Chapter 13
Designing and Developing Skills- and Competency-Based Environments:
Micro and Macro Strategies

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ABSTRACT

Institutions approach the design and development of competency-based programs through macro- and micro-level strategies. From high level, system-focused decisions to individual course instructional strategies, administrators, faculty, and designers must maintain focus on the needs of the learner as they address issues and barriers of academic policies and institutional infrastructure. A variety of strategies at the macro- and micro-level must be incorporated into the design, development, and implementation of a competency-based course and program. Following guidance offered through standards, guidelines, and best practices, competency-based courses and programs can meet the needs of students as they demonstrate their competence in course and program content.

INTRODUCTION

Competency-based education (CBE) is not a new concept in higher education; it has, however, in the early 21st century, been the focus of considerable interest -- especially when considering the needs of adults who are returning to college to complete academic credentials in an environment, or in an ecosystem with multiple integrated systems, where higher education has been further challenged to meet the future needs of the workplace (Sluijsmans, Prins, & Martens, 2006; Symons, 2017). A further subset of

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CBE relates to microlearning, where students focus on specific skills that can be immediately practiced. Adults desiring to earn a postsecondary academic credential often have had academic, professional, and life experiences that can be used to jumpstart the next step of their journey and their re-engagement with the academic world.

The use of competency-based instruction, as part of an overall program, enables a student to show what s/he knows about course content through formal assessment that permits the student to clearly demonstrate competence. A student has the opportunity to "test out" of known content or deeply engage in unknown content where time is not the primary course-based factor. Erisman and Steele (2015) identify the need for institutions to create systems that are "affordable, flexible, and student centered" (p. 1) that can specifically serve the needs of adults who want (or need) to return to college. CBE programs fill the gap between current traditional higher education systems and innovative next steps.

Microlearning has been characterized as a form of CBE (Zhang & West, 2020) and can be thought of as personalized instruction that is delivered in short periods of time consisting of "small chunks, focused on delivering skill-based and just-in-time knowledge" (p. 310) that specifically links a skill to a lesson; much of the discussion about microlearning identifies benefits specifically in workplace settings. The essence of microlearning is what the student must know and extraneous content is removed (Jimenez, 2019), or, in other words, the instruction "cuts to the chase" and does not include any material not specifically relevant to the task at hand. Microlearning also facilitates the awarding of microcredentials (such as badges) that document individual attainment of specific skills. Microlearning opportunities combined with ability to earn microcredentials permits individuals to create their own pathways, aligned to their personal and professional goals, based on their own knowledge and skill gaps.

Design and development are critical components to the successful implementation of a CBE or skills-based program. The overall system must be well thought out and implemented, however, without a strong foundation of micro and macro strategies that focus on creating engaging, high-quality courses and learning experiences, students will not be able to meet learning outcomes and performance expectations. In this chapter, we explore how those 2 levels of strategies guide the design and development of a ecosystem that integrates academic systems and supports students. Critical to the success of the system, expectations for faculty and student support systems for successful learning experiences are presented.

Online Learning Delivery

Technology has opened up opportunities for online delivery of CBE which has, in turn, provided access to students and functionality for faculty and administrators. Online delivery is critical for the digital access required by microlearning offerings (Zhang & West, 2020). Technology available through learning management systems and the continued improvement of student information systems and overall campus technology permits academic infrastructure support, delivery of instruction, and interaction with and monitoring and evaluation of students to occur. The integration of CBE into an online learning delivery system enables institutions to launch CBE programs and meet the needs of increasingly larger numbers of students. Using online design and development standards – while at the same time, attending to the idea that the student is the center of the environment and clearly relating competencies to course content and assessment helps frame the development of a competency-based learning environment.