RE-IMAGINING THE LEARNING MODEL:

A CONCEPT ANALYSIS OF COMPETENCY-BASED EDUCATION

By

Angela D. Clark Thompson

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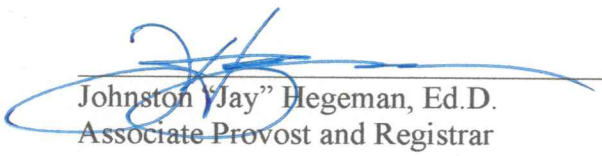

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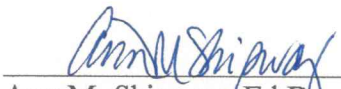

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Abstract

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Competency-based education (CBE), a learning model focused on demonstrated proficiency in well-defined competencies rather than on the amount of time students spend in the classroom, influenced niche higher education markets in the United States for decades. However, the lack of a consensus definition limited CBE's widespread acceptance by the traditional academic community. In the early 21st century, concerns about accessibility and affordability led to renewed interest in and experimentation with CBE models in higher education. Despite this resurgence of interest, defining CBE as a concept remained problematic and underscored the need to clarify the conceptual use and understanding of CBE. Settings for the research included the ERIC online library, resource libraries of three national CBE initiatives, and official policymaker websites. Rodgers' evolutionary approach to concept analysis, emphasizing the evolution of concepts, shaped the research design of this qualitative study. Documents published in 1973–1983 and 2005–2015, 2 eras of intense postsecondary CBE experimentation, comprised the purposive sample. Using the described method, CBE characteristics were categorized in stakeholder and temporal contexts and common characteristics identified. Although this study confirmed a lack of consensus definition, it also revealed three characteristics fundamental to CBE. At its' core, CBE is a learning model with (a) explicitly stated competencies; (b) progression determined by demonstrated performance; and (c) an individualized instruction framework well suited to mature learners with life

and work experience beyond school. These core characteristics support an adaptable framework providing a foundation for CBE's enduring presence in the higher education landscape of the United States in the 20th and 21st centuries.

Keywords: competency-based education, higher education, concept analysis

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Chapter 1: Introduction

Although attempts to expand acceptance of competency-based education (CBE) into the mainstream of U.S. higher education met limited acceptance in the 1960s and 1970s, efforts to improve quality and accountability, and to reduce cost and student debt load in the 21st century have generated renewed interest in this nontraditional learning model (American Association of State Colleges and Universities [AASCU], State Relations and Policy Analysis Team [SRPAT], 2014; Book, 2014; Duncan, 2011; Grant et al., 1979; *Keeping College Within Reach*, 2011; Kelchen, 2015; Office of the Press Secretary, 2013; U.S. Department of Education, The Secretary of Education's Commission on the Future of Higher Education, 2006). CBE is grounded in the idea that demonstrated mastery of competencies is more critical to student learning than where and how that learning occurs (Book, 2014; Johnstone & Soares, 2014). Of particular note, the current movement toward a reimagined competency-based learning model has been undeterred by the lack of a clear and commonly accepted definition and is gaining advocates at a rapid pace (Fain, 2015; Kelchen, 2015). Although some modern proponents have initiated attempts to develop a consensus definition, other recent authors often simply acknowledge the absence of clear definitional underpinnings and proceed with their arguments (Book, 2014; Ganzglass, Bird, & Prince, 2011; Kelchen, 2015; Porter, 2014). This recognition of definitional shortcomings is not new to CBE. One can find similar explanations in CBE literature in the 1970s (Grant et al., 1979; Spady, 1977, 1978). To explore these widely acknowledged conceptual ambiguities, this study analyzed literature from two time periods noted for CBE experimentation. The common characteristic shared by these time periods was federal interest in and support for experimentation with the CBE learning model. The most recent wave of interest in CBE

began in 2005 with the authorization of Title IV financial aid for direct-assessment CBE programs (Beaudoin & Shaw, 2006; Kelchen, 2015). To establish the boundaries of this study, the current time period was defined as 2005–2015. The second time period covered literature published from 1973–1983 when federal grants were offered to institutions of higher education (IHEs) interested in developing CBE programs in fields other than teacher education (Grant et al., 1979; Houston, 1974; U.S. Department of Education, n.d.).

To understand the current CBE movement, one must first become familiar with the 20th and 21st century incarnation of CBE. In its most basic form, CBE is a learning model focused on what students know and can do, not only what they know (Johnstone & Soares, 2014; Kelchen, 2015). At its most extreme, competency-based direct assessment uncouples learning from the traditional concepts of seat time, credit hours, and courses and allows students to demonstrate mastery of competencies at their own pace (Laitinen, 2012). Despite the current resurgence of interest in CBE, however, this learning model is not new to the United States or internationally. In fact, the Fund for the Improvement of Postsecondary Education (FIPSE) funded grants to multiple IHEs and state education systems interested in exploring competency-based reform in the 1960s and 1970s (Grant et al., 1979; Houston, 1974; U.S. Department of Education, n.d.). It was not, however, until the 1997 founding of Western Governors University (WGU), a nonprofit, competency-based, online university designed to improve access and affordability in the Western states, that CBE began to creep into the common vernacular (Harris, 2002; Johnstone & Soares, 2014; Kinser, 1999, 2007; Meyer, 2005; WGU Newsroom, n.d.). In fact, a 2005 amendment to the Higher Education Act of 1965 opened the possibility of awarding federal student aid (FSA) to students participating in competency-based, direct

assessment programs, at least in part, due to the founding of WGU (Beaudoin & Shaw, 2006; WGU Newsroom, n.d.). Beginning in 2013, ongoing clarifications on federal funding eligibility requirements kept CBE in the news and increased IHE interest in developing CBE programs, despite parameters outlining funding standards for FSA still grounded in the traditional concepts of seat time and the credit hour (Bergeron, 2013; Dann-Messier, 2013; Laitinen, 2012; Mahaffie, 2014).

The paradigm shift inherent in the redefinition of 21st century competency-based, direct assessment federal-funding policies has the potential to remodel the higher education landscape (Alverno College et al., 2014; Book, 2014; Klein-Collins, Ikenberry, & Kuh, 2014; Weise & Christensen, 2014). Consequently, this study serves a valuable purpose in helping to clarify the conceptual use and understanding of CBE. As Jonas Soltis (1978) explained, when words gain the power to effect policy,

> the total framework of the ideas these words represent must be fully understood by those who use them. Without such an understanding, many educational words become empty slogans; or, even worse, they provide the license for doing anything under the protective blanket of their impressive names. ... But, if the word is only as good as the idea behind it, we as educators should ask ourselves more frequently just what this or that educational term means. To what assumptions, values, theories, procedures, and strategies for teaching do these words commit us? (p. 90)

Statement of the Problem

Recurring periods of interest in competency-based learning models have influenced pockets of the U.S. higher education system for decades, but the absence of a consistent and commonly understood definition for CBE has limited its widespread

acceptance across the academic community (Cuckler, 2016; Kelchen, 2015; Kennedy, Hyland, & Ryan, 2009; Klein-Collins, 2012; Morcke, Dornan, & Eika, 2013; Van der Klink & Boon, 2002). In the early 21st century, external stakeholders began to actively promote experimentation with new CBE programs as a method to decrease costs, save time, and improve quality and performance in postsecondary education. Despite this resurgence of interest, though, defining CBE as a concept remained problematic (AASCU, SRPAT, 2014; *Keeping College Within Reach*, 2011; Kelchen, 2015; Office of the Press Secretary, 2013).

Purpose and Rationale of the Study

The purpose of this study was to clarify the conceptual use and understanding of CBE and its application to U.S. higher education. The parameters of Rodgers' (2000a) evolutionary approach to concept analysis provided the methodological framework to study a limited, proportional, random sample of documents published on the topic of CBE during two different periods in U.S. history (2005–2015 and 1973–1983). Using this method, I identified common and divergent characteristics across social and temporal contexts. In the 21st century, CBE supporters identified funders, reformers, and policymakers as the three primary external stakeholder groups attempting to advance CBE into the mainstream (Kelchen, 2015). This study reviewed distinguishing features of CBE in the identified time periods and determined if those characteristics could be categorized by stakeholder context (Johnstone & Soares, 2014; Rodgers, 2000a). Challenges to this study included the emergent nature of CBE in the mainstream academic community and the relatively small body of scholarly literature available on the topic. Another challenge was the prevalence of inconsistent and contradictory definitions.

Significance of Study

The significance of this study was threefold: improving the conceptual understanding of CBE for internal and external stakeholders and informing future decision makers; adding to the limited scholarly literature on the 2005–2015 incarnation of CBE and providing a basis for future inquiry. In addition, the results of this study helped establish conceptual and contextual foundations for educators, taxpayers, policymakers, and future researchers (Kelchen, 2015; Rodgers, 2000a; Scheffler, 1978). If acceptance of CBE in the higher education arena expands, the potential impact of that acceptance on the entire higher education landscape also increases (Weise & Christensen, 2014). Consequently, a broader definition of internal and external stakeholders could include students, parents, policymakers, taxpayers, vendors, IHEs, and the entire academic community (AASCU, SRPAT, 2014; Klein-Collins et al., 2014; Laitinen, 2012; (Office of the Press Secretary, 2013; Porter & Reilly, 2014).

Contextual Framework

In the global context, CBE is more entrenched because of the accepted historic ties between vocational education, credentialing, and employer needs (Bradley, Seidman, & Painchaud, 2012). In 1999, 30 European countries agreed to participate in the Bologna Process, to create a European Higher Education Area, thereby increasing the attractiveness of higher education in Europe by improving student transferability and employability (European Higher Education Area, 2014). Despite the challenges of surmounting cultural differences to develop a common framework of measureable learning outcomes, the number of participating countries had increased to 47 by 2011 (Bradley et al., 2012).

Regardless of the recent and growing interest in developing CBE programs,

previous efforts to establish widespread acceptance of CBE in the United States seemed most durable in specific niche markets such as adult education, teacher education, and in professional fields (Duley & Gordon, 1977; Grant et al., 1979; Houston, 1974; Maehl, 2000). The push for accountability and personalization in the educational-reform movements of the 1950s and 1960s led to increased interest in competency-based teacher education (CBTE; Hodge, 2007). Not surprisingly, the Office of Education's Bureau of Research provided an impetus for wider exploration of CBTE. By the 1970s, competency-based approaches to teacher education had become a familiar part of education reform (Burns & Klingstedt, 1973; Hodge, 2007; Houston, 1974). From the teacher-education arena, interest in CBE expanded to other areas of higher education, supported by FIPSE grants (Grant et al., 1979). Reaction against emphasis on behavioral modification to meet clearly stated learning objectives characteristic of behaviorism reduced interest in broad-range expansion of CBE programs into the traditional higher education community throughout the 1980s and 1990s, but CBE in the professional fields, especially in health care, continued to grow (Hatcher et al., 2013; Maehl, 2000; Morcke et al., 2013). Beyond teacher education and the professional fields, remnants of CBE programs from the 1970s continued to serve the nontraditional community throughout this period, but it was not until the foundation of WGU in 1997, that CBE was reintroduced as a viable option for the broader postsecondary community (Dragoo, 2015; Kinser, 1999, 2007; Meyer, 2005).

Research Design Overview

In an effort to understand the strength and potential longevity of the 21st century iteration of CBE in comparison with earlier attempts to expand the CBE learning model to the broader academic community, this study used a qualitative concept analysis

(Rodgers, 2000a; Scheffler, 1978; Soltis, 1978; J. Wilson, 1971) to reveal the fundamental uses of the term CBE, as contextualized in the literature of external stakeholder groups of funders, reformers, and policymakers (Kelchen, 2015). In addition to the social context of stakeholder groups, this study also explored CBE in a temporal context across 2 eras of U.S. history with similar social, economic, and political influences bounded by the authorization of the Higher Education Act in 1965 and the present day (Kelchen, 2015). Although more common to the field of nursing, concept analysis has been considered a valid research option for educational concepts since 1958 to analyze unclearly defined terms, thereby advancing understanding and encouraging further inquiry (Raiskums, 2008; Rodgers, 2000a; Scheffler, 1978; J. Wilson, 1971). The evolutionary approach to concept analysis selected for this study is grounded in the idea that concepts are context dependent and evolve over time (Rodgers, 2000a).

With theoretical roots in adult learning, behavioral psychology, mastery learning, and systems theory, CBE has been part of the educational landscape in the United States since the 1960s (Hodge, 2007; McDonald, 1974; Ray, 1975; Urch, 1975). In 1967, the U.S. Office of Education Bureau of Research actively encouraged the development of CBE programs through funding guidelines that gave preference to institutions exploring CBE (A. P. Wilson & Stansberry, 1975). For outside vocational and professional training arenas, however, interest in CBE waxed and waned (Gallagher, 2014; Hatcher et al., 2013). The rush to implement competency-based reforms in teacher education in the 1960s and 1970s dwindled as negative reactions grew stronger against behaviorism. One primary argument against behaviorist-influenced curricula with observable learning objectives and predetermined outcomes was that this type of learning could disregard the development of values and ethical standards because those outcomes could not be easily

observed (Bloom, 1956/1984; Morcke et al., 2013). Despite negative reactions, remnants of programs begun with FIPSE grants offered in the early 1970s encouraging postsecondary institutions to develop competencies in the liberal arts and general education have continued in a variety of forms to the present (Grant et al., 1979; Kelchen, 2015; Klein-Collins, 2012; Maehl, 2000). The 1980s experienced a resurgence of interest in CBE that, although still grounded in behaviorist principles, led to the development of competency frameworks in many helping professions such as health care and human services (Duley & Gordon, 1977; Hatcher et al., 2013; Morcke et al., 2013; Spady, 1994). Founded in the late 1990s, WGU arguably served as the primary model for CBE in higher education until the development of Southern New Hampshire University's integrated, competency-based, 3-year bachelor's degree program (Bradley et al., 2012; Johnstone & Soares, 2014; Klein-Collins, 2012). Considering CBE's cyclical history, it should come as no surprise to hear echoes of earlier eras in the 21st century promotion of CBE to improve completion rates, reduce student debt, and enhance the reputation of the United States in the global knowledge economy (Grant et al., 1979; Klein-Collins, 2012; Morcke et al., 2013).

Research Questions

Three questions formed the basis of this research.

1. How is CBE defined in documents published by the three external stakeholder groups during the time periods 2005–2015 and 1973–1983?
2. Can documents from both periods be categorized into similar stakeholder groups?
3. Can common characteristics of CBE be identified within and across stakeholder groups and time frames?

Limitations

Researchers design a concept analysis to identify distinguishing characteristics of the concept being studied, thereby illuminate meaning. Those identifying characteristics are the units of analysis; but concepts and the words used to describe those concepts are fluid across social settings and bounded by the contexts of time and community. They are, as Rodgers (2000a) described, evolutionary in nature. Consequently, the primary limitations of this study were those of credibility, reliability, and generalizability in the two time periods being studied and across the larger contextual framework.

Credibility. Documents published between 1973–1983 and 2005–2015 that are available in the Educational Resource Information Center (ERIC) online library form the primary setting for this study. Documents referenced in the online resource libraries of three organizations supported the development of CBE in the academic community (Kelchen, 2015) and augmented the number of relevant documents for the period 2005–2015. Reducing the large number of documents revealed in the initial search to a manageable number required a thoughtfully considered exclusionary strategy and a stratified proportional random-sampling strategy. The large initial population and the sampling strategies were designed to increase credibility. In addition to data-collection and sampling techniques, I also kept comprehensive notes of all methodological decisions made during the data-collection phase. This reflective journal included decision points and the thought processes through which I arrived at those decisions to "substantiate [the] neutrality and credibility" of the study (Rodgers, 2000a, p. 94). Because much of the literature published by lay professionals during the period 2005–2015 encouraged CBE expansion, documents critical of that learning model were not well represented. As the point of this study was not to make value judgments but rather to search for a common

understanding of the concept in and across contexts, the inclusion of lay literature posed no threat to credibility.

Reliability. By their very nature, qualitative studies tend to be more subjective and require researchers to guard against sampling bias and personal bias. The sampling strategy outlined in this study addressed concerns of sampling bias. Personal bias can be introduced into a study through prior knowledge and perceptions (Raiskums, 2008). As a staff member of one of the institutions selected to be a CBE experimental site by the U.S. Department of Education that is also one of the founding institutional members of the Competency-Based Education Network (C-BEN), I was exposed to and participated in daily conversations about CBE and related topics. To mitigate the potential of introducing bias into this study, I maintained constant vigilance through extensive, reflexive journaling and constant comparisons of coding decisions in and across contexts, using a prescribed list of initial categories (Creswell, 2013; Rodgers, 2000a).

Generalizability. The three primary purposes of this study were (a) to clarify the concept of CBE, as presented to the higher education community in documents published by three primary external stakeholder groups during two specific time periods, characterized by federally encouraged CBE advocacy and experimentation; (b) to inform future research; and (c) to educate future decision makers.

Definitions

Stipulative definitions, also known as working definitions, provide a basis of understanding for a specific and limited purpose (Scheffler, 1978). Because discovering meaning in usage formed the crux of this study, the following stipulative definitions provided a common frame of reference.

Competences: The term *competences* is the international equivalent of the term

competencies more commonly used in the United States. The definition of this term is considered indistinct and varies by country and social context. In general, the more clearly defined term, *learning outcomes*, is used more commonly to refer to "what students are expected to know, understand and/or be able to demonstrate at the end of a module or programme" (Kennedy et al., 2009, pp. 15–16).

Competencies: The word *competencies* refers to "the result of integrative learning experiences in which skills, abilities, and knowledge interact to form bundles that have currency in relation to the task for which they are assembled" (Jones, Voorhees, & Paulson, 2002, p. 7). This definition emphasizes the bridge between education, the 21st century job market, and the current demand by policymakers for accountability.

Competency: The term *competency* describes a level of achievement established through carefully defined assessment activities (Klein-Collins et al., 2014; Porter & Reilly, 2014).

Competency-based education/learning: Although many variants exist, in general, CBE is a nontraditional learning model based on students' ability to demonstrate attainment of defined competencies at a desired level of achievement through some form of assessment (Kelchen, 2015; Klein-Collins, 2012; Klein-Collins et al., 2014; Laitinen, 2012; Spady, 1994).

Concept: A concept is a generally accepted label or category that allows individuals to group different ideas about a thing or event under an abbreviated descriptive symbol (Carley & Palmquist, 1992; Rodgers, 2000b; J. Wilson, 1971). The development of concepts can rest in the observable—to categorize a tangible thing or event—or the mental: to symbolize an abstraction (Rodgers, 2000b).

Concept analysis: A form of qualitative content analysis, *concept analysis*

focuses on identifying essential characteristics and contextual meanings of a concept (McMillan & Schumacher, 2010; Rodgers, 2000b).

Credit hour: According to federal guidelines for financial aid professionals, as described in what is known as *Dear Colleague Letters*,

> A credit hour is a unit of measure that gives value to the level of instruction, academic rigor, and time requirements for a course taken at an educational institution. At its most basic, a credit hour is a proxy measure of a quantity of student learning. The higher education community has long used the credit hour, as defined by the Carnegie unit, as part of a process to establish a standard measure of faculty workloads, costs of instruction, and rates of educational efficiencies as well as a measure of student work for transfer students. (Ochoa, 2011, para. 6)

This basic feature of traditional-education models is considered one of the most restrictive limiters for advancing CBE (Laitinen, 2012).

Direct assessment: According to the U.S. Department of Education guidelines, as published in the *Federal Register (FR),*

> (a)(1) 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. The assessment must be consistent with the accreditation of the institution or program utilizing the results of the assessment.
>
> (2) Direct assessment of student learning means a measure by the institution of what a student knows and can do in terms of the body of knowledge making up the educational program. These measures provide evidence that a student has

> command of a specific subject, content area, or skill or that the student demonstrates a specific quality such as creativity, analysis or synthesis associated with the subject matter of the program. Examples of direct measures include projects, papers, examinations, presentations, performances, and portfolios. (71 FR 45693, 2006, para. 1–2)

Direct-assessment programs were first considered eligible for federal financial aid in 2005 with the authorization of the Higher Education Reconciliation Act (Beaudoin & Shaw, 2006). For this reason, 2005 served as the starting point for one of the time periods reviewed in this study.

External stakeholders: Groups or organizations that are not responsible for IHE implementation and delivery of CBE programs to students but that can affect IHE goals, decisions, and policies are considered external stakeholders. According to Kelchen (2015), CBE has three primary external stakeholder groups: reformers, funders, and policymakers. Literature published in each of the two time periods defined for this study was considered within the contextual framework of these external stakeholder groups.

Funders: A funder is an external stakeholder group or organization with a primary goal of providing financial support to other groups or organizations. The goal of a funder is to help other groups or organizations implement change. Funders may function as reformers and reformers may fund change efforts, but the distinguishing feature of a funder is that the primary mission of the group or organization is to provide monetary support through grants to other groups or organizations (Kelchen, 2015).

Mastery: Mastery connotes a level of achievement that can be used to gauge whether students should receive recognition for having completed the competency. Just as no common definition of CBE exists; no common acceptance of the level of learning

needed to indicate successful completion exists. For the purpose of this study, "mastery" is further defined as being equivalent to at least a 3.3 on a 4.0 grade-point average scale (Klein-Collins et al., 2014; Porter & Reilly, 2014).

Mastery learning: This style of learning allows a student to continually assess and correct work until such time as a learning objective is mastered (Bloom, 1968).

Outcomes-based education/learning: Another term for a nontraditional learning model based on students' ability to prove completion of defined learning outcomes or competencies. This term is often used interchangeably with the term CBE (Klein-Collins et al., 2014; Porter & Reilly, 2014; Spady, 1994).

Performance-based education/learning: Another term for a nontraditional learning model based on students' ability to prove completion of defined learning outcomes or competencies. This term was often used interchangeably with the term CBE during the 1960s and 1970s (Houston, 1974).

Policymakers: Individuals or organizations with the authority to legislate the actions of other individuals or organizations are known as policymakers (Kelchen, 2015).

Prior learning assessment (PLA): According to the Council for Adult and Experiential Learning (CAEL), PLA is "the process of earning college credit for college-level learning acquired from other sources, such as work experience, professional training, military training, or open source learning from the web" (Doyle, 2016, para. 2). Portfolio assessment and several forms of standardized tests such as the College Level Examination Program or Advanced Placement can be considered PLA.

Reformers: Individuals or organizations that share a common purpose or reform interest and have the time, inclination, and funds to encourage other individuals or organizations to that purpose can be called reformers. Reformers may or may not have

the ability to monetarily support the efforts of other individuals or organizations and because of this, differentiating between funders and reformers can be difficult. For this study, reformers are those individuals or organizations whose *primary function* is to expand acceptance/adoption of their chosen reform by educating their chosen audience about that reform (Kelchen, 2015). Consequently, educational vendors are included in the reformers category.

Seat time: The amount of time a student spends interacting with the class instructor during each week of instruction is commonly called seat time. Prior to common acceptance of online modes of instruction, seat time referred to time spent physically in the classroom and was part of the standard formula for calculating faculty teaching load and federal financial aid. *Contact hours* and *class time* are commonly used synonyms (Bradley et al., 2012, p. 24; Laitinen, 2012; Ochoa, 2011).

Organization of the Study

Five chapters form the core of this study. Chapter 1 introduced the purpose, research questions posed, and significance. Chapter 2 reviews 21st-century trends related to CBE, the history of previous CBE movements, and other educational influences that have affected the development of CBE in the United States. The research methodology explained in Chapter 3 provides an overview of concept analysis as well as the setting selection, sampling strategy, and coding decisions. Chapter 4 describes the findings resulting from this study and Chapter 5 synthesizes those findings into conclusions that improve the conceptual understanding of CBE, informs future decision makers, and adds to the limited scholarly literature on the 2005–2015 incarnation of CBE. Chapter 5 also discusses implications for future research.

Chapter 2: Review of Literature

Competency-based education (CBE), a learning model focused on demonstrated proficiency in well-defined competencies rather than on the amount of time students spend in the classroom, is gaining momentum in traditional academic arenas of the U.S. higher education system in the 21st century (Educause Learning Initiative, 2014; Klein-Collins, 2013; Polis & Salmon, 2013). To gain an understanding of the renewed level of interest generated by competency-based learning models, one need only look at the abundance of popular and scholarly literature published 2005–2015. This literary interest increased exponentially when, in 2013, President Obama highlighted competency-based programs at Western Governors University (WGU) as models of success in a plan to improve college access and affordability, and then again in 2014, when the U.S. Department of Education formally published an invitation for institutions of higher education (IHEs) to participate as experimental sites in the areas of prior learning assessment (PLA), CBE, and Limited Direct Assessment (American Association of State Colleges and Universities [AASCU], State Relations and Policy Analysis Team [SRPAT], 2014; Dann-Messier, 2013; *Keeping College Within Reach*, 2011; Kelchen, 2015; Klein-Collins et al., 2014; Laitinen, 2012; Mahaffie, 2014; Office of the Press Secretary, 2013; Porter & Reilly, 2014). Although the 2005 changes to federal funding guidelines generated no immediate applications for direct-assessment experimental site status, by December 2014 more than 50 IHEs had applied for experimental site status to develop competency-based or limited direct assessment programs (Fain, 2015; Federal Student Aid [FSA], 2015). Included in this group of 50 were the 16 IHEs that participated in the January 2014 joint response to the Request for Information issued by the U.S. Department of Education on the topic of competency-based programs. In addition to the

nonprofit organization, Council for Adult and Experiential Learning (CAEL), participating institutions included Alverno College, Antioch University, Brandman University, Broward Community College, Capella University, Cardinal Stritch University, Charter Oak State College, Excelsior College, Kentucky Community and Technical College System, Lipscomb University, Northern Arizona University, Southern New Hampshire University, State University of New York Empire State College, University of Maryland University College, University of Wisconsin-Extension, and Westminster College. The jointly drafted white paper detailed six experiments considered key to the broad development and acceptance of CBE models in higher education (Alverno College et al., 2014). Later in 2014, those same IHEs formed the nucleus of the Competency-Based Education Network (C-BEN), a group of colleges, universities, and public systems serving multiple campuses sharing a common interest in "designing, developing and scaling competency-based degree programs" (Competency-Based Education Network [C-BEN], n.d., para. 1).

Much of the material written on the topic of CBE during the 2005–2015 period tended, however, to be the unscientific products either of proponents encouraging the higher education community to abandon instructor-led learning structured around seat time or opponents decrying this trend as the catalyst that would lead to the ultimate destruction of higher education in the United States. Despite the recent torrent of literature on CBE, only a limited pool of current, academically grounded literature exists on the topic of CBE at the postsecondary level in the United States. However, a rich vein of scholarly material is available to inform parties interested in the current trend and its history. To explore this developing topic, the following review of the literature focuses not only on current U.S. trends, but also the history of previous CBE movements in the

United States and how CBE in the United States fits in the international framework. This review also touches on adult-learning theory, mastery education, outcomes-based learning, self-regulated or self-directed-learning theory, experiential learning and PLA, and online education as influential antecedents in the development of CBE.

Although the origins of CBE and training in the United States can trace back to industrial/business-influenced educational reforms of the 1920s and improvements to military training systems in the 1950s, the earliest form of CBE at the postsecondary level occurred in conjunction with the 1960s competency-based teacher education (CBTE) reform movement (Allais, 2012; Hodge, 2007; Steffenson, 1974; Tuxworth, 1989). During the social turmoil of the 1960s, greater interest in the ties between education and the economy and the growing demand for educational accountability by the public opened the door for federal funding to improve teacher education and training (Elam, 1971; Houston, 1974; Steffenson, 1974; Tuxworth, 1989). In 1967, the Bureau of Research of the U.S. Office of Education offered 10 postsecondary-education grants to develop new training models for teacher education. Specific wording in these grant applications required grantees to develop individualized modular instruction with clearly stated competencies/behaviors, assessments, and practical experiences (Elam, 1971; Houston, 1974; Steffenson, 1974; Tuxworth, 1989).

By 1970, the competency movement had become a well-recognized element of teacher-education reforms in the United States (Burns & Klingstedt, 1973; Hodge, 2007; Houston, 1974). Despite the common use of the term CBTE and an expanding body of literature on the topic, the U.S. Office of Education, Department of Health, Education, and Welfare, commissioned experts in CBE to provide a critical analysis of the positive and negative aspects of competency/performance-based education (Houston, 1974).

According to Houston (1974), the cultural demands for more "accountability" and more "personalization" shaped the direction of teacher education in the late 1960s and early 1970s (pp. 5–6). CBE developed in response to that call for accountability and personalized learning (Houston, 1974; Urch, 1975). Although several attempts were made in the 1970s to arrive at a comprehensive definition of CBE, the most widely accepted, according to Houston, was developed by Elam in a paper presented at the American Association for Colleges of Teacher Education conference in December 1971. In his paper to the conference, Elam (1971, p. 8) identified five "essential elements," six "implied characteristics," and seven "related or desirable characteristics" for performance- or competency-based education:

Essential elements.

1. Teaching competencies to be demonstrated are role-derived, specified in behavioral terms, and made public.
2. Assessment criteria are competency-based, specify mastery levels, and made public.
3. Assessment requires performance as prime evidence, considers student knowledge.
4. Students' progress rate depends on demonstrated competency.
5. Instructional programs facilitate development and evaluation of specific competencies.

Implied characteristics.

1. Individualization
2. Feedback
3. Systemic program

4. Exit-requirement emphasis

5. Modularization

6. Student and program accountability

Related or desirable characteristics.

1. Field setting

2. Broad base for decision making

3. Protocol and training materials

4. Student participation in decision making

5. Research-oriented and regenerative

6. Career-continuous

7. Role integration

Although experts in the fields of teacher education could not reach consensus on *the* definition of CBTE (Houston, 1974), Elam's well-recognized definition did provide a comprehensive list of characteristics easily adapted to the evolutionary approach to concept analysis, providing the structure for this study (aligned with Rodgers, 2000a).

