Making the Case for Competency-Based Education

Early Lessons From the Field

**Matthew Soldner
and Kelle Parsons**

Competency-based education (CBE) programs in higher education hinge on two central principles: (1) The requirements to earn credentials are communicated as measurable learning outcomes and general competencies, and (2) learning is demonstrated through assessments of what students know, understand, and can do.

Educators who design, lead, and work in CBE programs at colleges and universities consider well-articulated competency statements, paired with high-quality assessments of students' progress toward proficiency or mastery, to be fundamental to good design. These are rigorous demands. But when programs are thoughtfully designed, educators can have confidence that learners' knowledge, skills, and abilities can be accurately measured and characterized—often well beyond what can be asserted for graduates of traditional instructional programs.

As CBE grows in prominence, leaders of CBE programs will be asked to demonstrate how students in those programs "stack up" against students in traditional non-CBE programs across an array of outcomes from learning to time-to-degree and affordability. Internal and external stakeholders alike will want compelling, rigorous evidence that CBE programs serve students well and, therefore, merit the continued support of the institution.

In this brief, American Institutes for Research (AIR) identifies seven concrete considerations for leaders of CBE programs who want to begin gathering and using rigorous evidence to make the case for CBE, both within their institution and to external audiences. These considerations for evaluating CBE are based on lessons from a collaborative research project with a set of colleges and universities that are at the forefront of offering CBE programs. The AIR collaborative includes public, private nonprofit, and for-profit institutions offering everything from workforce certificates to postbaccalaureate degrees and other credentials.

1   Create Clear Value Statements

Case making begins with being clear about the value a program creates for students and other stakeholders. Two questions can clarify the ways in which your program adds value:

Clarifying Questions	What were we trying to improve or address when we designed this program?
	How does addressing those issues help my institution meet its mission with integrity?

The value statement is likely to be unique and tailored to specific on- and off-campus stakeholders. Consider the following examples, generated from the answers to the clarifying questions:

- We believe our CBE program allows students to accelerate the process of developing and demonstrating mastery via high-quality assessments, so the amounts students pay and the debt they acquire are reduced *and* the institution is able to serve more students at the same time.

- We believe our CBE program's flexibility allows students who might not otherwise enroll in college, because of family and work demands, to complete a high-quality credential, so they are able to find jobs or receive promotions more easily.

Making a data-driven case that a program is delivering value is critical to the program's long-term sustainability. The questions guiding the evaluation must connect back to the program's specific value statements.

2   Bolster Research Partnerships

Most CBE programs are the result of collaboration within institutions. However, evaluating a program's value often requires expanding on those existing networks. Consider:

Clarifying Questions	Who at my institution is skilled in using evidence to improve decision making?
	Who at my institution is expert in the types of data most related to my program's value propositions?

Although every campus is different, answering these questions often requires inviting two groups of colleagues to the case-making effort. The first group is institutional research professionals or other experts in leveraging institutional data resources in support of applied research and managerial decision making. The second group is a broader cohort of functional area leaders, such as financial aid administrators, registrars, program faculty, and learning management system architects, who often have a deep knowledge of institutional practice and how such practices are reflected in the data systems they use on a regular basis. This group can be well suited to work through the key questions that must be addressed, from each angle, to build the case for CBE programs.

3   Clearly Describe Your Program

Not all CBE programs are alike, even on a single campus. In addition, although stakeholders at an institution offering CBE might be familiar with the design of its CBE program, people outside of the institution are likely less knowledgeable. Unfortunately, the lack of a commonly accepted vocabulary or taxonomy for talking about the main features of CBE programs makes describing them difficult.

An ability to clearly describe the CBE program during the case-making process is important. First, a clear description helps the audience understand how likely it is that your findings will generalize to the CBE models they have or are considering adopting. For instance, graduates of programs that are tightly aligned to industry standards might have different employment outcomes than gradates of more loosely defined academic programs. Second, a clear description helps bound expectations about what findings the audience might expect to see. For example, if a program does not allow learners to accelerate their academic progress, shortened time-to-completion is unlikely.

With the help of institutional partners, AIR has developed a descriptive rubric that assists practitioners in describing 18 key elements of CBE programs, including how learning outcomes and competencies are developed, how courses or competency units are structured, and how the various faculty and learning support roles that exist within programs are structured.

4   Identify Research Questions

With the help of research collaborators, value statements can be translated into one or more research questions. These questions provide a road map for building evidence that will form the case for a CBE program. Using the value statement above as an example, we can identify three potential questions for research, each corresponding to an element of the assertion:

Value Proposition	Potential Questions for Research
We believe our CBE program allows	
A students to accelerate the process of developing and demonstrating mastery, →	How does CBE participants' time-to-completion compare to similar peers' time-to-completion in non-CBE programs?
B so students' cost and debt are reduced *and* →	How does the total amount paid by CBE completers compare to the total amount paid by similar peers in non-CBE programs?
C the institution is able to serve more students at the same time. →	How many students were enrolled in the program of study this year compared to the past year?

Unfortunately, the process of identifying questions that lend themselves to research is not as simple as translating the value statements into questions for research. To ensure a question is suitable for research, consider:

Clarifying Questions	Is the question straightforward and easily understood? Will answering the question matter to stakeholders? Are the data needed to answer the question, including the outcomes we hope to observe, available from campus data systems?

