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## Competency Based Education: Best Practices and Implementation Strategies for Institutions of Higher Education

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**COMPETENCY BASED EDUCATION: BEST PRACTICES AND IMPLEMENTATION  
STRATEGIES FOR INSTITUTIONS OF HIGHER EDUCATION**

BY

Sara E. Kellogg

A Dissertation  
in Partial Fulfillment of the  
Requirements for the Degree of  
Doctor of Education  
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February 2018

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# COMPETENCY BASED EDUCATION: BEST PRACTICES AND IMPLEMENTATION STRATEGIES FOR INSTITUTIONS OF HIGHER EDUCATION

Sara E. Kellogg, Ed. D

Concordia University, St. Paul, 2018

The purpose of this qualitative study was to explore the landscape of Competency-Based Education in institutions of higher education, and how these institutions have successfully implemented a new model into their existing structures. Interviews were conducted to explore the rationale, implementation strategies, and challenges at institutions involved in Competency-Based Education. Interviews were conducted with ten professionals who held positions in administrative roles, faculty roles, and sometimes both roles simultaneously. A thorough research of the literature was conducted, and there was found to be a lack of consensus of best practices and implementation strategies for institutions. Best practices at the institutions that participated in the study were analyzed in comparison to Johnstone and Soares' (2014) *Principles for Developing Competency-Based Education Programs* as well as through the lens of the Competency Based Education Network (C-BEN), *Shared Design Elements*, and *Suggested Practices of Competency-Based Education Programs* (2015). The strategies in place for the implementation of this change at the institutions was analyzed through the lens of John Kotter's (1985) 8-steps model for change implementation. The research in this dissertation built upon that of Dragoo in 2015, and adds new knowledge to the field. The rationales, strategies, and programming at the institutions who took part in this research vary. While there were some similarities, it is clear the institutions must examine specific rationales for implementing CBE programs, and how CBE best fits with the overall strategic plans and missions of the institution. CBE programs provide institutions with many opportunities, but also some challenges.

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I would like to thank Dr. Amie Dragoo, who completed her study regarding Competency-Based Education and gave me permission to build upon and add to her previous work. I would also like to thank my editor Monica Lamb who did a fantastic and expedient job in working with me on final edits.

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Sara E. Kellogg

## **DEDICATION**

This dissertation is dedicated to my family who have supported me through the long process of earning my doctorate degree and understood why I had to miss out on so many things over the years.

To my parents Dave and Corey, who instilled in me that I could truly do anything that I set my mind to as long as I worked hard and was dedicated. I would especially like to thank my husband, Eric, and my son, Zachary for their patience and encouragement to push through to “get it done.” I started this process with you Zachary, when you started Kindergarten, you are now in fourth grade, so it is about time that I wrap this up! I could not have made it without your support and encouragement! Thank you!

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## **CHAPTER ONE: INTRODUCTION**

The field of higher education in the United States is changing and evolving at a very rapid pace. Learning and classrooms look significantly different today than they did 50 years ago. Many factors have contributed to, and will continue to influence these changes. Higher education is tasked with rising to the occasion to change and evolve along with society and the students they serve. It is imperative that institutions do not become stagnant as they look to new and innovate ways to successfully educate students. Institutions are under intense pressure to decrease tuition costs, increase accessibility for students, increase outcomes, and adhere to accountability standards, while also ensuring that students successfully graduate. These pressures come at a time of decreased funding, increased competition for students, and a plethora of market competitors and innovations. Data suggests that funding for higher education has not recovered since the recession of 2008 (Thelin, 2015). State support of higher education per student is still below pre-2008 levels, after adjusting for inflation (Mitchell, Palacios, & Leachman, 2014).

### **Tuition and Student Debt**

Rising tuition costs and excessive student debt are a concern for many American families, which in turn creates a great unease for institutions. Data from the U.S. Department of Education shows that “over the past three decades, tuition at public four-year colleges has more than doubled, even after adjusting for inflation” (ED.gov, 2017A, para. 3).

Higher education is faced with a dilemma to educate more students, offer a high-quality education, and ensure job and workplace outcomes, increase students’ graduation rates, while also working to control student debt. Many individuals in the U.S. consider student loan debt to be in crisis. According to the Cumulative Student Loan Debt Report, published by the

Minnesota Office of Higher Education (2016), a worrying trend of student debt is outpacing wage growth. In fact, “over the period 1990-2015, median debt amounts for bachelor’s degree recipients increased 164 percent from \$12,100 to \$31,900” (p. 4). With rapidly rising tuition, outpacing inflation in most of the other areas in the economy, students are asking hard questions and wanting to know if such an education is truly worth the investment of time and money.