In the early 1970s, a second more generalized wave of grants encouraging the development of postsecondary competency-based curriculums occurred (Grant et al., 1979; Monjan & Gassner, 1979). Because the Fund for the Improvement of Postsecondary Education (FIPSE) online database only extends back to 1973, however, that year served as the boundary of the first sample group (U.S. Department of Education, n.d.). The publication *On Competence: A Critical Analysis of Competence-Based Reforms in Higher Education* resulted from a 3-year study by a group of scholars commissioned by the U.S. Department of Health, Education, and Welfare to review the development of postsecondary competency-based curriculums in the liberal arts and in

fields other than teacher education (Grant et al., 1979). In the prologue to this multiauthor study, Grant, the project lead, elaborated on the overall strengths and weaknesses of competency-based programs as demonstrated by nine IHEs who participated in the FIPSE funded CBE experiments of the early 1970s. The central characteristic of competency-based reform was, according to Grant et al. (1979), the institutions' efforts to redefine their purpose "by being able to state that their students are competent *at* something or competent to *do* something rather than that they have accumulated so many course credits" (p. 2). The nine institutional case studies emphasized the wide variety of theoretical orientations, scopes, intentions, and disciplinary focuses exemplified by grant recipients. However, the project goal of developing a commonly accepted definition of CBE reached an impasse even as common characteristics were highlighted. Ambivalence about CBE programs remained high and attributed directly to the wide variety of institution-specific implementation standards (Grant et al., 1979). Consequently, although the team did attempt to develop a consensus definition of CBE, the implementation variations hampered generalization (Grant et al., 1979; Monjan & Gassner, 1979).

Despite this lack of a normative definition, Grant et al. (1979) did identify institutional impacts common to all IHEs experimenting with CBE programs despite their various implementations. The primary impact was shifting resources. Although the study revealed that CBE programs did seem to lead to "a net increase in societal competence" (Grant et al., 1979, p. 12), it did so at the price of faculty workload. "The major impact of adopting a competence-based approach is to shift more of an institutions' resources from the best to the average and below-average students" (Grant et al., 1979, p. 11). Because Grant et al. described CBE primarily as a faculty-reform movement, it is unsurprising that impacts such as faculty roles changing from lecturer to guide, reduced faculty

autonomy, and increased emphasis on faculty accountability featured prominently in the study (Grant et al., 1979).

Despite the promotion of CBE during the 1960s and 70s, growing humanistic concerns about CBE's behavioristic orientation and emphasis on easily observable skills and abilities over less easily observed traits of character, moral values, and self-awareness transitioned interest in CBE to niche markets such as teacher education, the professional fields, and adult education (Houston, 1974; Maehl, 2000; Urch, 1975). In fact, during the 1980s and 1990s, interest in CBE, and surrogates such as performance-, proficiency-, mastery-, standards-, and outcomes-based education, continued to expand in professional studies, especially in professional fields requiring certification or licensure to practice (Hatcher et al., 2013; Maehl, 2000; Morcke et al., 2013; Spady, 1994). Despite growth of CBE programs in the professional fields, the traditional academic community displayed little interest in this nontraditional learning model. Remnants of CBE programs from the 1970s continued to serve the nontraditional community throughout this period, but it was not until the foundation of WGU in 1997 that CBE was reintroduced as a viable option for the broader 21st-century postsecondary community (Dragoo, 2015; Kinser, 1999, 2007; Meyer, 2005).

Although the United States experienced a resurgence of interest in CBE, competency-based models in higher education were also the focus of much controversy (Bradley et al., 2012; Laitinen, 2012). The impact of foregoing traditional academic standards such as seat time, credit hours, and instructor-led classes could not be minimized; however, at the same time, advocates promoted CBE as a promising method to mitigate 21st-century shortfalls in access, affordability, and achievement in higher education (Bradley et al., 2012). To provide greater clarity on the topic, the American

Enterprise Institute Center on Higher Education Reform commissioned a series of five papers to examine the 21st century interpretation of CBE.

The first paper, *The Landscape of Competency-Based Education* by Kelchen (2015), described the general characteristics of CBE and provided enrollment, demographic, and affordability data from current CBE providers. More important for the purpose of this study, the American Enterprise Institute series introduced the stakeholder contexts of "policymakers, reformers, and funders" (p. i) and Kelchen (2015) confirmed that no "consensus definition" existed for CBE even among IHEs offering CBE programs (p. 1). With the fast pace of CBE program development, Kelchen's paper provided a needed update to Klein-Collins (2012). The second paper in the series, *Employer Perspectives on Competency-Based Education* (Franklin & Lytle, 2015) focused on the importance of involving employers in the development of competency-based programs. Although not overtly stated, the employer-centric viewpoint presented in this paper was consistent with international ties among vocational education, credentials, and employer needs (Allais, 2012; Bradley et al., 2012; European Higher Education Area, 2014; Kennedy et al., 2009; Voorhees, 2001). The importance of developing valid and reliable assessments was the topic of the third paper in the series: *Measuring Mastery: Best Practices for Assessment in Competency-Based Education* (McClarty & Gaertner, 2015).

Rethinking the Regulatory Environment of Competency-Based Education by Lacey and Murray (2015), the fourth in the series, provided a comprehensive view of the regulatory bodies governing IHEs in the United States and, more importantly, the massive scope needed to integrate CBE, especially direct-assessment CBE, into the traditional higher education landscape. This is especially relevant because the 2005 update to federal financial aid regulations authorizing direct-assessment experimentation

did not provide sufficient detail to alleviate IHE skepticism about continued federal support (Bergeron, 2013; Lacey & Murray, 2015; Porter, 2014). The series concluded with R. B. Baker's (2015) analysis of CBE from the student perspective and supported the conclusions drawn in a dissertation on faculty perceptions of nontraditional learning environments, averring that exploring beyond established traditional learning models could facilitate student success (Janson, 2013).

Other developments in higher education influenced the 21st-century wave of interest in CBE. Research by experts in the field of adult education, including the acclaimed father of andragogy, Knowles (Conlan, Grabowski, & Smith, 2003), indicated the current trend toward CBE had its roots in the expansion of the adult-education movement that occurred after World War II. During that time, universities began developing adult curricula focused on organizing and validating prior learning experiences and integrating them into a meaningful and structured learning plan with emphasis on behaviorist objectives that provided a foundation for CBE in adult education (Knowles, 1962/1977; Knowles, Holton, & Swanson, 2015). Maehl (2000) emphasized a demographic shift beginning in the 1990s with fewer postsecondary enrollments by traditional age, unencumbered students, and more by working adults. Ongoing federal studies of enrollment trends support Maehl's claim (Choy, 2002). According to Maehl, lifelong learning had become a critical part of the 21st-century life/work cycle, requiring everyone in the workforce to continually update skills and abilities to remain relevant and employable. Advancing lifelong learning and the attainment of needed skills through individualization and self-awareness formed the foundation of Maehl's argument.

This individualized approach to lifelong learning also provided the focus in *Self-Direction in Adult Learning* by Brockett and Hiemstra (1991) and further supported

Knowles' (1977) earlier work by expanding the definition of self-directed learning in the field of adult education. Brockett and Hiemstra elaborated on the importance of self-direction in adult learning by referencing a conference paper presented by Kulich (1970) that expounded on the history of self-directed education and reflection as the primary path many individuals used to meet the many demands of daily life. This emphasis on self-direction and reflection expanded into what became known as the self-regulated learning theory (SRLT) and reinforced the idea of self-direction as a long-standing concept in adult education that assumed students had the skills and abilities to monitor their own learning and could, either with or without a facilitator, develop their own individualized learning path (Brockett & Hiemstra, 1991; Educause Learning Initiative, 2014; Manuelito, 2013). Individualized learning became an accepted component of adult-learning styles and a key aspect of CBE.

Although the willingness to assume personal responsibility for one's own education, as described in SRLT, was a critical element in CBE, one must also consider the primary method used to support CBE delivery: online learning/distance education. Courses can be designated as online if, according to the *Online Education* report series by Allen and Seaman (2010b), at least 80% of the course content is delivered in an online format. As the World-Wide Web (WWW) and open Internet access expanded in the last decade of the 20th century, online education became a permanent feature not only in adult education, but also in more traditional institutions of higher education. Although demand for online courses increased though, traditional viewpoints about classes offered in this delivery system changed more slowly. An annual series of studies on the topic of online education conducted by Allen and Seaman (2010a) provided an interesting view on the historical trends of this learning modality. The resulting documents, produced

yearly since 2003, reported an incredibly rapid increase in the use and acceptance of online learning that only began to level off in 2009 (Allen & Seaman, 2010b). In fact, by the ninth annual report on the state of online learning in U.S. higher education, more than 65% of responding institutions cited online education as a critical part of their organization plan (Allen & Seaman, 2011). Despite the rapid increase in online course offerings, approximately one-third of the responding academic leaders still considered classes taught in an online format to be pedagogically inferior to classes taught in a face-to-face format. Not surprisingly, institutions fully engaged in online learning had fewer online skeptics. Although this lingering skepticism about online learning opportunities could extend by association to CBE, online learning received consistently high marks for the way it supported self-directed learning (Allen & Seaman, 2011).

Academic leaders and faculty were not the only stakeholders who expressed concern about the effectiveness and validity of online education. Employers also watched this growing trend in higher education with interest and several doctoral dissertations reported employers were largely supportive of online education. Key factors for industry seemed to be whether the same level of learning and relationship building expected in face-to-face classes could also be expected in online classes (Macon, 2012; Schmidt, 2012). In the dissertation, *Employer Attitudes and Perceptions of Job Applicants with Distant Learning Degrees*, Gordon (2013) reported an interesting and somewhat surprising tendency for 21st-century employers to confirm the validity of a prospective employee's credential without asking further questions. The key for employers was that new hires had to have the competencies to do their jobs well without requiring the employer to provide training in basic skills. The source of the degree was typically not a factor (Ganzglass et al., 2011). Not surprisingly, the primary industry that had not, at

least during the early years of online education, conformed to this minimal standard was postsecondary education. Montell (2003) elaborated on this tendency by the academic community to denigrate degrees awarded through online formats. Despite this lingering skepticism about the efficacy of online learning, the impact of that delivery model in higher education cannot be understated. Weise and Christensen (2014) reinforced the critical importance of online delivery models to the widespread development of CBE. In fact, Weise and Christensen coined the phrase, "online competency-based education" to describe adaptations to CBE developed through a confluence of "the right learning model, the right technologies, the right customers, and the right business model" (p. iv). Their viewpoint supported the claim that CBE was destined to be a "disruptive innovation" capable of shifting the higher education landscape (Weise & Christensen, 2014, p. iv).

In addition to adult education and online learning, two other developments were critical to understanding the foundations of CBE. Experiential learning theory (ELT) and prior learning assessment (PLA) focus on the needs of individual students and leverage assessment opportunities such as portfolio evaluations, credit by examination, and training programs evaluated by the American Council on Education (Hayward, 2012). The idea that learning could be explicated in portfolios built on the idea that learning achieved through experience could be transferred to other contexts (Maehl, 2000; Manuelito, 2013). The methodologies used to assess the learning, documented in portfolio evaluations, varied widely depending upon the evaluator (Stevens, 2013). Consequently, granting credit for an individual's prior noncollegiate experiences discomfited many institutions. To address these concerns and standardize practices in PLA, the Educational Testing Service created CAEL in 1974 (McClintock, 2013). The combination of standards established by CAEL to document mastery of learning

experiences through a variety of assessment opportunities and a delivery system that disengaged the learner from the idea of time and place has an integral place in the 21st-century notion of CBE (Achieve, 2013; Klein-Collins, 2012).

Making college an affordable and accessible option for all Americans as well as increasing overall college completion authenticated several federal initiatives during the Obama administration, but the overarching goal to improve the position of the United States in the world market was a focal point much longer than that. In fact, the battle cry to improve the position of the U.S. workforce in the global economy has been a recurring theme in U.S. history and the U.S. higher education system (Callan, Finney, Kirst, Usdan, & Venezia, 2006). From the Smith-Hughes Vocational Education Act in 1917 to the National Defense Education Act of 1958, to *A Nation at Risk* in 1983, to the call by President Obama in 2009 for the United States to lead the world in college completion by 2020, the goal had been and continues to be educating a citizen workforce and remaining competitive in the global economy (Knowles, 1962/1977; McCann, 2013; Obama, 2010; Office of the Press Secretary, 2013; Urban, 2010; U.S. National Commission on Excellence in Education, 1983; Wagner, 2008). All the above-mentioned initiatives impacted the U.S. education system by focusing federal attention on making higher education more accessible.

On August 22, 2013, the White House Press Office announced President Obama's plan to make postsecondary education more affordable and reduce the student-debt load. The plan also specifically encouraged the U.S. Department of Education to remove regulations obstructing innovation in higher education (Office of the Press Secretary, 2013). According to a report authored by Christensen, Horn, Caldera, and Soares (2011), the national call to regain the advantage in the global market shifted that focus from

making higher education accessible for all potential students to making a quality education truly affordable in all respects, not just in cost per credit hour.

One result of this emphasis on reclaiming global prestige led to an unprecedented national interest in nontraditional learning and educational models providing affordable opportunities for students to leverage previous learning, regardless of where it occurred (*Keeping College Within Reach*, 2011; Obama, 2010). Although this focus on nontraditional credit might sound limiting of the number of students who could benefit from a reimagined model for higher education, one must consider how broadly the concept of the nontraditional student has been redefined in the 21st century (Maehl, 2000; Choy, 2002). In earlier time periods, higher education was more often the purview of the elite; but, by the mid-20th century, postsecondary education began to become more accessible to all ages, races, and classes. That shift in the traditional demographics for U.S. college students led to a marked increase in the number of students classified as nontraditional. In fact, nontraditional students of the 21st century had become the majority of students enrolled in higher education (Maehl, 2000; Choy, 2002). However, higher education business practices tended to retain focus on the waning traditional demographic. All too often, nontraditional students who attempted to pursue education at a traditional postsecondary institution found themselves facing inaccessible locations, inconvenient class times, outdated learning environments, and unaffordable educational options (Advisory Committee on Student Financial Assistance, 2012; Complete College America, 2011; Klein-Collins, 2010).

The most recent push for CBE came, in part, from the rising awareness that the "normal" completion time for students to finish a degree was greater than even the 150% time frame formulated for the award of federal financial aid (J. Baker, 2013). In fact,

although little more than half of all students pursuing a bachelor's degree completed within 6 years, only about a quarter of all students who began an associate's degree completed within 3 years (Achieve, 2010; Planty et al., 2009). Persistence toward degree completion was one factor used to measure success in higher education, but that standard of efficient progress toward a degree did not adequately consider the demands on nontraditional students unrelated to education. According to a 2009 study authorized by the National Center for Educational Statistics, measuring graduation rates documented the effectiveness and efficiency of the postsecondary education system. Students, especially nontraditional students, did not conform to statistical models typically applied to traditional educational tracks (Planty et al., 2009).

If completion of a college degree was critical to meet global expectations, then what education model could address the need for completion and the individual personal needs of the nontraditional learner? President Obama, former Representative Kline, former U.S. Secretary of Education Duncan, and other policymakers went on record encouraging nontraditional forms of education like PLA and CBE as possible avenues for meeting national and individual goals (Duncan, 2011; *Keeping College Within Reach*, 2011, 2014; Klein-Collins, 2010; McCann, 2013; Office of the Press Secretary, 2013;).

Understanding the interdependencies between knowledge and skills and how to apply them outside the learning environment formed the most critical aspect for defining competencies in higher education (Thomes, 2012). An interesting aspect of the CBE learning model centered on the combination of knowledge and skills equal to the abilities employers indicated as often lacking in their new hires (Bloom, 1956/1984; Klein-Collins et al., 2014; Wagner, 2008). Adapting CBE to the academic arena in higher education depended on a standardized method to measure the learning that occurred outside the

traditional model (Wagner, 2008) and had to be crafted to recognize learning resulting from experience; not from the experience itself (Advisory Committee on Student Financial Assistance, 2012; Committee for Economic Development, 2012).

For competency-based learning models to become broadly accepted in the U.S. higher education system, educators needed to address three aspects of education: accessibility, affordability, and acceptability. Two basic elements firmly rooted in higher education—the concepts of seat time and the credit hour—limited both accessibility and affordability (Christensen et al., 2011; National Governors Association, Center for Best Practices, 2012). The traditional definition of the credit hour and the widespread belief that this convenient standard of time measurement was also a valid way to measure learning was described, and repudiated, in the report, *Cracking the Credit Hour* (Laitinen, 2012). The tie to the credit hour and seat-time formula used by federal funding agencies for decades effectively excluded learning options that did not adhere to those standards (Bradley et al., 2012; Laitinen, 2012). Consequently, students have been offered limited options for pursuing alternative and potentially more efficient paths to educational credentialing (Committee on Non-Traditional Study & Gould, 1973). In fact, according to Sherman at CAEL, "the financial aid system and other programs are simply not structured for a learning outcomes-based, assessment-based approach to postsecondary completion" (Advisory Committee on Student Financial Assistance, 2012, para. 1). Changes in federal guidelines for granting Title IV financial aid, however, addressed changes to this focus. In a 2013 Dear Colleague Letter to Financial Aid Professionals, the U.S. Department of Education recognized that wording in the Higher Education Act might not adequately address the requirements of nontraditional learning models and began actively encouraging IHE applications for eligibility to test the viability of

competency-based programs (Bergeron, 2013).

Regional accrediting bodies have long been considered the arbiters of standards in higher education and the de facto gatekeepers of federal financial aid. In a June 2013 testimony before the U.S. House of Representatives, the president of the Middle States Commission on Higher Education (MSCHE) described accreditation as a mechanism designed to instill confidence in the quality of education being provided by accredited institutions (Sibolski, 2013). In the United States, seven regional accrediting agencies serve six regions. Each of these commissions is a private, membership-based association with no government affiliation, designed to encourage excellence in education. One distinguishing characteristic of the regional accrediting commissions is that they accredit individual institutions, not individual programs (Sibolski, 2013).

As the U.S. Department of Education continued to endorse experimentation with alternative forms of learning such as CBE, it was not unexpected that regional accrediting agencies began to adjust their substantive change policies to conform to federal recommendations (U.S. Department of Education, 2015). Since 2005, the year direct assessment programs were originally approved for Title IV financial-aid consideration, regional accrediting agencies have been updating their policies to support the rapidly changing higher education landscape. According to Sibolski (2013), the changes allowed the commissions to

1. Keep pace, changing educational delivery methods;
2. Oversee complex fiscal-management systems;
3. Support the needs of policymakers for transparency; and
4. Encourage clearly defined outcomes in higher education.

As early as 2006, operational policies for MSCHE recognized the benefit of

experiential learning opportunities and encouraged institutions to establish polices that "provide appropriate consideration, consistent with good educational practice, for the individual student who has gained college level learning from other sources" (MSCHE, 2006, p. 53). The MSCHE manual cautioned IHEs to carefully define college-level learning and ensure credit awarded for experience be "awarded for demonstrated learning, and not merely for experience" (MSCHE, 2006, p. 53). This statement supported policies outlined in literature from the Advisory Committee on Student Financial Assistance (2012), and the Committee for Economic Development (2012), and findings presented by Wagner (2008) and Arum and Roksa (2011). More recently, MSCHE explicitly expanded its willingness to consider nontraditional learning options when that organization updated its screening form for IHEs to document substantial change aligned with 34 CFR 602.22(a) to include language supportive of CBE and direct-assessment programs (MSCHE, 2015).

Most other regional accrediting agencies followed a similar strategy by updating their policies on substantive change. The New England Association of Schools and Colleges Commission on Institutions of Higher Education (NEASC-CIHE) added wording to specifically include "initiating any degree program whose requirements for graduation are based on the mastery of competencies rather than the accrual of credit hours" as a type of substantive change (NEASC-CIHE, n.d., p. 2). The Southern Association of Colleges and Schools Commission on Colleges (SOCSCOC) provided instructions to seek approval for CBE direct-assessment programs, but did not emphasize CBE policies on their website (2014). Alternatively, the Higher Learning Commission (HLC) has provided instructions for documenting CBE direct-assessment programs to their member institutions since 2013 and also updated the HLC website to provide

explicit instructions for IHEs interested in pursuing CBE, including an overview of all federal recommendations for evaluating CBE programs (Higher Learning Commission [HLC], 2013; 2017) The Western Association of Schools and Colleges Accrediting Commission added a clearly defined substantive change application procedure for CBE and CBE direct assessment programs (WASC Senior College and University Commission, 2015).

Although 50 regionally accredited IHEs in the United States had already developed or begun to develop competency-based programs using U.S. Department of Education experimental-site status by fall 2014, the lack of a commonly accepted definition hindered widespread growth of CBE in the traditional academic community (Council of Regional Accrediting Commissions [C-RAC], 2015; Fain, 2015). This hindrance was mitigated in June 2015 when the Council of Regional Accrediting Commissions (C-RAC) announced a joint agreement on standards for defining and approving CBE programs to be used by all regional accrediting bodies (C-RAC, 2015). In this joint statement, C-RAC provided a framework outlining a definition of CBE and the three most common approaches for implementing CBE programs: a course/credit approach that included demonstration of competencies at a high level of achievement in traditional course, credit, and term settings; direct assessment that awards credentials based solely on competencies, completely uncoupled from the traditional academic settings of course, credit, and term; and a hybrid approach combining elements of course/credit and direct assessment (C-RAC, 2015). According to the Chair of C-RAC and President of NEASC-CIHE, Brittingham,

> The key is to promote this expansion of CBE while also ensuring the quality and integrity of the academic program. Between our statement and the new guidance

> from the Department of Education, we believe these goals can be accomplished, thereby supporting increased innovation at our member institutions. (C-RAC, 2015, p. 1)

With the additional clarity provided by C-RAC and guidance from the U.S. Department of Education on experimental-site status, by fall 2015, the number of IHEs developing CBE programs had increased to more than 600 (C-RAC, 2015; Fain, 2015; U.S. Department of Education, 2015).

Despite this growing number of IHEs exploring CBE, WGU continued to be the institution most commonly singled out as a 21st-century exemplar of the competency-based movement (*Keeping College Within Reach*, 2014; Office of the Press Secretary, 2013). WGU, established in 1997 as an online nonprofit IHE offering 100% competency-based programs, received regional accreditation in 2003. Since that time, WGU reported the average time to complete a bachelor's degree at 30 months with tuition charges of less than $6,000 per year. In addition to offering savings in time and cost, WGU reported high acceptance of their graduates in the marketplace. In a 2011 survey of employers who hired WGU graduates, 98% expressed a high level of satisfaction with the hires (Committee for Economic Development, 2012) and the results of this survey have been widely used by CBE proponents to validate the effectiveness of the competency-based model. Other regionally accredited IHEs touted as having model programs characteristic of the more flexible pathways to degree completion fundamental to CBE include Southern New Hampshire University's subsidiary College for America, Northern Arizona University, University of Wisconsin Flex Option, and Capella University (Kelchen, 2015; Klein-Collins, 2012). CBE programs at each of the above-mentioned IHEs have been approved by the U.S. Department of Education to offer direct-assessment programs and

are exploring this most disruptive form of CBE in a regulatory system not yet fully supportive of programs untethered from the credit hour and seat time standards (Kelchen, 2015; Klein-Collins, 2012; Lacey & Murray, 2015).

Despite the growing number of IHEs offering CBE programs, the institutions and the students who transition to CBE face potential negative outcomes in areas such as student readiness, lack of transformative classroom experiences, and concerns about academic rigor (Slaton, 2014). The first concern focused on the notion that not every student could be considered a good candidate for CBE. Although students already comfortable with online learning and distance education tended to adapt quickly to the independence and responsibility of CBE, other students became lost in the freedom of this modality (Neem, 2013). Another concern about CBE related directly to the perceived transformational nature of a liberal arts education and the traditional viewpoint that this transformation could only occur in seat-time-based educational experiences (Neem, 2013). Because CBE modalities can be disconnected from seat time, opponents tended to focus on CBE's lack of interpersonal, face-to-face experiences. Although this viewpoint may be valid for the traditional college student, it ignores the fact that the majority of students attracted to CBE, and accepted into CBE programs, have often already achieved a measure of comfort and success in online educational environments (Neem, 2013).

Academic rigor in CBE programs was another much-debated topic. Proponents of CBE expressed the belief that the extensive research and development necessary to convert traditional course-learning outcomes to competencies and then develop comprehensive and measurable assessments for them would validate the legitimacy of these programs (Fain, 2014). Opponents of CBE castigated institutions promoting CBE for abandoning their academic roots in favor of supporting the demands of the

marketplace. These same opponents also expressed concern that students who subscribe to CBE opportunities run the risk of being unable to transfer those credentials to other IHEs or employers. These concerns resulted, at least in part, from conceptual ambiguities inherent in CBE (Christensen et al., 2011).

According to the American Psychological Association (2010), *gray literature* can provide valuable supplemental material, even though not typically peer reviewed. Much of the material on the topic of CBE was written by lay professionals and can be categorized as gray literature. Despite its often-nonacademic focus, the expanding pool of CBE literature written by scholars and lay professionals provided the 21st-century context for this study. When combined with documents written during earlier waves of CBE exploration, the combined body of literature formed the basis of the qualitative concept analysis described in Chapter 3.

Chapter 3: Research Design and Methodology

Research Design

A qualitative, concept analysis, grounded in the epistemological assumptions of the postpositivist paradigm, provided the framework for this study (aligned with Mertens & Wilson, 2012; Rodgers, 2000b, J. Wilson, 1971). Clarifying the conceptual use and understanding and revealing the primary characteristics of competency-based education (CBE) in the traditional postsecondary landscape, as presented in the literature of external stakeholder groups of funders, reformers, and policymakers (Kelchen, 2015) during 2 eras of intense CBE experimentation, provided the purpose. Concept analysis is a form of content analysis with a rich history, traceable to the ancient philosopher Aristotle, and his search for the essence of things (Rodgers, 2000b). Studying the essential nature of a thing as observable falls in the philosophical view of concepts as entities. Philosophers who took this approach included Descartes, Kant, Locke, and Frege, whose views tended to consider the concept or symbol in direct connection to actual, observable entities, but excluded any consideration of context or relationship (Rodgers, 2000a, 2000b). The works of Ryle, Toulmin, and the later works of Wittgenstein contributed greatly to the development of what is called the dispositional view of concepts (Hacker & Schulte, 2009; Rodgers, 2000b; Ryle, 1949/1966; Toulmin, 1972). This dispositional approach presents "concepts as habits or capacities for certain behaviors" (Rodgers, 2000b, p. 11) and provides opportunity for individual or collective understanding of a concept to engender specific behavior. For example, professional behavior is a personal activity dependent on an individual's understanding (mental disposition) of what it means to be professional (Rodgers, 2000b).

Based on the works of these early philosophers, modern philosophers in the field

of education began to apply the theoretical study of concepts to educational ideas in the late 1950s not only to describe concepts themselves, but also to establish policy based on those descriptions (Scheffler, 1978). Scheffler, one of the first educational philosophers to apply concept analysis to educational concepts in the United States, argued that to establish policy, one must consider the contextual framework in which a concept is used (Scheffler, 1978). J. Wilson (1971) expanded this new emphasis on context by encouraging scholars to explore concepts for "the practical results of using it in certain ways, and the underlying anxieties about ultimate values [and] ideals" (p. 38). Soltis, a student of Scheffler, elaborated by developing three different types of concept analysis:

1. Generic analysis, where the main purpose is to identify important characteristics to clarify a concept,
2. Differentiation analysis, used to "identify dominant standard uses", and
3. Conditions analysis that determines the conditions or contexts in which use of the concept is most likely to occur (Soltis, 1978, inside front cover).

Soltis (1978) emphasized the importance of context and reiterated Wittgenstein's argument that concepts do not have to have rigid boundaries or definitions; rather, concepts can be clarified by exploring common usages rather than attempting to discover the inherent essence (Hacker & Schulte, 2009; Rodgers, 2000b). Clarifying concepts such as CBE is important because "some educational words have power—the power to redirect the procedures and purposes of educators" (Soltis, 1978, p. 90).

Although concept analysis has been considered a valid research option for analyzing immature (i.e., not clearly defined) educational concepts since the late 1950s (Scheffler, 1978; J. Wilson, 1971), this research method has been more commonly used in the field of nursing (Raiskums, 2008; Rodgers, 2000a). The evolutionary approach to

concept analysis introduced by Rodgers (2000a) centered on the "philosophical position that concepts are dynamic and evolve over time" (p. 91) and corresponds to the dispositional philosophical view of concept analysis (Rodgers, 2000b). Few subtle but important differences emerged between Rodgers' evolutionary approach and other methods of concept analysis. First among those variations is the acknowledgement that social context and time frame impact the use and understanding of concepts (Rodgers, 2000b). Also, concepts are not typically described with a single word or expression, but with "clusters" of related words and expressions (Rodgers, 2000a, p. 79).

The evolutionary method described by Rodgers involves the following iterative and, often simultaneous activities:

1. Identify the concept of interest and associated expressions (including surrogate terms).
2. Identify and select an appropriate realm (setting and sample) for data collection.
3. Collect data relevant to identify:
    a. The attributes of the concept; and
    b. The contextual basis of the concept, including interdisciplinary, sociocultural, and temporal (antecedent and consequential occurrences) variations.
4. Analyze data regarding the above characteristics of the concept.
5. Identify an exemplar of the concept, if appropriate.
6. Identify implications, hypotheses, and implications for further development of the concept. (Rodgers, 2000a, p. 85)

This study conformed to the Rodgers' method described above.

When using the evolutionary approach to concept analysis, one must first identify the concept being studied (Rodgers, 2000a). For this study, the conceptual term of interest was CBE, but review of the literature illustrated several surrogate terms referencing similar concepts. During the time periods when CBE began to emerge as a concept, the development of these surrogates was particularly prevalent. Some alternate terms were competency-based learning (Corlett, 2014), outcome or outcomes-based education/learning (Spady, 1978, 1994), mastery-based learning (Bloom, 1968), and performance-based education/learning (Houston, 1974). The use of hyphens in these terms has been inconsistent and seemingly dependent on the author's preference. The use of the term *education* rather than *learning* also seemed to vary based on author preference, but education was used more frequently when discussing a formal educational setting whereas learning might occur in any setting (Corlett, 2014). In addition to identifying surrogate terms, but consistent with the first step of Rodgers' evolutionary approach to concept analysis, one should also develop an awareness of alternative expressions associated with the concept under review. Consequently, when exploring the 21st-century evolution of CBE, one must include the terms used to describe the three approaches identified by key regulatory agencies: course/credit CBE, direct-assessment CBE, and a hybrid approach combining the course/credit and direct-assessment approaches (Book, 2014; Council of Regional Accrediting Commissions [C-RAC], 2015; Johnstone & Soares, 2014; The Secretary's Recognition of Accrediting Agencies, 2009). The term *direct assessment* must be included when identifying alternative expressions for CBE.

Setting

As with any literature-based analysis, the time period and type of literature being studied form the boundaries of the study's setting (Rodgers, 2000b). To determine the effectiveness of the proposed research strategy, I conducted a small pilot study in June 2014. During this pilot, I tested my methodology and explored various search parameters and coding strategies. The results of the pilot supported the proposed approach and also illuminated a flaw in the stipulative definition of the external stakeholder group, *reformers*. As stated in the definitions section of Chapter 1, *reformers* are individuals or organizations whose *primary function* is to expand acceptance/adoption of their chosen reform (see p. 14). Although I anticipated some difficulty discerning between reformers and funders, I had not made the logical leap to anticipate reformers might also include educators and educational vendors. Once I resolved the intellectual quandary of categorizing an individual or agency whose reform modus operandi included educating/training other individuals or organizations rather than just informing them, my contextual confusion resolved.

