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State Policy and Competency-Based Education: A Practitioner-Based Case Study

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Despite the growing focus on competency-based education (CBE), research from a state policy perspective remains limited, which is problematic because state policy can either incentivize or hinder the implementation of high-quality CBE. Using a practitioner-based case study design, this study examines the South Dakota Board of Technical Education's (SDBOTE) development of three systemwide CBE policies: credit hour equivalency, academic calendar and term structure, and tuition and fee models. For each policy, the authors outline the options considered and describe the decisions made. Two of the three authors served as the primary project managers for the SDBOTE's CBE policy development, offering direct insight into the considerations and decision-making processes. Across the three policies examined, a consistent tension between supporting educational innovation and working within existing structures is identified. Three themes emerge from SDBOTE's approach to managing this tension, and their implications for policy development in state higher education systems are explored: evaluating capacity, identifying constraints, and making intentional compromises. This study provides one example of how state higher education systems can develop systemwide CBE policies and offer insights for state policymakers, state higher education system administrators, and policy researchers who are considering and evaluating CBE implementation.

Keywords: Competency-based education, state policy, state higher education systems

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Over the past thirty years, competency-based education (CBE) has gained increasing attention from higher education institutions (HEIs), accreditors, and state and federal policymakers (Book, 2014; Burnette, 2016; DeBacker et al., 2024; Kelchen, 2015; Specht-Boardman, 2024). Generally defined as an academic model where students earn academic credit based on their demonstrated learning rather than seat time (Kelchen, 2015), CBE is often cited for its potential to improve access, reduce costs, and enhance the quality of higher education (Book, 2014; Burnette, 2016; DeBacker et al., 2024; Kelchen, 2015; Klein & DeSchryver, 2022; Mason et al., 2021; Parsons et al., 2016; Parsons et al., 2023b).

Despite the increased attention, current research on CBE in higher education remains limited (DeBacker et al., 2024; Kelchen, 2015; Specht-Boardman, 2024). The research that does exist primarily focuses on CBE from institutional, accreditation, and federal policy perspectives (see Specht-Boardman, 2024, for a detailed synthesis of recent literature). However, research on CBE from a state policy perspective is limited, making it difficult to consider the state's role in the program integrity triad (Harnisch et al., 2016). States also play an essential role in the funding and coordination of their public higher education systems (Fulton, 2019; Lane, 2013; McGuinness, 2016; Zimpher, 2013). Considering that 51% of HEIs offering CBE programs are public institutions (Mason et al., 2021), state policies can either promote or hinder the implementation of high-quality CBE, whether intentionally or unintentionally (Bell, 2017; Daugherty et al., 2015; Lacey & Murray, 2015; Parsons et al., 2016).

The purpose of this study is to examine how state higher education systems develop policies that support educational innovation within existing structures. To achieve this purpose, this study employs a practitioner-based case study design to explore the South Dakota Board of Technical Education's (SDBOTE) development of three systemwide policies for CBE. Two of the three authors serve in dual roles as practitioners and researchers. This study is guided by two research questions: Which policy options did the SDBOTE consider for credit hour equivalency, the academic calendar and term structure, as well as the tuition and fee model? What factors determined the SDBOTE's policy decisions?

This study makes two significant contributions to the literature on CBE, state policy, and state higher education systems. First, it provides a descriptive account of how one state's higher education system developed three key policies that must be considered when implementing CBE; more specifically, it examines the policy options considered, the decisions made, and the rationales behind those decisions, filling a critical gap in the existing literature. As noted above, current research on CBE, in general, is limited, but this is especially true from a state policy perspective. While this study's single case approach limits generalizability, single cases play a fundamental role in both building a body of shared knowledge and connecting research, policy, and practice (Råbu & Binder, 2025).

Second, this case is unique in the literature because of the SDBOTE's incremental approach to CBE policy development and implementation. This approach may be especially relevant for institutions and state systems that want to advance CBE but lack the necessary capacity to support large-scale reform. By documenting

the SDBOTE's intentional compromises that sought to preserve CBE's core value proposition of holding learning constant and allowing time to change (Competency-Based Education Network, 2021) while also working within the constraints of existing systems, this study outlines one pathway to scaling CBE that could be more feasible for such institutions and state systems.

Literature Review

While CBE has gained notable attention in higher education, its implementation remains complex. Understanding its definitions, characteristics, recognized approaches, and key policy considerations is essential to grasp CBE's challenges and opportunities.

Definitions and Characteristics

Efforts to codify a definition of CBE in federal statute and administrative rule faced political challenges and were technically complex; no single definition of CBE exists in either context. As a result, definitions of CBE vary across each member of the program integrity triad —including the U.S. Department of Education, institutional accreditors, and states. However, most definitions share the three primary characteristics. First, a CBE program is "defined by a series of competencies rather than the accumulation of credit hours in a variety of academic disciplines" (Porter, 2016, p. 3). Second, a student advances through a CBE program only when they demonstrate mastery of each competency (Bushway et al., 2018). Third, since students only advance by demonstrating mastery of a competency through a rigorous assessment (e.g., portfolio, paper, project, performance evaluation), the time required can vary and is not based on traditional, time-based structures (e.g., academic year, terms, semesters) (Porter, 2016).

Recognized Approaches

There are two main types of CBE programs prevalent in higher education: course/credit-based and direct assessment (Paydar, 2024). The first type, course/credit-based, measures student progress through the traditional course/credit-based framework but incorporates a competency-based approach (Competency-Based Education Network & American Association of Collegiate Registrars and Admissions Officers, 2023; Council of Regional Accrediting Commissions, 2015; Paydar, 2024). Competencies are integrated into a program of study that includes traditional courses and credit hours, and students receive credit for courses only after demonstrating mastery of the associated competencies (Competency-Based Education Network & American Association of Collegiate Registrars and Admissions Officers, 2023; Council of Regional Accrediting Commissions, 2015).

Western Governors University (WGU), for example, employs a course and credit-based system. Students enroll in and pay a flat rate for a six-month term and enroll in courses with specific competencies to master before moving forward (Western

Governors University, n.d.). Students can complete as many courses as possible within the term at no additional cost (Western Governors University, n.d.).

The second type is direct assessment, which "in lieu of credit or clock hours as the measure of student learning, utilizes direct assessment of student learning, or recognizes the direct assessment of student learning by others" (Direct Assessment Programs, 34 C.F.R. § 668.10, 2024). Untethered from credit hours, a student's progression through a direct assessment program is defined not by a specific amount of time, but instead, the student's demonstration "that he or she has a command of a specific subject, content area, or skill, or can demonstrate a specific quality associated with the subject matter of the program" (Paydar, 2024).

In 2013, Southern New Hampshire University (SNHU) became the nation's first HEI approved to offer direct assessment (Porter, 2016). Students in SNHU's direct assessment model advance by mastering each competency instead of following traditional, time-based requirements (Porter, 2016).

