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Competency-based Education Brief

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Introduction

The concept of competency-based education is not new or foreign to traditional universities. Often curricula are developed around a defined set of competencies (or learning outcomes) and course content, assignments, and exams are designed to address those competencies. This is also the approach used for gtPathways. For each gtPathways content area, specific content and competencies are identified. A course must address the relevant content and competencies to be approved for guaranteed general education transfer credit.

However, competency-based education (CBE), as discussed here, is not meant to capture programs that are developed by aligning course content with specific learning outcomes but still rely on the traditional course structure. The defining characteristic of competency-based education as described in this document is that it involves the *deconstruction* of a course or field of study into a set of competencies around which individual assessments are designed. A specified level of proficiency must be achieved on *each* assessment for a student to earn credit or a credential.

Beyond this core concept, there is significant flexibility in program design. CBE programs may vary in their mode of delivery, degree of faculty engagement, use of instructional materials, availability of learning resources, methods of assessment, definitions of proficiency (or “mastery”), schedule and program pace, and tuition model. Content and competencies may address different levels of the Bloom Taxonomy of educational goals. The CBE programs described below illustrate the variability that exists in program design.

This document provides an overview of CBE programs recently implemented by several large public universities, including the University of Wisconsin, Purdue University, the University of Texas, the University of Michigan, and Northern Arizona University. It also gives a synopsis of how CBE programs operate at Western Governor’s University and Southern New Hampshire University. Finally, it offers a brief summary of actions taken by the U.S. Department of Education and Higher Learning Commission with respect to competency-based programs.

General Observations

- The role of faculty in developing and delivering competency-based degree programs is unclear. For the examples included below, available information offers little insight about how faculty members are involved in creating content, assessing competency, or interacting with students. This is despite the fact that HLC guidelines suggest that substantive faculty interaction is required for CBE program approval. (HLC accredits Wisconsin, Purdue, Michigan, and Northern Arizona.)
- Developing content and assessments, determining standards for mastery, and mapping to existing courses and credit hours is a very time-consuming, labor intensive process.
- The implementation of competency-based education affects every part of student services and business operations. Systems and processes developed by the admissions, registrar, bursar, financial aid, and advising offices must all be adapted to accommodate programs that deviate from standard rules and procedures.

- Developing and delivering competency-based programs will likely require new resources (instructional designers, IT support, advisors, coaches/mentors, marketing staff, etc.). It would be difficult for existing personnel to perform these functions, even if starting on a small scale. This is in addition to resources needed for faculty course buyouts or new faculty hires.
- Although accrediting agencies and the Department of Education have attempted to clarify requirements around competency-based education, approval processes still cause confusion and require additional time and attention.

For all of the reasons stated above, bringing competency-based education to scale is challenging. Traditional universities that are experimenting with CBE models are starting with a very limited number of programs.

Examples of Competency-based Education Programs

University of Wisconsin. In 2013, the University of Wisconsin System introduced the [Wisconsin Flexible Option](#), a program that allows students to earn credit through competency-based education. Current offerings include four degree programs and five certificate programs. The degree programs include an Associate of Arts and Science, offered by the UW Colleges (a network of 13 freshman/sophomore campuses) and three bachelors' degree programs offered by UW-Milwaukee – an RN to BSN degree, B.S. in Biomedical Sciences Diagnostic Imaging, and a B.S. in Information Science and Technology. The certificate programs are Business and Technical Communications, Global Skills, Sales, Project Management, and Substance Use Disorders Counselor.

The degree programs are characterized as degree completion programs. The Nursing degree is aimed at students with two-year degrees; advanced nursing courses are competency-based offerings. The Biomedical Sciences degree program is aimed individuals working in the field and awards 60 credits for their experience;¹ the remaining program requirements can be met through CBE. The Information Sciences program allows students to earn credits through the major through competency-based modules, but other credits must be earned through traditional coursework or can be completed in the CBE associate's degree program.