Pilot search parameters included the phrases "competency-based education" and "competency-based learning" in the Educational Resources Information Center (ERIC), ProQuest, and University System of Maryland and Affiliated Institutions databases. These searches revealed an abundance of material on professional and career training, but relatively little recent scholarly literature centered on CBE in traditional higher education settings. Informed by the pilot experience, the final study setting focused primarily on postsecondary CBE documents published during the periods 1973–1983 and 2005–2015 and indexed in the ERIC online library (http://eric.ed.gov/). Considering the impact of the growing number of online, electronic publications on CBE in the 21st century, however,

the setting also included the resource libraries of three of the four national initiatives dedicated to the promotion of postsecondary CBE (Lacey & Murray, 2015), and materials from the official websites of policymaking agencies completed the setting. Although not always peer reviewed, the inclusion of online documents—gray literature—provided a valuable source of information on postsecondary CBE as a 21st century emerging topic (American Psychological Association, 2010).

Sample Selection

This study employed a purposive sampling strategy, also known as relevance sampling (Krippendorff, 2013), and made no claim that the samples included were fully representative of the entire population. Instead, the intent was for samples to represent the population of *relevant* texts. Texts not pertaining to the specific search criteria were not included in either sample group. Sample Group 1 initially included all relevant results returned for the time frame 1973–1983. Sample Group 2 initially included all relevant results for the time frame 2005–2015. Both groups were ultimately further reduced using a proportional, stratified, random-sampling strategy based on year of publication and external stakeholder. Choosing a sufficiently large sample size supported the credibility and neutrality of the study (as suggested by Creswell, 2013; Krippendorff, 2013; Rodgers, 2000a). This strategy provided a sample size of 90 units of analysis and conformed to Rodgers' recommendation of using the greater number of either 30 items in each context/stratum or 20% of the total to increase the "rigor of the design and the credibility of the findings" (2000a, p. 88). Illuminating these strata facilitated the process of comparing characteristics during the analysis phase (as in Creswell, 2013; Krippendorff, 2013).

Considering the limitation introduced into this study because of the 21st-century

experimental status afforded CBE, the initial population included all results returned from an ERIC online library search. Those search results were augmented by publications identified as key resources by any of the four national initiatives promoting CBE identified in *Rethinking the Regulatory Environment of Competency-Based Education* (Lacey & Murray, 2015). Those initiatives include the Competency-Based Education Network (C-BEN), the Next Generation Learning Challenges (NGLC) 2014 Breakthrough Models Incubator, the Council for Adult and Experiential Learning (CAEL) Jumpstart program, and the Community Colleges in Partnership of Western Governors University (WGU) (Lacey & Murray, 2015).

C-BEN is a collaboration of IHEs that share the common goal of developing CBE programs to improve accessibility, affordability, and completion, and is one of the first 21st-century organizations developed specifically to educate interested parties about CBE (Competency-Based Education Network, n.d.). A full list of participating institutions is available in Appendix A. Each of the 33 participating C-BEN institutions has also been approved in at least one of the experimental-site initiatives authorized by the U.S. Department of Education. Experimental-site approval allows an IHE to explore competency-based higher education programs without jeopardizing its authorization to offer federal student aid (FSA) (Alverno College et al., 2014; Bergeron, 2013).

Educause, a nonprofit association that encourages advancements in higher education through innovations in information technology, partnered with the Bill and Melinda Gates Foundation and the League for Innovation in the Community College to create NGLC (http://www.educause.edu/). Through a system of model initiatives, NGLC builds national coalitions of higher education leadership teams dedicated to exploring and promoting innovations through a different focus each year. The focus for the 2014

incubator model (see Appendix B) sought to expand the development of CBE programs (http://nextgenlearning.org/breakthrough-models-incubator-cohort-2). The CAEL created the Jumpstart program with support from the Lumina Foundation to provide faculty and staff training on developing and maintaining CBE programs. A list of the 21 IHEs who participated in this innovative form of professional development 2014-2015 appears in Appendix C – Council for Adult and Experiential Learning Jumpstart Institutions (http://www.cael.org/cbe/publication/giving_cbe_a_jumpstart). Searches of each of the three resource libraries used the same primary search parameters applied to the ERIC searches with some variations due to the constraints inherent in each search engine.

The fourth CBE national initiative referenced by Lacey and Murray (2015) is the Community Colleges in Partnership with WGU. Although this scholarship program reduces the cost of attending WGU for students who graduate with an associate's degree from any of the 345 participating community colleges from 27 states, because no resource library exists for this initiative, it was not used to augment the sample size (WGU, 2017).

Materials included in search results from Policymakers websites such as The White House, the U.S. Department of Education, the U.S. House of Representatives, the U.S. Senate, the Library of Congress, and the National Archives provided more detail on the official language used to describe CBE. Much of the material appeared in the form of Dear Colleague letters, press releases, congressional testimony, and bills presented in the Senate and the House of Representatives.

Data-Collection Procedures

During the data-collection stage, I accessed material from the ERIC online library and the C-BEN, NGLC, and CAEL Jumpstart websites to download items included in

their respective resource libraries. Searches of these resource libraries helped identify current gray literature on the topic of CBE. Because documents published in the Policymakers context were, as anticipated, underrepresented in the initial sample, Internet searches of the official websites for The White House, U.S. Department of Education, U.S. Senate, U.S. House of Representatives, Library of Congress, and National Archives for documents published on the topic of CBE during the selected time periods supplemented the initial search results.

The primary search parameter for all searches used the phrase *competency-based*. The inclusion of words such as *education* and *learning* in the initial search-parameter phrase varied depending on the search engines provided by each resource. Secondary-search filter adjustments conformed to the demands of each setting. For example, the search tool provided on the listed government websites did not allow the user to enter a secondary-filter option. The secondary filters for ERIC searches included the term *higher education* with related terms enabled. Related terms included phrases such as *postsecondary education* and *tertiary education.* Year filters limited and categorized each result. An exploratory search exercise limited the filters to the title and abstract fields, impractical because of the minimal abstract material available for many exhibits in the earlier year ranges.

To maintain focus on the development of CBE in the mainstream academic community and to limit the broad initial parameters, ERIC searches included an exclusionary strategy based on the relevancy criteria of mainstream *higher education* exclusive of *teacher education.* Developing competency-based teacher education (CBTE) and, to a lesser degree, other professional fields, provided the impetus for CBE growth in the 1960s and 1970s (Grant et al., 1979; Houston, 1974). Interest in expanding the CBE

learning model in healthcare and other professional fields continued through the 1980s and 1990s (Maehl, 2000; Morcke et al., 2013; Spady, 1994). Consequently, the exclusion strategy expanded to filter out terms related to *health care* and *medical fields, professional education,* and *vocational education* and *training*. Inclusion criteria included accessibility through online sources, and applicability to the emerging conceptualization of CBE in mainstream higher education (Rodgers, 2000a).

Application of the above strategies varied depending on the search options available through the specific resource. Specific search parameters I applied to each source evolved as research progressed. The finalized ERIC search included the following parameters for each search years 1973–1983 and 2005–2015: (competency-based AND pubyear:####) -kindergarten -elementary -vocational -training -medical -pharmacy -nurse -nursing -health -teacher -engineering -surgery -counselor -clinical -healthcare "-social work" -dental -administrator -international –professional). A great deal of manual review had to occur because the term *secondary* could not be added to exclusion statements because that also excluded the term *postsecondary*. The surrogate terms of proficiency-based, mastery-based, outcome-based, performance-based, and standards-based substituted for the inclusion parameter competency-based in additional search passes for each publication year. Ultimately, replacing *competency* with surrogate terms did not produce appreciably more results, but was still a worthwhile exercise.

The completed ERIC search passes numbered 132; all other sources required six searches each for a total of 186 searches. The 3,008 documents identified during the search process underwent additional exclusion analysis based on either abstract or full-document review to determine if the actual focus of each document complied with the study's parameters and met the relevance criteria. Documents excluded during the

manual-review process most frequently fell into categories such as “secondary” or “elementary” education, “international” focus, or were not on topic at all. I assigned the exclusion category, “instructional design focus,” to any document emphasizing guidebook-style details for developing classroom materials that lacked the broader CBE perspective that would have made it germane to this study. The exclusion category, “research focus” included student-oriented experimental and case studies or any article focused specifically on research methods. In all, I employed approximately 140 exclusion categories.

A preliminary review of the final results organized the documents into strata of Group 1 (1973–1983) and Group 2 (2005–2015) publication years, and the contexts of three external stakeholder groups (Funder, Reformers, and Policymakers). All documents included in each sample group were available online in the public domain or through interlibrary loan and in Portable Document Format (PDF) or, if web-based, in HyperText Markup Language (HTML). Of the 3,008 results reviewed, 202 underwent the proportional, stratified, random-sampling exercise. NVivo, a computerized bibliographic retrieval and coding system, provided organizational structure for the study.

To further define my sample group, I first identified the desired number of documents to be included in the study. The final number of relevant texts for the two time periods totaled 202 documents (see Appendix D). Rodgers recommends analyzing either 30 items in each context/stratum or 20% of the total (Rodgers, 2000a, p. 88). Considering 20% of 202 would have only resulted in a document pool of 41 documents, I made the decision to explore the larger value of 30 per strata for a total desired sample size of 90. When organized by time periods, the relevant documents in Group 1 (1973–1983) totaled 80 and relevant documents in Group 2 (2005–2015) totaled 122, shown in Table 1.

Table 1

Relevant Documents Stratified by Time Periods and External Stakeholders

	Funders	Policymakers	Reformers	Combined stakeholders
Group 1: 1973–1983	7	15	58	80
Group 2: 2005–2015	4	33	85	122
Combined time frames	11	48	143	202

Because the Reformers stakeholder group published the greater number of documents, to more fairly represent the documents included in the funders and Policymakers groups, I employed the proportional, stratified, random-sampling strategy shown in Table 2.

Table 2

Proportional, Stratified Sample

	Funders	Policymakers	Reformers	Combined stakeholders
Group 1: 1973–1983	4	7	25	36
Group 2: 2005–2015	2	14	38	54
Combined time frames	6	21	63	90

After determining the number of documents to be evaluated in each group, I used the delivered Microsoft Excel RAND function to generate random numbers for each document. Sorting the spreadsheet by the generated random numbers and sorting by year and stakeholder groups identified the documents that would be included in the coding and analysis stage (as suggested by DAuria, 2013; Major, 2013). Because of the relatively small number of documents in the funders and Policymakers categories and at the recommendation of my dissertation committee chair, I deliberately oversampled documents in those stakeholder contexts. A quick content review of all documents in the funders and Policymakers groups in both time periods ensured I did not miss or

overemphasize any findings from the stakeholder groups with smaller representation. Thematic elements in the uncoded documents were consistent with those found in the coded documents. No outliers emerged.

After collecting or creating electronic files for each of the 90 documents identified through proportional sampling, I then performed a preliminary review of each document using the schedule of activities described in the method of evolutionary concept analysis (Rodgers, 2000a, p. 85). Because concept analysis is a type of content analysis, general coding procedures recommended by experts in the field of content analysis applied (Center for Evaluation and Research, 2013; Creswell, 2013; Krippendorff, 2013; McMillan & Schumacher, 2010; Saldana, 2013). The evolutionary approach of concept analysis followed, at least initially, a prescriptive list of coding categories. During the first coding phase, I carefully read and coded each document for prescriptive categories such as, (a) temporal and external stakeholder contexts, (b) definition, (c) surrogate and related terms, (d) intended purposed, and (e) model cases or "exemplars" (Rodgers, 2000a). Although I initially applied only Rodgers' prescriptive coding strategy, it became apparent during the first pass through the documents that additional prescriptive coding based on Elam's (1971) list of five essential, six implied, and seven related CBE characteristics would identify common and divergent characteristics with greater specificity. In addition, I integrated new, unscripted themes into the coding and analysis phase as they emerged (aligned with Center for Evaluation and Research, 2013; Creswell, 2013; Krippendorff, 2013; McMillan & Schumacher, 2010; Rodgers, 2000a; Saldana, 2013).

Data-Analysis Procedures

The evolutionary approach to concept analysis recommended completing data

collection prior to beginning analysis. In this way, researchers minimize the risk of preconceived and half-formed ideas introducing personal bias into studies (Rodgers, 2000a). Coding is an iterative process (Krippendorff, 2013; Saldana, 2013) and despite the temptation to disregard Rodgers' recommendation and document early findings after each coding cycle, formal analysis did not commence until I completed all coding cycles. However, the process of coding the literature in each sample group created an exploratory, problem-solving heuristic to inform each step of the analysis (Saldana, 2013). As Saldana (2013) points out, "coding is not just labeling, it is linking" (p. 8). Using this approach to coding, I developed the raw-data fragments contained in each relevant document into conceptual codes and, through analysis, linked those codes to all related data (aligned with Saldana, 2013). Although creating clean copies of the older documents was time-consuming, the many advantages of uploading all documents to NVivo became more obvious as I developed and ran queries to extract data from the coded documents. Using the query feature, I examined each theme individually as well as collectively in each stratum and recorded the resulting data in Microsoft Excel spreadsheets for easy tabulation. The thematic framework that structured my coding efforts also centered my analytical focus and provided a comprehensive and coherent method to organize the findings.

Summary

Through careful application of the described methodology, I gathered and analyzed the data needed to answer the research questions posed in this study. A comprehensive discussion of the findings resulting from this effort is the subject of Chapter 4.

Chapter 4: Findings

Competency-based education (CBE) has reemerged in the 21st century as a possible solution for improving quality and performance while reducing cost and time to complete a degree in the U.S. higher education system. Despite increased interest in and experimentation with this learning model though, defining CBE as a concept remains problematic. Consequently, the three-fold purpose of this study was (a) to clarify the concept of postsecondary CBE by analyzing use of the term in documents published by three primary external stakeholder groups during two specific time periods, characterized by federally encouraged CBE advocacy and experimentation; (b) to educate future decision makers; and (c) to improve conceptual clarity to assist researchers exploring CBE in the future.

External stakeholders are groups or organizations that, although not responsible for implementation and delivery of CBE programs to students, can affect institutional goals, decisions, and policies. According to Kelchen (2015), CBE has three primary external stakeholder groups. The first stakeholder group, funders, is a group or organization that provides financial support to other groups or organizations for the primary purpose of implementing change. Funders may function as Reformers, the second stakeholder group, but although Reformers encourage acceptance/adoption of their chosen reform through education, the distinguishing feature of Funders is to provide monetary support in the form of grants (Kelchen, 2015). Policymakers make up the final external stakeholder group and comprise individuals or organizations with the authority to legislate the actions of other individuals or organizations (Kelchen, 2015).

The primary research questions in this study follow: How is CBE defined in documents published by the three external stakeholder groups during two different time

periods; Can documents from both periods be categorized into similar stakeholder groups; and Can common characteristics of CBE be identified in and across stakeholder groups and time frames? The answers to these questions provided a conceptual foundation for improved understanding of CBE for internal and external stakeholders and added to the body of scholarly literature on the topic, for future inquiry.

For this study, the entwined data-collection and coding procedures, based on predetermined themes, provided a rich environment for analysis. According to the Rodgers (2000a) approach to evolutionary concept analysis, the following themes must be explored to fully inform any analysis exploring an emergent concept.

1. Contexts – year of publication, type of publication, and the external stakeholder group that published the document;
2. Definition – either an actual descriptive definition or the defining characteristics attributed to the concept in the document;
3. Terminology – surrogate or related terms the document used to identify the topic;
4. Applications or intended purpose – goals advanced by the topic; and
5. Identified exemplar – examples of "found" model cases (if available).

As initial analysis commenced, however, the need for further elaboration of Rodgers' defining activities became clear. Elam's (1971) description of the five "essential elements," six "implied characteristics," and seven "related or desirable characteristics" common to performance-based education, also known as CBE, provided the needed additional framework (p. 8):

Essential elements.

1. Competencies to be demonstrated are role-derived, specified in behavioral

terms, and made public.

2. Assessment criteria are competency-based, specify mastery levels, and made public.
3. Assessment requires performance as prime evidence, considers student knowledge.
4. Students' progress rate depends on demonstrated competency.
5. Instructional program facilitates development and evaluation of specific competencies.

Implied characteristics.

1. Individualization
2. Feedback
3. Systemic program
4. Exit-requirement emphasis
5. Modularization
6. Student and program accountability

Related or desirable characteristics.

1. Field setting
2. Broad base for decision making
3. Protocol and training materials
4. Student participation in decision making
5. Research-oriented and regenerative
6. Career-continuous
7. Role integration (Elam, 1971, p. 8)

Because the selected evolutionary approach to concept analysis is grounded in the

idea that concepts are context dependent and evolve over time (Rodgers, 2000a), it seemed natural for the analytical framework of this study to evolve as an amalgam of Rodgers' prescribed list of themes/categories, Elam's list of characteristics common to CBE programs, and new themes that emerged during the coding process. The final list of themes/categories developed for this study included:

1. Antecedents
2. Application/intended purpose
3. Characteristics
    a. Faculty
    b. Program
        i. E1. Competency-based, role specific & public
        ii. E2. Performance-level expectations
        iii. E3. Assessments performance based
        iv. E4. Demonstration determines progression
        v. E5. Instruction framework supports acquisition of competencies
        vi. I1. Personalized/individualized/learner centered
        vii. Feedback loop between instructor & students
        viii. I3. Systems approach
        ix. I4. Exit-requirement emphasis
        x. I5. Instruction modularized
        xi. I6. Accountability focus (student & program)
        xii. O1. Prior learning
        xiii. O2. Support mechanisms (including technology)

xiv. O3. Transcripting

xv. O4. Fee structure

xvi. R1. Field setting

xvii. R2. Decisions broad-based (students assessed by more than a single faculty member; program assessed by school, community, career experts)

xviii. R3. Training/instruction is career relevant

xix. R4. Students part of goal setting process

xx. R5. Program data driven and regenerative

xxi. R6. Life-long learning expectations

xxii. R7. Career/role integrative

c. Student

d. School

4. Definitions

5. Exemplars

6. Financial Support

7. Positive Impacts

8. Constraints or limitations

9. References

10. Related concepts

11. Sociocultural context

12. Surrogates

The following findings for each thematic element are contextualized on the basis of time frame and stakeholder groups to provide a clear understanding of the analytical

process framing this study. The strata comprising this proportional, stratified, random sample are detailed in Table 3.

Table 3

Time Frame and External Stakeholders

	Funders	Policymakers	Reformers	Combined stakeholders
Group 1: 1973–1983	4	8	25	37
Group 2: 2005–2015	2	14	37	53
Combined time frames	6	22	62	90

Antecedents

Descriptions of antecedents provide readers with a fuller understanding of the foundation on which a current concept rests. Of the documents in the 1973–1983 sample group (Group 1), the ones that explicitly described historical, postsecondary antecedents of CBE did so in terms of earlier competency-based and performance-based education movements in the fields of teacher education and the helping professions. Group 1 documents referenced theoretical antecedents of the post-World War I era military training and the systems approach for industrial improvements characterized by behavioral objectives and performance efficiencies. The documents in the 2005–2015 sample group (Group 2) focused more exclusively on the adult and continuing-education experiments of the 1970s as the historical roots of today's postsecondary CBE movement. Theoretical antecedents represented in Group 2 coincided with those of Group 1, emphasizing a systems approach combined with individualized forms of strategic management.

From the stakeholders' perspective, the Funders' viewpoint about antecedents was absent in both Group 1 and Group 2. Documents published by Policymakers in Group 1

mentioned the importance of adult development as a theoretical antecedent of and validation for exploring CBE programs in the 1970s. No document in the Group 2 Policymakers strata referenced either a historical or theoretical antecedent. The Reformers' publications represented in Groups 1 and 2 provided the majority of informative details concerning historical and theoretical antecedents. In the antecedent category, any relevant differences formed along temporal boundaries rather than across stakeholder perspectives. See Tables 4 and 5 for full coding results on antecedents.

Table 4

Antecedents Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Antecedents	1	25.00	1	12.50	7	28.00	9	24.32
Elem/sec ed	-	-	-	-	2	8.00	2	5.41
Teacher ed	1	25.00	-	-	3	12.00	4	10.81
Adult dev & ed	-	-	1	12.50	1	4.00	2	5.41
Helping prof	-	-	-	-	1	4.00	1	2.70
Systems design	-	-	-	-	1	4.00	1	2.70
Behavioral obj	-	-	-	-	-	-	-	-
Mastery theory	-	-	-	-	1	4.00	1	2.70
Military training	-	-	-	-	-	-	-	-
Vocational trng	-	-	-	-	-	-	-	-

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes. Elem/sec ed = elementary or secondary education; adult dev & ed = adult development and education; Behavioral obj = Behavioral objective; vocational trng = vocational training.

Table 5

Antecedents Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Antecedents	0	0.00	0	0.00	9	24.32	9	16.98
Elem/sec ed	-	-	-	-	1	2.70	1	1.89
Teacher ed	-	-	-	-	4	10.81	4	7.55
Adult dev & ed	-	-	-	-	6	16.22	6	11.32
Helping prof	-	-	-	-	1	2.70	1	1.89
Systems design	-	-	-	-	3	8.11	3	5.66
Behavioral obj	-	-	-	-	2	5.41	2	3.77
Mastery theory	-	-	-	-	2	5.41	2	3.77
Military training	-	-	-	-	1	2.70	1	1.89
Vocational trng	-	-	-	-	1	2.70	1	1.89

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes. Elem/sec ed = elementary or secondary education; adult dev & ed = adult development and education; Behavioral obj = Behavioral objective; vocational trng = vocational training.

Application/Intended Purpose

In the sample group, stated applications for CBE programs in Group 1 emphasized student performance, success, and opportunity as well as institutional accountability and cost efficiency; Group 2, in contrast, emphasized affordability, degree completion, time efficiency, and quality. None of the sample publications explicitly defined the term *quality* and the definition remained open to reader interpretation. The intended purposes represented in stakeholder-group documents ranged along similar lines. Funders' documents published in the Group 1 time frame emphasized institutional accountability. Career relevance also surfaced in Funders' documents, but was more common in Group 2. Policymakers' documents tended to emphasize access, student performance, career relevance, affordability, quality, completion, and efficiency, but the only crossover theme shared by time periods was student access. Documents published

by the Reformers group demonstrated more commonality with publications in both time frames emphasizing access, student performance, career relevance, institutional cost effectiveness, and quality. Despite those common threads, the most prevalent topic in Reformers' publications was the Group 2 idea of affordability. Refer to Tables 6 and 7 for full details on coding results for Application and Intended Purpose.

Table 6

Application and Intended Purpose Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
All applications	2	50.00	7	87.50	11	44.00	20	54.05
Access	-	-	2	25.00	3	12.00	5	13.51
Student perf	1	25.00	5	62.50	5	20.00	11	29.73
Career relevant	-	-	5	62.50	2	8.00	7	18.92
Enrichment	-	-	2	25.00	-	-	2	5.41
Accountable-ind	-	-	-	-	1	4.00	1	2.70
Accountable-inst	2	50.00	1	12.50	4	16.00	7	18.92
Affordability	-	-	-	-	-	-	-	-
Inst savings	-	-	-	-	5	20.00	5	13.51
Quality	1	25.00	-	-	3	12.00	4	10.81
Completion	-	-	-	-	-	-	-	-
Time efficient	-	-	-	-	-	-	-	-
U.S. status	-	-	-	-	-	-	-	-

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes. Student perf = student performance; accountable-ind = accountable-individual; accountable-inst = accountable-institutional; inst savings = institutional savings.

Table 7

Application and Intended Purpose Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
All applications	1	50.00	8	57.14	16	43.24	25	47.17
Access	-	-	2	14.29	6	16.22	8	15.09
Student perf	-	-	-	-	2	5.41	2	3.77
Career relevant	1	50.00	-	-	8	21.62	9	16.98
Enrichment	-	-	-	-	4	10.81	4	7.55
accountable-ind	-	-	1	7.14	-	-	1	1.89
Accountable-inst	-	-	-	-	-	-	-	-
Affordability	-	-	6	42.86	10	27.03	16	30.19
Inst savings	-	-	-	-	2	5.41	2	3.77
Quality	-	-	4	28.75	3	8.11	7	13.21
Completion	-	-	3	21.43	6	16.22	9	16.98
Time efficient	-	-	5	35.71	5	13.51	10	18.87
U.S. status	-	-	-	-	1	2.70	1	1.89

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes. Student perf = student performance; accountable-ind = accountable-individual; accountable-inst = accountable-institutional; inst savings = institutional savings.

Constraints and Limitations

The theme of constraints and limitations common to developing and implementing a CBE model emerged so repeatedly during the coding process that it had to be added to the developing analytical framework. Authors in both time frames focused on the difficulties associated with operationalizing this new learning model by emphasizing the time-consuming and costly aspects of developing and operating competency-based programs. The most common constraints mentioned included defining competencies, developing valid and reliable assessments, combating opposition to changing faculty roles, expectations, the accompanying increased workload, and the inadequacy of existing support systems. Other commonly mentioned barriers included

structural elements inherent in the traditional term/credit/course framework, the limitations of observable performance goals, concerns about transferability between institutions of higher education (IHEs) and between IHEs and employers, and the more ephemeral barriers of institutional culture and societal perception.

Documents in the 1973–1983 time frame tended to express more student-centric concerns than found in documents of the later time frame. Examples of these constraints included concerns about the lack of data on student success, the prescriptive nature of competency lists and how the key characteristic of CBE could limit student creativity, how a binary performance system could reduce student incentives to excel, and deemphasizing the importance of social skills for developing human competence. Because CBE proponents tended to promote departure from traditional course and credit structures in favor of individualized study, standard rates of student progress could not be easily defined. The much-lauded CBE benefits of time and cost savings as well as student applicability and performance were necessarily student specific and, consequently, not easily generalizable. The documents of Group 1 stakeholders all shared similar concerns about the lack of existing data, the relativity of student success, and faculty opposition; but the Policymakers context emphasized only those three concerns. Although concerns expressed in documents published by the Funders group did coincide with those published in Reformers' publications, the Reformers group presented the widest variety of constraints and limitations for public review. Reformers' documents published 1973–1983 provided the sole mention of constraints related to the validity and accuracy of assessments and the inherent limitations of assessing observable learning. Reformers' documents also expressed concern about public perceptions of CBE being more suited to the development of context-dependent and simplistic skills, disconnected from higher

level affective development. This negative viewpoint was reinforced by additional concerns about the lack of standardization in the areas of student performance and rates of progress. Reformers' publications were also the source of budding concerns as to how CBE would fit into existing regulatory, accreditation, and fee structures. These publications expressed the opinion that a long-term view would be needed to establish the viability of CBE in the higher education landscape.

Publications from the 2005–2015 Policymakers and Reformers stakeholder groups provided readers with an expanded list of constraints focused on the traditional term, course, and credit-hour framework and related institutional, accreditation, and financial aid regulations inhibiting widespread development and adoption of competency models. This later time period also emphasized the criticality of career-relevant competencies and the purposeful alignment of academic outcomes to employer requirements. The Funders group provided less material on specific delimiters of CBE programs and focused more on the impact of public perceptions of CBE as a simplistic education model geared more toward workforce development than developing an educated citizenry. One cannot, however, ignore the fact that three of the Group 1 sample and 16 of the Group 2 sample had Funders acting as sponsors for Reformers' publications. Consequently, Funders must be considered contributing partners when reviewing those results. See Tables 8 and 9 for full details on Constraints and Limitations.

Table 8

Constraints and Limitations Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Constraints	3	75.00	2	25.00	20	80.00	25	67.57
Development	3	75.00	-	-	14	56.00	17	45.95
Validity	-	-	-	-	4	16.00	4	10.81
Observable	-	-	-	-	4	16.00	4	10.81
Funding	-	-	-	-	-	-	-	-
Prescription	1	25.00	-	-	9	36.00	10	27.03
Fee structure	-	-	-	-	1	4.00	1	2.70
Long-term view	-	-	-	-	1	4.00	1	2.70
Regs & culture	1	25.00	-	-	1	4.00	2	5.41
Empl alignment	-	-	-	-	-	-	-	-
Perception	-	-	-	-	3	12.00	3	8.11
Mechanization	-	-	-	-	1	4.00	1	2.70
Support limits	1	25.00	-	-	3	12.00	4	10.81
Context dep	-	-	-	-	1	4.00	1	2.70
No perf diff	-	-	-	-	2	8.00	2	5.41
Accreditation	-	-	-	-	1	4.00	1	2.70
Lack of data	1	25.00	1	12.50	3	12.00	5	13.51
Transferability	2	50.00	-	-	2	8.00	4	10.81
Social impacts	1	25.00	-	-	4	16.00	5	13.51
Financial aid	-	-	-	-	-	-	-	-
Relativity	2	50.00	1	12.50	2	8.00	5	13.51
Trad structure	2	50.00	-	-	1	4.00	3	8.11
Faculty issues	2	50.00	1	12.50	8	32.00	11	29.73
Progress rate	-	-	-	-	2	8.00	2	5.41
CBE integration	-	-	-	-	-	-	-	-

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes. Regs & culture = regulations and culture; empl alignment = employment alignment; context dep = context dependent; trad structure = traditional structure; CBE = competency-based education.

Table 9

Constraints and Limitations Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Constraints	1	50.00	7	50.00	27	72.97	35	66.04
Development	-	-	3	21.43	10	27.03	13	24.53
Validity	-	-	1	7.14	3	8.11	4	7.55
Observable	1	50.00	-	-	2	5.41	3	5.66
Funding	-	-	-	-	1	2.70	1	1.89
Prescription	-	-	-	-	2	5.41	2	3.77
Fee structure	-	-	-	-	1	2.70	1	1.89
Long-term view	-	-	1	7.14	1	2.70	2	3.77
Regs & culture	-	-	2	14.29	5	13.51	7	13.21
Empl alignment	-	-	-	-	4	10.81	4	7.55
Perception	1	50.00	1	7.14	5	13.51	7	13.21
Mechanization	1	50.00	-	-	2	5.41	3	5.66
Support limits	-	-	1	7.14	9	24.32	10	18.87
Context dep	-	-	-	-	3	8.11	3	5.66
No perf diff	-	-	-	-	-	-	-	-
Accreditation	-	-	1	7.14	4	10.81	5	9.43
Lack of data	-	-	-	-	1	2.70	1	1.89
Transferability	-	-	1	7.14	6	16.22	7	13.21
Social impacts	-	-	-	-	2	5.41	2	3.77
Financial aid	-	-	5	35.71	11	29.73	16	30.19
Relativity	-	-	-	-	2	5.41	2	3.77
Trad structure	-	-	1	7.14	5	13.51	6	11.32
Faculty issues	-	-	1	7.14	12	32.43	13	24.53
Progress rate	-	-	-	-	-	-	-	-
CBE integration	-	-	-	-	1	2.70	1	1.89

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes. Regs & culture = regulations and culture; empl alignment = employment alignment; context dep = context dependent; trad structure = traditional structure; CBE = competency-based education.