Significant Policy Considerations

CBE implementation requires a strategic approach to several policy considerations. Three key policies are particularly noteworthy because of their influential role in program design and regulatory compliance: credit hour equivalency, academic calendar and term structure, and tuition and fee model.

Credit Hour Equivalency

Establishing a credit hour equivalency is a critical policy consideration for CBE programs, which involves developing a method to equate competencies with credit hours. There are several reasons why institutions must consider how to set equivalencies between competencies and credit hours. Federal regulations require institutions offering direct assessment programs to "establish a methodology to reasonably equate each module… to either credit hours or clock hours" and obtain approval for this methodology from the institution's accreditor (Direct Assessment Programs, 34 C.F.R. § 668.10, 2024). Although these regulations do not explicitly extend to course/credit-based CBE programs, many institutions still must develop equivalencies to align with accreditor expectations, comply with state and system policies, and address various institutional needs (Bell, 2017; Lacey & Murray, 2015).

A major challenge in establishing these equivalencies is the limited guidance on how to formulate an equivalency method. Porter (2016) emphasizes the core difficulties in developing an equivalency: quantifying the "worth" of a competency (p. 11). This difficulty partly arises from the ambiguous definition of the credit hour, which is described as "an amount of student work…" reasonably approximated to a minimum of one hour of direct instruction and two hours of out-of-class work weekly for approximately 15 weeks per semester, 10–12 weeks per quarter, or the equivalent for other academic activities, such as labs or internships (Definitions, 34 C.F.R. § 600.2, 2024). While this definition allows for flexibility, it points to a broader issue that Sylvia Manning, then president of the Higher Learning Commission, described in a

2010 congressional hearing: "The apparent precision of the credit hour as originally defined, based on the fact that it has numbers, is an illusion: *underneath the numbers lies the mush*" (*The Department of Education Inspector General's Review of Standards for Program Length in Higher Education*, 2010, p. 21, emphasis added). Although the credit hour equivalency is a key policy consideration for CBE programs, the vague definition of the credit hour and limited guidance in formulating an equivalency methodology pose a significant challenge for institutions and state systems.

Academic Calendar and Term Structure

Besides credit hour equivalency, the academic calendar and term structure play an important role in designing and delivering CBE programs. The structure has a direct influence on both a CBE program's eligibility for Title IV and the personalized progression of students. First, all Title IV eligible academic programs, including CBE programs, must have a clearly defined academic year (U.S. Department of Education, Office of Federal Student Aid, 2024b). For Title IV purposes, the academic year is based on weeks of instruction. It must include at least 30 weeks per year (U.S. Department of Education, Office of Federal Student Aid, 2024b). However, institutions can offer programs with various academic calendars and term structures within that timeframe (U.S. Department of Education, Office of Federal Student Aid, 2024b).

Second, the academic calendar and term structure also affect how much students can advance in a CBE program on a personalized basis. This personalized progression aligns with a fundamental principle of CBE, which is that demonstrated mastery, not time, should determine student progress (*Innovation to Improve Equity: Exploring High-Quality Pathways to a College Degree*, 2019).

Tuition and Fee Model

Finally, establishing a sustainable tuition and fee model is critical to the success of CBE programs, with a direct impact on students and institutions by influencing access, affordability, and overall program quality (Bushway et al., 2018; Desrochers & Staisloff, 2016). For students, CBE is often cited for its potential to lower tuition and fee costs compared to traditional, non-CBE programs; however, initial results affirming this are mixed (Desrochers & Staisloff, 2016; Kelchen, 2015; Mason et al., 2021; Parsons et al., 2016; Parsons et al., 2023b). Comparing costs between CBE and non-CBE programs is challenging to evaluate and quantify; additional research is needed.

From an institutional perspective, CBE can lower operational costs over time (Desrochers & Staisloff, 2016). However, CBE typically requires significant up-front investment, and institutions need "patient capital" to cover initial expenses until revenue catches up (Desrochers & Staisloff, 2016, p. 4). Desrochers and Staisloff's (2016) analysis of CBE programs at four institutions found the initial development costs of a single CBE program averaged $382,000, with further investments ranging from $6.3 million to $11 million over the first three years due to additional technology and curriculum expenses. Despite these substantial initial expenses, CBE

programs are projected to reduce operational costs significantly by the sixth year, operating at about half the expenses of traditional, non-CBE programs (Desrochers & Staisloff, 2016). This reduction is achieved, in part, because of the unique factors associated with the CBE business model, including differentiated approaches to curriculum development and delivery, faculty modesl, and the student services experience (Desrochers & Staisloff, 2016).

Summary

As evident in this review, implementing CBE requires a strategic approach to multiple policy considerations. While institutions and state systems will inevitably face numerous policy considerations, this study focuses on three key policies that—credit hour equivalency, academic calendar and term structure, and tuition and fee models—because of their significant impact on program design and regulatory compliance. Additionally, current state-level research on these three policy areas is scarce and offers minimal context to guide a state system's policy development and implementation.

In response, this study uses a practitioner-based case study design to examine the South Dakota Board of Technical Education's (SDBOTE) development of three systemwide policies for CBE. This study is guided by two research questions: Which policy options did the SDBOTE consider for credit hour equivalency, academic calendar, and term structure, and tuition and fee models? What factors determined the SDBOTE's policy decisions?

Methods

Research Design

A practitioner-based case study involves the reflective and systematic examination of an intervention within a specific context (Pikaar & Caple, 2021; *Practitioner Research*, n.d.). Besides offering a structured account of the development, implementation, and outcomes of a case, this approach documents a practitioner's direct experience within the intervention. It draws on established methods of self-study research, where practitioners systematically reflect on and examine their own practice (Cochran-Smith & Lytle, 2009; Schön, 2017; Weimer, 2006), as well as the case study approach. Single case research is appropriate when one or more of these three are met. "(1) The case is an unusual phenomenon; (2) the case has not been accessible to researchers before; or (3) the case can be observed longitudinally" (Ozcan et al., 2017, p. 93). The single-subject, practitioner-based case study approach was well-suited for this study for three main reasons. First, it provided a rich and detailed description of the complex phenomena of developing policies that support educational innovation within existing structures by analyzing the SDBOTE's policy options and decisions. Second, it allowed for documentation of decision rationales from an insider perspective that would not have been accessible in formal policy documents alone. Third, although this specific study does not provide a longitudinal

perspective, it does lay the groundwork for future research and can inform subsequent studies..

Positionality

Two of the three authors of this study (Bell, DesLauriers) served as the primary project managers for the SDBOTE's CBE policy development and therefore serve in a dual researcher-practitioner role. Bell was contracted by and provided technical assistance to the SDBOTE. As deputy director for the SDBOTE, DesLauriers was the system office staff member responsible for policy development and implementation. Their direct involvement in the pilot provides firsthand knowledge into the considerations and decision-making processes related to the SDBOTE's policy development. At the same time, their involvement requires acknowledgment of potential biases in data collection, analysis, and presentation.