Flexible Option program offerings are online² and self-paced. Students enroll for a three-month subscription period, and new periods start at the beginning of every month. They are assigned an academic success coach to help them create a learning plan and timeline. Each degree and certificate program includes a number of competency sets; a competency set is equivalent to a traditional college course. For example, the undergraduate degree in Information Science & Technology includes competency sets in web design, systems analysis, database information systems, and information resources for research. Students must still complete the university's general education requirements to earn a bachelor's degree through

¹ The program is for adult learners with several years of healthcare experience and an active registry with the American Registry for Diagnostic Medical Sonography, American Registry of Magnetic Resonance Imaging Technologists, American Registry of Radiologic Technologists, or Cardiovascular Credentialing International. Students are awarded 60 credits once their registry is confirmed.

² Some programs require hands-on or clinical experience.

the Flexible Option, but competency sets offered through the associate's degree program can be used to meet these requirements.

Program faculty and staff determine the competencies, assessments, and appropriate levels of mastery for all programs. Some assessments are based on tests and papers used in traditional classrooms. Some require a portfolio assessment and others require observations of clinical demonstrations or other experiences. A psychometrician was hired to help plan, coordinate, and execute activities to ensure the accuracy and validity of assessments and gather data to improve the assessment process. For most programs, two attempts to successfully demonstrate mastery of a given assessment are allowed. Students can re-enroll in a competency set only once. Students earn credit by passing the assessments for a given competency set. If a student fails a competency in a competency set, mastery for that competency set is not earned. Faculty members were asked to create three to six versions for each assessment so that a student can re-take an assessment for a given competency without being presented with the same assessment. For each subscription period, a student receives a letter grade that reflects the level of mastery demonstrated in each competency set. A cumulative grade point average is also calculated for all work completed at a UW institution. Grade point averages are calculated and transcribed separately for each institution attended.

Because the Flex Option would affect the operations of nearly all business units, UW-Extension supports the administration of the program, serving admissions, registrar, financial aid, and bursar functions.

Students pay a flat tuition rate and can choose between an "all-you-can-learn" option and a "single competency set" option. Under the first option, students can enroll in as many competency sets as they choose within a three month period for a flat rate of \$2,250. Under the second option, students enroll in a single competency set for a three-month period at a flat rate of \$900. Some Flexible Option programs are eligible for federal financial aid.

Total development costs and source of funds is unclear. A March 2015 report to the Higher Learning Commission (HLC) stated that over two fiscal years (2012-13 and 2013-14), Flexible Option startup costs totaled \$6.8 million and that the UW system committed an additional \$14.3 million to develop programs going forward. Other sources indicate that the system received a \$1.2 million grant from the Lumina Foundation, \$650,000 from the state in FY 2013-14 and \$1.3 million from the state in FY 2014-15. It's unclear whether any of these funds are included in the startup costs mentioned in the HLC report.

Purdue University. In March 2016, the Purdue University received final approval of a competency-based Bachelor of Science degree in [Transdisciplinary Studies](#). The program, offered through the Polytechnic Institute (formerly the College of Technology), is aimed at traditional students. It combines content in technical disciplines such as computing, construction management, engineering, and aviation with content in the social sciences, humanities, and business. The program is customizable – incoming student work one-on-one with a faculty mentor to create personalized plans of study. Faculty spent a year to develop the degree proposal.

Students enroll in credit-based seminar courses and design labs, but the development of an electronic portfolio is a primary component of the program. Students can move through offerings as soon as they master required concepts; the portfolio includes links to a set of badges that demonstrate mastery. To graduate, students must master each of eight broadly defined competencies: design thinking; systems thinking; effective communication; envision and work independently; social interaction and teamwork; ethical reasoning; innovation and creativity; and disciplinary knowledge.

Transcripts do not reflect courses or course grades. They reflect competencies that are clustered into groups. Credit is awarded for competencies that have been mastered. Transcripts are accompanied by a digital portfolio that shows the competencies and the work the student has completed to demonstrate mastery.