Definitions

Although stipulative definitions for CBE appeared in documents across both time

frames and in each stakeholder group, the 1973–1983 attempts to define CBE fell into three types: general and brief statements of function, simple lists of identified characteristics, and elaborations on identified characteristics. Williams and Berns (1978) briefly described competency-based instruction as, "instruction based on actual competencies required for a specific occupation" (p. 11) and the Vocational Education Act (1976) defined CBE programs as ones "that assess learner-competencies, identify learner needs, and prescribe learner activities" (p. 8478). Peterson and Florida State University (1976) identified the three primary characteristics of the Curriculum of Attainments, as, "1) a generic behavior or knowledge area; 2) an assessment task(s) and 3) a preset standard of performance made public in advance of the assessment" (p. 20).

Several publications in Group 1 referenced Elam (1971) either directly (see Byram, 1973; Calbert & Epps, 1974; Hertling, 1974; McBrayer, 1977) or indirectly (see Gentry, 1976). Gentry (1976) provided a brief but coherent definition of CBE programs using the Elam influenced ideal of CBE as "a program in which the competencies to be acquired by the student and the criteria to be applied in assessing the competency level of the student are made explicit, and the student is made responsible for meeting these criteria" (p. 13). Other authors described CBE as, "an educational framework which systematically focuses on student attainment of a hierarchy of publicly stated and validated intellectual attitudinal, and/or motor learning outcomes and the concomitant instructional processes that facilitate, measure and certify such attainment" (Herrscher, 1981, p. 24). Conrad (1983) categorized CBE as, "programs [that] proceed with reference to desired outcomes or competencies that students must achieve. ... Most competency-based programs focus on skills, however, as opposed to the more traditional testing of certain facts in given areas of knowledge" (p. 39). McBrayer (1977) emphasized the

accountability inherent in the certification process: "In a competency-based curriculum, students are certified to possess the skills, knowledge, values, and attitudes necessary to perform such tasks competently. Education is focused not on taking courses, but on learning and demonstrating competencies" (p. 21). Accountability for the learning acquired rather than the time involved in completing a program highlighted Knott's (1975) definition:

> the basic desired outcomes of an educational process can be stated in terms of defined and recognizable competences and all students can be held responsible for achieving these competences. Under a competence-based curriculum, mastery learning and not time is the major criterion of performance. (p. 28)

Although not specifically defined in Funders' publications during 2005–2015, allusions to CBE are present in statements like, "credits should be given based on mastery of content rather than time spent in the classroom" (Lumina Foundation & Gallup, 2013, p. 8). Despite this definitional gap in Funders' publications, Policymakers' and Reformers' publications in Group 2 carried on the tradition of using stipulative definitions to provide basic understanding of CBE for a specific purpose, but they all fell short of the goal of consensus definition. For example, Senate bills referencing CBE routinely used the stipulative definition:

> an educational process that...is characterized by the measurement of learning as opposed to the measurement of instructional and learning time; and … includes direct measures of learning, which may include projects, papers, examinations, presentations, performances, and portfolios, and direct measures by others of student learning, in place of, or in addition to, using credit hours or clock hours to measure learning. (Advancing Competency-Based Education Demonstration

Project Act of 2014, S. 2513, 2014, p. 3)

House bills tended to use a slightly different stipulative definition describing CBE as

> an educational process that … is characterized by the measurement of learning as opposed to the measurement of instructional and learning time; uses direct assessment of student learning, or recognizes the direct assessment by others of student learning, in place of or in addition to using credit hours or clock hours; and...includes direct measures of learning, including projects, papers, examinations, presentations, performances, and portfolios. (Advancing Competency-Based Education Demonstration Project Act of 2014, HR 3136, 2014, p. 3)

Other, less formal documents in the Policymakers group tended to define CBE in sound bytes suitable for electronic distribution. An example can be seen in the phrase, "'competency-based' programs focus on student learning, rather than how many credit hours a student has completed" (Murray, 2015, p. 3).

Reformers' documents published 2005–2015 also conformed to the temptation to present the concept of CBE in short, memorable catch-phrases such as "an outcomes-based approach to education where the emphasis is on what comes out of postsecondary education—what graduates know and can do—rather than what goes into the curriculum" (Soares, 2012, p. 2) or "students only make academic progress and graduate by passing a series of assessments" (Testa, 2008, p. 1) or "learning is fixed, while time is variable" (Porter & Reilly, 2014, p. 2). More detailed definitions emphasized "that learners will be able to demonstrate their learned capabilities after they have acquired a necessary combination of knowledge, skills, and abilities" (Chyung, Stepich, & Cox, 2006, p. 307). Other publications listed characteristics common to CBE programs much like the

descriptions seen in Group 1 publications. For example, Weise and Christensen (2014) published a working definition of CBE that included the following five parts,

1. Students advance upon demonstrated mastery.
2. Competencies include explicit, measurable, transferable learning objectives that empower students.
3. Assessment is meaningful and a positive learning experience for students.
4. Students receive rapid, differentiated support based on their individual learning needs.
5. Learning outcomes emphasize competencies that include application and creation of knowledge along with the development of important skills and dispositions. (pp. 11–12)

Although the wide variety of CBE definitions included in documents from both time periods and each stakeholder group allowed the authors to share their views on the topic, each of those definitions fell short of being considered the consensus definition. Consequently, CBE continued as an emerging concept obscured by definitional confusion.

Definitional Confusion

Concerns related to the lack of clarity surrounding the concept of CBE were primarily represented in publications from the Reformers group. Reformers' publications from Group 1 tended to represent a wider range of concerns about the definitional shortcomings of CBE. Those concerns included the opinion that although CBE had some commonly accepted characteristics, no consensus definition existed and consensus was critical to widespread acceptance of CBE in postsecondary education. Other publications emphasized how the terms used to describe educational concepts were often influenced by funding and regulatory parameters, were context dependent, and were influenced by

individual perceptions of antecedents. Early Funders' publications mentioned that institutional definitions of CBE tended to vary by each institution's experience with that learning model. The common thread running through each of these commentaries was that lack of definitional clarity resulted in mixed messages and tended to obscure critical examination.

Group 2 publications focused on only four concerns, summarized as follows. The widespread acceptance of CBE in postsecondary education was hampered by the lack of a fully developed consensus definition. This lack of conceptual clarity resulted in mixed messages, avoidance by vendors who might assist with other concerns, and contributed to concerns about applicability, transferability, and longevity. Policymakers in Group 2 also emphasized the importance of a consensus definition. See Tables 10 and 11 for more detail.

Table 10

Definitional Confusion Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Definition lacking	1	25.00	0	0.00	6	24.00	7	18.92
Experience influence	1	25.00	-	-	-	-	1	2.70
No consensus	-	-	-	-	2	8.00	2	5.41
Antecedent influence	-	-	-	-	2	8.00	2	5.41
Known characteristics	-	-	-	-	3	12.00	3	8.11
Stakeholder influence	-	-	-	-	2	8.00	2	5.41
No clarity	-	-	-	-	1	4.00	1	2.70
Different views	-	-	-	-	2	8.00	2	5.41
Consensus def critical	-	-	-	-	1	4.00	1	2.70

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes. Consensus def critical = consensus definition critical.

Table 11

Definitional Confusion Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Definition lacking	0	0.00	2	14.29	7	18.92	9	16.98
Experience influence	-	-	-	-	-	-	-	-
No consensus	-	-	-	-	2	5.41	2	3.77
Antecedent influence	-	-	-	-	-	-	-	-
Known characteristics	-	-	-	-	2	5.41	2	3.77
Stakeholder influence	-	-	-	-	-	-	-	-
No clarity	-	-	-	-	-	-	-	-
Different views	-	-	-	-	2	5.41	2	3.77
Consensus def critical	-	-	2	14.29	5	13.51	7	13.21

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes. Consensus def critical = consensus definition critical.

Exemplars

In the documents examined for this study, approximately 66 different institutions were highlighted as exemplars of CBE programs in the United States higher education community. During the Group 1 time frame, 27 different institutions were mentioned and of that number, six (Alverno College, Empire State College, Florida State University, Mars Hill College, Minnesota Metropolitan State College, and Sterling College in Kansas) were mentioned in more than one publication. In the Group 2 time frame, publications recognized a total of 43 different institutions with 20 mentioned in multiple sources. The institution referenced most frequently during this time frame was WGU. The institutions referenced in both time frames included Alverno College, Empire State College, University of Wisconsin, and Valencia Community College. Three different institutions (Alverno College, Florida State University, and Mars Hill College) were recognized at least once in each of the stakeholder groups. The most referenced

institutions in each stakeholder group included Alverno College and Mars Hill College in the Funders group, Southern New Hampshire University in the Policymakers group, and WGU in the Reformers stakeholder group. Tables 12 and 13 provide the full list of exemplar institutions of higher education.

Table 12

Exemplars Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Exemplars	2	50.00	3	37.50	9	36.00	14	37.84
Alverno	2	50.00	2	25.00	5	20.00	9	24.32
Bellevue	-	-	-	-	-	-	-	-
Bowling Green	1	25.00	-	-	-	-	1	2.70
Brandman	-	-	-	-	-	-	-	-
Capella	-	-	-	-	-	-	-	-
Central Tech CC	-	-	-	-	1	4.00	1	2.70
Centralia	-	-	-	-	-	-	-	-
Charter Oaks	-	-	-	-	-	-	-	-
Clark	-	-	-	-	-	-	-	-
College III-UM	1	25.00	-	-	-	-	1	2.70
Columbia Basin	-	-	-	-	-	-	-	-
CC of Vermont	-	-	-	-	-	-	-	-
Dallas Co CC	-	-	1	12.50	-	-	1	2.70
Delaware Co CC	-	-	-	-	-	-	-	-
Delta @ DuPage	1	25.00	-	-	-	-	1	2.70
DePaul U	-	-	1	12.50	-	-	1	2.70
DePaul U-SNL	-	-	-	-	-	-	-	-
Empire State	-	-	-	-	2	8.00	2	5.41
Everett	-	-	-	-	-	-	-	-
Excelsior	-	-	-	-	-	-	-	-
Excelsior-Nurs	-	-	-	-	-	-	-	-
Florida State	1	25.00	1	12.50	1	4.00	3	8.11
Governors State	1	25.00	-	-	-	-	1	2.70
Green River	-	-	-	-	-	-	-	-
Illinois Central	1	25.00	-	-	-	-	1	2.70
Iowa Wesleyan	-	-	-	-	1	4.00	1	2.70
KCTCS	-	-	-	-	-	-	1	2.70
Lipscomb	-	-	-	-	-	-	-	-
Mars Hill	2	50.00	2	25.00	5	20.00	9	24.32
Mary	-	-	-	-	1	4.00	1	2.70
Marylhurst	-	-	-	-	-	-	-	-
McMurray	1	25.00	-	-	-	-	1	2.70
Minn Metro	-	-	2	25.00	2	8.00	4	10.81
New Charter	-	-	-	-	-	-	-	-
North Seattle	-	-	-	-	-	-	-	-
Northern Az	-	-	-	-	-	-	-	-

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Oklahoma City	1	25.00	-	-	-	-	1	2.70
Olympic	-	-	-	-	-	-	-	-
Our Lady	-	-	-	-	1	4.00	1	2.70
Patten	-	-	-	-	-	-	-	-
Pa Dept of Ed	1	25.00	-	-	-	-	1	2.70
Pierce District	-	-	-	-	-	-	-	-
Rio Salado	-	-	-	-	-	-	-	-
Roger Williams	-	-	-	-	-	-	-	-
Sangamon State	1	25.00	-	-	-	-	1	2.70
Shoreline	-	-	-	-	-	-	-	-
SNHU, CfA	-	-	-	-	-	-	-	-
South Seattle	-	-	-	-	-	-	-	-
South Texas	-	-	-	-	-	-	-	-
SNHU	-	-	-	-	-	-	-	-
Spokane Falls	-	-	-	-	-	-	-	-
Sterling	-	-	1	12.50	2	8.00	3	8.11
Tacoma CCs	-	-	-	-	-	-	-	-
Tx A&M Comm	-	-	-	-	-	-	-	-
Thomas Edison	-	-	-	-	-	-	-	-
Tusculum	-	-	-	-	-	-	-	-
U of Houston	-	-	1	12.50	-	-	1	2.70
U of ME-PI	-	-	-	-	-	-	-	-
U of MD UC	-	-	-	-	-	-	-	-
U of MA	-	-	1	12.50	-	-	-	-
U of NE	-	-	1	12.50	-	-	1	2.70
U of WI	-	-	1	12.50	-	-	1	2.70
Valencia	-	-	1	12.50	-	-	1	2.70
Walla Walla	-	-	-	-	-	-	-	-
WGU	-	-	-	-	-	-	-	-
Westminster	-	-	-	-	-	-	-	-
Worcester Poly	-	-	-	-	1	4.00	1	2.70

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes, WGU = Western Governors University, SNHU = Southern New Hampshire University.

Table 13

Exemplars Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Exemplars	0	0.00	6	42.86	23	62.16	29	54.72
Alverno	-	-	-	-	5	13.51	5	9.43
Bellevue	-	-	1	7.14	-	-	1	1.89
Bowling Green	-	-	-	-	-	-	-	-
Brandman	-	-	-	-	3	8.11	3	5.66
Capella	-	-	1	7.14	4	10.81	5	9.43
Central Tech CC	-	-	-	-	-	-	-	-
Centralia	-	-	1	7.14	-	-	1	1.89
Charter Oaks	-	-	1	7.14	3	8.11	4	7.55
Clark	-	-	1	7.14	-	-	1	1.89

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
College III-UM	-	-	-	-	-	-	-	-
Columbia Basin	-	-	1	7.14	-	-	1	1.89
CC of Vermont	-	-	2	14.29	-	-	2	3.77
Dallas Co CC	-	-	-	-	-	-	-	-
Delaware Co CC	-	-	-	-	2	5.41	2	3.77
Delta @ DuPage	-	-	-	-	-	-	-	-
DePaul U	-	-	-	-	-	-	-	-
DePaul U-SNL	-	-	-	-	3	8.11	3	5.66
Empire State	-	-	-	-	5	13.51	5	9.43
Everett	-	-	1	7.14	-	-	1	1.89
Excelsior	-	-	1	7.14	7	18.92	8	15.09
Excelsior-Nurs	-	-	-	-	1	2.70	1	1.89
Florida State	-	-	-	-	-	-	-	-
Governors State	-	-	-	-	-	-	-	-
Green River	-	-	1	7.14	-	-	1	1.89
Illinois Central	-	-	-	-	-	-	-	-
Iowa Wesleyan	-	-	-	-	-	-	-	-
KCTCS	-	-	-	-	4	10.81	4	7.55
Lipscomb	-	-	-	-	1	2.70	1	1.89
Mars Hill	-	-	-	-	-	-	-	-
Mary	-	-	-	-	-	-	-	-
Marylhurst	-	-	-	-	1	2.70	1	1.89
McMurray	-	-	-	-	-	-	-	-
Minn Metro	-	-	-	-	-	-	-	-
New Charter	-	-	-	-	2	5.41	2	3.77
North Seattle	-	-	1	7.14	-	-	1	1.89
Northern Az	-	-	-	-	5	13.51	5	9.43
Oklahoma City	-	-	-	-	-	-	-	-
Olympic	-	-	1	7.14	-	-	1	1.89
Our Lady	-	-	-	-	-	-	-	-
Patten	-	-	-	-	1	2.70	1	1.89
Pa Dept of Ed	-	-	-	-	-	-	-	-
Pierce District	-	-	1	7.14	-	-	1	1.89
Rio Salado	-	-	-	-	1	2.70	1	1.89
Roger Williams	-	-	1	7.14	-	-	1	1.89
Sangamon State	-	-	-	-	-	-	-	-
Shoreline	-	-	1	7.14	-	-	1	1.89
SNHU, CfA	-	-	3	21.43	3	8.11	6	11.32
South Seattle	-	-	1	7.14	-	-	1	1.89
South Texas	-	-	-	-	2	5.41	2	3.77
SNHU	-	-	3	21.43	8	21.62	11	20.75
Spokane Falls	-	-	1	7.14	-	-	1	1.89
Sterling	-	-	-	-	-	-	-	-
Tacoma CCs	-	-	1	7.14	-	-	1	1.89
Tx A&M Comm	-	-	-	-	2	5.41	2	3.77
Thomas Edison	-	-	-	-	4	10.81	4	7.55
Tusculum	-	-	-	-	1	2.70	1	1.89
U of Houston	-	-	-	-	-	-	-	-
U of ME-PI	-	-	-	-	1	2.70	1	1.89
U of MD UC	-	-	-	-	1	2.70	1	1.89
U of MA	-	-	-	-	-	-	-	-
U of NE	-	-	-	-	-	-	-	-
U of WI	-	-	-	-	8	21.62	8	15.09

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Valencia	-	-	-	-	1	2.70	1	1.89
Walla Walla	-	-	1	7.14	-	-	1	1.89
WGU	-	-	3	21.43	14	37.84	17	32.08
Westminster	-	-	-	-	4	10.81	4	7.55
Worcester Poly	-	-	-	-	-	-	-	-

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes, WGU = Western Governors University, SNHU = Southern New Hampshire University.

Funding Options for CBE Programs

Documents in both time frames cited the same funding options for CBE development. Options included institutional or system support, Fund for the Improvement of Postsecondary Education (FIPSE) or other governmental grants, and foundation grants. Most commonly, CBE program development 1973–1983 was funded either by the institution, through FIPSE grants, or some combination of the two. During 2005–2015, the earlier funding options were enhanced by a number of foundation grants. Funders' publications appeared exclusively in Group 1 and emphasized institutional funding and FIPSE grants. Policymakers' publications appeared exclusively in Group 2 and focused more on FIPSE and foundation grants. Only the Reformers' publications mentioned all four funding options across both time frames. Refer to Tables 14 and 15 for more detail.

Table 14

Institutional Funding Options for CBE Development Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Funding options	1	25.00	0	0.00	2	8.00	3	8.11
Inst funding	1	25.00	-	-	1	4.00	2	5.41
Govt grants (not ed)	-	-	-	-	1	4.00	1	2.70
FIPSE grants	1	25.00	-	-	1	4.00	2	5.41
Foundation grants	-	-	-	-	1	4.00	1	2.70

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes. Inst Funding = institutional funding; Govt grants (not ed) = noneducational government grants; FIPSE grants = Fund for the Improvement of Postsecondary Education grants.

Table 15

Institutional Funding Options for CBE Development Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Funding options	0	0.00	2	14.29	8	21.62	10	18.87
Inst funding	-	-	-	-	5	13.51	5	9.43
Govt grants (not ed)	-	-	-	-	2	5.41	2	3.77
FIPSE grants	-	-	2	14.29	2	5.41	4	7.55
Foundation grants	-	-	2	14.29	5	13.51	7	13.21

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes. Inst Funding = institutional funding; Govt grants (not ed) = noneducational government grants; FIPSE grants = Fund for the Improvement of Postsecondary Education grants.

Positive Impacts

A variety of positive impacts or advantages peppered publications in both time frames and across each stakeholder group. Even the documents that could not be described in pro-CBE terms included some positive or potentially positive results that might be expected after implementing a CBE program. Positive impacts mentioned more than twice in the represented publications in Group 1 included reforming the curriculum to provide students a clear coherent path for degree completion, and that the efficient attainment of competencies could increase students' self-confidence and sense of accomplishment. In addition, a shift in faculty focus from teaching to learning and corresponding institutional accountability could establish minimal acceptable standards of performance, quality, and effectiveness. Group 2 publications emphasized the importance of providing accessible, affordable, cost effective, and career-relevant programs designed around clear and coherent objectives. Commonly stated benefits included completion of a quality degree in the most efficient manner, shifting faculty focus from teaching to learning, and stressing student performance and accountability

through established minimal acceptable standards of performance, quality, and effectiveness. Although similar, the focus was slightly different in the literature of the two time periods. Group 1 documents emphasized educational achievements and the personal successes possible with CBE; Group 2 documents, in contrast, employed language reminiscent of political or advertising slogans promoting CBE.

Four positive impacts were present in each of the three stakeholder groups and across both time frames. Those potential advantages included improved affordability, career relevance, efficiency, and the establishment of transparent standards for minimal performance in all the identified competencies. According to documents published by the Reformers group, the most commonly described advantage to be gained from a CBE program was the benefit of a curriculum based on clear, coherent, and transparent objectives. Unsurprisingly, Policymakers' publications emphasized the importance of establishing minimal acceptable standards of performance to ensure quality and effectiveness. The documents published by the Funders group did not emphasize one positive impact over another; but, instead, promoted affordable, career-relevant programs that required minimal acceptable standards of performance, could fit in a traditional term and credit structure, and could be personalized to promote student self-directedness and efficiency. See Tables 16 and 17 for full details.

Table 16

Positive Impacts of CBE Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Positive impacts	1	25.00	3	37.50	13	52.00	17	45.95
Accessible	-	-	1	12.50	-	-	1	2.70
Affordable	1	25.00	-	-	1	4.00	2	5.41
Empl satisfaction	-	-	-	-	2	8.00	2	5.41
Trad structure fit	1	25.00	-	-	-	-	1	2.70
Career relevant	-	-	-	-	2	8.00	2	5.41
Clear objectives	-	-	1	12.50	6	24.00	7	18.92
Time efficient	1	25.00	-	-	2	8.00	3	8.11
New funding	-	-	-	-	-	-	-	-
Adaptable faculty	-	-	-	-	1	4.00	1	2.70
Focus on learning	-	-	-	-	3	12.00	3	8.11
Inst accountability	-	-	1	12.50	2	8.00	3	8.11
Inst competitive	-	-	-	-	1	4.00	1	2.70
Nonpunitive	-	-	-	-	-	-	-	-
Personalized	1	25.00	-	-	-	-	1	2.70
Min standards	1	25.00	1	12.50	3	12.00	6	16.22
Informed change	-	-	-	-	-	-	-	-
Global economy	-	-	-	-	-	-	-	-
Stdnt accountability	-	-	-	-	1	4.00	1	2.70
Stdnt confidence	-	-	-	-	3	12.00	3	8.11
Stdnt self-direction	1	25.00	-	-	-	-	1	2.70

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes. Empl satisfaction = employee satisfaction; trad structure fit = traditional structure fit; inst accountability = institutional accountability; Inst competitive = Institution competitive; min standards = minimum standards; stdnt accountability = student accountability; stdnt confidence = student confidence; stdnt self-direction = student self-direction.

Table 17

Positive Impacts of CBE Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Positive impacts	1	50.00	5	35.71	19	51.35	25	47.17
Accessible	-	-	1	7.14	8	21.62	9	16.98
Affordable	-	-	2	14.29	9	24.32	11	20.75
Empl satisfaction	-	-	-	-	3	8.11	3	5.66
Trad structure fit	-	-	-	-	-	-	-	-
Career relevant	1	50.00	1	7.14	8	21.62	10	18.87
Clear objectives	-	-	-	-	8	21.62	8	15.09
Time efficient	-	-	2	14.29	9	24.32	11	20.75
New funding	-	-	1	7.14	-	-	1	1.89
Adaptable faculty	-	-	-	-	-	-	-	-
Focus on learning	-	-	2	14.29	2	5.41	4	7.55
Inst accountability	-	-	-	-	2	5.41	2	3.77
Inst competitive	-	-	-	-	-	-	-	-
Nonpunitive	-	-	1	7.14	1	2.70	2	3.77
Personalized	-	-	-	-	1	2.70	1	1.89
Min standards	-	-	1	7.14	4	10.81	5	9.43
Informed change	-	-	-	-	1	2.70	1	1.89
Global economy	-	-	-	-	1	2.70	1	1.89
Stdnt accountability	-	-	2	14.29	2	5.41	4	7.55
Stdnt confidence	-	-	-	-	-	-	-	-
Stdnt self-direction	-	-	-	-	-	-	-	-

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes. Empl satisfaction = employee satisfaction; trad structure fit = traditional structure fit; inst accountability = institutional accountability; Inst competitive = Institution competitive; min standards = minimum standards; stdnt accountability = student accountability; stdnt confidence = student confidence; stdnt self-direction = student self-direction.

Related Concepts

The documents included in this study listed a wide-range of concepts related to CBE. Group 1 publications identified client-centered learning, contract learning, departmental challenge examinations, individualized learning, and mastery learning, On-

the-Job experience, personalized learning such as Personalized System of Instruction or the Keller Plan, PLA or portfolio assessment of life-experience credit, self-directed or self-paced learning, and standardized examinations. Related concepts exclusive to Group 2 included 3-year bachelor's programs, the American Association of State Colleges and University's Extended Learning Outcomes/Liberal Education and America's Promise, the American Council on Education evaluated non-collegiate learning, apprenticeship programs, badges and other nondegree credentials, capstone courses where students applied all theory learned in previous classes, the Degree Qualifications Profile (DQP) framework, distance-learning models, incorporating competencies in traditional learning models using participatory theories, military training, transfer credit from other institutions or non-CBE programs in residence, and the faculty outcome articulation effort called Tuning USA. Despite the wide-variety of programs mentioned in each publication group, only four related concepts appeared in documents from both time periods: departmental challenge examinations, personalized learning models, prior learning/portfolio assessments, and standardized examinations.

Reformers' publications were the most inclusive in that those documents referenced the concepts listed in each time frame. Funders' and Policymakers' publications considered fewer concepts to be CBE related. Policymakers' publications made more reference to the 3-year bachelor's degree, contract and distance-learning options, and PLA whereas Funders' publications mentioned the more traditional examination options. None of the related concepts appeared in the literature for each of the three stakeholder groups. Tables 18 and 19 provide full details on related concepts identified during the coding stage.

Table 18

Related Concepts Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Related concepts	1	25.00	3	37.50	11	44.00	15	40.54
3-Year BS	-	-	-	-	-	-	-	-
AASCU LEAP	-	-	-	-	-	-	-	-
ACE	-	-	-	-	-	-	-	-
Apprenticeships	-	-	-	-	-	-	-	-
Badges/MOOCs	-	-	-	-	-	-	-	-
Capstone courses	-	-	-	-	-	-	-	-
Contract learning	-	-	3	37.50	1	4.00	4	10.81
DQP	-	-	-	-	-	-	-	-
Challenge exams	1	25.00	-	-	-	-	1	2.70
Distance learning	-	-	-	-	-	-	-	-
Trad course CBE	-	-	-	-	-	-	-	-
Mastery learning	-	-	-	-	1	4.00	1	2.70
Military programs	-	-	-	-	-	-	-	-
OJT	-	-	-	-	1	4.00	1	2.70
Personalized lrning	-	-	-	-	3	12.00	3	8.11
PLA	-	-	1	12.50	5	20.00	6	16.22
Prof certs/corp univ	-	-	-	-	-	-	-	-
Self-directed lrning	-	-	-	-	5	20.00	5	13.51
Standardized exams	1	25.00	-	-	-	-	1	2.70
Transfer credit	-	-	-	-	-	-	-	-
Tuning USA	-	-	-	-	-	-	-	-

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes. AASCU LEAP = American Association of State Colleges and Universities Liberal Education and America's Promise; ACE = American Council on Education; badges/MOOCs = Badges/massive open online courses; DQP = degree qualifications profile; Trad course CBE = traditional course competency-based education; OJT = on the job training; personalized lrning = personalized learning; PLA = prior learning assessment; prof certs/corp univ = professional certificates/corporate university; self-directed lrning = self-directed learning.

Table 19

Related Concepts Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Related concepts	0	0.00	3	21.43	15	40.54	18	33.96
3-Year BS	-	-	1	7.14	-	-	1	1.89
AASCU LEAP	-	-	-	-	4	10.81	4	7.55
ACE	-	-	-	-	2	5.41	2	3.77
Apprenticeships	-	-	-	-	1	2.70	1	1.89
Badges/MOOCs	-	-	-	-	2	5.41	2	3.77
Capstone courses	-	-	-	-	1	2.70	1	1.89
Contract learning	-	-	-	-	-	-	-	-
DQP	-	-	-	-	5	13.51	5	9.43
Challenge exams	-	-	-	-	1	2.70	1	1.89
Distance learning	-	-	1	7.14	-	-	1	1.89
Trad course CBE	-	-	-	-	2	5.41	2	3.77
Mastery learning	-	-	-	-	-	-	-	-
Military programs	-	-	-	-	1	2.70	1	1.89
OJT	-	-	-	-	-	-	-	-
Personalized lrning	-	-	-	-	1	2.70	1	1.89
PLA	-	-	3	21.43	7	18.92	10	18.87
Prof certs/corp univ	-	-	-	-	2	5.41	2	3.77
Self-directed lrning	-	-	-	-	-	-	-	-
Standardized exams	-	-	-	-	6	16.22	6	11.32
Transfer credit	-	-	-	-	1	2.70	1	1.89
Tuning USA	-	-	-	-	1	2.70	1	1.89

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes. AASCU LEAP = American Association State of Colleges and Universities Liberal Education and America's Promise; ACE = American Council on Education; badges/MOOCs = Badges/massive open online courses; DQP = degree qualifications profile; Trad course CBE = traditional course competency-based education; OJT = on the job training; personalized lrning = personalized learning; PLA = prior learning assessment; prof certs/corp univ = professional certificates/corporate university; self-directed lrning = self-directed learning.

Surrogate Terms

Authors who wrote about CBE during both time periods used many variations of the term. Instead of "education," authors alternated the terms "instruction," "learning,"

"frameworks," "programs," or "performance." Variations of "competency-based" included "competence-based," "competences-based," and "competency-focused." True surrogate terms rather than variations of the base words included ability/abilities-based, assessment degrees, direct assessment, experiential-based, outcomes-based, performance-based, curriculum of attainments, individualized education, mastery learning, personalized learning, programmed-in instruction, and systems approach. It is important to note that although terms such as "performance-based education" were used interchangeably with CBE in the sampled documents, other publications may have presented a different viewpoint (Elam, 1971). Surrogates for the direct-assessment type of CBE included noncourse, noncredit hour, and nontime-based as prefixes to the term, "direct assessment." The majority of surrogate terms appeared in Reformers' publications during the 2005–2015 time frame. The most commonly referenced surrogates during both time periods were ability-based education, competency-focused programs, direct-assessment CBE versus course-based CBE, outcomes-based education, and performance-based education. For the purpose of this study, the DQP and the American Association State of Colleges and Universities Extended Learning Outcomes/Liberal Education and America's Promise frameworks are considered related concepts rather than surrogate terms, despite their foundational influence on the development of 21st-century CBE programs. The learning outcomes at the heart of DQP can act as the foundation for CBE programs that also require demonstration of learning for the degree to be awarded. Tables 20 and 21 provide additional details on identified surrogate terms.