5   Create Valid Comparison Groups

Answers to the research questions identified above can be understood only in the context of a comparison group, which rigorous evaluations of all types demand. Most often, these groups comprise students in traditional instructional programs, against whom learners in CBE programs are compared.[1]

To have the greatest confidence in results about CBE's effects on student outcomes, consider the following questions:

Clarifying Questions	About programs. Are students in the comparison group enrolled in a program that is of similar quality, rigor, and type as the CBE program? Does the comparison program have the same broad objectives as the CBE program? About students. Are students in the CBE and comparison programs similar on observable characteristics that are likely associated with the outcomes proposed to be measured? Are there enough students in this program to provide confidence in the results? Are students in the CBE and comparison programs similar on any observable characteristic that is likely associated with their decision to choose one type of program over the other *and* that could influence student outcomes?

Clarifying questions concerning *programs* are designed to help ensure that program-to-program comparisons are fundamentally fair. This is meant to avoid comparing programs of vastly different quality or comparing programs that are not designed to achieve the same ends. Determining whether these conditions have been met is often left to the best judgment of campus experts.

In contrast, the similarity of *students* in both CBE and comparison programs—and the relationships between these characteristics and learners' choices about CBE versus traditional instructional programs—can be verified quantitatively. Student characteristics to explore include but are not limited to: (1) demographic characteristics, such as ethnicity, race, gender, family income,

employment status, and age at enrollment and (2) prior academic experiences, such as college attendance, existing grade point averages, and numbers of transfer credits.

Unfortunately, many of the student characteristics most important for creating a valid comparison group—those characteristics likely to be associated with choice of program and subsequent outcomes, such as motivations and dispositions—often are not collected by institutions in a systematic manner. AIR and its partner colleges and universities offering CBE programs are working to develop creative solutions to this evaluation obstacle.

6   Use Appropriate Comparison Methods

There is no single best method for contrasting outcomes of CBE program participants with the outcomes of their peers in traditional programs. Instead, there is a set of options that ranges from less to more rigorous. The best choice among these options should be determined by what is feasible given available resources, standards of evidence acceptable to each institution, and what is possible based on the data already collected.

On-campus collaborators, such as institutional research staff and quantitative researchers on faculty, often can help determine which method is best for each institution's situation. External research partners, such as AIR, also can help determine the right approach. Two approaches are common:

- Matching designs, in which CBE ("treatment") students would be contrasted with the subset of potential comparison group members (students in traditional programs) who are most like them

- Time series designs, in which institutional- or program-level metrics would be contrasted before and after a CBE program has been implemented

7   Make Sense of the Results and Communicate the Story Simply

After the appropriate design has been selected, institutional researchers can begin analyzing the data they have gathered. However, case making has a final, important step: making sense of the results and communicating that story simply.

It can be helpful to reconvene the group of research partners to interpret the results together, leveraging the background and perspective of each stakeholder. For instance, financial aid staff might have important knowledge about the reason the average total cost of the program might be trending in a particular direction for CBE students, which program leaders and institutional researchers may not know. This process also might raise new research questions, which can be investigated in a second cycle of this process.

Although the full process of using rigorous evaluation to build a case could take weeks or months, students and their families, faculty members, higher education leaders, state and federal policymakers, and other stakeholders often have only a few minutes to understand the findings. This heightens the importance of making sure the story that is told is simple, accurate, and compelling. For instance, Exhibit A uses data from a recent AIR research project to demonstrate how research findings can be communicated to lay audiences as a single-page infographic.

Even though the first—and even primary—description of the work may take the form of an infographic (like Exhibit A), researchers and other practitioners can benefit from more thorough descriptions. As CBE has grown nationally, outlets for more technical publications, including journal-quality research articles, have begun to emerge. Western Governors University publishes the *Journal of Competency-Based Education*, which is one such outlet for publishing research on the efficacy of CBE programs.[2]

Want More Information?

AIR is active in the CBE research community and is committed to building partnerships to gather evidence regarding the effectiveness of CBE programs. For more information, please contact Matt Soldner (msoldner@air.org) or Kelle Parsons (kparsons@air.org).

Acknowledgments

Exhibit A. Sample Infographic

Is There Evidence CBE Programs Are Serving New Traditional Learners?

Background

CBE programs have the potential to allow learners who might not otherwise enroll in postsecondary education due to the demands from family and work to pursue and complete postsecondary credential. But do they?

1. A set of leading CBE programs, with the assistance of American Institutes for Research, collected data about who is enrolling in their CBE programs.

2. They explored CBE learner characteristics, including whether they had prior college credit and were from lower-income families.

Early Findings

>70% Typical share of learners with prior college credit.

>30% Typical share of undergraduate students receiving Pell grants.

Data Gaps

Working adults are a population many CBE programs hope to serve; unfortunately, many institutions do not currently capture any information about the learners' current employment status, or the workforce outcomes learners hope to achieve.

The Takeaway

There is early evidence for the case that CBE programs are serving learners who are adults with previous college experience but no degree, often from low-income backgrounds.

Source: American Institutes for Research, Strengthening Research and Policy on Postsecondary CBE project

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End Notes

[1] The most rigorous forms of evaluation randomly assign students to intervention and control conditions and are referred to as randomized controlled trials, or true experiments. Because students typically self-select into CBE programs, we do not discuss them here and instead focus on quasi experiments that do not include random assignment. Random assignment might be appropriate when, for example, a program wishes to contrast two different CBE implementations, randomly assigning students who have already chosen CBE to the intervention (new) and control (status quo) conditions.

[2] More information about the journal can be found at http://www.wgu.edu/about_WGU/competency_based_education_journal, and it is indexed at http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)2379-6154