Participant

The SDBOTE is the governing entity for the state's technical college system and recognized the growing interest and potential benefits of CBE. In June 2022, with support from the Governor's Emergency Education Relief (GEER) funds, the SDBOTE launched a CBE implementation pilot in collaboration with Southeast Technical College (STC).

The pilot had two primary goals. Focusing on the system level, which is the focus of this study, the SDBOTE sought to develop administrative rules, policies, and procedures to support and ensure high-quality CBE implementation across the technical college system. Recognizing that most existing policies were credit hour-based, the SDBOTE sought to establish a comprehensive policy framework accommodating CBE before widespread implementation.

At the institutional level, STC's objective was to design and prepare for the implementation of four specific CBE programs: Associate of Applied Science (AAS) in Registered Nursing, AAS in Electrician, Diploma in HVAC/R Technology, and Diploma in Computer Technician. The pilot funding supported activities such as purchasing CBE-specific software, providing faculty stipends, and facilitating professional development and technical assistance.

The SDBOTE organized the pilot's work into three phases: (1) conducting a needs assessment, outlining policy considerations, and evaluating potential policy changes; (2) prioritizing key policy changes critical for CBE design and implementation within the grant timeline; and (3) developing policy guided by policy models and STC's campus-level work.

Data Collection and Analysis

Data were collected from two primary sources: document review and post-pilot reflection. The first group of documents analyzed included those documents produced by authors during the SDBOTE's policy development process and implementation pilot. These included internal project management documents (e.g., project

charter and scope of work); various iterations of draft policy proposals, including draft policy documents and associated summaries or analyses; Board meeting documents; and internal memorandums. Additionally, the authors also referenced publicly available statutes, administrative rules, and supplementary guidance from government agencies (e.g., Dear Colleague Letters, Federal Student Aid Handbook) on both the state and federal levels.

After completing the pilot, the authors engaged in a reflective analysis in two stages. Both stages occurred consecutively with the writing of this article, and the reflective process being essentially integrated into the development of the manuscript. The documented reflections served as the foundation for policy option critiques and decision rationale outlined in the subsequent section.

Stage One: The two dual researcher-practitioner authors (Bell, DesLauriers) documented their interpretations of the policy development process without structured prompts. This initial reflective writing drew on their direct involvement in the policy development process and produced documented reflections that formed early drafts of the results section. However, the authors recognized the need for a more structured approach to strengthen the analysis of their own policy decisions.

Stage Two: To address this need, the authors re-examined each policy decision using reflection prompts based on the critical incident technique (CIT). (1) Context: the factors influencing the policy decision; (2) Action: the specific policy decision made; (3) Reasoning: the rationale behind why the specific policy decision was made; (4) Outcome: the actual, anticipated, or potential consequences of a policy decision (Butterfield et al., 2005; Keatinge, 2002). This approach served two key purposes. First, it allowed the authors to document policy option critiques and the decision rationales that were not formally documented during the pilot. Second, it provided standardized prompts across all three policies to guide analysis.

The authors used a thematic analysis (Clarke & Braun, 2014) to organize the data, focusing on three key policy considerations: credit hour equivalency, academic calendar and term structure, and tuition and fee model. These three themes were initially identified based on themes in the literature, were reinforced in the pilot's documentation, and were further refined through post-pilot reflections.

In summary, the combination of document review and post-pilot reflection allowed for a deeper analysis of the policies, tensions between CBE and existing educational structures, and long-term implications of the policies.

Results

This section examines the SDBOTE's development of three systemwide policies for CBE: credit hour equivalency, the academic calendar and term structure, and tuition and fee model. For each policy, the authors outline the options considered and describe the decision made.

Before proceeding, two points warrant acknowledgment. First, although the initial four pilot programs included in the SDBOTE's implementation pilot pursued course/credit-based approaches rather than direct assessment methods, the SDBOTE

designed policies flexible enough to accommodate both CBE types should future programs pursue the direct assessment approach. Second, while this manuscript presents policy options and decisions separately for the sake of clarity, these policies are highly interdependent in practice. Policy options can be combined—for example, as is the case with the SDBOTE's academic calendar and term structure decision—and a policy decision in one area will influence options in another. The SDBOTE's policy development was more iterative than sequential.

Credit Hour Equivalency

One of the most critical policy considerations is establishing a credit hour equivalency for CBE programs, which involves developing a method to equate competencies with credit hours.

Policy Options

With limited guidance and no explicit definitions available at the federal level, the SDBOTE considered three different strategies for determining credit hour equivalencies: weighted, proportional, and standardized. These methodologies are described further below.

Weighted Equivalency. The weighted equivalency method involves assigning a credit hour value to each competency based on its size (amount of work). A single competency could be worth one or more credits, while multiple competencies can collectively be worth one credit.

The weighted equivalency method acknowledges that not all competencies are of the same size and offers significant flexibility in assigning credits. However, this flexibility introduces a new factor to the process of articulating and transferring credits between programs and institutions. Determining a competency's "weight" becomes critical, as it must not only reflect the size of the competency itself but also ensure that the size is comparable across different programs and institutions. For example, a competency valued at three credit hours at one institution might be assigned a different value at another institution, posing challenges for students transferring between institutions. This method is illustrated in Table 1.

Proportional Equivalency. The proportional equivalency method assigns a credit value to a competency based on its proportional share of the entire academic program. All required competencies for an individual academic program are first determined at the credential level. Then, each competency is given a proportional share of the total credits based on the amount of work needed to master that competency relative to the entire program. This approach acknowledges that some competencies may be more comprehensive than others.

In the proportional equivalency approach, the institution must determine what proportion of the educational program is represented by each competency. That could be determined by dividing the total number of competencies by the percentage of program completion. For example, in a program that has 20 competencies, completing five competencies represents 25% of program completion. The number

Table 1
Weighted Credit Equivalency Comparison

Traditional Course	Credit Hours	Competency	Credit Equivalent
Marketing 101	3	Apply theories, models, and practices of marketing	1
		Analyze how a company uses marketing resources	2
Accounting 101	3	Apply theories, models, and practices of accounting in the analysis of financial statements	1
		Describe regulatory and ethical issues in accounting	0.5
		Integrate accounting theories, models, and practices across an organization	1.5
English 101	3	Write appropriately researched persuasive arguments	6
Communications 101	3		
Statistics 101	3	Perform complex statistical calculations	3
Total	**15**		**15**

Note. Simplified for demonstration, adapted from "Direct assessment (competency-based) programs," by U.S. Department of Education, 2024, (https://www2.ed.gov/policy/highered/reg/hearulemaking/2024/direct-assessment.html).

of equivalent credit hours would then be assigned based on the non-CBE program. If the equivalent program were 60 credits, then each 25% of the competencies completed equals 15 credits. A more nuanced approach is to individually assign each competency a percentage value of the total program that the competency represents based on that workload analysis. That percentage value can then be converted into credit hour equivalents. This method is illustrated in Table 2.