The Purdue University Office of the President provided \$500,000 to create the program. The involvement of a faculty mentor and customizable nature of the program are touted as significant positives of the program but are also noted as challenges to bringing the model to scale.

University of Texas System. In November 2014, higher education news sources reported that the University of Texas (UT) System would launch [competency-based programs](#). The first program, a Bachelor of Science degree in Biomedical Sciences, started in Fall 2015. Although labeled “competency based,” the program is not self-paced or self-directed. It does include a significant online component and offers an accelerated option.

The BS in [Biomedical Sciences](#) is a hybrid program based on an existing degree offered by UT Rio Grande Valley. It was restructured to include weekly face-to-face classroom time but also allow students to do much of their work online and choose a three-year or four-year path to completion. Approximately 80 percent of the 129 current students are on an accelerated track (taking the equivalent of 18-19 credit hours). To further accelerate time to degree, UT plans to deliver foundational courses as dual enrollment courses in high schools. All instructional content is delivered on an iPad and students have access to a life coach and an instructional facilitator. The program does not use portfolios and credit by exam is not central to the program but students do receive both a competency-based transcript and a conventional graded transcript. Students pay the standard tuition rate, which is credit hour based.

In March 2016, the UT System announced that it would add nine more competency-based degrees and certificates in the areas of engineering, computer science, business, and criminal justice. They are still in the development phase, but will likely include both hybrid and fully online modalities and various types of credentials (e.g. modules, certificates, specializations, degrees).

All of the programs will be offered on Total Educational Experience, or “TEX” – a mobile learning platform that was developed internally. It integrates data from a number of systems and provides real-time data on student performance. The entire initiative is being developed by the Institute for Transformational Learning, which was established by the Board of Regents in 2012 as an “incubator for educational innovation.” Its mission is to work with campus

partners to “develop transformational and sustainable models of education that are student-centered, industry-aligned, personalized, data-driven and salable.” The board allocated \$50 million to the institute.

University of Michigan. In September 2014, the University of Michigan Medical School received approval for a competency-based [Master of Health Professions Education](#) (MHPE). The program is designed for individuals who have a degree in the health professions and want to advance their roles as health educators.

Students can use their experience to demonstrate competence in health professions education. The program defines 12 competencies across 5 domains: theory of teaching and learning; teaching practice; assessment and evaluation; research and scholarship; and leadership. Students are assigned a mentor to help them develop an individualized learning plan and advise them throughout the duration of the program. Faculty members guide students in completing “Entrustable Professional Activities” (EPAs). EPAs are mapped to the 12 individual competencies and used to demonstrate mastery. Students complete projects from their workplace with guidance from program faculty via interactive online group discussions, face to face meetings, and/or phone calls.

The program requires a minimum of 32 credit hours. One credit is awarded for each completed EPA. Students must address each of the 12 competencies at least twice (some competencies will be addressed more than twice). An assessment committee reviews EPAs to determine if credit can be awarded toward program completion. Students can complete the EPAs in any sequence. Examples of EPAs include: design and implement a curricular intervention; design and implement a research study; create a learning plan; solicit feedback on one’s leadership and teaching portfolio from multiple observers and critically reflect on it; and select a learning outcome and design, select, and develop an appropriate assessment method and application. Evidence of competence from prior experience can also be applied towards credit in the program.

Although the program is not time-based, students register and pay tuition for six semesters. Tuition is paid in six equal installments, usually twice per year (Fall, Winter). If a student plans to complete the program in two years, they may register for three semesters per year (Fall, Winter, Spring/Summer).

Northern Arizona University. Northern Arizona University launched a “[Personalized Learning](#)” program in June 2013. It offers self-paced online bachelor’s degrees in three areas: Liberal Arts, Computer Information and Technology, and Small Business Administration. Courses are split into small focused lessons that can be taken at any time, in any order. Lessons are automated but students can interact with university instructors or peers in online social spaces. Students demonstrate competency either by taking a pre-test or a test at the end of a lesson. Competency is met by achieving an 86% “level of mastery.” Lessons are grouped into competencies; when all lessons are complete, the student earns a degree.