The student debt crisis is one of the most prevalent issues facing higher education today. According to the Chronicle of Higher Education (2016), over the past decade, student loan debt has tripled in the U.S. to \$1.2 trillion dollars. This data has led to overall increased scrutiny by students, parents, federal and state governments, and accrediting agencies, among others. In the fall of 2015, the U.S. Department of Education launched the *College Scorecard* to bring transparency to the financial costs of receiving a college education. Institutions are now required to report and make public information regarding average student debt, federal loan repayment, completion rates, and post college earnings, in a way that is easy for consumers to understand (ED.gov, 2017B). In other words, institutions of higher education are required to be transparent with students regarding their return on investment.

### **CBE Defined and Key Terms**

#### **CBE Defined**

Institutional leaders and administrators will need to understand the current landscape, remain innovative, and work to explore new opportunities to meet these ever-increasing demands. This study will review one of the current innovations in education, Competency-Based Education (CBE). Competency Based Education is different from the traditional credit hour that has been the norm in the U. S. higher education system. There is still limited consensus on the exact definition of CBE. CBE is a model in education that focuses on what

students know and can do rather than how long it took them to learn it (Klein-Collins, 2013). The basic principle of CBE is that *learning* is the constant and *time* is the variable. This contrasts with the traditional model of the Carnegie unit, credit model, where students spend a required amount of time in each course, and learning may be variable.

While CBE is not necessarily new, it has seen a surge of interest in recent years. A review of the literature determined that CBE is a topic of great interest, and an increasing number of higher education institutions (HEIs) are incorporating CBE within their education modalities. In the spring of 2014, there were an estimated 52 colleges or universities with CBE programs. In the winter of 2015, there were 200 institutions estimated to be considering or involved in CBE. By the fall of 2015, the U.S. Department of Education reported that there were as many as 600 institutions that were either designing or implementing CBE programs (Fain, 2015; Mitchell, 2015; Nodine, 2015). With the increasing numbers of HEIs either implementing or considering the CBE models, it is important that administrators have a clear understanding of the commitments, implementation strategies, and best practices of designing CBE models.

A review of the current literature suggests that there is limited information regarding implementation strategies and best practices for launching CBE programs. As higher education continues to evolve to meet the needs of students, it will be important to define these best practices and implementation strategies. This study will contribute to the higher education field by offering a review of current institutions who have already implemented CBE programs to learn best practices for design and implementation of CBE programs, as well as lessons learned, challenges and points to consider for institutions who are interested in implementing CBE programs.

Competency based education differs from traditional education in several ways. The diagram below shows a comparison between traditional education that many have experienced in the U.S. education system and Competency-Based Education.

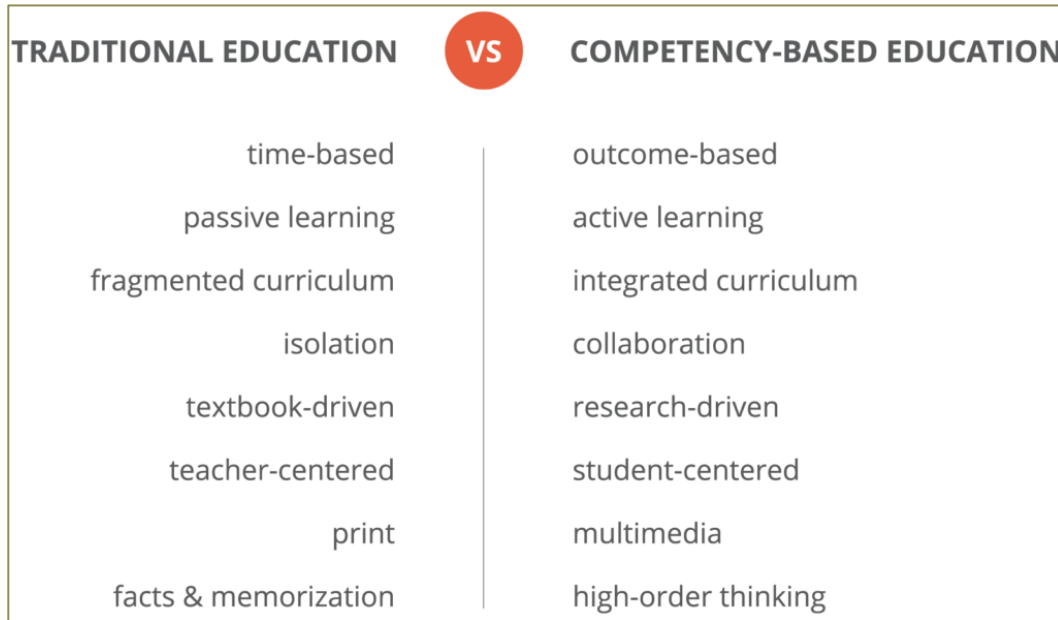


Figure 1. Traditional versus Competency-Based Education  
 [Source: (Motivis Learning, 2017)]

**Key Terms**

*Competency-Based Education:* Educational delivery model that organizes content according to what a student knows and can do, often referred to as a “competency.” CBE focused on whether students have mastered competencies, there is a focus on learning outcomes, rather than time spent in the classroom (U.S. Department of Education, 2016A).