Primary considerations associated with the proportional equivalency method include determinations about competency size and workload, establishing program progression milestones (i.e., determining objective ways to quantify when 25% of a program is truly completed), bundling multiple competencies into milestones, and

Table 2
Proportional Credit Equivalency Comparison

Traditional Course	Credit Hours	Competency	Percentage Equivalent	Credit Equivalent
Marketing 101	3	Apply theories, models, and practices of marketing	2.5%	1.5
		Analyze how a company uses marketing resources	2.5%	1.5
Accounting 101	3	Apply theories, models, and practices of accounting in the analysis of financial statements	1.67%	1
		Describe regulatory and ethical issues in accounting	1.67%	1
		Integrate accounting theories, models, and practices across an organization	1.67%	1
English 101	3	Write appropriately researched persuasive arguments	10%	6
Communications 101	3			
Statistics 101	3	Perform complex statistical calculations	5%	3
Total	**15**		**25%**	**15**

Note. Simplified for demonstration, adapted from "Direct assessment (competency-based) programs," by U.S. Department of Education, 2024, (https://www2.ed.gov/policy/highered/reg/hearulemaking/2024/direct-assessment.html).

handling changes to competencies and an academic program's program of study over time.

Standardized Equivalency. The standardized equivalency method establishes a consistent ratio between a competency and a credit hour value, such as a 1:1 ratio in which one competency is always equals one credit hour or a 2:1 ratio where two competencies are always equal to one credit hour. This method requires considering the "size" of a competency, primarily assessed by the amount of anticipated student work involved in mastering a competency, which is reasonably approximated to the federal definition of the credit hour (Definitions, 34 C.F.R. § 600.2, 2024). This method is summarized in Table 3.

While the standardized equivalency provides the most direct relationship to the traditional credit-hour framework, the primary consideration is that the method may lead to a program of study with an artificial number of competencies. For example, a faculty team may identify a total of 40 competencies for an associate's degree; however, due to the 1:1 equivalency, the faculty would be required to add 20 additional competencies to achieve the 60-credit hour requirement for associate's degrees. Alternatively, that same faculty team might identify 70 competencies but would be required to remove 10 because of the 1:1 equivalency.

Table 3
Standardized Credit Equivalency Comparison

Traditional Course	Credit Hours	Original Competency	Revised Competency	Credit Equivalent
Marketing 101	3	Apply theories, models, and practices of marketing	Apply theories, models, and practices of marketing	1
			Analyze how a company uses marketing resources	1
		Analyze how a company uses marketing resources	Analyze a marketing plan for a company using theories, models, and practices of marketing.	1

Traditional Course	Credit Hours	Original Competency	Revised Competency	Credit Equivalent
Accounting 101	3	Apply theories, models, and practices of accounting in the analysis of financial statements	Apply theories, models, and practices of accounting in the analysis of financial statements	1
		Describe regulatory and ethical issues in accounting	Describe regulatory and ethical issues in accounting	1
		Integrate accounting theories, models, and practices across an organization	Integrate accounting theories, models, and practices across an organization	1
English 101	3	Write appropriately researched persuasive arguments	Understand the compositional elements of a persuasive argument.	1
			Analyze the composition of a persuasive argument.	1
			Create an appropriately composed persuasive argument.	1
Communications 101	3		Understand the elements of research quality in a persuasive argument.	1
			Analyze the quality of the research used in a persuasive argument.	1
			Create a persuasive argument using quality research.	1

Traditional Course	Credit Hours	Original Competency	Revised Competency	Credit Equivalent
Statistics 101	3	Perform complex statistical calculations	Understand complex statistical calculations.	1
			Apply complex statistical calculations.	1
			Analyze a statistical problem to determine which statistical calculation is most appropriate.	1
Total	**15**			**15**

Note. Simplified for demonstration, adapted from "Direct assessment (competency-based) programs," by U.S. Department of Education, 2024, (https://www2.ed.gov/policy/highered/reg/hearulemaking/2024/direct-assessment.html).

Policy Decision

In the early stages of policy development, the SDBOTE decided to adopt a system-level credit hour equivalency methodology instead of allowing each institution to develop its own equivalency. Then, the SDBOTE needed to choose the specific equivalency method it would implement, which the SDBOTE identified as the most complex policy decision it made. The SDBOTE ultimately adopted the standardized equivalency method and specifically required one competency to be equal to one credit hour. The SDBOTE also required each competency to be structured as its own one-credit course, which facilitates the design, delivery, and assessment of learning at the individual competency level rather than the traditional course level.

Two primary factors influenced the SDBOTE's decision. First, after assessing the its capacity to handle very different sets of policy requirements if it were to implement either the weighted or proportional equivalencies, the SDBOTE concluded that the standardized equivalency would ease administrative processes, especially considering that the SDBOTE's institutions will continue to offer non-CBE programs. Due to the direct relationship between the standardized equivalency and the credit hour, both the institutions and the system office can continue to use their existing academic, financial, data, and student information management systems without significant modifications.

Second, while still working within the highly institutionalized process associated with the credit hour, the standardized equivalency best positioned faculty teams to make localized decisions regarding competencies. It may seem counterintuitive

considering the standardized nature of the method, but faculty have significant autonomy in "sizing" competencies to meet the one-competency-to-one-credit-hour equivalency requirement. For example, a single competency worth three credits may need to be split into three one-credit competencies or combine three different competencies each worth 1/3 of a credit into a single competency worth one credit.

The SDBOTE's credit hour equivalency policy decision is ultimately a compromise that attempts to balance the constraints of highly institutionalized administrative processes with less institutionalized academic processes. The most significant outcome of this decision is the need for faculty to size competencies to meet the one-competency-to-one-credit-hour equivalency requirement. While the SDBOTE acknowledged that the process of breaking down or rolling up competencies can appear arbitrary, the SDBOTE suggested that the process is an important curricular tuning process through which faculty refine the composition of competencies and may provide the opportunity to refine the traditional, non-CBE programs as well.

Academic Calendar and Term Structure

The academic calendar and term structure play an important role in the design and delivery of CBE programs. The structure has a direct influence on both a CBE program's eligibility for Title IV and the personalized progression of students.

Policy Options

The SDBOTE considered four options regarding how to structure the terms within its academic calendar: standard, non-standard, non-term, and subscription. These terms are not unique to CBE, and CBE programs can be delivered in all four. The term duration must align with the determined credit hour equivalency explored in the prior section (U.S. Department of Education, 2024).

Standard Term. A standard term is a predefined period with set start and end dates (U.S. Department of Education, Office of Federal Student Aid, 2024b). A standard term follows a traditional academic calendar structure divided into specific terms, such as semesters or quarters, with fixed lengths (e.g., 15 weeks for a semester) (Competency-Based Education Network & American Association of Collegiate Registrars and Admissions Officers, 2023; U.S. Department of Education, Office of Federal Student Aid, 2024b). In a standard term, students must start and finish a competency within the established term dates (U.S. Department of Education, 2024).