Table 20

Surrogate Terms Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Surrogate terms	0	0.00	3	37.50	7	28.00	10	27.03
Abilities-based	-	-	-	-	-	-	-	-
Assessment degrees	-	-	-	-	1	4.00	1	2.70
Competence-based	-	-	-	-	1	4.00	1	2.70
Competences-based	-	-	-	-	-	-	-	-
CB frameworks	-	-	-	-	-	-	-	-
CB instruction	-	-	1	12.50	-	-	1	2.70
CB performance	-	-	-	-	-	-	-	-
Competency-focused	-	-	-	-	-	-	-	-
Course-based CBE	-	-	-	-	-	-	-	-
Curric of attainments	-	-	1	12.50	1	4.00	2	5.41
Direct assessment	-	-	-	-	-	-	-	-
Experiential-based	-	-	-	-	-	-	-	-
Individualized ed	-	-	1	12.50	1	4.00	2	5.41
Mastery learning	-	-	-	-	1	4.00	1	2.70
Noncourse based	-	-	-	-	-	-	-	-
Non-credit hour	-	-	-	-	-	-	-	-
Non-time based	-	-	-	-	-	-	-	-
Outcomes-based	-	-	-	-	-	-	-	-
Participatory lrning	-	-	-	-	-	-	-	-
Performance-based	-	-	-	-	2	8.00	2	5.41
Personalized lrning	-	-	-	-	-	-	-	-
Programmed-in instr	-	-	-	-	1	4.00	1	2.70
Systems approach	-	-	-	-	1	4.00	1	2.70

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes. CB frameworks = competency-based frameworks; CB instruction = competency-based instruction; CB performance = competency-based performance; course-based CBE = course-based competency-based education; Curric of attainments = curriculum of attainments; individualized ed = individualized education; participatory lrning = participatory learning; personalized lrning = personalized learning; programmed-in instr = programmed-in instruction.

Table 21

Surrogate Terms Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Surrogate terms	1	50.00	1	7.14	13	35.14	15	28.30
Abilities-based	-	-	-	-	3	8.11	3	5.66
Assessment degrees	-	-	-	-	-	-	-	-
Competence-based	-	-	-	-	-	-	-	-
Competences-based	-	-	-	-	1	2.70	1	1.89
CB frameworks	-	-	-	-	1	2.70	1	1.89
CB instruction	-	-	-	-	-	-	-	-
CB performance	-	-	-	-	1	2.70	1	1.89
Competency-focused	-	-	-	-	2	5.41	2	3.77
Course-based CBE	-	-	-	-	2	5.41	2	3.77
Curric of attainments	-	-	-	-	-	-	-	-
Direct assessment	-	-	1	7.14	3	8.11	4	7.55
Experiential-based	-	-	-	-	1	2.70	1	1.89
Individualized ed	-	-	-	-	-	-	-	-
Mastery learning	-	-	-	-	-	-	-	-
Noncourse based	-	-	-	-	1	2.70	1	1.89
Non-credit hour	-	-	1	7.14	-	-	1	1.89
Non-time based	-	-	-	-	1	2.70	1	1.89
Outcomes-based	1	50.00	-	-	4	10.81	5	9.43
Participatory lrning	-	-	-	-	1	2.70	1	1.89
Performance-based	-	-	-	-	1	2.70	1	1.89
Personalized lrning	-	-	-	-	1	2.70	1	1.89
Programmed-in instr	-	-	-	-	-	-	-	-
Systems approach	-	-	-	-	-	-	-	-

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes. CB frameworks = competency-based frameworks; CB instruction = competency-based instruction; CB performance = competency-based performance; course-based CBE = course-based competency-based education; Curric of attainments = curriculum of attainments; individualized ed = individualized education; participatory lrning = participatory learning; personalized lrning = personalized learning; programmed-in instr = programmed-in instruction.

Sociocultural Contexts

Publications from each time frames exhibited surprisingly similar sociocultural

contexts. The two periods included in this study were characterized by diminished state funding and rising institutional costs paired with changing demographics, declining student enrollments and lower graduation rates. Into those periods of postsecondary education reappraisal, government and foundation grants offered IHE financial incentives to explore new learning models that could potentially lower costs and reduce time to degree completion. The resulting interest in CBE programs converged with advances in technology, new market-centered business models, and increased stakeholder demands for accountability, affordability, accessibility, and completion.

The sociocultural environment extending across all stakeholder groups included agreements that although career relevant degrees were vital to economic security, those degrees were often unaffordable unless students and their families assumed a huge debt load. Despite demands for career and socially relevant postsecondary programs to support a global economy, increased demands emerged for institutional accountability to address the ongoing concern about employers' reported dissatisfaction with graduates' apparent lack of career-readiness and social skills and the oft-repeated opinion that credentials (degrees) were unreliable proxies for skills.

In documents published by the Funders stakeholder group, the sociocultural emphasis stressed accessibility, affordability, career readiness, and overall accountability. Similar messages inundated Policymakers' publications, but these publications also telegraphed support for the validity of all learning regardless of the source, concern about the lack of conclusive data available on CBE, and the assumption that the rapidly changing postsecondary landscape would embrace the idea of education as a commodity available for purchase by mobile and adaptable life-long learners. Descriptions of the sociocultural context in Reformers' publications mirrored those found in the Funders and

Policymakers groups. Unlike the other stakeholders though, the Reformers' publications provided the most comprehensive and balanced examination of CBE and its place in the sociocultural climate. Negative viewpoints included how CBE might teach to the list but not teach adaptability, how too little data existed to confirm CBE could accurately validate possession of key skills, how higher education still resisted ties to workforce development, and that, despite the growing trend to engage business leaders as higher education advisors, employers had no common agreement about the competencies a career-ready graduate should have. On the positive side, the endorsement of explicitly stated outcomes and CBE in particular was seen as supportive of an increasingly diverse student population, poised to take advantage of technological advances and grounded in efficiency theories and a systems approach to education that emulated industrial strategies for improvement. Another relevant environmental trend included how online technologies were creating a growing number of learning opportunities unavailable in the traditional postsecondary community. Tables 22 and 23 identify full details about sociocultural contexts. Table 24 and 25 provide characteristics of schools interested in CBE.

Table 22

Sociocultural Contexts Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Sociocultural contexts	3	75.00	5	62.50	20	80.00	28	75.68
Source-agnostic lrning	-	-	1	12.50	-	-	1	2.70
Life/work barriers	-	-	-	-	-	-	-	-
Empl dissatisfaction	2	50.00	1	12.50	7	28.00	10	27.03
Lack of adaptability	-	-	-	-	1	4.00	1	2.70
Little CBE data	-	-	1	12.50	1	4.00	2	5.41
Empl acceptance	-	-	-	-	-	-	-	-
Supports diversity	-	-	-	-	1	4.00	1	2.70
Demand spurs interest	-	-	1	12.50	2	8.00	3	8.11
Tech advances	-	-	-	-	-	-	-	-
Industry approaches	-	-	-	-	2	8.00	2	5.41
Changing workforce	-	-	-	-	2	8.00		
Declining completion	-	-	-	-	1	4.00	1	2.70
Ed career unaffordable	-	-	1	12.50	-	-	1	2.70
Diminished funding	-	-	-	-	1	4.00	1	2.70
Cost saving method	-	-	-	-	-	-	-	-
Faculty responsibility	1	50.00	-	-	-	-	1	2.70
Fewer job ops	1	50.00	-	-	-	-	1	2.70
Grant availability	-	-	-	-	3	12.00	3	8.11
HE external options	-	-	-	-	-	-	-	-
Business advising HE	-	-	-	-	-	-	-	-
Educ as a commodity	-	-	1	12.50	1	4.00	2	5.41
HE access/completion	-	-	1	12.50	2	8.00	3	8.11
Accreditation standrds	-	-	-	-	-	-	-	-
Inst accountability	1	50.00	-	-	4	16.00	5	13.51
Learning pathways	-	-	-	-	-	-	-	-
Fed regs increase cost	-	-	-	-	-	-	-	-
Diverse instr/perf mod	1	50.00	3	37.50	6	24.00	10	27.03
Workforce/HE resist	-	-	-	-	-	-	-	-
Empl/skills agreement	-	-	-	-	-	-	-	-
OL HE competition	-	-	-	-	-	-	-	-
Transparent outcomes	-	-	-	-	-	-	-	-
Req adaptable workers	-	-	1	12.50	1	4.00	2	5.41
Rapid HE changes	-	-	-	-	-	-	-	-
Waning confidence	-	-	-	-	-	-	-	-
Military training	-	-	-	-	-	-	-	-
Vocational trng	-	-	-	-	-	-	-	-

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes. Source-agnostic lrning = source-agnostic learning; empl dissatisfaction = employee dissatisfaction; CBE = competency-based education; empl acceptance = employee acceptance; ed career unaffordable = education career unaffordable; Fewer job ops = fewer job opportunities; HE = higher education; educ as a commodity = education as a commodity; accreditation standrds = accreditation standards; inst accountability = institution accountability; fed regs increase cost = federal regulation increase cost; diverse instr/perf mod = diverse instruction/performance model; empl/skills agreement = employee/skills agreement; OL HE competition = online higher education competition; req adaptable workers = require adaptable workers; vocational trng = vocational training.

Table 23

Sociocultural Contexts Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Sociocultural contexts	1	50.00	12	85.71	29	78.38	42	79.25
Source-agnostic lrning	-	-	-	-	-	-	-	-
Life/work barriers	-	-	-	-	2	5.41	2	3.77
Empl dissatisfaction	-	-	1	7.14	11	29.73	12	22.64
Lack of adaptability	-	-	-	-	-	-	-	-
Little CBE data	-	-	-	-	1	2.70	1	1.89
Empl acceptance	-	-	-	-	1	2.70	1	1.89
Supports diversity	-	-	-	-	-	-	-	-
Demand spurs interest	-	-	10	71.43	10	27.03	20	37.74
Tech advances	-	-	-	-	1	2.70	1	1.89
Industry approaches	-	-	-	-	-	-	-	-
Changing workforce	-	-	-	-	2	5.41	2	3.77
Declining completion	-	-	-	-	2	5.41	2	3.77
Ed career unaffordable	1	50.00	1	7.14	5	13.51	7	13.21
Diminished funding	-	-	-	-	3	8.11	3	5.66
Cost saving method	-	-	-	-	1	2.70	1	1.89
Faculty responsibility	-	-	-	-	-	-	-	-
Fewer job ops	-	-	-	-	-	-	-	-
Grant availability	-	-	-	-	1	2.70	1	1.89
HE external options	-	-	-	-	1	2.70	1	1.89
Business advising HE	-	-	-	-	1	2.70	1	1.89
Educ as a commodity	-	-	-	-	3	8.11	3	5.66
HE access/completion	-	-	2	14.29	5	13.51	7	13.21
Accreditation standrds	-	-	-	-	1	2.70	1	1.89
Inst accountability	-	-	2	14.29	7	18.92	9	16.98
Learning pathways	-	-	-	-	3	8.11	3	5.66
Fed regs increase cost	-	-	-	-	1	2.70	1	1.89
Diverse instr/perf mod	-	-	-	-	2	5.41	2	3.77
Workforce/HE resist	-	-	-	-	1	2.70	1	1.89
Empl/skills agreement	-	-	-	-	1	2.70	1	1.89
OL HE competition	-	-	-	-	1	2.70	1	1.89
Transparent outcomes	-	-	-	-	1	2.70	1	1.89
Req adaptable workers	-	-	-	-	1	2.70	1	1.89
Rapid HE changes	-	-	1	7.14	1	2.70	2	3.77
Waning confidence	-	-	-	-	3	8.11	3	5.66
Military training	1	50.00	12	85.71	29	78.38	42	79.25
Vocational trng	-	-	-	-	-	-	-	-

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes. Source-agnostic lrning = source-agnostic learning; empl dissatisfaction = employee dissatisfaction; CBE = competency-based education; empl acceptance = employee acceptance; ed career unaffordable = education career unaffordable; Fewer job ops = fewer job opportunities; HE = higher education; educ as a commodity = education as a commodity; accreditation standrds = accreditation standards; inst accountability = institution accountability; fed regs increase cost = federal regulation increase cost; diverse instr/perf mod = diverse instruction/performance model; empl/skills agreement = employee/skills agreement; OL HE competition = online higher education competition; req adaptable workers = require adaptable workers; vocational trng = vocational training.

Table 24

Characteristics of Schools Interested in CBE Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
School	4	100.00	6	75.00	14	56.00	24	64.86
Personal curric	-	-	1	12.50	-	-	1	2.70
Direct assessment	-	-	-	-	1	4.00	1	2.70
Diverse students	1	25.00	1	12.50	-	-	2	5.41
Localized instr	-	-	1	12.50	-	-	1	2.70
Mature students	2	50.00	6	75.00	7	28.00	15	40.54
High standards	-	-	-	-	1	4.00	1	2.70
Virtual campus	-	-	1	12.50	1	4.00	2	5.41
No full-time faculty	-	-	-	-	1	4.00	1	2.70
No commencement	-	-	-	-	1	4.00	1	2.70
No traditional terms	-	-	-	-	2	8.00	2	5.41
Open admission	4	100.00	4	50.00	12	48.00	20	54.05
Metro location	1	25.00	-	-	-	-	1	2.70
Supports PLA	-	-	-	-	1	4.00	1	2.70
Inst values included	-	-	-	-	1	4.00	1	2.70
Common faculty	-	-	-	-	-	-	-	-
Service-oriented	1	25.00	-	-	-	-	1	2.70
No grades	-	-	-	-	1	4.00	1	2.70

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes. CBE = competency-based education; personal curric = personal curriculum; localized instr = localized instruction; PLA = prior learning assessment; inst values included = instructional values included.

Table 25

Characteristics of Schools Interested in CBE Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
School	0	0.00	9	64.29	29	78.38	38	71.70
Personal curric	-	-	-	-	-	-	-	-
Direct assessment	-	-	-	-	-	-	-	-
Diverse students	-	-	-	-	-	-	-	-
Localized instr	-	-	-	-	-	-	-	-
Mature students	-	-	8	57.14	18	48.65	26	49.06
High standards	-	-	-	-	-	-	-	-
Virtual campus	-	-	-	-	1	2.70	1	1.89
No full-time faculty	-	-	-	-	-	-	-	-
No commencement	-	-	-	-	-	-	-	-
No traditional terms	-	-	-	-	-	-	-	-
Open admission	-	-	9	64.29	26	70.27	35	66.04
Metro location	-	-	-	-	-	-	-	-
Supports PLA	-	-	-	-	-	-	-	-
Inst values included	-	-	-	-	-	-	-	-
Common faculty	-	-	-	-	1	2.70	1	1.89
Service-oriented	-	-	-	-	-	-	-	-
No grades	-	-	-	-	-	-	-	-

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes. CBE = competency-based education; personal curric = personal curriculum; localized instr = localized instruction; PLA = prior learning assessment; inst values included = instructional values included.

Faculty Characteristics

In a traditional academic model, a faculty member would have multiple roles such as content expert, instructor, assessment designer, assessor, academic counselor, mentor, and researcher. IHEs exploring CBE partition or disaggregate those multifaceted faculty roles into single activities. Publications that described CBE from a faculty viewpoint tended to focus on two types of characteristics related to faculty roles: concerns about disaggregation and the new workload demands related to it. Only one role, faculty as

mentor, and the related concern that faculty members were not prepared for the flexible staffing roles and structures of CBE appeared in Group 1 and 2 publications and across all three stakeholder groups. Funders' publications described faculty members as guides and as mentors, whereas Policymakers' publications focused primarily on the mentor role. Reformers' publications presented a more complicated picture of faculty roles in CBE that included mentor, counselor, assessor, coach, content expert, instructor, curriculum designer, and program monitor. The workload demands of faculty assigned to these roles includes developing outcomes and associated competencies, identifying learning resources, creating optimal learning experiences, maintaining ties to their profession or field, and participating in training activities designed to support competency-based instruction. Tables 26 and 27 provide addition information about faculty characteristics.

Table 26

Impacts of CBE Programs on Faculty Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Faculty	3	75.00	4	50.00	11	44.00	18	48.65
No tenure	-	-	-	-	-	-	-	-
Deskilling	-	-	1	12.50	-	-	1	2.70
Devalued credentials	-	-	-	-	1	4.00	1	2.70
Devalued expertise	-	-	-	-	1	4.00	1	2.70
Unprepared for roles	1	25.00	1	12.50	2	8.00	4	10.81
Acad counselors	1	25.00	-	-	-	-	1	2.70
Advisors	1	25.00	-	-	-	-	1	2.70
Assessment dev	-	-	-	-	-	-	-	-
Assessors	-	-	-	-	-	-	-	-
Coaches	-	-	-	-	-	-	-	-
Content experts	-	-	-	-	-	-	-	-
Curric designers	-	-	-	-	1	4.00	1	2.70
Facilitators	1	25.00	-	-	1	4.00	2	5.41
Guides	2	50.00	-	-	-	-	2	5.41
Instructors	-	-	-	-	-	-	-	-
Jury members	-	-	-	-	1	4.00	1	2.70
Lrning designers	1	25.00	-	-	-	-	1	2.70
Lrning directors	-	-	-	-	-	-	-	-
Lrning managers	-	-	1	12.50	-	-	1	2.70

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Mentors	2	50.00	-	-	3	12.00	5	13.51
Navigators	-	-	-	-	-	-	-	-
Needs assessors	-	-	-	-	1	4.00	1	2.70
Not teacher	-	-	-	-	-	-	-	-
Program monitors	-	-	-	-	-	-	-	-
Researchers	-	-	-	-	1	4.00	1	2.70
Resource	-	-	1	12.50	-	-	1	2.70
Test writers	-	-	-	-	-	-	-	-
Tutors	-	-	-	-	1	4.00	1	2.70
Perf assessor	-	-	-	-	-	-	-	-
Balance counselor	-	-	-	-	-	-	-	-
Collegial relations	-	-	1	12.50	-	-	1	2.70
Competency dev	-	-	-	-	2	8.00	2	5.41
Knowledge integration	1	25.00	1	12.50	-	-	2	5.41
Identify deficiencies	1	25.00	-	-	-	-	1	2.70
Identify resources	-	-	-	-	1	4.00	1	2.70
Identify outcomes	-	-	-	-	2	8.00	2	5.41
Identify mentors	-	-	-	-	-	-	-	-
Create lrning exp	-	-	-	-	2	8.00	2	5.41
1–1 contact	-	-	-	-	1	4.00	1	2.70
Professional ties	-	-	-	-	2	8.00	2	5.41
Learner progress	-	-	-	-	-	-	-	-
Training	-	-	-	-	1	4.00	1	2.70

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes. Acad counselors = academic counselors; assessment dev = assessment development; curric designers = curriculum designers; lrning designers = learning designers; lrning directors = learning directors; lrning managers = learning managers; perf assessor = performance assessor; competency dev = competency development; create lrning exp = create learning experience.

Table 27

Impacts of CBE Programs on Faculty Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Faculty	0	0.00	3	21.43	14	37.84	17	32.08
No tenure	-	-	-	-	1	2.70	1	1.89
Deskilling	-	-	-	-	-	-	-	-
Devalued credentials	-	-	-	-	-	-	-	-
Devalued expertise	-	-	-	-	-	-	-	-
Unprepared for roles	-	-	-	-	2	5.41	2	3.77
Acad counselors	-	-	-	-	-	-	-	-
Advisors	-	-	-	-	3	8.11	3	5.66
Assessment dev	-	-	-	-	1	2.70	1	1.89
Assessors	-	-	-	-	3	8.11	3	5.66
Coaches	-	-	-	-	6	16.22	6	11.32
Content experts	-	-	-	-	3	8.11	3	5.66
Curric designers	-	-	-	-	4	10.81	4	7.55
Facilitators	-	-	-	-	-	-	-	-
Guides	-	-	-	-	1	2.70	1	1.89
Instructors	-	-	1	7.14	2	5.41	3	5.66

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Jury members	-	-	-	-	-	-	-	-
Lrning designers	-	-	-	-	-	-	-	-
Lrning directors	-	-	-	-	1	2.70	1	1.89
Lrning managers	-	-	-	-	-	-	-	-
Mentors	-	-	2	14.29	6	16.22	8	15.09
Navigators	-	-	1	7.14	-	-	1	1.89
Needs assessors	-	-	-	-	-	-	-	-
Not teacher	-	-	-	-	1	5.41	1	1.89
Program monitors	-	-	-	-	2	5.41	2	3.77
Researchers	-	-	-	-	-	-	-	-
Resource	-	-	-	-	-	-	-	-
Test writers	-	-	-	-	1	5.41	1	1.89
Tutors	-	-	-	-	-	-	-	-
Perf assessor	-	-	-	-	1	5.41	1	1.89
Balance counselor	-	-	-	-	1	5.41	1	1.89
Collegial relations	-	-	-	-	-	-	-	-
Competency dev	-	-	-	-	-	-	-	-
Knowledge integration	-	-	-	-	-	-	-	-
Identify deficiencies	-	-	-	-	-	-	-	-
Identify resources	-	-	-	-	2	5.41	2	3.77
Identify outcomes	-	-	-	-	-	-	-	-
Identify mentors	-	-	1	7.14	-	-	1	1.89
Create lrning exp	-	-	-	-	-	-	-	-
1–1 contact	-	-	-	-	-	-	-	-
Professional ties	-	-	-	-	-	-	-	-
Learner progress	-	-	-	-	1	5.41	1	1.89
Training	-	-	-	-	1	5.41	1	1.89

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes. Acad counselors = academic counselors; assessment dev = assessment development; curric designers = curriculum designers; lrning designers = learning designers; lrning directors = learning directors; lrning managers = learning managers; perf assessor = performance assessor; competency dev = competency development; create lrning exp = create learning experience.

Student Characteristics

Students considered good candidates for CBE programs in the publications of both time frames and in each of the stakeholder groups were described as adult, mature, or nontraditional learners. These learners were typically 25 years old or older who had major life experiences and responsibilities other than school. Documents in both time frames and in Policymakers and Reformers stakeholder groups characterized students as independent learners. Documents published by Funders emphasized the adult/nontraditional learner characteristic. Policymakers' publications in Group 2

presented a more detailed picture of CBE learners as individuals already participating in the workforce and willing to take advantage of employer/IHE partnerships. These individuals were also described as independent learners seeking an affordable, quality education that could be completed as quickly and conveniently as possible, and who were unwilling to pay for unnecessary facilities, programs, or services. One Group 1 Policymakers' publication indicated that CBE programs were good options for underprepared students with diverse learning styles. Documents published by Reformers provided the most comprehensive description of CBE learners. Group 1 publications described good CBE candidates as job-oriented independent learners who might be trying to overcome a history of poor academic performance. Documents in Group 2 continued to add more specific descriptions of nontraditional learners as returning students with some college but no degree, already participating in the workforce, but who could have new career goals. Group 2 Reformers' publications also touched on the concern that CBE might not be a good fit for every student. See Tables 28 and 29 for additional student characteristics.

Program Characteristics

Based on competencies. According to Elam (1971), the primary essential element of a competency-based/performance-based program was the public availability of career-oriented and explicitly stated competencies. As expected, all documents published in both time periods and by all three stakeholder groups referenced CBE and provided differing levels of detail about competencies in the framework of CBE. Of the three desirable aspects included in Elam's description, the explicit definition of competencies required for CBE consideration was the most common detail referenced. The greatest number of documents describing the explicit identification of competencies

occurred in Reformers' publications during the period 2005–2015. The second requirement—being made public in advance—was also well represented across all groups. The third required element of CBE—career relevance—was the least documented overall, but was, surprisingly a more common feature in Policymakers' publications 1973–1983. Full details on the competency-program characteristic are available in Tables 30 and 31.

Table 28

Characteristics of CBE Students Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Student	2	50.00	6	75.00	11	44.00	19	51.35
25 w/ life experience	2	50.00	6	75.00	7	28.00	15	40.54
Corp employees	-	-	-	-	-	-	-	-
Self-paced students	-	-	-	-	-	-	-	-
Independent learners	-	-	-	-	1	4.00	1	2.70
In workforce	2	50.00	6	75.00	7	28.00	15	40.54
Degreed, new goals	-	-	-	-	-	-	-	-
Job currency	-	-	-	-	1	4.00	1	2.70
College, no degree	-	-	-	-	-	-	-	-
Poor past performance	-	-	-	-	1	4.00	1	2.70
Underprepared students	-	-	1	12.50	-	-	1	2.70
Consumer students	-	-	-	-	-	-	-	-
Not for everyone	-	-	-	-	-	-	-	-

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes. CBE = competency-based education.

Table 29

Characteristics of CBE Students Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Student	1	50.00	11	78.57	20	54.05	32	60.38
25 w/ life experience	1	50.00	11	78.57	20	54.05	32	60.38
Corp employees	-	-	1	7.14	-	-	1	1.89
Self-paced students	-	-	-	-	1	2.70	1	1.89
Independent learners	-	-	1	7.14	-	-	1	1.89
In workforce	1	50.00	11	78.57	20	54.05	32	60.38
Degreed, new goals	-	-	-	-	1	2.70	1	1.89
Job currency	-	-	-	-	1	2.70	1	1.89
College, no degree	-	-	-	-	4	10.81	4	7.55
Poor past performance	-	-	-	-	-	-	-	-
Underprepared students	-	-	-	-	-	-	-	-
Consumer students	-	-	2	14.29	1	2.70	3	5.66
Not for everyone	-	-	-	-	1	2.70	1	1.89

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes.

Table 30

Program Characteristics - Based on Competencies Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Competencies	4	100.00	8	100.00	25	100.00	37	100.00
Career relevant	1	25.00	4	50.00	5	20.00	10	27.03
Explicitly stated	4	100.00	8	100.00	23	92.00	35	94.59
Made public	3	75.00	4	50.00	14	56.00	21	56.76

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes.

Table 31

Program Characteristics - Based on Competencies Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Competencies	2	100.00	14	100.00	37	100.00	53	100.00
Career relevant	-	-	1	7.14	8	21.62	9	16.98
Explicitly stated	2	100.00	8	57.14	32	86.49	42	79.25
Made public	1	50.00	4	28.57	25	67.57	30	56.60

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes.

Expected levels of performance. The second essential element of CBE required programs to be made public in advance of all performance-level expectations (Elam, 1971). Criteria for performance were most common in documents published by Reformers in Group 1 and 2 time frames. Achievement of mastery level was the most-referenced expectation in Group 1 publications. Mastery and Competency were the two performance levels most commonly referenced in Group 2 publications. Other expected levels of performance shared across Group 1 and 2 included Proficiency and Variable. Publications promoting a Variable performance level had no standard criterion to which all learners should conform. Instead, each defined competency would be achieved to the best of the individual learner's ability. Variability by context and learner across all stakeholder groups was more common in Group 1 publications. Although achieving competency was the most common performance-level reference point in Group 2 Reformers' publications, the idea of competency performance itself had several published variants. These variants included a binary construct (competent/not competent), but also competency stages with performance indicators at three to six different levels. Funders' publications tended to focus on the mastery, competency, and variable levels of

performance whereas Policymakers' publications emphasized mastery, proficiency, and variable levels of performance. The most detailed commentary about performance levels appeared in Reformers' documents published 2005–2015. See Tables 32 and 33 for details on expected levels of performance.

Table 32

Program Characteristics - Expected Levels of Performance Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Criteria level	4	100.00	3	37.50	14	56.00	21	56.76
Competency*	1	25.00	-	-	1	4.00	2	5.41
Mastery	2	50.00	2	25.00	5	20.00	9	24.32
Proficiency	-	-	-	-	2	8.00	2	5.41
Satisfactory	-	-	-	-	1	4.00	1	2.70
Sufficient	-	-	-	-	1	4.00	1	2.70
Variable	1	25.00	1	12.50	1	4.00	3	8.11
Mastery Theory	-	-	-	-	1	4.00	1	2.70
Military Training	-	-	-	-	-	-	-	-
Vocational Trng	-	-	-	-	-	-	-	-

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes. *The documents advocating the criteria level of "competency" often subdivided that level into the variants enumerated below:
1. (a) entry, (b) intermediate, and (c) graduation;
2. (a) elementary, (b) applied, (c) advanced, and (d) strategic;
3. (a) novice, (b) advanced beginner, (c) competent, (d) proficient, and (e) expert; and
4. (a) unskilled or not relevant, (b) novice, (c) learner, (d) competent, (e) proficient, and (f) expert.

Table 33

Program Characteristics - Expected Levels of Performance Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Criteria level	0	0.00	1	7.14	13	35.14	14	26.42
Competency*	-	-	-	-	5	13.51	5	9.43
Mastery	-	-	-	-	6	16.22	6	11.32
Proficiency	-	-	1	7.14	1	2.70	2	3.77
Satisfactory	-	-	-	-	-	-	-	-
Sufficient	-	-	-	-	-	-	-	-
Variable	-	-	-	-	1	2.70	1	1.89
Mastery Theory	-	-	-	-	2	5.41	2	3.77
Military Training	-	-	-	-	1	2.70	1	1.89
Vocational Trng	-	-	-	-	1	2.70	1	1.89

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes. *The documents advocating the criteria level of "competency" often subdivided that level into the variants enumerated below:
1. (a) entry, (b) intermediate, and (c) graduation;
2. (a) elementary, (b) applied, (c) advanced, and (d) strategic;
3. (a) novice, (b) advanced beginner, (c) competent, (d) proficient, and (e) expert; and
4. (a) unskilled or not relevant, (b) novice, (c) learner, (d) competent, (e) proficient, and (f) expert.

Performance-based assessments. The requirement for performance-based, knowledge-grounded assessments presented in Elam's (1971) third essential element for CBE programs appeared in this sample across all stakeholder groups and in both time periods. Policymakers' publications provided the fewest details about assessment requirements. Full details about the performance-based assessments is shown in Table 34 and 35.

Table 34

Program Characteristics - Performance-Based Assessments Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Performance-based assessments	3	75.00	2	25.00	15	60.00	20	54.05

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes.

Table 35

Program Characteristics - Performance-Based Assessments Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Performance-based assessments	1	50.00	3	21.43	15	40.54	19	35.85

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes.