Faculty mapped student learning outcomes from 3-credit course offerings to competencies in the new online programs; when students complete lessons they earn credit equivalencies to traditional courses, which makes the work transferrable. Students receive both a conventional transcript and a competency-based report. The conventional transcript reflects the traditional course equivalencies. The competency-based report identifies content mastery and skill proficiency according to the program's defined competencies.

Students are charged a flat tuition rate of \$2,500 for a 6-month subscription. There are no fees or textbook costs and there is no minimum or maximum number of lessons to complete during a six month period. There are no refund or withdrawal options within a six month subscription period. Programs are financial aid eligible. The university received a \$1 million grant from the Bill & Melinda Gates Foundation to help develop the program.

Western Governor's University. [Western Governor's University](#) (WGU) was established in 1995 by governors of 19 states. All programs are online and competency-based. WGU offers several degrees in education, including bachelor's degree programs that lead to teacher licensure, post-baccalaureate teacher licensure programs, master's degrees programs with teacher licensure, and master's degree programs for licensed teachers. It also offers several bachelors and master's degrees in business, information technology, and health care.

Each student is assigned a faculty mentor to help develop a personalized degree plan and determine the learning resources needed to develop and demonstrate competency in a subject area. Students are required to demonstrate skills and knowledge by completing the assessments for each course. There are two types of assessments: performance assessments and objective assessments. Performance assessments generally contain multiple scored tasks such as projects, essays, and research papers. Objective assessments include multiple-choice items, multiple-selection items, matching, short answer, drag-and-drop, and point-and-click item types, as well as case study and video-based items. WGU equates competency with the grade level of "B."

Competency units are comparable to a traditional credit hour. There is no upward limit on how many units a student can complete in a six-month term, however there is a minimum. Students must be enrolled full-time, which means an undergraduate must be enrolled for at least 12 competency units per term and a graduate student must be enrolled for at least 8 units. This is the "standard path" and students are considered to be making "on time progress" if they complete the minimum number of competency units per term. On time progress serves as a baseline from which students can accelerate their programs. The number of competency units needed to complete a degree varies by program but most bachelor's degrees require 120 to 122 units.

WGU refers to their instructional model as a "disaggregated faculty model" that divides responsibilities into various roles: student mentors, course mentors, product managers, council members, and adjunct faculty. Student mentors provide overall academic support of candidates; course mentors provide content expertise and instructional help to candidates as they work to complete courses of study and prepare for assessment of competence; product managers develop, manage, and provide ongoing evaluation of academic programs and

curriculum; council members provide academic expertise and industry experience; and adjunct faculty evaluate assessments and perform clinical observation and evaluation of candidates in the Teachers College and in the Nursing Programs.

A student can start at the beginning of each month; this marks the beginning a new term for that student. Tuition is billed at a flat rate for a six month term and covers all coursework completed in that time. Tuition rates vary by program but most programs cost \$2,890 per term. The tuition rate for the BSN and MSN in Nursing and all master's degrees in Business is \$3,250. The BS in Nursing is the highest cost program, with a tuition rate of \$4,250 per term.

Southern New Hampshire University. Southern New Hampshire University (SNHU), a private nonprofit institution, created a separate college to deliver competency-based degrees – [College for America](#) (CfA). Programs are aimed at working adults and are available *only* to employees of CfA business partners. The college claims relationships with more than 100 employers (public and private sector) nationwide. Programs are financial aid eligible, but many employers cover tuition, which is \$3,000 per year. Program offerings include two associate's degree programs (Healthcare Management and a General Studies degree with a concentration in Business) and three bachelors' degrees (Communications, Healthcare Management, and Management). Each of the three bachelor's degree programs has two distinct areas of concentration.

Students receive support from learning coaches who help them navigate the program. Projects are completed in the work environment and assessed by CfA reviewers using a defined set of rubrics. Reviewers are selected based on their subject matter experience and experience in online education. For each rubric category, a student either meets the criterion or not. To complete a project, a student must meet every criterion of the rubric. A student may revise and resubmit work until all rubric criteria have been satisfied.