Non-Standard Term. For a non-standard term, the term period deviates from traditional terms yet still maintains a predefined period with set start and end dates (U.S. Department of Education, Office of Federal Student Aid, 2024b). A non-standard term is typically less than nine weeks in length (Competency-Based Education Network & American Association of Collegiate Registrars and Admissions Officers, 2023; U.S. Department of Education, Office of Federal Student Aid, 2024b). Similar to the standard term, students must start and finish a competency within the established term dates (U.S. Department of Education, 2024).

Non-Term. In a non-term structure, a course does not begin and end within specified dates (U.S. Department of Education, Office of Federal Student Aid,

2024b). This structure allows for ongoing enrollment throughout the year across different enrollment periods, enabling students to start and finish a competency at any time (Competency-Based Education Network & American Association of Collegiate Registrars and Admissions Officers, 2023).

Subscription-Based. A subscription-based academic calendar is utilized for programs in which the institution charges students a flat fee for a subscription period (U.S. Department of Education, Office of Federal Student Aid, 2024b). However, unlike traditional term-based calendars, courses in subscription-based programs are not required to begin or end within specific timeframes in each period (U.S. Department of Education, Office of Federal Student Aid, 2024b).

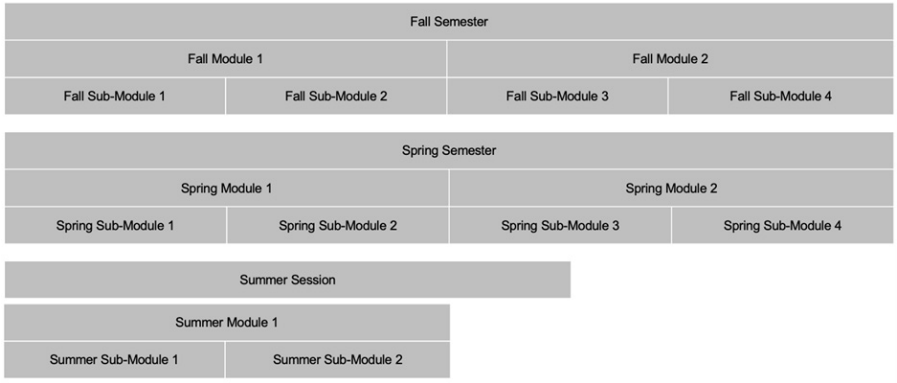
Students can start and finish a competency at their own pace during their enrollment, potentially continuing the same course or competency across multiple subscription periods (Competency-Based Education Network & American Association of Collegiate Registrars and Admissions Officers, 2023). In a subscription-based calendar, students are expected to complete a specified number of credit hours, or equivalent, during a period (U.S. Department of Education, Office of Federal Student Aid, 2024b).

Policy Decision

After considering the four potential term structures outlined above, the SDBOTE adopted an academic calendar that included both standard terms (16-week semesters) and non-standard terms (10-week sessions, eight-week modules, and four-week sub-modules), as demonstrated in Figure 1.

Figure 1

SDBOTE's Academic Calendar Structure



Note. The SDBOTE's academic calendar includes four types of terms: Semester: 16 weeks; Session: 10 weeks; Module: 8 weeks; Sub-Module: 4 weeks.

The primary reason the SDBOTE selected this blended approach is that it increases student flexibility and personalization while also aligning with the system's current academic calendar and term structure. First, the selected approach increases student flexibility by creating multiple entry points and opportunities for students to start or adjust enrollment plans throughout the academic year. For example, a student who missed the start of the Fall Sub-Module 1 could still enroll in Fall Sub-Module 2 instead of needing to wait until the Spring Semester. Second, since the selected approach aligns with the system's current academic calendar and term structure, it allows CBE and non-CBE programs to operate within the same calendar. There are a significant number of administrative processes associated with and determined by an academic calendar, from student billing to registration to faculty compensation, all of which are highly institutionalized. This shared calendar approach minimized the need to manage the administrative processes associated with two separate calendars simultaneously.

At the same time, the SDBOTE acknowledged several limitations with the blended approach. Namely, it does not allow for as much flexibility for students using Title IV funding to enroll in more or fewer competencies as the SDBOTE desired. Furthermore, although additional terms exist, not every competency may be offered every term, at least initially, as a program establishes its enrollment, which could influence a student's progression.

Despite these limitations, the blended approach offers a compromise that creates additional opportunities for student flexibility within the constraints of highly institutionalized administrative processes associated with the academic calendar. The SDBOTE acknowledged this policy decision as an incremental step that will need to be revisited as CBE matures within the system.

Tuition and Fee Model

Determining a sustainable tuition and fee model is critical to the success of CBE programs. The selected model directly impacts students and institutions by influencing access, affordability, and overall program quality.

Policy Options

The SDBOTE evaluated three tuition and fee models: per competency, banded, and subscription. The tuition and fee model was heavily influenced by decisions related to the credit hour equivalency as well as the academic calendar and term structure, as explored in the prior two sections.

Per Competency. A per-competency model for tuition and fees charges a specific rate for each competency. There are two approaches to this model. In the first approach, a flat rate per competency, a consistent rate is charged for each competency a student enrolls in. For example, if a competency is equivalent to three credit hours, and the standard per-credit rate is $200, the student would pay $600 for the competency. This rate applies across all competencies in an academic program.

In the second approach, the differentiated rate per competency varies based on the specific competency. This approach reflects the variation in costs associated with delivering specific competencies. For instance, competency in a more resource-in-

tensive academic program may have a higher rate than a competency in a less resource-intensive program.

Banded. A banded tuition and fee model charges a flat rate for a specified range of competencies or enrollment status levels (U.S. Department of Education, Office of Federal Student Aid, 2024a). For example, a student enrolled in six credits would pay the same rate as a student enrolled in eight credits since both students would be considered half-time. The same applies to a student enrolled in 12 credits and one student enrolled in 20 credits, as both would be classified as full-time. The banded model can be combined with the per-competency model, establishing a maximum number of competencies for a flat rate, with any additional competencies charged separately. An example of the banded tuition and fee model is illustrated in Table 4.

Subscription. A subscription-based tuition and fee model allows students to pay a flat rate for access to an unlimited number of competencies or courses within a defined subscription period (U.S. Department of Education, Office of Federal Student Aid, 2024b). An institution can charge different amounts by the length of the subscription period, the enrollment intensity (e.g., half-time, full-time), or both, but cannot charge based on the coursework the student completed at the end of the period, which differentiates the subscription model from the banded model previously described (U.S. Department of Education, Office of Federal Student Aid, 2024b). However, if using Title IV, a student is required to complete a minimum number of competencies in a subscription period to maintain eligibility (U.S. Department of Education, Office of Federal Student Aid, 2024b).

Table 4

Banded Tuition and Fee Model Example

Competencies	Enrollment Status Equivalent	Tuition and Fee Rate
1–5	Less-than-Half-Time	$2,000
6–8	Half-Time	$3,000
9–11	Three-Quarter Time	$4,000
12 (or more)	Full-Time	$5,000

Note. Adapted from "Volume 3: Chapter 1: Academic years, academic calendars, payment periods, and disbursements," by U.S. Department of Education, Office of Federal Student Aid, 2024-2025 Federal Student Aid Handbook, April 17, 2024 (https://fsapartners.ed.gov/knowledge-center/fsa-handbook/2024-2025/vol3/ch1-academic-years-academic-calendars-payment-periods-and-disbursements).