Demonstration determines progression. In Elam's (1971) CBE framework, each learner's progression depended on demonstration of competencies and not on seat time, accumulated credit, or completion of courses. More than half the documents in each time period mentioned the importance of students being able to demonstrate, at an acceptable level of performance, their knowledge, skills, and abilities for each defined competency. Group 1 publications across each stakeholder group, and Funders' publications in particular, provided the most information about demonstrating competencies. Fewer Policymakers' publications referenced demonstration as the critical path for progression. Although more than half of the Group 2 Reformers' documents emphasized demonstration of competencies as the pathway for degree completion, those documents explicitly deemphasized traditional academic structures such as seat time and credit hour. This was also true in Funders' publications. See Tables 36 and 37 for full

details.

Table 36

Program Characteristics - Demonstration Determines Progression Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Demonstration progression	4	100.00	3	37.50	17	68.00	24	64.86
No seat-time	3	75.00	2	25.00	5	20.00	10	27.03

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes.

Table 37

Program Characteristics - Demonstration Determines Progression Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Demonstration progression	1	50.00	5	35.71	22	59.46	28	52.83
No seat-time	1	50.00	5	35.71	13	35.14	19	35.85

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes.

Competency-based instruction framework. The requirement that instruction frameworks be designed specifically to support competency development comprised Elam's (1971) fifth essential element for CBE models. With the exception of Group 2 Funders' publications, documents in all strata included varying degrees of detail on this element. Overall, documents from the 1973–1983 time frame and those published by Funders and Reformers provided the most detail about competency-instruction frameworks. Policymakers' publications that did comment on the curricular requirements of CBE models provided few examples and minimal details. Tables 38 and 39 provide more details.

Table 38

Program Characteristics - CBE-Centered Instruction Framework Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Competency instruction framework	4	100.00	3	37.50	14	56.00	21	56.76

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes.

Table 39

Program Characteristics - CBE-Centered Instruction Framework Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Competency instruction framework	0	0.00	2	14.29	16	43.24	18	33.96

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes.

Individualized/learner-centered instruction. The second tier of Elam's model described "implied" characteristics that frequently appeared in conjunction with essential elements, but were not absolutely critical for CBE program definition (Elam, 1971, p. 7). Personalized instruction opportunities designed to accommodate individual progression was the first of these implied characteristics. Although personalized learning was not one of the most strongly documented characteristics in the publications sampled, individualization was mentioned repeatedly in its relation to student self-pacing and the essential element of demonstration determining progression. The need for individualization appeared in a little more than half of the documents reviewed in both time frames, but although Funders and Policymakers' publications in Group 1 placed more emphasis on this characteristic, that emphasis on individualization switched to Reformers' publications in Group 2. View more details about the personalized learning

characteristic in Tables 40 and 41.

Table 40

Program Characteristics - Individualized Instruction Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Personalized instr for ind progression	4	100.00	6	75.00	9	36.00	19	51.35

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes. Personalized instr for ind progression = personalized instruction for individualized progression.

Table 41

Program Characteristics - Individualized Instruction Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Personalized instr for ind progression	0	0.00	4	28.57	23	62.16	27	50.94

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes. Personalized instr for ind progression = personalized instruction for individualized progression.

Feedback loops. Ongoing feedback between the learner and the individual guiding the learning was considered a necessary feature of personalized learning. Feedback between the learner and the guide provided the opportunity for instructional adjustments. If a true feedback loop, the implementation of this implied characteristic would inform not only the individual learner, but also the program (Elam, 1971). Although not strongly represented in the sampled documents, the topic of feedback appeared most frequently in Funders' and Policymakers' documents published in Group 1. During the Group 2 time frame, references to feedback became more common and stakeholder interest switched to Reformers' publications. Funders' documents published in Group 2 made no mention of this characteristic. See Tables 42 and 43 for more details

on feedback loops.

Table 42

Program Characteristics - Feedback Loops Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Feedback informs improvement	3	75.00	2	25.00	4	16.00	9	24.32

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes.

Table 43

Program Characteristics - Feedback Loops Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Feedback informs improvement	0	0.00	2	14.29	20	54.05	22	41.51

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes.

Systems approach. When applying a systems approach to a learning model, Elam (1971) stressed the importance of all aspects of the program working together to produce an educated learner. Although this implied characteristic appeared overtly in few of the sampled publications, any document detailing the five essential elements of a competency-based program could, by implication, be considered to advocate for the systems approach. Explicit references to a systems approach appeared most commonly in Group 1 Funders and Reformers stakeholder-group publications. Tables 44 and 45 provide full information on references to a systems approach.

Table 44

Program Characteristics - Systems Approach Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Systems approach	3	75.00	1	12.50	8	32.00	12	32.43

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes.

Table 45

Program Characteristics - Systems Approach Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Systems approach	0	0.00	0	0.00	4	10.81	4	7.55

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes.

Emphasis on exit requirements. Emphasis on program exit requirements has been an accepted part of the teaching profession for decades, so it was no surprise for this characteristic to appear on Elam's (1971) list of implied characteristics. References to exit requirements appeared solely in Funders and Reformers' publications, but did cross both time periods. See Tables 46 and 47 for more details.

Table 46

Program Characteristics - Exit Requirements Emphasis Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Exit req emphasis	1	25.00	0	0.00	3	12.00	4	10.81

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes. Exit req emphasis = exit requirements emphasis.

Table 47

Program Characteristics - Exit Requirements Emphasis Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Exit req emphasis	1	50.00	0	0.00	3	8.11	4	7.55

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes. Exit req emphasis = exit requirements emphasis.

Modularization. In a modularized CBE instructional program, all learning activities are designed to assist students to develop specific competencies and support individualization and self-pacing (Elam, 1971). References to modularization appeared primarily in Group 1 Funders' publications but also in those of Policymakers and, to a lesser degree, in Reformers' documents. No Funders' or Policymakers' publications mentioned modularization in the Group 2 sample, but Reformers' publications during the 2005–2015 time frame indicated some interest in this implied characteristic. More information about the characteristic of modularization is located in Tables 48 and 49.

Table 48

Program Characteristics - Modularization Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Modularization for Ind pacing	3	75.00	1	12.50	1	4.00	5	13.51

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes. Modularization for Ind pacing = Modularization for Individualized pacing.

Table 49

Program Characteristics - Modularization Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Modularization for Ind pacing	0	0.00	0	0.00	5	13.51	5	9.43

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes. Modularization for Ind pacing = Modularization for Individualized pacing.

Accountability. Accountability completed Elam's (1971) list of implied characteristics. Unsurprisingly, the two time periods were punctuated by increasing stakeholder demands that students be held accountable for demonstrating specified levels of performance and institutions be held accountable for producing successful graduates, emphasizing this implied CBE characteristic. Documents published in Groups 1 and 2 and across all stakeholder groups emphasized accountability. That being said, this topic was more characteristic of Group 1 documents and least prominent in Policymakers' publications. Full details about documents referencing student or institutional accountability can be found in Tables 50 and 51.

Table 50

Program Characteristics - Accountability Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Student accountability	4	100.00	3	37.50	14	56.00	21	56.76

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes.

Table 51

Program Characteristics - Accountability Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Student accountability	1	50.00	1	7.14	15	40.54	17	32.08

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes.

Field setting. Providing experiential learning in a relevant field setting was the first characteristic described as "related or desirable" but not critical in definition (Elam, 1971, p. 7). In areas other than teacher education, a field setting could include working with practitioners in the field or using real-world scenarios for project-based activities. Consequently, despite Elam's teacher-education focus, this characteristic can also be generalized to the broader CBE effort. Although no mention was made to field setting, real-world scenarios, or the benefits of working with practitioners active in the field in Group 1 Policymakers' documents or Group 2 Funders' documents, this characteristic did appear in the publications of other stakeholder groups and in both time frames. The idea of generalizing the field-setting characteristic appeared most commonly in Funders' documents published between 1973–1983. See Tables 52 and 53 for more details.

Table 52

Program Characteristics - Field Setting Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Real-world scenarios	2	50.00	0	0.00	3	12.00	5	13.51

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes.

Table 53

Program Characteristics - Field Setting Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Real-world scenarios	0	0.00	1	7.14	2	3.41	3	5.66

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes.

Broad-based decisions. Another "related or desirable" characteristic (Elam, 1971) stressed the advantages of a broad base for decision making. Publications evaluated in this study referenced the importance of employing a broad network of academic content experts and professionals working in the field to develop assessments and, in some cases, act as assessors. The idea of having a broad-based decision network appeared most commonly in Group1 Funders' publications but was nonexistent in Group 2 Funders' publications. Overall, this theme appeared more commonly in Group 2 Reformers' publications. See Tables 54 and 55 provide greater detail on broad-based decision making.

Table 54

Program Characteristics - Broad-Based Decision-Making Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Broad-based decisions	4	100.00	1	12.50	2	8.00	7	18.92

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes.

Table 55

Program Characteristics - Broad-Based Decision-Making Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Broad-based decisions	0	0.00	2	14.29	13	35.14	15	28.30

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes.

Role-based instruction. The availability of "protocol and training materials" specific to the area of teacher training (Elam, 1971, p. 10) can be generalized to accommodate any field of study. The availability of an instructional framework consisting of materials designed to support the attainment of competencies and resulting demonstrations was one of the five essential elements for competency-based learning. In the sample publications, the importance of learning resources and activities adapted from real-life experiences and designed to help synthesize the acquisition and application of new knowledge, skills, and abilities was emphasized in each time frame and across each stakeholder group. Group 1 Funders' publications were the exception and made no mention of learning activities based on real-life scenarios. The group publications that most commonly referenced this characteristic were those published in Group 1 by Policymakers and those published in Group 2 by Reformers. Refer to Tables 56 and 57 for more details.

Table 56

Program Characteristics - Role-Based Instruction Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Instr role specific	1	25.00	3	37.50	5	20.00	9	24.32

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes. Instr role specific = Instruction is role specific.

Table 57

Program Characteristics - Role-Based Instruction Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Instr role specific	0	0.00	2	14.29	13	35.14	15	28.30

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes. Instr role specific = Instruction is role specific.

Student participation in goal setting. A learning model designed to allow student participation in decision making supports student accountability and individualized learning through flexible options that help inform educational goals. Although not a prominent theme in Group 2 publications, Group 1 publications did mention this characteristic across stakeholder groups. Funders and Policymakers' publications in Group 1 referenced student participation in goal setting more than did Reformers' publications during the same time frame. This mention coincided with the student-centric focus of other Group 1 publications. See Tables 58 and 59.

Table 58

Program Characteristics - Student Participation in Goal Setting Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Student active in goal setting	3	75.00	3	37.50	6	24.00	12	32.43

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes.

Table 59

Program Characteristics - Student Participation in Goal Setting Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Student active in goal setting	0	0.00	1	7.14	3	8.11	4	7.55

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes.

Data-driven program. According to Elam (1971), a research-oriented and regenerative CBE program relies on the implied characteristic of feedback because robust feedback loops could be used to inform program improvements. Although comments on the need for data to document CBE program results appeared in more Group 1 publications, the percentage of Group 2 Reformers' publications commenting on research data needs equated to the percentage in the entire Group 1 set. This outcome corresponds to the thematic results from the "lack of data" Constraints and Limitations section. More details are available in Tables 60 and 61.

Table 60

Program Characteristics - Program Is Data Driven Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Data informs improvements	3	75.00	2	25.00	5	20.00	10	27.03

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes.

Table 61

Program Characteristics - Program Is Data Driven Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Data informs improvements	0	0.00	1	7.14	10	27.03	11	20.75

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes.

Life-long learning expectations. Few publications in the sample group described career preparation as a continuous, life-long learning activity rather than merely a prerequisite for entering the workforce (Elam, 1971). Of those that did mention the connection of life-long learning to CBE, it was most common in stakeholder Group 1 publications. Reformers and Policymakers documented life-long learning in both time frames, but references to life-long learning in Funders' publications appeared only in Group 1 documents. Tables 62 and 63 provide full details on references to life-long learning.

Table 62

Program Characteristics - Life-Long Learning Expectations Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Life-long learning experience	1	25.00	1	12.50	3	12.00	5	13.51

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes.

Table 63

Program Characteristics - Life-Long Learning Expectations Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Life-long learning experience	0	0.00	1	7.14	3	8.11	4	7.55

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes.

Role integrative instruction. The final related characteristic described by Elam (1971) was that of role integrative learning. In this type of instruction framework, student performance is expected to improve as the student masters each foundational competency. In modern parlance, this is more commonly referenced as scaffolded learning. This characteristic did appear in documents published in both time frames, but Reformers' publications, especially those published 2005–2015, provided the most information on role integrative instruction. No Funders' publications reviewed included this characteristic. See Tables 64 and 65 for full details.

Table 64

Program Characteristics - Role Integrative Instruction Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Foundational competencies	2	50.00	0	0.00	3	12.00	5	13.51

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes.

Table 65

Program Characteristics - Role Integrative Instruction Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Foundational competencies	0	0.00	0	0.00	9	24.32	9	16.98

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes.

Views on Prior Learning Assessment (PLA). In addition to the coding themes based on Rodgers' (2000a) evolutionary approach to concept analysis and Elam's (1971) development of characteristics common to CBE programs, additional themes came to light during the coding process. The first of these emergent characteristics focused on the documentation and award of learning gained through life, work, and prior educational experiences. As might be expected considering the Council for Adult and Experiential Learning (CAEL) was one of the prominent publishers in the Reformers category during the 2005–2015 time frame, the highest percentage of documents referencing PLA occurred in the Group 2 Reformers group. Despite this clear connection to more current Reformers' publications, mention of PLA occurred in both time periods and, to a lesser degree, in Funders and Policymakers stakeholder-group documents. One of the more interesting aspects of PLA was the ambiguity regarding its connection to CBE. Some documents included in this study clearly considered PLA a feature of CBE. Other documents treated PLA as distinct and separate from CBE. After careful consideration of the potential duality of prior learning presented in the documents sampled, I decided to categorize PLA as a related concept rather than a surrogate term, primarily because the focus of this study is on CBE as a model for new learning. Tables 66 and 67 provide additional details about references to PLA in the sampled documents.

Table 66

Program Characteristics - Views on Prior Learning Assessment Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Documentation of learning gained through life, work, and prior educational experiences	0	0.00	2	25.00	4	16.00	6	16.22

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes.

Table 67

Program Characteristics - Views on Prior Learning Assessment Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Documentation of learning gained through life, work, and prior educational experiences	1	50.00	0	0.00	8	21.62	9	16.98

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes.

Support mechanisms. Another emergent characteristic centered on the need for specialized support mechanisms to implement and maintain CBE programs. The primary areas of concern during the 1973–1983 time frame focused on the development of new student-information systems, learning-management systems, and new advising models. All the new technological advances of the 21st century generated expectations for sophisticated support mechanisms, described in the documents published 2005–2015. Some of those new systems included curriculum and instructional-design tools, new advising models supported by increasingly technologically advanced online advising tools, new learning platforms, data analytics with associated reporting tools, and new student-information systems with expanded functionality to award Title IV financial aid

to CBE students. Although a few Funders' documents referenced support systems, the majority of publications calling for new systems emerged from Reformers stakeholders across both time frames. See Tables 68 and 69 for full details.

Table 68

Program Characteristics - CBE Support Mechanisms Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Support mechanisms	2	50.00	0	0.00	2	8.00	4	10.81
Curriculum design sys	-	-	-	-	-	-	-	-
Financial aid sys	-	-	-	-	-	-	-	-
New advising models	1	25.00	-	-	-	-	1	2.70
Online advising tools	-	-	-	-	-	-	-	-
Learning mgmt sys	1	25.00	-	-	1	4.00	2	5.41
Reporting tools	-	-	-	-	-	-	-	-
Student info sys	-	-	-	-	1	4.00	1	2.70

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes. Curriculum design sys = Curriculum design system; financial aid sys = financial aid system; learning mgmt sys = learning management system; student info sys = student information system.

Table 69

Program Characteristics - CBE Support Mechanisms Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Support mechanisms	0	0.00	0	0.00	11	29.73	11	20.75
Curriculum design sys	-	-	-	-	2	5.41	2	3.77
Financial aid sys	-	-	-	-	1	2.70	1	1.89
New advising models	-	-	-	-	6	16.22	6	11.32
Online advising tools	-	-	-	-	2	5.41	2	3.77
Learning mgmt sys	-	-	-	-	10	27.03	10	18.87
Reporting tools	-	-	-	-	1	2.70	1	1.89
Student info sys	-	-	-	-	6	16.22	6	11.32

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes. Curriculum design sys = Curriculum design system; financial aid sys = financial aid system; learning mgmt sys = learning management system; student info sys = student information system.

Competency transcript. In conjunction with demands for new systems designed to support CBE, several publications also expounded on the need for a new type of transcripting or reporting tool to document the attainment of competencies. Documents published by all stakeholder groups and across both time frames elaborated on the need for a specialized transcript. The only group represented in the sample that did not comment on this characteristic fell in the Group 2 Funders category. Policymakers and Reformers' documents mentioned the need for this new reporting tool. Uncharacteristically, Policymakers' publications included the highest percentage of comments on transcript deficiencies. See Tables 70 and 71 for additional information on references to transcripting.

Table 70

Program Characteristics - Transcripting Competency Records Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Competency transcript	2	50.00	1	12.50	2	8.00	5	13.51

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes.

Table 71

Program Characteristics - Transcripting Competency Records Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
Competency transcript	0	0.00	3	21.43	6	16.22	9	16.98

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes.

New tuition models. The need for new tuition models to support CBE's disaggregation from the traditional term/course/credit fee structures comprised the final emergent characteristic identified in this study. Of the documents included in the sample,

fee structures for CBE programs varied from a flat all-you-can-learn rate per term or instructional period to a regular tuition structure where competencies were adjoined to courses. This emergent characteristic was specific to Group 2 publications and appeared in only Reformers and Policymakers' publications. The most common references to tuition structure occurred in Reformers' publications. For full details on new tuition structures referenced in the documents, see Tables 72 and 73.

Table 72

Program Characteristics - New Tuition Models Group 1

	Group 1							
	Funders (*n* = 4)		Policymakers (*n* = 8)		Reformers (*n* = 25)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
New tuition models	0	0.00	0	0.00	0	0.00	0	0.00

Note. The Group 1 time frame is 1973–1983. A total of 37 documents made up the combined stakeholder sample for Group 1. Documents may reference multiple themes.

Table 73

Program Characteristics - New Tuition Models Group 2

	Group 2							
	Funders (*n* = 2)		Policymakers (*n* = 14)		Reformers (*n* = 37)		Overall	
	n	%	*n*	%	*n*	%	*n*	%
New tuition models	0	0.00	4	28.75	12	32.43	16	30.19

Note. The Group 2 time frame is 2005–2015; a total of 53 documents made up the combined stakeholder sample for Group 2. Documents may reference multiple themes.

Consideration of the results for predictive and emergent themes coalesced into comprehensive responses to the research questions posed. The first research question explored the way CBE presented in scholarly literature during the period 1973–1983 and if the documents from this early period could be categorized into similar stakeholder groups described in 2005–2015. Although no consensus definition resulted from the 1973–1983 efforts to define CBE, descriptions of characteristics common to CBE programs such as those identified by Elam (1971) branded CBE programs throughout

both time frames. Categorizing documents included in the study in the same stakeholder groups identified in the 2005–2015 time frame posed no issues in this proportional random sample. Publications categorized in the Funders external stakeholder group in both time frames comprised a smaller percentage of the total sample than was originally anticipated, perhaps because many Reformers' documents in both time frames were published in part with the support of Funders. This blurring of spheres of influence across the Funders/Reformers stakeholder groups supports the initial ambiguity encountered when identifying stakeholder groups explained in Chapter 1. Despite this occasional overlap in Funders/Reformers roles, the results from exploring the first research question supported the division of the documents not only by time frame, but also into the three stakeholder groups of Funders, Policymakers, and Reformers that framed the rest of the research questions.

The second question posed in this study sought to determine how CBE presented in the literature of the three primary external-stakeholder groups of Funders, Reformers, and Policymakers during the period 2005–2015. Although attempts to provide a consensus definition for CBE continued during the 2005–2015 time frame, those attempts were no more successful than comparable efforts in 1973–1983. In addition to the expected stipulative definitions provided in the documents included in the study, the report published by the Reformers organization, Public Agenda (2015) and summarized by Wax (2015) provided a list of shared design elements for CBE programs in the 21st century that were strikingly similar to Elam's (1971) description of essential elements introduced more than 4 decades earlier. According to the Public Agenda (2015) report, CBE programs developed around "clear, precise and easy to understand" competency statements focused on "the specialized and technical aspects of a field of work or study"

(p. 3). This assessment corresponded to Elam's first essential element that competencies be "role-derived, specified in behavioral terms, and made public" (1971, p. 8). The second element of a thriving CBE program focused on assessments that were to be "designed to measure what matters and inform decision-making. CBE assessments are planned with the end in mind … when, where and how learners should be able to demonstrate required competencies" (Public Agenda, 2015, p. 19). This characteristic mirrored Elam's second and third essential elements that "assessment criteria are competency-based, specify mastery levels, and made public" and "requires performance as prime evidence, tak[ing] student knowledge into account" (1971, p. 8). According to Elam, individualization was implied and student goal-setting was seen as desirable/related, but neither held a prominent place in the earlier time frame. Conversely, the 2015 report placed student participation in decision making as a central feature in modern CBE programs: "Learners are engaged, empowered and valued. Learners have the information and supports needed to participate and progress in the CBE program. The interactions, policies and programs support the learning experience and adjust to accommodate learner needs" (Public Agenda, 2015, p. 15).

During the 2005–2015 time frame, "the program structure and curriculum [were] designed to flex in support of the learner. … All aspects of the CBE program [were] meant to help the learner practice and master the competencies" (Public Agenda, 2015, p. 5). Although slightly lower in priority, this requirement corresponded to Elam's (1971) fifth essential element, that the "instructional program facilitates development and evaluation of specific competencies" (p. 8). The idea that progress depended on demonstration completed Elam's list of essential elements and found its counterpart in the modern requirement that

> graduates achieve proficiency in all required competencies and are prepared for appropriate field demands and career opportunities. … Strong partnerships between faculty and employers strengthen the likelihood that CBE graduates leave prepared for the real world challenges and opportunities connected to their credential(s). (Public Agenda, 2015, p. 23)

Both program and student accountability as an implied characteristic and development of a broad decision network as a related characteristic (Elam, 1971) elevated to primary CBE characteristics in 2015. Modern CBE "programs encourage responsible innovation, adjustments and reflection [and] value transparent and data-driven practices. CBE professionals and learners are invested in the program's success and serve as active contributors" (Public Agenda, 2015, p. 7). A network of "CBE professionals and partners inform and enrich the CBE program, its curriculum, and selected competencies" (Public Agenda, 2015, p. 11).

Not included in Rodgers' (2000a) activities or Elam's (1971) definition, but added during the development of emergent themes, were characteristics emphasizing the changing nature of faculty roles, financial structures, and technical-support systems. According to the Public Agenda (2015) report, "faculty and staff roles [were] arranged in a way that maximize[d] individual talent, strengths, and competence, while enriching the learner experience" (p. 13); financial structures had to be modified to "enable accessibility and affordability while ensuring the delivery of a quality program. … This can require adjustments to current financial models or building entirely new financial models" (Public Agenda, 2015, p. 21); and modify "business processes and systems [to] communicate with each other and work together to best enable various program components. CBE professionals adjust their business models, vendor relationships and

technology systems to maximize automation and ease" (Public Agenda, 2015, p. 9).

The commonalities and variations of the Elam (1971) and Public Agenda (2015) CBE program characteristics were consistent with the results identified in the coding and analysis phase of this study and helped answer the third research question: Can common characteristics of CBE be identified in the documents sampled across both time periods and in and across documents published by external-stakeholder groups. Aligned with the list of activities described in Rodgers's (2000a) evolutionary approach to concept analysis, the following contextual framework emerged from language commonly used to describe CBE in documents published during the 1973–1983 time frame. Commonalities are presented as the highest percentage of documents having shared characteristics in each theme.

CBE Characteristics Identified in Group 1

Described as a legacy of the competency-based teacher- education movement in 10.81% of the documents in Group 1, the primary purpose of CBE was to improve student performance (29.73%) through curriculum reforms requiring clear and coherent objectives (18.92%). Demands that postsecondary programs provide diverse instruction options for an increasingly heterogeneous student population (27.03%) and improve career and societal relevance to address the needs of a changing workforce (27.03%) encouraged CBE exploration despite the cost in money and time (45.95%). During this early period, institutions supported CBE program development in their own budgets (5.41%) or with the assistance of FIPSE grants (5.41%) and considered Alverno College (24.32%) and Mars Hill College (24.32%) to be exemplars of the learning model, also known as performance-based education (5.41%), individualized learning (5.41%), and curriculum of attainments (5.41%). PLA, "a term used to describe the process by which

an individual's experiential learning is assessed and evaluated for purposes of granting college credit, certification, or advanced standing toward further education or training" (Klein-Collins, 2012, p. 9), appeared in conjunction with CBE in 16.22% of the documents included in Group 1. Although 18.92% of the documents in this group expressed concern about the lack of a widely accepted definition for CBE, efforts to describe CBE in the documents themselves tended to be vague or to resort to a list of common characteristics (8.11%) that is typical when trying to define an emergent concept (Rodgers, 2000a).

In the contextual framework of the 1973–1983 period, one could also identify characteristics common to schools, faculty, students, and, ultimately, programs. IHEs interested in developing or expanding CBE programs tended to focus on open admission and the cost-effective expansion of educational technology (54.05%). Faculty were unprepared for the challenges of transitioning away from the traditional instructor/teacher role to new, often disaggregated roles (10.81%) and the most common title assigned to faculty members engaged in CBE models was that of mentor (13.51%). Students attracted to CBE programs tended to be 25 years old or older who already had major life and work experiences providing foundational learning (40.54%) and who were already active in the workforce (40.54%). The characteristics of CBE programs common in Group 1 documents emphasized the explicit public statement of required competencies (100%) demonstrated through performance assessment (54.05%) to a desired level of achievement. The level of achievement most commonly identified in these documents encouraged mastery of the competency (56.76%). The program's instruction framework expressly supported the development of stated competencies (56.76%) and student progression depended on demonstrated mastery of those competencies (64.86%). These

findings were consistent with the first five characteristics considered essential for any CBE program, as presented by Elam (1971). The other single most common characteristic during this time frame was that of program and student accountability (56.76%). For the full list of Group 1 common characteristics, see Table 74.

Table 74

CBE Characteristics Identified in Group 1

	Characteristics of CBE programs	%
E1	Competency Statements Clear, Explicit & Made Public	100.00
	Explicitly Stated	94.59
	Made Public	56.76
	Career Relevant	27.03
E2	Required Level of Performance	56.76
	Mastery	24.32
E3	Performance Based Assessment	54.05
E4	Demonstration Determines Progress	64.86
E5	Instruction Framework Facilitates Competency Development	56.76
I1	Personalized Learning	51.35
I2	Feedback	24.32
I3	Systemic Approach	32.43
I4	Exit Requirement Emphasis	10.81
I5	Modularization	13.51
I6	Student and Program Accountability	56.76
R1	Field Setting	13.51
R2	Broad-Base for Decision Making	18.92
R3	Training Materials Specific to Role	24.32
R4	Student Participation in Goal Setting	32.43
R5	Research Oriented and Regenerative	27.03
R6	Career Continuous	13.51
R7	Role Integrative	13.51
O1	Integrated Assessment of Prior Learning	16.22
O2	Support Mechanisms	10.81
	Learning Management Systems	5.41
O3	Transcripting	13.51
O4	Fee Structure	0.00

Note. Characteristics of competency-based programs identified as Essential (E1–E5), Implied (I1–I6), and Related (R1–R7). Adapted from *Performance Based Teacher Education: What Is the State of the Art?* by S. Elam, 1971, Washington, DC: American Association for Colleges of Teacher Education, retrieved from http://files.eric.ed.gov/fulltext/ED058166.pdf, p. 8. Researcher identified characteristics coded as Other (O1–O4) during coding and analysis.

CBE Characteristics Identified in Group 2

Documents in Group 2 made limited reference to theoretical antecedents, but when they did do so, adult education (11.32%) was the commonly identified wellspring for CBE along with its surrogate, outcomes-based education (9.43%). Related concepts such as PLA appeared in 16.98% of the documents. Foundation-grant supplements (13.21%) to institutional funding (9.43%) provided most of the support for developing CBE programs during the 2005–2015 time frame. Although the cost in time and money (24.53%) and faculty opposition (24.53%) were considered barriers to CBE development, the most commonly cited impediments to implementing CBE were the strictures of federal regulations surrounding Title IV financial aid (30.19%). Despite these constraints, the lure of improved affordability (30.19%) and time savings (20.75%), combined with market implications of those claims and examples of institutions like WGU (32.08%), continued to arouse interest in new learning models to help meet stakeholder demands for affordability, accessibility, and improved completion rates in high-quality career-relevant programs (37.74%). The potential promise of CBE did not blind the authors of the documents included in Group 2 to the inherent problems of trying to implement CBE programs before CBE as a concept had matured (16.98%). In fact, Group 2 publications considered creation of a consensus definition critical to widespread acceptance of this learning model (13.21%).

Considering the contextual framework of Group 2 documents, it is unsurprising that the IHEs described in these publications focused on the needs of the mature learner (49.06%) and categorized faculty members as mentors (15.09%) and coaches (11.32%). As in Group 1 publications, Group 2 publications promoted CBE's advancement of adult-learning opportunities, but the percentage of documents citing this characteristic was

higher in Group 2. The percentage of documents describing students most likely to be interested in CBE as employed, 25 years and older, with life and work experience increased from 40.54% in Group 1 to 60.38% in Group 2. The CBE program characteristics described in Group 2 publications also differed from those identified in Group 1. Documents in Group 2, as those in Group 1, all cited clear and coherent competency statements as the primary criteria of a competency-based program. However, only two other characteristics appeared in more than 50% of Group 2 documents. The emphasis on demonstration of learning (52.83%) over credits or seat time to determine student progression, and the corollary personalization of learning (50.94%) provided the majority of descriptive text on CBE in Group 2 documents. See Table 75 for the full list of Group 2 program characteristics.

CBE Characteristics Identified in Funders' Publications

Although consistent with the overall results specific to each time frame, viewing the documents in this study from a stakeholder perspective provided a revealing glimpse into the areas emphasized by each group. CBE's roots in teacher-education reforms of the 1960s and 1970s (16.67%) appeared occasionally in documents published by the Funders stakeholder group during 1973–1983 and 2015–2015—2 eras demanding institutional accountability (33.33%)—and the development of more career and socially relevant postsecondary programs (33.33%).

