CBE Tools

Scenario

After five years in the military, Mark is returning to college in the fall. For three years, he worked in communications, maintaining a website for Air Force personnel and their families. He has completed three online college courses, all related to web development. Because Mark is not clear about a major and because he will need to meet core requirements for a degree, his advisor suggests he start his coursework now, using the university’s new competency-based education (CBE) tools.

Using the online tool Competency Tutor, Mark finds he can leverage what he has learned from his job to move quickly through basic English and communications courses. He easily passes nearly every pretest, allowing him to skip the lesson modules. When he scores less on the punctuation pretest than the required 80 percent, a tutorial brings him up to speed. He demonstrates his competency by scoring 98 percent in the subsequent assessment.

Meanwhile, his long-time interest in history, particularly regarding military events, allows him to zip through basic courses in that subject as well.

When he starts classes in the fall, Mark uses a tool called Curriculum Guide. His interests are far ranging, and the tool suggests ways his eclectic choice of courses—creative writing, the psychology of trauma, and organizational management—might fit together in a degree plan.

The following year, the CBE tool called Project Match-UP suggests some ways Mark can get CBE credit for completing an internship or a major project. He selects a project called The Power of Art. He will work with middle-school students in a high-risk urban environment to see whether intense arts programs might reduce gang activity.

In just over four years, Mark has acquired a BA in cross-disciplinary studies and an MA in art therapy. His curiosity and determination to embrace educational opportunities have landed him an internship this year with the school’s Entrepreneurship Lab, where he is currently exploring options for funding an arts program he has put together for those suffering from PTSD.

1 What is it?

As competency-based education (CBE) programs become more prevalent, tools have emerged to support them. These tools range from software utilities that enable a single type of student project to complex, custom-built, campus-wide solutions that accommodate multiple degree programs. These tools support scaling, thus fostering much of the progress being made in CBE while suggesting extended potential in the current educational ecosystem. They help accommodate scheduling flexibility for CBE students who have obligations to job and family, provide automated monitoring of student progress through self-directed coursework, and assist with the validation of skills that students may have acquired during outside school. For all students, the tools’ sophisticated analytics and their focus on individual projects enable highly individualized education tailored to individual needs and interests.

2 How does it work?

The competency-based education movement has engendered tools that cover a wide spectrum of uses. They may establish competencies by defining and documenting learning outcomes, map competencies to the curriculum, track student progress, or certify prior knowledge. Some tools focus on a single proficiency or assist in completing a specific type of project. They may support niche subjects or monitor progress in a subset of skills. One tool, a free language-learning system called Duolingo tracks competency in language abilities as students translate documents. Other types of CBE tools are adaptable for wide use in multiple topic areas. The Learning Mastery Gradebook, for example, integrates with the Canvas LMS. This mastery-based gradebook exists alongside the traditional gradebook and offers a way to track mastery via learning outcomes as well as traditional scoring. The instructor uses the tool to define learning outcomes, linking them to assessments and rubrics. The Khan Academy supports CBE with sophisticated tools that include video tutorials, practice problems, and a learning dashboard for tracking one’s progress through the free courses. Students who achieve competency at the Khan Academy may need to demonstrate that competency to get credit in CBE programs elsewhere.
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Who’s doing it?

College for America (CfA), from Southern New Hampshire University, uses a competency-based system called CfA Learning Environment, which tracks student direction, efforts, and needs. In the CfA competency-based program, students work on individual projects rather than classroom-based coursework. The web-based data management and reporting service allows students to submit assignments, monitor financial aid status, schedule projects, set reminders, access college resources, connect with learning communities, and contact their learning coach. Competencies are mapped to credit hours for traditional university courses, and automated triggers can be set by administrators to help students in the competency-based program stay on track. To track competency-based learning in the trades and healthcare, the British Columbia Post-Secondary Education Office is using tools such as Totara LMS and IOMAD, which were designed to identify skills and competencies for enterprise employees. Individuals seeking a trade credential can complete an application and self-assessment, supplying evidence of competency in each area. Gaps are identified by human consultants, and the system generates a personalized education plan to address these gaps.

Why is it significant?

These tools have the potential to change the character and administration of CBE programs. Tools that analyze student abilities and validate existing knowledge can reduce the cost and time of a degree, making college more viable for many. As they empower students, the tools can free faculty from administrative chores, leaving more time for teaching. The growth of analytics has enabled the development of numerous CBE tools that monitor student progress and intervene where appropriate, helping students take responsibility for shaping their own learning paths. The increased student and program support afforded by CBE tools may aid the shift from seat time to demonstrated knowledge and concrete outcomes. Meanwhile, these tools can also support organizational learning, helping institutions evaluate the effectiveness of programs and how to improve them. Perhaps the most significant change is that CBE tools could create new opportunities for students and faculty to explore learning alternatives to a traditional lecture course.

What are the downsides?

Ideally, CBE programs and the tools that support them would develop in tandem. Unfortunately, faculty and administrators might struggle to find suitable software for their CBE needs and may be obliged to adapt what is available. Many tools may be appropriate for a single project or course but are not linked, managed, and accessible across the campus. While tools can evaluate what a student has learned and suggest what he or she should explore next, an education should comprise more than a list of competencies. If CBE tools are employed without support from faculty and interaction with peers, a student could lose the experience of being part of a community of learning.

Where is it going?

A broader range of CBE tools with wider utility will allow more institutions to experiment with and implement CBE. CBE tools are set to migrate from individual courses to institutional and campus-wide utility, integrating more frequently with the LMS. As the tools enter wider use, students may see course descriptions in enough detail to demonstrate competencies for credit in a wide array of courses across the curriculum. Changes to the curriculum might include more coursework focused on demonstrable skills and projects driven by individual student interests, in part because the tools that support CBE make tracking such work more feasible for instructors. All this should encourage the development of increasingly robust tools, leading to more competency-based degree programs. This symbiotic cycle will mean more students can complete degrees and more can return throughout their lives to update or acquire additional skills and knowledge to complement their education.

What are the implications for teaching and learning?

Competency-based education and the tools that enable it oblige faculty and administrators to take a more holistic approach to education, embracing the view that education emerges from many different life experiences. The tools enable widespread changes that could result in a rethinking of pedagogy, assessment, and the concept of the credit hour, leading to new models designed to meet the requirements of accrediting bodies. The tools used in CBE programs can do more than track student efforts, remind them to turn in their work, present interesting side-roads for study, evaluate their efforts, and discover what it is they need to know. They make it feasible for colleges and universities to assess and accept previous learning into an integrated degree plan, in which knowledge gained from a variety of sources can become part of a formal education.