Policy Decision

After considering the three tuition and fee options, the SDBOTE adopted a per-competency tuition and fee rate. Considering the SDBOTE's credit hour equivalency approach, where one competency is equivalent to one credit hour, the rate assessed per competency in a CBE program is the same rate assessed per credit hour in a non-CBE program.

The SDBOTE's decision was primarily driven by the uncertainty associated with CBE's financial operating model. More specifically, the SDBOTE cited the lack of data regarding one-time and ongoing expenses with CBE implementation as a significant influence on its decision to move forward with the more familiar and predictable per-competency model. The SDBOTE recognized that even the most data-informed changes to an institution's business model can be technically complex and politically challenging. Recognizing the uncertainties with cost, the SDBOTE concluded that maintaining the existing tuition and fee structure would enable CBE programs to launch and allow for organizational resources to be initially invested in developing our CBE's academic model rather than managing a disruptive tuition and fee model with uncertain outcomes.

While the model does not decrease tuition and fees for students to the extent the SDBOTE desired, it established a predictable financial model for initial CBE implementation until additional data regarding actual revenues and expenses are available. The SDBOTE acknowledged the need to reassess the tuition and fee model as CBE matures within the technical college system. This incremental approach allows for initial progress in the short term while also laying the groundwork for more data-informed and progressive policy changes in the future.

Discussion

Implications for Policy and Practice

Across the three policies examined in this study, there is a consistent tension between supporting educational innovation and working within existing structures. This section identifies three overarching themes that informed the SDBOTE's approach to managing this tension and their implications for policy and practice in state higher education systems.

Implication 1: Evaluate capacity to determine if available resources can realistically support the management of separate policies for CBE and non-CBE programs.

Throughout the policy development process, the SDBOTE wrestled with a fundamental decision to create separate policies specifically for CBE programs or adapt existing policies to accommodate both CBE and non-CBE programs. This decision reflects broader tensions in regulating and managing transformational innovation, aligning with Biber et al.'s (2017) conceptualization of a "policy disruption," which is when innovation challenges existing regulatory frameworks because "a regulato-

ry program generally—even necessarily—presumes a certain kind of organizational form for the activities that it regulates" (pp. 1564–1565). When faced with innovation that disrupts the presumed organizational form, regulators must decide whether to prevent the innovation altogether, preserve or adapt the existing regulatory structure, or create an entirely new regulatory structure (Biber et al., 2017).

Much of the current research on innovation management favors the creation of separate policies because it fosters organizational separation. Christensen et al. (2015) argue that the success of an innovation "depends in large part on keeping it separate from the core business" (pp. 8–9). The rationale is that "when the independent and mainstream organizations are folded together in order to share resources, debilitating arguments inevitably arise over which groups get what resources and whether or when to cannibalize established products" (Bower & Christensen, 1995, p. 52).

In practice, however, implementing this approach requires managing what could be two very different sets of policies and associated practices. In the case of the SDBOTE, this would require managing one set of policies for CBE programs and another for non-CBE programs, which prompted the SDBOTE to conduct an honest assessment of its capacity to do so. The SDBOTE concluded that, given the available resources (e.g., financial, human, technological) at both the system office and institutional levels, managing entirely separate policies would not be feasible. Therefore, the SDBOTE ultimately decided to modify its existing policies to address both CBE and non-CBE programs. This decision shaped the specific constraints within which the SDBOTE and its institutions would need to operate.

Implication 2: Identify the constraints that will require significant energy and time to change and focus resources on the change that is realistically feasible.

While all policies and their associated practices can be changed, some are significantly harder to modify due to their level of institutionalization (Bower & Christensen, 1995). Policies and practices related to credit hour calculations, academic calendar and terms, and tuition and fees are deeply institutionalized, which directly influenced the SDBOTE's policy options and decisions. Recognizing "organizational dynamics typically prioritize status quo…" (Biber et al., 2017, p. 1570), the time and energy required to change highly institutionalized practices became a consideration in the SDBOTE's decision-making process for policies.

Implication 3: When necessary, make intentional compromises that protect CBE's core value proposition and plan for incremental improvement.

Recognizing its limited capacity, the SDBOTE made intentional compromises that sought to preserve CBE's core value proposition of holding learning constant and allowing time to vary (Competency-Based Education Network, 2021) while also working within the constraints of existing systems. Determining what compromises to accept was incredibly difficult, and the SDBOTE's goal was to avoid "errors of commission," which may occur when an organization implements an innovation "within the processes and priorities embedded in its existing business model…"

(Christensen et al., 2018, p. 1072).

The SDBOTE was required to make trade-offs both within each policy decision (as described in the prior policy decision sections) and across all three policies. The SDBOTE's "hypothesis" was that intentional short-term compromises would facilitate long-term progress. In this initial phase of policy development, the SDBOTE accepted the limitations of its academic calendar and tuition policy decisions because of the significance of its credit hour equivalency decision. Its equivalency approach, in which each competency is equal to one credit hour (1:1), combined with the SDBOTE's related requirement that each competency be structured as a standalone one-credit course, leads to a fundamental shift: the primary unit of learning changes from the traditional three-credit course structure to individual competencies. In the traditional model, assessments, curriculum, and instruction are modularized at the course level, where multiple competencies remain bundled together and cannot be easily separated. The 1:1 approach, however, modularizes these elements at the individual competency level, an important shift for meaningful CBE implementation (Weise & Christensen, 2014). At the same time, this approach fits within the current credit hour framework, and in doing so, minimizes the administrative tensions that may have otherwise been so burdensome that even the most committed institution or state system leader would face difficulty managing.

The SDBOTE recognized that its initial set of policies would require revision as CBE matures within the system. By that point, however, CBE's efficacy as an educational model would be established and therefore provide the evidence and momentum needed to support more significant policy changes.

Limitations and Directions for Future Research

This study has three main limitations that should be considered when interpreting the findings. For each limitation, we also suggest directions for future research. First, this study's single case approach limits generalizability to other states or state higher education systems. Ultimately, future research should examine additional state-level cases to enable comparative, cross-case analysis. Parsons et al.'s (2023a) framework can serve as a common language for such analysis. For example, the three policies examined in this study map to the following framework categories: credit hour equivalency (Administrative Elements, Competencies, Program Design, Assessment Strategies, External Partners, Transparency of Learning); academic calendar and term structure (Administrative Elements, Program Design, Learner Experience); and tuition and fee models (Administrative Elements). Future research, both within and across cases, should also disaggregate policy decisions by the Institutional Context category since certain policy approaches may be more appropriate for some institutional types and/or state-level governance structures than others.