Students in the associate of arts program are required to master 120 *core* competencies in nine areas: communication; critical and creative thinking; quantitative skills; digital fluency and information literacy; personal effectiveness; ethics and social responsibility; teamwork and collaboration; business essentials; and science, society and culture. Competency is demonstrated by completing online projects that count toward a defined goal. Each goal has between five and eight competencies. Each goal qualifies for three credit hours. An associate's degree consists of 20 goals (equivalent to 60 credit hours).

After completing the associate's degree program (or transferring at least 60 credits), students in the bachelor's degree programs must master 120 *advanced* competencies. Again, competencies are demonstrated by completing online projects that count toward a goal. One goal addresses multiple competencies. There are 20 advanced goals (equivalent to 60 credit hours, which are added to the credit hours earned at the associate's level or transferred in).

While enrolled in the CfA program, students cannot enroll in other academic programs at SNHU. CfA programs are considered to be full-time programs; a student is expected to master at least eight competencies during each six-month term. A student can accelerate the program by taking on more projects during a term.

Transcripts reflect the mastered competencies, but are also mapped directly to SNHU courses. A student's official transcript shows each course equivalency the student has earned with a grade of "MA" for mastery. The completion of each goal is equal to three credit hours in a corresponding SNHU course. The transcript key indicates that "MA" is equivalent to an "A" grade. Up to 60 credits are awarded for the AA degree and up to 60 additional credits for the advanced competencies leading to the BA degree, for a total of 120 credits.

CBE Program Approval – Federal Financial Aid and Accreditation

In 2005 the Higher Education Act of 1965 was amended to allow federal aid for students enrolled in competency-based programs. It now defines programs that qualify for federal financial aid to include those that measure student learning by "direct assessment" rather than credit hours. According to [federal regulations](#), a direct assessment program is "an instructional program that, in lieu of credit hours or clock hours as a measure of student learning, utilizes direct assessment of student learning, or recognizes the direct assessment of student learning by others." Despite the change, institutions offering CBE opted to tie competencies to credit hours, thereby avoiding the new rules which were seen as overly complex.

In March 2013, the Department of Education issued a [Dear Colleague letter](#) to clarify requirements for approval of direct assessment programs. However, a September 2014 [audit report](#) released by the Department of Education Office of Inspector General criticized the approval process and issued a number of recommendations to improve practices. In December 2014, another [Dear Colleague letter](#) was issued which included more detailed requirements for approval. It also addressed the role of accreditors in approving direct assessment programs.

The actions of the Department of Education led to a response from the regional accrediting bodies. In July 2015, the Council of Regional Accrediting Commissions issued a [common framework](#) for how to assess and approve competency-based programs. In September 2015, the Higher Learning Commission (HLC) implemented new procedures for approving competency-based programs and adopted a [policy change](#) in February 2016 to formalize those procedures.

HLC policy specifically requires institutions to seek commission approval to add competency-based programs. The policy recognizes that many institutions embed competency-based curricula within course or credit-based programs while others opt for the direct assessment approach and some choose a hybrid approach. Regardless of the model employed, HLC [states](#) that institutions should demonstrate that their competency-based programs include:

- a) Faculty interaction with students that is initiated on a regular basis by one or more faculty members who have subject matter expertise in the discipline of the course or program (and not performed by success coaches, academic mentors, graduate students or other individuals even if they have some subject matter expertise);

- b) Regular and substantive faculty interaction that is explicitly designed in the curriculum and can be documented; and that the quality of this interaction is evaluated in curriculum assessment and program review;
- c) Assessment of “credit hour equivalencies” for the competencies and student learning outcomes of the program in relation to the typical assignment of credit hours across the institution.

HLC also offers “Elements of Good Practice in Competency-based Education” that relate to program structure; student support services; eligibility, development and engagement of faculty; assessment of student learning; and transcription of student work, among other topics. It is expected that institutions applying for program approval will also demonstrate that they follow the described practices.

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