Natow, and Vikash Reddy, "Anticipating and Addressing Challenges With Technology in Developmental Education," *EdSurge*, October 16, 2017, <https://www.edsurge.com/news/2017-10-16-anticipating-and-addressing-challenges-with-technology-in-developmental-education>.
14. Rebecca Natow, Vikash Reddy, and Markeisha Grant, *How and Why Higher Education Institutions Use Technology in Developmental Education Programming* (New York: Center for the Analysis of Postsecondary Readiness, Community College Research Center, 2017), <https://postsecondaryreadiness.org/wp-content/uploads/2017/09/how-why-higher-education-institutions-use-technology-developmental-education-programming.pdf>.
15. Aaron Brower, "Flexible Option: A Direct-Assessment Competency-Based Education Model," *Educause Review*, November 10, 2014, <https://er.educause.edu/articles/2014/11/flexible-option-a-directassessment-competencybased-education-model>.

16. T.S.M. Rainwater, "Teaching and learning in competency-based education courses and programs: faculty and student perspectives," *The Journal of Competency-Based Education* 1, no. 1 (April 2016): 42–47, <https://doi.org/10.1002/cbe2.1008>.
17. Bettinger and Loeb, "Promises and Pitfalls of Online Education"; Jaggars, *Online Learning: Does It Help Low-Income and Underprepared Students?*
18. Natow, Reddy, and Grant, *How and Why Higher Education Institutions Use Technology in Developmental Education Programming*.
19. Neil Butcher and Merridy Wilson-Strydom, *A Guide to Quality in Online Learning* (Dallas: Academic Partnerships, 2013), <http://www.chea.org/userfiles/uploads/A%20Guide%20to%20Quality%20in%20Online%20Learning.pdf>.
20. Cindy Miller, "Mission 'Impossible': Building Relationships with Online Students," *The evollution*, January 25, 2018, <https://evollution.com/revenue-streams/distance-online-learning/mission-impossible-building-relationships-with-online-students/>.
21. Barbara Thoeming, "New to Competency-Based Learning? Here're Five Ways to Assess It," *Ed Surge*, May 22, 2017, <https://www.edsurge.com/news/2017-05-22-new-to-competency-based-learning-here-re-five-ways-to-assess-it>.
22. These types of designs are covered in detail in: Natasha Jankowski and David Marshall, *Degrees that Matter: Moving Higher Education to a Learning Systems Paradigm* (Sterling, VA: Stylus Publishing, 2017).
23. Paul Fain, "Taking the Direct Path," *Inside Higher Ed*, February 21, 2014, <https://www.insidehighered.com/news/2014/02/21/direct-assessment-and-feds-take-competency-based-education>.
24. Cecilia Le, Rebecca E. Wolfe, and Adria Steinberg, *The Past and The Promise: Today's Competency Education Movement* (Boston: Jobs for the Future, 2014), <https://jfforg-prod-prime.s3.amazonaws.com/media/documents/The-Past-The-Promise-091514.pdf>.
25. Barry J. Zimmerman, Adam Moylan, John Hudesman, Niesha White, and Bert Flugman, "Enhancing self-reflection and mathematics achievement of at-risk urban technical college students" *Psychological Test and Assessment Modeling* 53, no. 1 (March 2011): 141-160.
26. *Quality Principles and Standards for Competency-Based Education Programs* (N.p.: Competency-Based Education Network, 2017), http://www.cbenetwork.org/sites/457/uploaded/files/CBE17_Quality_Standards_FINAL.pdf.
27. Katie Larsen McClarty and Matthew N. Gaertner, *Measuring Mastery: Best Practices for Assessment in Competency-Based Education* (Washington, DC: Center on Higher Education Reform, American Enterprise Institute, 2015).
28. Stephanie Malia Krauss, Karen J. Pittman, and Caitlin Johnson, *Ready by Design: The Science (and Art) of Youth Readiness* (Washington, DC: The Forum for Youth Investment, 2016).
29. Stephanie Malia Krauss, *How Competency-Based Education May Help Reduce our Nation's Toughest Inequities* (Indianapolis: Lumina Foundation, 2017).
30. Krauss, *How Competency-Based Education May Help Reduce our Nation's Toughest Inequities*.
31. *Quality Principles and Standards for Competency-Based Education Programs*.



EXPANDING CBE ACCESS
INCREASING SUCCESS

JFF

88 Broad St., 8th Floor, Boston, MA 02110

122 C St., NW, Suite 280, Washington, DC 20001

505 14th St., Suite 340, Oakland, CA 94612

Tel: 617-728-4446 **Web:** www.jff.org