Table 75

CBE Characteristics Identified in Group 2

	Characteristics of CBE programs	%
E1	Competency Statements Clear, Explicit & Made Public	100.00
	Explicitly Stated	79.25
	Made Public	56.60
	Career Relevant	16.98
E2	Required Level of Performance	26.42
	Mastery	11.32
E3	Performance Based Assessment	35.85
E4	Demonstration Determines Progress	52.83
E5	Instruction Framework Facilitates Competency Development	33.96
I1	Personalized Learning	50.94
I2	Feedback	41.51
I3	Systemic Approach	7.55
I4	Exit Requirement Emphasis	7.55
I5	Modularization	9.43
I6	Student and Program Accountability	32.08
R1	Field Setting	5.66
R2	Broad-Base for Decision Making	28.30
R3	Training Materials Specific to Role	28.30
R4	Student Participation in Goal Setting	7.55
R5	Research Oriented and Regenerative	20.75
R6	Career Continuous	16.98
R7	Role Integrative	13.51
O1	Integrated Assessment of Prior Learning	16.98
O2	Support Mechanisms	20.75
	Learning Management Systems	8.87
O3	Transcripting	16.98
O4	Fee Structure	30.19

Note. Characteristics of competency-based programs identified as Essential (E1–E5), Implied (I1–I6), and Related (R1–R7). Adapted from *Performance Based Teacher Education: What Is the State of the Art?* by S. Elam, 1971, Washington, DC: American Association for Colleges of Teacher Education, retrieved from http://files.eric.ed.gov/fulltext/ED058166.pdf, p. 8. Researcher identified characteristics coded as Other (O1–O4) during coding and analysis.

Although no documents published by Funders in Group 2 identified exemplars, Group 1 Funders' publications did reference Alverno College and Mars Hill College as

models for CBE programs (33.33%). Documents published by Funders in Group 2 used the surrogate term, outcomes-based education (16.67%). Related concepts such as departmental challenge examinations and standardized national examinations also appeared in the Funders' documents of Group 1 (16.67%). Institutional funds (16.67%) and FIPSE grants (16.67%) provided monetary support for developing CBE programs in the hopes of seeing the positive impacts of improving affordability (16.67%), efficiency (16.67%), performance (16.67%), and career relevance (16.67%); increasing student accountability (16.67%) and personalization (16.67%) all within a learning model that could be developed in a traditional academic framework (16.67%). Concerns about the time and money needed to develop a CBE program appeared in 50% of Funders' documents, but concerns about transferability (33.33%), structural barriers (33.33%), faculty opposition (33.33%), and student relative performance (33.33%) also presented in these publications. Concern about the lack of a consensus definition appeared in 16.67% of the documents, but this group included references to a nuanced definitional issue: the fact that the definition of CBE tended to change with the level of exposure to and experience with this learning model (Illinois Central College, 1977).

As presented in documents published by Funders, IHEs with an interest in CBE tended to operate with an open-admission policy (66.67%), described their faculty as mentors (33.33%) or guides (33.33%) who serve working adult learners (50%). In comparison with other stakeholder groups, documents published by the Funders group were more likely to describe program characteristics. Of the characteristics categorized by Elam (1971) as being essential or implied, only emphasis on exit requirements over entrance requirements appeared in fewer than 50% of the documents in this group. Table 76 provides the full list of program characteristics represented in Funders' publications.

Table 76

CBE Characteristics Identified in Funders' Publications

	Characteristics of CBE programs	%
E1	Competency Statements Clear, Explicit & Made Public	100.00
	Explicitly Stated	100.00
	Made Public	66.67
	Career Relevant	16.67
E2	Required Level of Performance	66.67
	Mastery	33.33
E3	Performance Based Assessment	66.67
E4	Demonstration Determines Progress	83.33
E5	Instruction Framework Facilitates Competency Development	66.67
I1	Personalized Learning	66.67
I2	Feedback	50.00
I3	Systemic Approach	50.00
I4	Exit Requirement Emphasis	33.33
I5	Modularization	50.00
I6	Student and Program Accountability	83.33
R1	Field Setting	33.33
R2	Broad-Base for Decision Making	66.67
R3	Training Materials Specific to Role	16.67
R4	Student Participation in Goal Setting	50.00
R5	Research Oriented and Regenerative	50.00
R6	Career Continuous	16.67
R7	Role Integrative	33.33
O1	Integrated Assessment of Prior Learning	16.67
O2	Support Mechanisms	33.33
	Learning Management Systems	16.67
	New Advising Model	16.67
O3	Transcripting	33.33
O4	Fee Structure	0.00

Note. Characteristics of competency-based programs identified as Essential (E1–E5), Implied (I1–I6), and Related (R1–R7). Adapted from *Performance Based Teacher Education: What Is the State of the Art?* by S. Elam, 1971, Washington, DC: American Association for Colleges of Teacher Education, retrieved from http://files.eric.ed.gov/fulltext/ED058166.pdf, p. 8. Researcher identified characteristics coded as Other (O1–O4) during coding and analysis.

CBE Characteristics Identified in Policymakers' Publications

Documents published by Policymakers external stakeholders referenced antecedents in adult education (12.50%) and highlighted the importance of exploring new learning models (50%) to address issues of affordability (27.27%) and improved quality by establishing minimum acceptable standards of student performance (25%). Funding options in Policymakers' documents emphasized FIPSE (9.09%) and foundation grants (9.09%) over institutional funding. Federal regulations posed the primary constraint for CBE programs (22.73%), although this concern could be managed as in the examples provided by Alverno College (25%) in the earlier time period and WGU (13.64%), Southern New Hampshire University (13.64%), and Southern New Hampshire University's College for America (13.64%) during the later time period. Concern about the lack of a widely accepted definition of CBE appeared in 9.09% of Policymakers' publications but, in contrast to this concern, documents published by this group occasionally mentioned CBE with no attempt to explain the term. Surrogates for CBE included competency-based instruction (4.55%), curriculum of attainments (4.55%), and individualized learning (4.55%) in Group 1 and direct assessment (4.55%) and noncredit-hour CBE (4.55%) in Group 2. Related concepts included contract learning (13.64%) in Group 1 and PLA (13.54%) across both time frames.

Policymakers' publications also described the relevance of CBE to IHEs focused on the needs of mature learners (63.64%) in the 25+ age bracket (77.27%) who were already active in the workforce (77.27%). Very few of these publications made any mention of either curriculum or faculty reform or the potential challenges of changing faculty roles (9.09%). Overall, Policymakers' publications provided the fewest details about CBE program characteristics. In fact, Policymakers' documents routinely included

CBE in lists of several promising innovations but provided little detail. It appears the authors assumed readers would have some familiarity with competency-based learning models. The only program characteristics appearing in more than 50% of Policymakers' documents were explicit statements (72.73%) of required competencies (100%). The next most common characteristic emphasized personalized-learning opportunities (45.45%) over traditional academic structures of credit-bearing courses and seat time. See Table 77 for the full list of program characteristics mentioned in Policymakers' publications.

Table 77

CBE Characteristics Identified in Policymakers' Publications

	Characteristics of CBE programs	%
E1	Competency Statements Clear, Explicit & Made Public	100.00
	Explicitly Stated	72.73
	Made Public	36.36
	Career Relevant	22.73
E2	Required Level of Performance	18.18
	Mastery	9.09
E3	Performance Based Assessment	22.73
E4	Demonstration Determines Progress	36.36
E5	Instruction Framework Facilitates Competency Development	22.73
I1	Personalized Learning	45.45
I2	Feedback	18.18
I3	Systemic Approach	4.55
I4	Exit Requirement Emphasis	0.00
I5	Modularization	4.55
I6	Student and Program Accountability	18.18
R1	Field Setting	4.55
R2	Broad-Base for Decision Making	13.64
R3	Training Materials Specific to Role	22.73
R4	Student Participation in Goal Setting	18.18
R5	Research Oriented and Regenerative	13.64
R6	Career Continuous	9.09
R7	Role Integrative	0.00
O1	Integrated Assessment of Prior Learning	9.09
O2	Support Mechanisms	0.00
O3	Transcripting	18.18
O4	Fee Structure	18.18

Note. Characteristics of competency-based programs identified as Essential (E1–E5), Implied (I1–I6), and Related (R1–R7). Adapted from *Performance Based Teacher Education: What Is the State of the Art?* by S. Elam, 1971, Washington, DC: American Association for Colleges of Teacher Education, retrieved from http://files.eric.ed.gov/fulltext/ED058166.pdf, p. 8. Researcher identified characteristics coded as Other (O1–O4) during coding and analysis.

CBE Characteristics Identified in Reformers' Publications

Unlike publications in the Funders and Policymakers external-stakeholder groups, publications in the Reformers group emphasized the theoretical importance of teacher education and adult education in the development of CBE (11.29%). Changes in curriculum to establish clear and coherent program objectives and increased transparency (22.58%) supported the dual purpose of increasing affordability (16.13%) and career relevance (16.13%) during 2 eras noted for stakeholder demands for improvement in those areas (29.03%). Factors limiting CBE development included the cost in time and money (38.71%) and faculty opposition to changing roles (32.26%). To help address concerns about the cost of implementation, Reformers' publications included not only institutional funding (9.68%) but also foundation grants (9.68%). Outcomes-based education acted as a surrogate for CBE in 6.45% of Reformers' publications during the period 2005–2015, but the related concept of PLA featured in both time frames (17.74%). CBE documents also tended to extol Alverno College (16.13%) and Mars Hill College (8.06%) in Group 1 and WGU (22.58%) in Group 2. Although 20.97% of documents published in the Reformers group explicitly mentioned the lack of a consensus definition, only 9.68% categorized that lack as detrimental to widespread acceptance of CBE.

The Reformers stakeholders group clearly published the greatest number of documents on the topic of CBE. Like Funders stakeholders, Reformers' publications emphasized opportunities CBE afforded to open admission IHEs (61.29%) and, like the Funders' and Policymakers' publications in both time frames, Reformers' documents described CBE students as working adults (43.55%) who were 25 years or older (43.55%). Faculty members were described in a variety of roles but most often as mentors (14.52%). Program characteristics most commonly recognized in Reformers'

publications included the development of explicit (88.71%) and publicly stated (62.90%) competencies (100%) where a student's progress was determined by demonstration of learning and not time served (62.90%). This emphasis on student demonstration corresponded to personalized-learning opportunities (51.61%). Documents placed slightly less emphasis on performance-based assessments (48.39%) and an instruction framework designed specifically to support the development of competencies (48.39%). Table 78 provides a full list of program characteristics identified in Reformers' publications.

Table 78

CBE Characteristics Identified in Reformers' Publications

	Characteristics of CBE programs	%
E1	Competency Statements Clear, Explicit & Made Public	100.00
	Explicitly Stated	88.71
	Made Public	62.90
	Career Relevant	20.97
E2	Required Level of Performance	43.55
	Mastery	17.74
E3	Performance Based Assessment	48.39
E4	Demonstration Determines Progress	62.90
E5	Instruction Framework Facilitates Competency Development	48.39
I1	Personalized Learning	51.61
I2	Feedback	38.71
I3	Systemic Approach	19.35
I4	Exit Requirement Emphasis	9.68
I5	Modularization	9.68
I6	Student and Program Accountability	46.77
R1	Field Setting	8.06
R2	Broad-Base for Decision Making	24.19
R3	Training Materials Specific to Role	29.03
R4	Student Participation in Goal Setting	14.52
R5	Research Oriented and Regenerative	24.19
R6	Career Continuous	9.68

	Characteristics of CBE programs	%
R7	Role Integrative	19.35
O1	Integrated Assessment of Prior Learning	19.35
O2	Support Mechanisms	20.97
	Learning Management Systems	17.74
O3	Transcripting	12.90
O4	Fee Structure	19.35

Note. Characteristics of competency-based programs identified as Essential (E1–E5), Implied (I1–I6), and Related (R1–R7). Adapted from *Performance Based Teacher Education: What Is the State of the Art?* by S. Elam, 1971, Washington, DC: American Association for Colleges of Teacher Education, retrieved from http://files.eric.ed.gov/fulltext/ED058166.pdf, p. 8. Researcher identified characteristics coded as Other (O1–O4) during coding and analysis.

Chapter 5: Conclusions and Implications

Since the 1960s, recurring waves of interest in competency-based education (CBE) influenced niche postsecondary markets, but the absence of a consistent and commonly accepted definition limited CBE's widespread acceptance across the academic community (Hatcher et al., 2013; Houston, 1974; Maehl, 2000; Morcke et al., 2013; Spady, 1994; Urch, 1975). In the early 21st century, external stakeholders began to once again actively promote CBE as a possible method to improve access, decrease individual and societal costs of education, reduce the time to degree completion, and improve quality, defined by workplace performance (American Association of State Colleges and Universities [AASCU], State Relations and Policy Analysis Team [SRPAT], 2014; Competency-Based Education Network, n.d.; Dann-Messier, 2013; Dragoo, 2015; Educause Learning Initiative, 2014; *Keeping College Within Reach*, 2011; Kelchen, 2015; Kinser, 1999, 2007; Klein-Collins, 2013; Klein-Collins et al., 2014; Laitinen, 2012; Mahaffie, 2014; Meyer, 2005; Office of the Press Secretary, 2013; Polis & Salmon, 2013; Porter & Reilly, 2014). Despite that recent resurgence of interest, though, the inherent conceptual ambiguity surrounding CBE remained as problematic in the early 21st century as it had been in the mid-20th century (Christensen et al., 2011; Grant et al., 1979; Houston, 1974; Kelchen, 2015).

According to Rodgers (2000a), "concept analysis can be a powerful heuristic to promote understanding and further growth of knowledge" (p. 100). To that end, this study used the evolutionary approach to concept analysis to explore the strength and potential longevity of the 21st-century iteration of CBE in comparison with earlier attempts to expand the CBE learning model to the broader academic community (Rodgers, 2000a; Scheffler, 1978; Soltis, 1978; J. Wilson, 1971). The evolutionary approach to concept

analysis builds on the idea that concepts are context dependent and evolve over time (Rodgers, 2000a). Analysis of the data resulting from this research provided answers to the questions, How is CBE defined in documents published by the three external stakeholder groups during the periods 1973–1983 and 2005–2015; Can documents from both periods be categorized into similar stakeholder groups; and Can common characteristics of CBE be identified within and across stakeholder groups and time frames? The answers to these questions revealed the fundamental uses for CBE, contextualized in the literature published by external-stakeholder groups. According to Kelchen (2015), external-stakeholder groups exerting the most influence on the development of CBE in the 21st century were categorized as funders, reformers, and policymakers. In addition to the social context of stakeholder groups, this study also explored CBE in a temporal context across 2 eras of U.S. history with similar social, economic, and political influences.

The organization for this study was framed by the historical, theoretical, and sociocultural contexts surrounding the development of CBE from the mid-20th century to 2015. The following conclusion follows the same structure, placing the research results in the historical, theoretical, and sociocultural frameworks.

Historical Framework

The historical context of this study began with early attempts to introduce competency-based teacher education reform in the 1960s (Allais, 2012; Hodge, 2007; Steffenson, 1974; Tuxworth, 1989) and expanded into competency-based curriculums in the liberal arts and other fields in the 1970s (Grant et al., 1979). During this early period, external stakeholder demands for accountability and personalized-learning opportunities fueled these early CBE initiatives through federal grants (Elam, 1971; Houston, 1974;

Steffenson, 1974; Tuxworth, 1989; Urch, 1975). Growth of CBE programs continued in the professional disciplines throughout the 1980s and 1990s, but the traditional academic community displayed little interest. It was not until the foundation of WGU in 1997 (Dragoo, 2015; Kinser, 1999, 2007; Meyer, 2005) that CBE was reintroduced as a viable option to address 21st-century demands for affordability, accessibility, and achievement in higher education (Bradley et al., 2012).

Analysis showed the results of this study to align with the historical antecedents of CBE described in the literature review. Although a history of CBE was not included in each document, the documents that did explicitly describe CBE's historical antecedents were present in both Group 1 (1973–1983) and Group 2 (2005–2015) sample groups. Stated antecedents included earlier CBE movements in the fields of teacher education, elementary and secondary education-reform efforts, adult education, and training for professionals requiring certification or licensure to practice. In addition, Group 2 documents also included military and vocational training in the list of historical antecedents.

In this historical framework, attempts to develop a consensus definition played a significant role in each period of CBE development in the United States. Ongoing efforts to develop a widely accepted definition for CBE punctuated the performance/competency-based teacher-education movement of the 1960s and 1970s, but that goal remained elusive despite identification of common characteristics (Elam, 1971; Grant et al., 1979; Houston, 1974). Despite the continued dissatisfaction with proposed definitions, the characteristic CBE elements identified through these efforts provided a baseline that extended beyond teacher education. In fact, Elam's (1971) list of essential characteristics for competency-based teacher education was so well received, I

incorporated those characteristics into this study as part of the prescriptive coding structure. Unfortunately, despite recognition of common characteristics, ambiguous definitions and implementation variations hampered widespread acceptance of CBE in the academic community (Grant et al., 1979; Monjan & Gassner, 1979). Regardless of the recognized ambiguity, interest in and exploration of CBE continued throughout the 20th century and into 21st-century efforts to develop competency-based learning models. Kelchen (2015) joined the historical trend of tolerating CBE's definitional ambiguity, confirming that no "consensus definition" existed for CBE even between institutions of higher education (IHEs) offering CBE programs (p. 1). Despite this apparent willingness to ignore definitional ambiguities, the literature showed lack of clarity was one of the stumbling blocks to widespread acceptance of CBE.

According to research results, comments about the many versions of CBE were consistent with the information discovered in the initial literature review. Concerns about lack of clarity were primarily represented in documents published by the Reformers group. Documents published by Reformers in the 1973–1983 time frame revealed a wider range of concerns about the definitional shortcomings of CBE. Those concerns included the opinion that despite some commonly accepted characteristics, the lack of a consensus definition minimized CBE's potential expansion throughout the postsecondary landscape. Other publications focused on the language of CBE and how the terms used to describe educational concepts were often influenced by funding and regulatory guidelines and preconceptions of CBE's antecedents, and were context dependent. Early Funders' publications mentioned that the experience of each institution influenced the definition applied to CBE at that institution and expressed the danger of mixed messages obscuring critical examination.

Theoretical Framework

According to the literature, theoretical antecedents for CBE included adult-learning theory, self-regulated learning theory (SRLT), and experiential learning theory (ELT). After World War II, the validation and inclusion of prior learning experiences in the developing adult curricula laid the foundation for the development of CBE (Conlan et al., 2003; Knowles, 1962/1977; Knowles et al., 2015). The idea of individualized life-long learning designed to continually update skills and abilities came into being around the same time (Maehl, 2000). Emphasis on self-direction and reflection in life-long learning expanded into SRLT and reinforced the idea of self-direction as a long-standing concept in adult education that assumed students had the skills and abilities to monitor their own learning (Brockett & Hiemstra, 1991; Educause Learning Initiative, 2014; Pintrich, 2000 as cited in Manuelito, 2013). Both ELT and prior learning assessment (PLA) focused on the needs of individual students and leveraged prior learning (Hayward, 2012). The idea that learning could be explicated in portfolios rested on transfer theory: the idea that learning achieved through experience could be transferred to other contexts (Maehl, 2000; Manuelito, 2013).

In keeping with the theoretical framework of CBE detailed in the literature review, the theoretical antecedents referenced in Group 1 and 2 documents of the research study extended the development of CBE in the United States back to the post-World War II era. Both groups cited military training and the systems approach for industrial improvements, characterized by behavioral objectives and performance efficiencies, combined with individualized forms of strategic management. The documents in Group 2 also mentioned adult-learning theories described by Knowles (1962/1977). Reformers' publications represented in Groups 1 and 2 provided the majority of informative details concerning

theoretical antecedents.

Sociocultural Framework

The literature review that framed both time periods included in this study indicated surprisingly similar historical sociocultural contexts. The overarching goal to improve the position of the United States in the world economy had been a focal point in the United States since the late 1950s (Urban, 2010). Consequently, making college an affordable and accessible option for all Americans, as well as increasing overall college completion, had been the focus of federal initiatives for decades (Callan et al., 2006; Knowles, 1962/1977; McCann, 2013; Obama, 2010; Office of the Press Secretary, 2013; Urban, 2010; U.S. National Commission on Excellence in Education, 1983; Wagner, 2008). By the 21st century, the call for accessibility included initiatives to make postsecondary education more affordable and led to unprecedented national interest in nontraditional learning and educational models providing affordable opportunities for students to leverage their previous learning, regardless of where it occurred (*Keeping College Within Reach*, 2011; Obama, 2010; Office of the Press Secretary, 2013).

The findings resulting from analysis of documents from the 1973–1983 and 2005–2015 time periods were characterized by diminished state funding and rising institutional costs paired with changing demographics, declining student enrollments, and lower graduation rates. Into those periods of postsecondary-education reappraisal, government and foundation grant opportunities offered IHEs financial incentives to explore new learning models that could lower student costs and reduce time to degree completion. The resulting interest in CBE programs converged with advances in technology, new market-centered business models, and increased stakeholder demands for accountability, affordability, accessibility, and completion.

The documents published by all stakeholder groups included agreements that career-relevant degrees were vital to economic security but were too often unaffordable without students and their families assuming a huge debt load. This demand for career and socially relevant postsecondary programs to support a global economy accompanied increased demands for institutional accountability to address the ongoing concern about employers' reported dissatisfaction with graduates' apparent lack of career-ready and social skills and the oft-repeated opinion that credentials (degrees) were unreliable proxies for skills. In documents published by the Funders stakeholder group, the sociocultural emphasis stressed accessibility, affordability, career readiness, and accountability for IHEs and for students. Similar messages inundated Policymakers' publications, but also emphasized interest in the validity of all learning regardless of the source, concern about the lack of conclusive data available on CBE, and the assumption that the rapidly changing postsecondary landscape would embrace the idea of education as a commodity, available for purchase by mobile and adaptable life-long learners.

Reformers' publications mirrored those of the Funders and Policymakers groups. Unlike other stakeholders though, the Reformers' publications provided the most comprehensive and balanced examination of CBE and its place in the sociocultural climate. Reformers' publications included concerns such as how CBE might teach to the list but not teach adaptability; how too little data existed to confirm CBE could accurately validate possession of key skills; how higher education still resisted ties to workforce development; and how, despite the growing trend to engage business leaders as higher education advisors, employers had no common agreement about the competencies a career-ready graduate should have. On the positive side, the higher education community increasingly endorsed explicitly stated outcomes and competencies, and saw CBE in

particular as supportive of an increasingly diverse student population, poised to take advantage of technological advances, and grounded in efficiency theories and a systems approach to education that emulated industrial strategies for improvement. Another relevant environmental attribute included advances in online technologies to create a growing number of learning opportunities previously unavailable in the traditional postsecondary community.

This study focused on the use and evolution of CBE in documents published during the periods 1973–1983 and 2005–2015. Based on the analysis of the sampled documents, I confirmed this study's fit in the literary context explained in the literature review, and also expanded understanding of the historical, theoretical, and sociocultural impacts of CBE in the United States. This study also confirmed the continued definitional ambiguity of CBE. In lieu of a consensus definition, the authors of Funders and Reformers documents engaged in the ongoing creation of stipulative definitions to aid readers' understanding. However, documents published by Policymakers did not conform to that pattern and instead introduced CBE with an assumption of previous knowledge.

In addition to confirming the absence of a consensus definition, this conceptual analysis confirmed several foundational characteristics applicable to CBE programs, but only three retained relevance across the context of time. The documents in Group 1 emphasized program completion based on the successful demonstration of explicitly stated competencies through objective performance assessments. The documents in this group also emphasized the importance of an instruction framework specifically designed to support development of the stated competencies. These attributes mirrored the five essential and one implied characteristics introduced by Elam (1971). Although it was no surprise that documents in Group 2 also cited comprehensive and transparent competency

statements as the primary criteria for a competency-based program, only progression by demonstration of learning over accumulated credits or seat time and emphasis on personalized learning opportunities appeared in both time periods.

Implications for Future Research

Considering the results of this study, suggestions for future research include the following. Researchers interested in the continued evolution of CBE could conduct a series of case studies showcasing institutions that expressed interest in developing CBE programs during the 2005–2015 time frame . The ensuing results could determine if those versions of CBE conformed to common characteristics identified in the current study. CBE has also been primarily categorized as a learning model appropriate for mature learners with prior life and work experience. Another opportunity for future research might be to explore the development of competency-based programs at IHEs with a primarily traditional student demographic, thereby documenting any evolutionary deviation away from the characteristics identified in this study. As a final option, future researchers may want to consider studying CBE at institutions such as Alverno College and Empire State College, where CBE has been evolving since the early 1970s. Regardless of the specific focus, future research on the topic of CBE will benefit from an exploration of conceptual use and the role of context provided by this study.

Summary

Ultimately, four conclusions surfaced from this study of the use and evolution of the concept of CBE: (a) despite a history spanning more than 50 years, CBE must still be considered an emergent concept, lacking a clear and consensus definition; (b) the documents published by external stakeholders influenced the language used to describe CBE in the academic community; (c) three program characteristics shaped the long-term

understanding and continued use of CBE as a concept; and (d) CBE's continued definitional ambiguity provided a basis for adaptation and reinvention.

Based on an analysis of the common characteristics used to describe CBE, it became clear that although individualized attainment of explicitly stated competencies demonstrated through performance assessments had remained consistent over decades, users wishing to explain CBE still felt the need to employ a wide variety of context-dependent definitions beyond those foundational elements. The lack of a consensus definition placed the concept of CBE in emergent status and substantiated the need for ongoing inquiry into the effectiveness and usefulness of this concept.

The language used by external stakeholders played an important role in the overall use and understanding of CBE. In fact, "the shaping of innovations and their quality [was] determined almost solely by those who provide[d] the necessary financial incentives" (Pottinger & Klemp, 1975, pp. 25–26). Consequently, because federally encouraged CBE advocacy and experimentation characterized each of the time periods included in this study, it came as no surprise that the language used by IHEs applying for monetary or regulatory support mirrored the language of the authoring agency. Another element of language that influenced the way the academic community communicated about CBE was that of educational slogans. According to Scheffler (1978), slogans "provide rallying symbols of the key ideas and attitudes of movements" (p. 36). As described in Chapter 4, modern documents describing CBE presented anticipated positive impacts in language reminiscent of sound bytes for advertising campaigns. One example of this type of language described CBE as a model where, "learning is fixed, while time is variable" (Porter & Reilly, 2014, p. 2). Despite common and repeated usage, a slogan is not a definition; however, over time, proponents and critics can come to view such

descriptive phrases as, “literal doctrines or arguments, rather than merely as rallying symbols” (Scheffler, 1978, p. 37). At this point in the conceptual development of CBE, attempts to define CBE have blurred with the slogans used to promote it.

CBE’s strength has been its continued adaptability. As described in the documents that formed the basis of this study, CBE provided a framework from which IHEs could explore and adapt a wide variety of pedagogical innovations. The ambiguity identified as a potential constraint to the widespread acceptance of CBE in the literature review and in the analyzed documents also supported CBE’s ongoing reinvention and must be considered when pursuing a fuller understanding of the foundational characteristics and adaptive nature of the CBE learning model. According to Soltis (1978), concept analysis reveals the “total framework of the ideas these words represent [so they might] ... be fully understood by those who use them” (p. 90). Although CBE still lacks a consensus definition, this study revealed three characteristics fundamental to CBE. At its’ core, CBE is a learning model with (a) explicitly stated competencies; (b) progression determined by demonstrated performance; and (c) an individualized instruction framework well suited to mature learners with life and work experience beyond school. These core characteristics support an adaptable framework providing a foundation for CBE’s enduring presence in the higher education landscape of the United States in the 20th and 21st centuries.

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Appendix A - Competency-Based Education Network (C-BEN) Institutions

Antioch University

Brandman University

Broward College

Capella University

Central New Mexico Community College

Charter Oak State College

City University of Seattle

Concordia University (WI)

Danville Community College

Davenport University

DePaul University

Excelsior College

Kentucky Commonwealth

Kentucky Community & Technical College System

Lipscomb University

Lord Fairfax Community College

Los Angeles Trade-Technical College

Northern Arizona University

Purdue University

Rasmussen College (MN)

Salt Lake Community College

Southern New Hampshire University

Southwestern College (KS)

Texas Higher Education Coordinating Board (South Texas College And Texas A&M University-Commerce)

Thomas Edison State College

University of Maine At Presque Isle

University of Maryland University College

University of Michigan

University of Texas System

University of Wisconsin-Extension

University System of Georgia

Walden University

Westminster College

http://www.cbenetwork.org/

Appendix B – NGLC 2014 Breakthrough Models Incubator Institutions

Antioch University

Austin Community College

Central Wyoming College

Empire State College

Excelsior College

Kentucky Council on Postsecondary Education

Paul Smith's College

University of Maryland University College

University of New England

http://nextgenlearning.org/breakthrough-models-incubator-cohort-2

Appendix C – Council for Adult and Experiential Learning Jumpstart Institutions

Indiana University-Purdue University (IN)

The New School (NY)

Valdosta State University (GA)

Los Angeles Trade Technical College (CA)

Kalamazoo Valley Community College (MI)

Minnesota State Colleges and University System (MN)

LeTourneau University (TX)

Golden Gate University (CA)

Davenport University (MI)

Granite State College, University System of New Hampshire (NH)

University of Toledo (OH)

Pace University (NY)

Missouri Dept of Higher Education/Missouri Community College Association (MO)

Community College of Philadelphia (PA)

Peirce College (PA)

Colorado Community College System (CO)

Lincoln Land Community College (IL)

Viterbo University (WI)

Western Michigan University (MI)

Boston Architectural College (MA)

University of Cincinnati (OH)

http://www.cael.org/cbe/publication/giving_cbe_a_jumpstart

Appendix D – Relevant Documents

Group	Year	Stakeholder	Source	Author	Title
GRP1	1973	Reformer	EJ087927 [C]	Byram, Claudia A.	Competency Based Education: How Competent?
GRP1	1973	Policymaker	ED080111 [C]	Weinstock, Chuck	Solutions for the Seventies: An Analysis of Competency-Based Learning and Cluster Colleges. A Report of the National Dissemination Project for the Community Colleges
GRP1	1973	Funder	ED082668 [C]	Woolfolk, E. O. et al.	Curriculum Change in Black Colleges IV: A Report on Two Cooperative Academic Planning Curriculum Development Workshops
GRP1	1974	Funder	ED096894 [C]	Calbert, R., & Epps, W. J.	Curriculum Change in Black Colleges VIII. A Report on a Cooperative Academic Planning Curriculum Development Workshop (Bethune-Cookman College, Daytona Beach, Florida, June 5–8, 1974)
GRP1	1974	Reformer	EJ098910 [C]	Hertling, J. E.	Competency Based Education: Is It Applicable to Adult Education Programs?
GRP1	1974	Policymaker	ED111304 [C]	Lehmann, T.	Success After Graduation. A Study of the Baccalaureate Graduates of Empire State College
GRP1	1974	Reformer	ED100841 [C]	Loser, R.	Thoughts on Behavioral Objectives
GRP1	1975	Reformer	ED109963 [C]	Florida State Univ., Tallahassee. Center for Educational Design	Instituting Competency-Based Degree Programs in a Large Public University. Curriculum of Attainments
GRP1	1975	Reformer	EJ112783 [C]	Knott, B.	What is a Competence-Based Curriculum in the Liberal Arts?
GRP1	1975	Reformer	ED107937 [C]	Splaver, S.	Nontraditional College Routes to Careers
GRP1	1976	Policymaker	ED127857 [C]	Chickering, A. W.	A Conceptual Framework for Educational Alternatives at Empire State College.
GRP1	1976	Reformer	EJ143152 [C]	Cross, K. P.	Mastery Learning: The New Classroom Revolution
GRP1	1976	Reformer	ED124039 [C]	Dobbert, D. J. et al.	Short Answers to Frequent Questions About Competency Based Curriculum. A Working Paper.
GRP1	1976	Policymaker	Federal Register [C]	Federal Register	Federal Register: 41 Fed. Reg. 8471 (Feb. 27, 1976).
GRP1	1976	Reformer	EJ148463 [C]	Gentry, C. G.	Will the Real Advantage of CBE Please Stand Up?
GRP1	1976	Funder	ED148272 [C]	Peterson, G. W. &	Curriculum of Attainments. Final Report.