Second, this study's practitioner-based case study approach combines methods traditionally associated with practitioner research (self-study) and the case study. While both are established methodological approaches on their own, their combined approach requires further development of methodological guardrails to ensure their

related research is systematic, rigorous, and cumulative (Collier et al., 2010). For instance, while the authors' dual roles as practitioners and researchers provided access that may not have otherwise been available, it also introduced potential biases in data collection, analysis, and presentation of findings. Advancing this combined methodological approach is significant as the field seeks to leverage this unique moment in time to scale evidence-based and high-quality CBE. Without learning quickly and iteratively from implementation cases, which will require practitioners to be more directly involved in the research process, we risk recreating or further entrenching the faults of the current higher education system or inadvertently creating entirely new ones (Bryk et al., 2015).

Third, while this study explores which policy options were considered and the decisions made, it does not analyze those decisions. Future research should track and evaluate these outcomes over time. In particular, understanding how the SDBOTE's incremental approach to policy development affects CBE implementation over time is an interesting area for future research. For example, future research can explore if, how, and to what extent SDBOTE's compromises either enable or restrict CBE implementation.

Conclusion

As discussed in the Introduction, while CBE has the potential to increase access, affordability, and quality in higher education, its implementation requires thoughtful policy considerations. This study provides one example of how state higher education systems can develop policies that support educational innovation within existing structures. Through examining the policy options considered, decisions made, and rationales behind those decisions, this study fills a critical gap in the existing literature on CBE, state policy, and state higher education systems. In addition, the SDBOTE's incremental approach to policy development and implementation may be especially relevant for institutions and state systems that want to advance CBE but lack the necessary capacity to support large-scale reform. While future research must further explore how this approach affects CBE implementation, this study outlines one potential pathway to scaling CBE in the complex environment that higher education exists within.

References

Bell, A. (2017). *State policy considerations for supporting competency-based education in higher education*. Lumina Foundation. https://www.ecs.org/wp-content/uploads/CBE-State_Policy_Considerations-2017.pdf

Biber, E., Light, S. E., Ruhl, J., & Salzman, J. (2017). Regulating business innovation as policy disruption: From the Model T to AirBnB. *Vanderbilt Law Review*, *70*(5), 1561–1626.

Book, P. A. (2014). *All hands on deck: Ten lessons from early adopters of competency-based education*. Western Interstate Commission for Higher Education. https://eric.ed.gov/?id=ED546830

Bower, J. L., & Christensen, C. M. (1995). Disruptive technologies: Catching the wave. *Harvard Business Review*, *73*(1), 43–53.

Bryk, A. S., Gomez, L. M., Grunow, A., & LeMahieu, P. G. (2015). *Learning to improve: How America's schools can get better at getting better*. Harvard Education Press.

Burnette, D. M. (2016). The renewal of competency-based education: A review of the literature. *The Journal of Continuing Higher Education*, *64*(2), 84–93. https://doi.org/10.1080/07377363.2016.1177704

Bushway, D. J., Dodge, L. G., & Long, C. S. (2018). *A leader's guide to competency-based education: From inception to implementation* (1st ed.). Stylus.

Butterfield, L. D., Borgen, W. A., Amundson, N. E., & Maglio, A.-S. T. (2005). Fifty years of the critical incident technique: 1954–2004 and beyond. *Qualitative Research*, *5*(4), 475–497. https://doi.org/10.1177/1468794105056924

Christensen, C. M., McDonald, R., Altman, E. J., & Palmer, J. E. (2018). Disruptive innovation: An intellectual history and directions for future research. *Journal of Management Studies*, *55*(7), 1043–1078. https://doi.org/10.1111/joms.12349

Christensen, C. M., Raynor, M. E., & McDonald, R. (2015, December). What is disruptive innovation? Twenty years after the introduction of the theory, we revisit what it does–and doesn't–explain. *Harvard Business Review*, *12/2015*. https://hbr.org/2015/12/what-is-disruptive-innovation

Clarke, V., & Braun, V. (2014). Thematic analysis. In T. Teo (Ed.), *Encyclopedia of critical psychology* (pp. 1947–1952). Springer. https://doi.org/10.1007/978-1-4614-5583-7_311

Cochran-Smith, M., & Lytle, S. L. (2009). *Inquiry as stance: Practitioner research for the next generation*. Teachers College Press.

Collier, D., Seawright, J., & Munck, G. L. (2010). The quest for standards: King, Keohane, and Verba's "Designing Social Inquiry." In H. E. Brady & D. Collier (Eds.), *Rethinking social inquiry: Diverse tools, shared standards* (2nd ed.). Rowman & Littlefield Publishers.

Competency-Based Education Network. (2021). *Hallmark practices in CBE assessment*. Competency-Based Education Network. https://www.cbenetwork.org/wp-content/uploads/2022/03/CBE-2021-Hallmark-Practices-WEB.pdf

Competency-Based Education Network & American Association of Collegiate Registrars and Admissions Officers. (2023). *Enrollment management and competency-based education*. https://www.c-ben.org/wp-content/uploads/2024/02/Enrollment-Management-and-Competency-Based-Education.pdf

Council of Regional Accrediting Commissions. (2015). *Regional accreditors announce common framework for defining and approving competency-based education programs*. https://download.hlcommission.org/C-RAC_CBE_Statement_6_2_2015.pdf

Daugherty, L., Davis, V. L., & Miller, T. (2015). *Competency-based education programs in Texas: An innovative approach to higher education*. RAND Corporation. https://www.rand.org/content/dam/rand/pubs/research_reports/RR1200/RR1239-1/RAND_RR1239-1.pdf

DeBacker, D., Kingston, N., Mason, J., Parsons, K., Patelis, T., & Specht-Boardman, R. (2024). A research agenda for competency-based education. *Competency-Based Education Research Journal*, *1*. https://doi.org/10.17161/cberj.v1i.23064

Definitions, 34 C.F.R. § 600.2. (2024). https://www.govinfo.gov/app/details/CFR-2024-title34-vol3/CFR-2024-title34-vol3-sec600-2

Desrochers, D. M., & Staisloff, R. L. (2016). *A study of four new models and their implications for bending the higher education cost curve* (p. 38). rpk GROUP. https://rpkgroup.com/wp-content/uploads/2016/09/rpkgroup_cbe_business-modelreport_bleeds-3.pdf

Direct Assessment Programs, 34 C.F.R. § 668.10. (2024). https://www.govinfo.gov/app/details/CFR-2024-title34-vol3/CFR-2024-title34-vol3-sec668-10

Fulton, M. (2019). *An analysis of state postsecondary governance structures*. Education Commission of the States. https://www.ecs.org/wp-content/uploads/An-Analysis-of-State-Postsecondary-Governance-Structures.pdf

Harnisch, T., Nassirian, B., Saddler, A., & Coleman, A. (2016). *Enhancing state authorization: The need for action by states as stewards of higher education performance*. Education Commission of the States. https://www.ecs.org/wp-content/uploads/ECS_FundingReports_HarnischNassirianSaddlerColeman_F.pdf