Group	Year	Stakeholder	Source	Author	Title
				Florida State University	
GRP1	1976	Reformer	ED131778 [C]	Schultz, R. E.	Lifelong Learning: Higher Education's Response. Topical Paper No. 3.
GRP1	1977	Reformer	ED142101 [C]	Ewens, T.	Think Piece on CBE and Liberal Education. CUE Project Occasional Paper Series No. 1.
GRP1	1977	Reformer	EJ166460 [C]	Harlacher, E. L., & Hencey, R. E.	Renewal: The New Learning Process
GRP1	1977	Funder	ED159999 [C]	Illinois Central College East Peoria	An Interinstitutional Effort to Establish a Competency Based Bachelor of Arts Degree in History, Sangamon State University and Illinois Central College.
GRP1	1977	Policymaker	ED161449 [C]	McBrayer, J.	Guidelines for Specification of Competencies.
GRP1	1977	Reformer	ED150937 [C]	Rudolph, F.	Curriculum. A History of the American Undergraduate Course of Study Since 1636.
GRP1	1978	Policymaker	ED167044 [C]	Advisory Council on Developing Institutions, Washington, DC.	Strengthening Developing Institutions. Title III of the Higher Education Act of 1965. Annual Report.
GRP1	1978	Reformer	ED156911 [C]	Dorland, J. R.	A National Focus on Competency-Based Adult Education.
GRP1	1978	Reformer	EJ185044 [C]	Feasley, C. E.	Student Monitoring Procedures for Competency-Based Programs
GRP1	1978	Reformer	EJ185193 [C]	Lawson, K.	Individual Instruction Works: Nebraska's Central Tech Offers Proof
GRP1	1978	Policymaker	ED189269 [C]	Williams, T. M., & Berns, R. G.	Experimentation and Further Validation of the IDECC Competency Based Teaching Approach in Adult Education.
GRP1	1979	Reformer	EJ207208 [C]	Andrews, G., & Harris, J.	A Perspective on the Accreditation of Nontraditional Higher Education.
GRP1	1979	Reformer	EJ205245 [C]	Hunter, W. E.	Competency-Based General Education.
GRP1	1980	Reformer	EJ227095 [C]	Willems, A. L., & Brown, M. H.	Competency-Based Curricula: Another Perspective.
GRP1	1981	Reformer	EJ249002 [C]	Herrscher, B. R.	Moving toward Industrial Excellence in the '80s on the Competency-Based Education Bandwagon.
GRP1	1981	Reformer	EJ238197 [C]	Lindsay, V. J.	The Implications of Current Developments for the Future of Business Education.
GRP1	1981	Reformer	EJ249975 [C]	Loacker, G.	Revitalizing the Academic Disciplines by Clarifying Outcomes.
GRP1	1981	Reformer	EJ248869 [C]	Peterson, G. W., &	Performance-Based Education: Method

Group	Year	Stakeholder	Source	Author	Title
				Stakenas, R. G.	for Preserving Quality, Equal Opportunity, and Economy in Public Higher Education.
GRP1	1982	Reformer	EJ265452 [C]	Reece, B L., & Braden, R. A.	Improving Adult Education Program Development with Fewer Dollars and Quality Control.
GRP1	1983	Reformer	EJ279024 [C]	Collins, M.	A Critical Analysis of Competency-Based Systems in Adult Education.
GRP1	1983	Policymaker	ED229090 [C]	Conrad, C. F.	At the Crossroads: General Education in Community Colleges. "Horizons Issues" Monograph Series.
GRP2	2006	Reformer	EJ745290 [C]	Chyung, S. Y., Stepich, D., & Cox, D.	Building a Competency-Based Curriculum Architecture to Educate 21st-Century Business Practitioners
GRP2	2007	Reformer	EJ752981 [C]	Griffin, P.	The Comfort of Competence and the Uncertainty of Assessment
GRP2	2007	Reformer	EJ899425 [C]	Ready, K. J., Novicevic, M. M., Elfessi, A., & Kuffel, T.	General Business Competencies of Students as Outcomes Assessment
GRP2	2008	Reformer	EJ791181 [C]	Testa, A. M.	Assessment of Student Learning through an Online, Competency-Based University
GRP2	2009	Reformer	ED508089 [C]	Bastedo, M., Batkhuyag, B., Prates, E., Prytula, Y., & Institute for Higher Education Policy (IHEP)	Educational Policies for Integrating College Competencies and Workforce Needs: Cases from Brazil, Mongolia, Ukraine, and the United States. Issue Brief
GRP2	2010	Policymaker	EJ930737 [C]	Scurry, J. E., Wilburn, A., Villagomez, A., & McCarthy, M.	How to Develop Learners Who Are Consistently Curious and Questioning
GRP2	2011	Reformer	EJ931255 [C]	Lakes, R.	Work-Ready Testing: Education and Employability in Neoliberal Times
GRP2	2012	Reformer	EJ1056165 [C]	Baker, D. S., & Stewart, G. T.	Adaptive Behavioral Outcomes: Assurance of Learning and Assessment
GRP2	2012	Reformer	ED535877 [C]	Burke, L. M., & Butler, S. M.	Accreditation: Removing the Barrier to Higher Education Reform. Backgrounder. No. 2728. Executive Summary
GRP2	2012	Reformer	EJ996328 [C]	Kirschner, A.	Innovations in Higher Education? Hah!
GRP2	2012	Reformer	C-BEN [C]	Klein-Collins, R.	Competency-Based Degree Programs in the U.S., Postsecondary Credentials for Measurable Student Learning and Performance
GRP2	2012	Reformer	C-BEN [C]	Laitinen, A., & New America Foundation	Cracking the Credit Hour

Group Year	Stakeholder	Source	Author	Title
			and Education Sector	
GRP2 2012	Reformer	ED530791 [C]	Schneider, M., & Yin, L. M.	Completion Matters: The High Cost of Low Community College Graduation Rates. Education Outlook. No. 2
GRP2 2012	Reformers	NGLC [C]	Soares, L.	A "Disruptive" Look at Competency-Based Education: How the Innovative Use of Technology Will Transform the College Experience
GRP2 2013	Funder	EJ1029298 [C]	Berkich, D.	The Agora
GRP2 2013	Reformer	EJ1089489 [C]	Ebersole, J. F.	Reflections on the Issues of the Moment
GRP2 2013	Reformer	CAEL Jumpstart [C]	Klein-Collins, R.	Sharpening Our Focus on Learning: The Rise of Competency-Based Approaches to Degree Completion.
GRP2 2013	Reformer	NGLC [C]	Klein-Collins, R., & Baylor, E.	Meeting Students Where They Are: Profiles of Students in Competency-Based Degree Programs
GRP2 2013	Policymaker	U.S. Senate [C]	LeBlanc, P. J.	LeBlanc Testimony to the Committee on Health, Education, Labor and Pensions
GRP2 2013	Policymaker	U.S. Senate [C]	Levine, A.	Accreditation as Quality Assurance: Meeting the Needs of 21st-Century Learning. Testimony Before U.S. Senate Health, Education, Labor and Pensions Committee, 12/12/2013
GRP2 2013	Funder	C-BEN [C]	Lumina Foundation & Gallup	America's Call For Higher Education Redesign the 2012 Lumina Foundation Study Of The American Public's Opinion On Higher Education
GRP2 2013	Reformer	EJ1010107 [C]	McCall, M. B.	The Kentucky Community and Technical College System Learn on Demand Model
GRP2 2013	Policymaker	U.S. House of Representatives [C]	Salmon, M.	113 HR 3136 : Advancing Competency-Based Education Demonstration Project Act of 2014
GRP2 2013	Reformer	EJ1094738 [C]	Schneider, C. G.	Holding Courses Accountable for Competencies Central to the Degree
GRP2 2013	Policymaker	U.S. Senate [C]	Wolff, R. A.	Accreditation as Quality Assurance: Meeting the Needs of 21st Century Learning. Testimony Before U.S. Senate Health, Education, Labor and Pensions Committee, December 12, 2013
GRP2 2014	Policymaker	U.S. Senate [C]	Bennet, M.	113 S2513 IS: Advancing Competency-Based Education Demonstration Project Act of 2014
GRP2 2014	Reformer	ED546830 [C]	Book, P. A.	All Hands on Deck: Ten Lessons from Early Adopters of Competency-Based Education
GRP2 2014	Reformer	NGLC [C]	Brower, A.	Flexible Option: A Direct-Assessment

Group	Year	Stakeholder	Source	Author	Title
					Competency-Based Education Model
GRP2	2014	Reformer	CAEL Jumpstart [C]	CAEL	Customized, Outcome-based, Relevant Evaluation (CORE) at Lipscomb University
GRP2	2014	Reformer	NGLC [C]	Educause Learning Initiative (ELI)	7 Things You Should Know About Competency-Based Education
GRP2	2014	Reformer	NGLC [C]	Everhart, D., Hurst, F., & Wagner, E.	From Badges to Breakthroughs: Unleashing Learner Potential through Competency-Based Achievements
GRP2	2014	Policymaker	U.S. Senate [C]	Harkin, T.	113 S2954 IS: Higher Education Affordability Act
GRP2	2014	Reformer	EJ1022879 [C]	Johnstone, S. M., & Soares, L.	Principles for Developing Competency-Based Education Programs
GRP2	2014	Reformer	NGLC [C]	LeBlanc, P. J.	Finding New Business Models in Unsettled Times
GRP2	2014	Policymaker	C-BEN [C]	Porter, S. R.	Competency-Based Education and Federal Student Aid
GRP2	2014	Reformer	C-BEN [C]	Porter, S. R., & Reilly, K.	Competency-Based Education as a Potential Strategy to Increase Learning and Lower Costs
GRP2	2014	Reformer	EJ1095266 [C]	Schneider, C. G., Gaston, P. L., Adelman, C., & Ewell, P. T.	The Degree Qualifications Profile 2.0: Defining US Degrees through Demonstration and Documentation of College Learning
GRP2	2014	Policymaker	U.S. House of Representatives [C]	Shiffman, P. H.	Correspondence to John Kline and George Miller from CEO of President's Forum
GRP2	2014	Policymaker	ED565169 [C]	Washington State Board for Community and Technical Colleges (SBCTC), Education Division	Competency-Based Business Degree. Issue Brief
GRP2	2014	Reformer	NGLC [C]	Weise, M., & Christensen, C.	Hire Education: Mastery, Modularization, and the Workforce Revolution
GRP2	2015	Reformer	C-BEN [C]	Cleary, M. N.	Faculty and Staff Roles and Responsibilities in the Design and Delivery of Competency-Based Programs: A C-BEN Snapshot
GRP2	2015	Reformer	CAEL Jumpstart [C]	Wax, D.	Does Your CBE Program Look Like This?
GRP2	2015	Reformer	ED558762 [C]	Fishman, R	Community College Online
GRP2	2015	Reformer	ED557615 [C]	Franklin, C., & Lytle, R.	Employer Perspectives on Competency-Based Education. AEI Series on Competency-Based Higher Education

Group	Year	Stakeholder	Source	Author	Title
GRP2	2015	Policymaker	U.S. Senate [C]	Gray, A. C.	Gray HELP Committee Testimony 06.17.2015
GRP2	2015	Reformer	NGLC [C]	Hickey, D.	A Framework for Competency-Based Courses
GRP2	2015	Reformer	NGLC [C]	Joosten, T.	Research to Ensure Access and Success in Higher Education
GRP2	2015	Reformer	CAEL Jumpstart [C]	Klein-Collins, R.	The Texas Affordable Baccalaureate Program
GRP2	2015	Policymaker	U.S. Senate [C]	LeBlanc, P. J.	LeBlanc Testimony to the Committee on Health, Education, Labor and Pensions
GRP2	2015	Reformer	NGLC [C]	Leuba, M.	Competency-Based Education: Technology Challenges and Opportunities
GRP2	2015	Policymaker	U.S. Senate [C]	Murray, P.	Murray: Innovation in Higher Education Should Work to Break Down Barriers Students Face
GRP2	2015	Reformer	C-BEN [C]	Public Agenda	Shared Design Elements and Emerging Practices of Competency-Based Programs
GRP2	2015	Policymaker	U.S. Senate [C]	Task Force on Federal Regulation of Higher Education	Recalibrating Regulation of Colleges and Universities
GRP1	1973	Reformer	EJ087254	Miller, H. G., & Greer, C. E.	Adult Education: Performance-Based Programs
GRP1	1974	Reformer	ED092196	Harlacher, E. L.	The Community-Based, Performance-Oriented Community College
GRP1	1974	Reformer	ED097087	Harlacher, E. L.	Competency-Based Learning Systems
GRP1	1974	Policymaker	The White House	Office of the Press Secretary	The White House Press Conference Of Frederick B. Dent Secretary, Department Of Commerce Caspar W. Weinberger Secretary, Department Of Health, Education And Welfare And Peter J. Brennan Secretary, Department Of Housing and Urban Development
GRP1	1974	Reformer	EJ109654	Wight, W. D.	Obtaining Competence with Competencies: A Case Study in Higher Education
GRP1	1975	Policymaker	National Archives	Cannon, J. M.	Meeting with Cavanaugh & Quern - Work and Education Meeting, Wednesday, July 30, 1975 10:00 a.m. Mr. Cannon's Office
GRP1	1975	Policymaker	EJ137179	Eisele, J. E., & Halverson, P. M.	Assumptions Underlying Competency-Based Education
GRP1	1975	Policymaker	Federal Register	Federal Register	Federal Register: 40 Fed. Reg. 52339 (Nov. 10, 1975).

Group	Year	Stakeholder	Source	Author	Title
GRP1	1975	Reformer	EJ131199	Martin, E. P.	Innovative Programs and Curricula
GRP1	1975	Policymaker	ED160731	McClelland, D. C. et al.	Pedagogy and Competency-Based Education. Paper No. 3, Series of 6
GRP1	1975	Reformer	ED104297	O'Connell, W. R., Jr., & Moomaw, W. E.	A CBC Primer. Report of a Conference: Competency-Based Curricula in General Undergraduate Programs
GRP1	1975	Reformer	EJ117067	Popham, E. L.	Making Business Education Meaningful with a Competency-Based Curriculum
GRP1	1975	Funder	ED134540	Pottinger, P. S., & Klemp, G. O.	The Fund for the Improvement of Postsecondary Education. Final Report
GRP1	1975	Policymaker	National Archives	Quern, A.	Work and Education Meeting with the President Wednesday, July 2, 1975 Oval Office 2:30 p.m.
GRP1	1975	Policymaker	ED160729	Rebell, M. A.	Legal and Legislative Implications of Competency-Based Education. Paper No. 5, Series of 6
GRP1	1975	Reformer	ED104247	Woditsch, G. et al.	Assaying the Great Cargo Cult: Recent Research on Learner-Centered Curricula
GRP1	1976	Funder	ED148839	Calhoun, A. B. et al.	An Individualized Competence-Based Assessment Model. CAEL Institutional Report. Metropolitan State University.
GRP1	1976	Funder	ED148852	Daloz, L. A., & Pitkin, C	Standard Setting by Students and Community--How Much Is Enough? CAEL Institutional Report. Community College of Vermont.
GRP1	1976	Reformer	EJ138475	Epley, G. W., & Shisler, C. L.	EDT: Greenville
GRP1	1976	Reformer	EJ148364	Galson, N. J., & Oliker, L. R.	Assessment of Experiential Learning in Business Administration
GRP1	1976	Reformer	ED132965	Gentsh, D.	A Study of Bachelor of Career Arts Degree Program at Dallas Baptist College.
GRP1	1976	Reformer	EJ138476	Hencey, R. E., & Zeiger, D.	And Now for Something Completely Different
GRP1	1976	Reformer	EJ153937	Peterson, G. W.	A Strategy for Instituting Competency Based Education in Large Colleges and Universities: A Pilot Program
GRP1	1976	Reformer	ED122872	Roueche, J. E. et al.	Time as the Variable, Achievement as the Constant: Competency-Based Instruction in the Community College. "Horizons Issues" Monograph Series.
GRP1	1977	Reformer	EJ151735	Belmore, W. E., & Sellers, M.	Individualized Instruction: Rationale and Factors for Success

Group	Year	Stakeholder	Source	Author	Title
GRP1	1977	Policymaker	EJ172907	Forrest, A.	Competency-Based Assessment in Postsecondary Education--Some Issues and Answers
GRP1	1977	Reformer	EJ166358	Jarrett, H. H., Jr.	Implications of Implementing Competency Based Education in the Liberal Arts
GRP1	1977	Reformer	EJ189104	McBrayer, J.	Extending Degrees via Individualization of Instruction and CBE Technology
GRP1	1977	Reformer	ED145766	Peterson, G. W.	Attainment Rather Than Competence: A Legitimate Basis for the Certification of Learning Outcomes.
GRP1	1977	Reformer	ED143249	Woditsch, G. A.	Developing Generic Skills: A Model for Competency-Based General Education. CUE Project Occasional Paper Series No. 3.
GRP1	1977	Reformer	ED169813	Wuest, F. J.	Chain of Choices, Paths of Inquiry. Renewal of Liberal Education. Executive Summary.
GRP1	1978	Reformer	EJ178037	Butler, F. C.	The Concept of Competence: An Operational Definition
GRP1	1978	Reformer	EJ192748	Daloz, L. A.	Now They're Competent...So What?
GRP1	1978	Reformer	ED177285	Loring, R. K. et al.	Adapting Institutions to the Adult Learner: Experiments in Progress. Current Issues in Higher Education, 1978 National Conference Series.
GRP1	1978	Reformer	EJ194412	Travis, T. G. et al.	Beyond the Core Curriculum: An Outcomes Approach to General Education.
GRP1	1979	Reformer	ED183118	Blum, M. E., & Spangehl, S. D.	Identifying Skills and Developing Curricula in Academic Research: Rationale for a Competency-Oriented Curricula.
GRP1	1979	Reformer	EJ219671	Brocklehurst, N.	Reinventing the Future: Adult Educators Meet.
GRP1	1979	Reformer	ED174160	Mohrman, K., (Ed.) et al.	Student Outcomes. The Forum for Liberal Education.
GRP1	1979	Reformer	EJ207214	Scigliano, J. A., & Sroufe, G. E.	Context and Structure in Field-Based Programs: What Makes Nova's Programs Work?
GRP1	1980	Reformer	ED199572	Parker, J. T., & Taylor, P. G. (Eds.)	The CB Reader. A Guide to Understanding the Competency-Based Adult Education Movement.
GRP1	1980	Reformer	EJ242587	Ward, B.	Credit for Learning: The Competence-Based Model.
GRP1	1981	Reformer	EJ256628	Snider, J. C., & McGee, L.	Life Experience Deserves Credit.

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GRP1	1982	Reformer	EJ263954	Ross, D. D.	Competency Based Education: Understanding a Political Movement.
GRP1	1983	Reformer	EJ284703	Dunn, S. L.	The Changing University: Survival in the Information Society.
GRP2	2005	Reformer	EJ790772	Belcher, A. R.	Assessment of the First-Year Experience at the University of Charleston: Using Portfolio Completion Rates as an Indicator
GRP2	2005	Reformer	EJ726498	Johnstone, D.	A Competency Alternative: Western Governors University
GRP2	2005	Reformer	EJ732692	Magliaro, S. G., Lockee, B. B., & Burton, J. K.	Direct Instruction Revisited: A Key Model for Instructional Technology
GRP2	2005	Reformer	EJ771470	Meyer, K. A.	Critical Decisions Affecting the Development of Western Governors University
GRP2	2006	Reformer	ED524441	Trombley, W. (Ed.)	National CrossTalk. Volume 14, Number 2, Spring 2006
GRP2	2007	Reformer	EJ785213	Jonnaert, P., Masciotra, D., Barrette, J., Morel, D., & Mane, Y.	From Competence in the Curriculum to Competence in Action
GRP2	2008	Reformer	EJ812655	Cambridge, D.	Universities as Responsive Learning Organizations through Competency-Based Assessment with Electronic Portfolios
GRP2	2008	Reformer	EJ791860	Case, R. E.	Independent Learning and Test Question Development: The Intersection of Student and Content
GRP2	2008	Reformer	EJ805965	Eubanks, D. A.	Assessing the General Education Elephant
GRP2	2008	Reformer	EJ791861	Johnson, D. L.	Collaborative Development of Assessments at Western Governors University
GRP2	2008	Reformer	EJ791862	Nicastro, G., & Moreton, K. M.	Development of Quality Performance Tasks at Western Governors University
GRP2	2008	Reformer	EJ791863	Zane, T. W.	Domain Definition: The Foundation of Competency Assessment
GRP2	2010	Reformer	ED536826	Hoops, J.	A Working Model for Student Success: The Tennessee Technology Centers. Preliminary Case Study
GRP2	2011	Reformer	ED520330	Alliance for Excellent Education	A Time for Deeper Learning: Preparing Students for a Changing World. Policy Brief
GRP2	2011	Reformer	ED524559	CAEL	Moving the Starting Line through Prior Learning Assessment (PLA). Research

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					Brief
GRP2	2012	Funder	NGLC	Educause	Breakthrough Models for College Completion: The Next Generation of Models for Higher Education
GRP2	2012	Policymaker	U.S. Senate	Mendenhall, R. W.	Dr. Mendenhall HELP Committee Testimony, February 2, 2012
GRP2	2012	Reformer	EJ990497	Milliron, M. D.	Reflections on the First Year of a New-Model University
GRP2	2012	Reformer	EJ994775	Neem, J. N.	A University without Intellectuals: Western Governors University and the Academy's Future
GRP2	2013	Reformer	CAEL Jumpstart	CAEL	Competency-Based Education – CAEL Forum and News
GRP2	2013	Policymaker	U.S. House of Representatives	Jenkins, A. S.	Testimony to U.S. House Education and Workforce Committee Alan Scott Jenkins Western Governors University July 9, 2013
GRP2	2013	Policymaker	U.S. Senate	Kazis, R.	Attaining a Quality Degree: Innovations to Improve Student Success. Testimony Before U.S. Senate Health, Education, Labor and Pensions Committee, October 31, 2013
GRP2	2013	Reformer	EJ995751	Kelderman, E.	Getting to the Bottom of the $10,000 Bachelor's Degree
GRP2	2013	Reformer	EJ1017378	LeBlanc, P. J.	Thinking about Accreditation in a Rapidly Changing World
GRP2	2013	Policymaker	EJ1064624	LeBlanc, P. J.	Credit for What You Know, Not How Long You Sit
GRP2	2013	Policymaker	U.S. Senate	Phelan, D.	Accreditation as Quality Assurance: Meeting the Needs of 21st-Century Learning. Testimony Before U.S. Senate Health, Education, Labor and Pensions Committee, December 12, 2013
GRP2	2013	Reformer	EJ1016151	Soares, L., Eaton, J. S., & Smith, B.	Higher Education: New Models, New Rules
GRP2	2014	Reformer	NGLC	Myers, A.	Competency-based Accelerated Training
GRP2	2014	Policymaker	U.S. House of Representatives	Brenner, M.	July 9, 2014 Correspondence to Matt Salmon Committee on Education & the Workforce from Chief of Staff for the Apollo Group
GRP2	2014	Reformer	NGLC	Bushway, D., & Everhart, D.	Investing in Quality Competency-Based Education
GRP2	2014	Reformer	EJ1047592	Clerkin, K., & Simon, Y.	College for America: Student-Centered, Competency-Based Education
GRP2	2014	Reformer	ED561777	Ganzglass, E.	Scaling "Stackable Credentials": Implications for Implementation and

Group	Year	Stakeholder	Source	Author	Title
					Policy
GRP2	2014	Policymaker	U.S. House of Representatives	Gilligan, K.	Testimony of Kevin Gilligan, Chairman and CEO Capella University, April 2, 2014
GRP2	2014	Policymaker	EJ1043406	Harney, J. O.	Remember to Just Think
GRP2	2014	Policymaker	U.S. House of Representatives	HR_Education and the Workforce Committee	Advancing Competency-Based Education Demonstration Project Act, July 7, 2014
GRP2	2014	Funder	ED555863	Johnson, N., & Bell, A.	Scaling Completion College Services as a Model for Increasing Adult Degree Completion. Lumina Issue Papers
GRP2	2014	Reformer	NGLC	Johnstone, S. M.	Competency-Based Education Programs versus Traditional Data Management
GRP2	2014	Policymaker	U.S. House of Representatives	Kline, J.	Kline Statement: H.R. 3136, the Advancing Competency-Based Education Demonstration Project Act (July 23, 2014)
GRP2	2014	Policymaker	U.S. House of Representatives	Kline, J.	Kline Statement: Hearing on "Keeping College Within Reach: Meeting the Needs of Contemporary Students"
GRP2	2014	Reformer	NGLC	Mazoue, J. G.	Beyond the MOOC Model: Changing Educational Paradigms
GRP2	2014	Policymaker	U.S. House of Representatives	Mendenhall, R. W.	Correspondence to John Kline and George Miller from President and CEO, WGU
GRP2	2014	Reformer	EJ1044239	Ordonez, B.	Competency-Based Education: Changing the Traditional College Degree Power, Policy, and Practice
GRP2	2014	Reformer	EJ1024565	Prasuhn, F. C.	Credit Hours with No Set Time: A Study of Credit Policies in Asynchronous Online Education
GRP2	2014	Policymaker	U.S. House of Representatives	Salmon, M.	Salmon Statement: Hearing on "Reviving Our Economy: Supporting a 21st Century Workforce"
GRP2	2014	Reformer	EJ1047749	Tedesco, J. C., Opertti, R., & Amadio, M.	The Curriculum Debate: Why It Is Important Today
GRP2	2014	Reformer	ED558055	Twyman, J. S.	Competency-Based Education: Supporting Personalized Learning. Connect: Making Learning Personal
GRP2	2014	Reformer	NGLC	Weise, M. R.	Got Skills? Why Online Competency-Based Education Is the Disruptive Innovation for Higher Education
GRP2	2015	Policymaker	U.S. Senate	Alexander, L.	Alexander: Washington Should Stop Discouraging Colleges and Universities from Innovating, Consider Ways to

Group	Year	Stakeholder	Source	Author	Title
					Embrace Models that Aren't Traditional Colleges
GRP2	2015	Reformer	CAEL Jumpstart	CAEL	City of Seattle (CityU): Performance-Based Degree Model
GRP2	2015	Reformer	CAEL Jumpstart	CAEL	Competency-Based Bachelor of Business Administration at Brandman University
GRP2	2015	Reformer	C-BEN	CBEN	C-BEN Annual Report
GRP2	2015	Reformer	CAEL Jumpstart	Wax, D., & Klein-Collins, R.	Competency-Based Education: A Powerful Way to Link Learning and the Workplace
GRP2	2015	Reformer	EJ1065801	Elbeck, M., & Bacon, D.	Toward Universal Definitions for Direct and Indirect Assessment
GRP2	2015	Policymaker	U.S. Senate	Horn, M. B.	Hall HELP Committee Testimony 7.22.2012
GRP2	2015	Policymaker	U.S. House of Representatives	HR_Education and the Workforce Committee	Strengthening America's Higher Education System: Republican Priorities for Reauthorizing the Higher Education Act
GRP2	2015	Reformer	NGLC	Kelchen, R.	The landscape of competency-based education: Enrollments, demographics, and affordability
GRP2	2015	Reformer	EJ1055091	Krause, J., Dias, L. P., & Schedler, C.	Competency-Based Education: A Framework for Measuring Quality Courses
GRP2	2015	Reformer	ED557618	Lacey, A., & Murray, C.	Rethinking the Regulatory Environment of Competency-Based Education. AEI Series on Competency-Based Higher Education
GRP2	2015	Policymaker	U.S. Senate	Merisotis, J. P.	Merisotis HELP Committee Testimony 7.22.15
GRP2	2015	Policymaker	U.S. Senate	Pruitt, G.	Reauthorizing the Higher Education Act: Evaluating Accreditation's role in Ensuring Quality. Testimony Before U.S. Senate Health, Education, Labor and Pensions Committee, June 17, 2015
GRP2	2015	Reformer	ED558048	Rickabaugh, J.	Including the Learner in Personalized Learning. Connect: Making Learning Personal
GRP2	2015	Reformer	EJ1057177	Silva, E., & White, T.	The Carnegie Unit: Past, Present, and Future
GRP2	2015	Policymaker	EJ1051845	Smith, P.	Living with Abundant Information: What's a College to Do?
GRP2	2015	Reformer	CAEL Jumpstart	Tate, P., & Klein-Collins, R.	PLA and CBE on the Competency Continuum

Group	Year	Stakeholder	Source	Author	Title
GRP2	2015	Reformer	CAEL Jumpstart	Wax, D.	Where is Help Needed Most with CBE?
GRP2	2015	Reformer	CAEL Jumpstart	Wax, D.	Exploring the CBE Landscape
GRP2	2015	Reformer	CAEL Jumpstart	Wax, D.	You Have to Start Somewhere

Note: Rows marked with superscript [C] indicate documents selected in the proportional, stratified, random sample and included in the content analysis, WGU = Western Governors University, C-BEN = Competency-Based Education Network, CAEL = Council for Adult and Experiential Learning, AEI = American Enterprise Institute, NGLC = Next Generation Learning Challenges.