Innovation to Improve Equity: Exploring High-Quality Pathways to a College Degree: Hearing before the U.S. House of Representatives Committee on Education and Labor, 116th Cong. (2019) (Testimony of Charla Long). https://www.govinfo.gov/content/pkg/CHRG-116hhrg36908/html/CHRG-116hhrg36908.htm

Keatinge, D. (2002). Versatility and flexibility: Attributes of the Critical Incident Technique in nursing research. *Nursing & Health Sciences*, *4*(1–2), 33–39. https://doi.org/10.1046/j.1442-2018.2002.00099.x

Kelchen, R. (2015). *The landscape of competency-based education: Enrollments, demographics, and affordability*. American Enterprise Institute for Public Policy Research. https://eric.ed.gov/?id=ED566651

Klein, J., & DeSchryver, D. (2022). *Moving competency-based education forward: Lessons from five years of direct assessment implementation*. Capella

University and Whiteboard Advisors. https://www.cbenetwork.org/wp-content/uploads/2022/03/moving-competency-based-education-forward.pdf

Lacey, A., & Murray, C. (2015). *Rethinking the regulatory environment of competency-based education*. American Enterprise Institute for Public Policy Research. https://eric.ed.gov/?id=ED557618

Lane, J. E. (2013). Higher education system 3.0: Adding value to states and institutions. In J. E. Lane & D. B. Johnstone (Eds.), *Higher education systems 3.0: Harnessing systemness, delivering performance* (pp. 3–26). State University of New York Press.

Mason, J., Parsons, K., & Nhi Cap, Q. (2021). *State of the field: Findings from the 2020 National Survey of Postsecondary Competency-Based Education*. American Institutes for Research. https://www.air.org/sites/default/files/2021-07/State-of-the-Field-Findings-from-2020-Postsecondary-CBE-Survey-July-2021.pdf

McGuinness, A. (2016). *State policy leadership for the future: History of state coordination and governance and alternatives for the future*. Education Commission of the States. https://www.ecs.org/wp-content/uploads/051616-State-Policy-Leadership-for-the-Future-KL-final4-1.pdf

Ozcan, P., Han, S., & Graebner, M. E. (2017). Single cases: The what, why, and how. In R. Mir & S. Jain (Eds.), *The Routledge companion to qualitative research in organization studies* (pp. 92–112). Routledge.

Parsons, K., Mason, J., & Soldner, M. (2016). *On the path to success: Early evidence about the efficacy of postsecondary competency-based education programs*. American Institutes for Research. https://www.air.org/sites/default/files/downloads/report/Path-to-Success-Postsecondary-Competency-Based-Education-Programs-Oct-2016.pdf

Parsons, K., Mayer, K.M., Hatcher, M., Caton, K., & Young, A. (2023). *Postsecondary competency-based education program model map: Framework*. American Institutes for Research. https://www.air.org/sites/default/files/2023-10/CBE-Program-Model-Map-Framework.pdf

Parsons, K., Mayer, K.M., Hatcher, M., Young, A., & Caton, K. (2023). *Postsecondary competency-based education program model map: Research brief*. American Institutes for Research. https://www.air.org/sites/default/files/2023-10/CBE-Program-Model-Map-Research-Brief.pdf

Paydar, N. H. (2024). *Applying for Title IV eligibility for direct assessment (competency-based) programs* (Dear Colleague Letter GEN-24-02). U.S. Department of Education, Office of Federal Student Aid. https://fsapartners.ed.gov/knowledge-center/library/dear-colleague-letters/2024-02-14/applying-title-iv-eligibility-direct-assessment-competency-based-programs#

Pikaar, R. N., & Caple, D. C. (2021). An introduction to the special issue on practitioner case studies. *IISE Transactions on Occupational Ergonomics and Human Factors*, *9*(2), 65–66. https://doi.org/10.1080/24725838.2021.2013044

Porter, S. R. (2016). Competency-based education and federal student aid. *Journal of Student Financial Aid*, *46*(3). https://doi.org/10.55504/0884-9153.1535

Practitioner research. (n.d.). Retrieved January 7, 2025, from https://cdip.merlot.org/facultyresearch/Practitionerresearch.html

Råbu, M., & Binder, P.-E. (2025). The single case study is a crucial bridge between research and practice. *Journal of Contemporary Psychotherapy*, *55*(2), 119–126. https://doi.org/10.1007/s10879-024-09658-2

Schön, D. A. (2017). *The reflective practitioner*. Routledge. https://doi.org/10.4324/9781315237473

Specht-Boardman, R. (2024). *How do we know what we claim is true? A scoping review of the empirical evidence on postsecondary competency-based education from 2012–2022* [Doctoral dissertation, University of Iowa]. Iowa Research Online. https://iro.uiowa.edu/esploro/outputs/doctoral/How-do-we-know-what-we/9984635142102771?institution=01IOWA_INST

The Department of Education Inspector General's Review of Standards for Program Length in Higher Education: Hearing before the U.S. House of Representatives Committee on Education and Labor, 111th Cong. (2010). https://www.govinfo.gov/content/pkg/CHRG-111hhrg56835/pdf/CHRG-111hhrg56835.pdf

U.S. Department of Education. (2024, February 6). *Direct assessment (competency-based) programs*. https://www2.ed.gov/policy/highered/reg/hearulemaking/2024/direct-assessment.html

U.S. Department of Education, Office of Federal Student Aid. (2024a, February 28). *Volume 7: Chapter 3: Pell grant enrollment intensity and cost of attendance*. 2024–2025 Federal Student Aid Handbook. https://fsapartners.ed.gov/knowledge-center/fsa-handbook/2024-2025/vol7/ch3-pell-grant-enrollment-intensity-and-cost-attendance

U.S. Department of Education, Office of Federal Student Aid. (2024b, April 17). *Volume 3: Chapter 1: Academic years, academic calendars, payment periods, and disbursements*. 2024-2025 Federal Student Aid Handbook. https://fsapartners.ed.gov/knowledge-center/fsa-handbook/2024-2025/vol3/ch1-academic-years-academic-calendars-payment-periods-and-disbursements

Weimer, M. (2006). *Enhancing scholarly work on teaching & learning: Professional literature that makes a difference*. Jossey-Bass.

Weise, M. R., & Christensen, C. M. (2014). *Hire education: Mastery, modularization, and the workforce revolution*. Clayton Christensen Institute for Disruptive Innovation. https://eric.ed.gov/?id=ED561277

Western Governors University. (n.d.). *Tuition and financial aid: A quality education you can afford*. Retrieved July 19, 2024, from https://www.wgu.edu/financial-aid-tuition.html

Zimpher, N. L. (2013). Systemness: Unpacking the value of higher education systems. In J. E. Lane & D. B. Johnstone (Eds.), *Higher education systems 3.0: Harnessing systemness, delivering performance* (pp. 27–44). State University of New York (SUNY) Press. https://sunypress.edu/Books/H/Higher-Education-Systems-3.02