*Direct Assessment:* An instructional program that, in lieu of credit or clock hours as a measurement of learning, utilizes direct assessment of student learning, or recognizes the direct assessment of student learning by others (U.S. Department of Education, 2016A).

*Credit/Clock Hour:* A program that is organized by competency, but measures student progress using clock or credit hours (U.S. Department of Education, 2016A).



## **Background**

In recent years, higher education has come under great public scrutiny regarding the value of the education being offered. Society has questioned if education is really a good return on investment for students. In fact, society as well as university leaders have questions as to the value of a college degree. During the fall of 2015, The Chronicle of Higher Education conducted a survey of top administrators at two and four-year institutions to focus on the value and key indicators that demonstrate the value of a college degree. Results of this survey revealed that 62% of the respondents felt that their institution provided an excellent value for the price, only 13% felt that the higher education system as a whole provide a good value for the price (The Chronicle of Higher Education, 2016). This skepticism, combined with typically increasing tuition rates year after year has produced a critical eye on higher education and the value of a college degree.

Businesses and employers have also expressed concern with the preparation of graduates. Many employers feel that the candidates that they hire with college degrees do not meet their qualifications and lack the essential skills that they need to perform their jobs. As cited by Clerkin and Simon, a recent Gallup survey indicated only “14 percent of Americans and 11 percent of business leaders strongly agreed that college graduates have the necessary skills and competencies needed to succeed in the workplace” (Clerkin & Simon, 2014, p. 7). These statistics indicate that there is room for improvement. Those statistics, coupled with the fact that “in the next decade, the number of jobs requiring a college degree will increase to 70% of all new jobs” (Ordonez, 2014, p. 47), are leading institutions to feel increased pressure. They are looking to new and innovate ways to improve the education that students receive to ensure that they are producing successful and competent employees.

One of the innovations that has come to the forefront in higher education institutions is Competency-Based Education (CBE). As previously stated, CBE is not necessarily new, but has become a renewed focus in Higher Education. An extensive review of the literature has revealed and confirmed that it is difficult to come to a consensus of the definition of CBE. Even within institutions that offer CBE degree programs, there is no consistent definition (Kelchen, 2015). Perhaps this is due to variations of this model and the different forms that it tends to take across institutions that currently practice CBE models. For the purposes of this study, CBE will be defined as “education that focuses on what students know and can do rather than how long it took them to learn it” (Klein-Collins, 2013). Competency-based education design and delivery will look different at different institutions. The two main principles of CBE include: 1) course/credit-based approach, and 2) direct assessment. The institutions reviewed in this study varied according in many ways within their CBE models, but both credit-based and direct assessment principles were in place among the institutions studied.

### **History of CBE**

Competency-based education is not new, nor is it exclusive to higher education. A number of K-12 initiatives helped to set the stage for CBE implementation in postsecondary education. Today, there is still evidence of CBE programming in many K-12 districts. This research will not focus on the K-12 field, but it is important to recognize the contributions and similarities.

The history of competency-based programs in U.S. higher education is distinguished by three overall phases: (a). innovative teacher education programs in the 1960s and beyond. (b). vocational education programs in the 1970s and beyond. (c). more recent programs over the last decade and a half, particularly those taking advantage of online or hybrid

models, advanced in adaptive learning technology or direct assessment (Nodine, 2015, p. 6).

Many institutions were considered early adopters of CBE programs. Charter Oak State College, Empire State College, Excelsior College, and Thomas Edison State College were early implementers of CBE. Alverno College was recognized for its CBE curriculum in the 1970s (Book, 2014). Western Governor's University, a well-known and established CBE school, began its programming in 1997. Today, there are an estimated 600 institutions that are in the planning stages or currently running CBE programs (Fain, 2015).

### **Significance and Rationale of the Study**

While the number of institutions offering CBE, or stating an interest in CBE is increasing, there is still little empirical data to guide institutions looking to implement CBE programs or models. This study is designed as a qualitative investigation to determine the best strategies for implementing CBE programming at institutions of higher education. Interviews and document analysis were conducted to explore strategies and best practices at institutions with CBE models already in place.

The researcher is a doctoral candidate with a stake in successful change implementation within her institution of employment. As a member of the administrative staff at an institution of higher education, tasked with the goal of designing and implementing a CBE program, the goal for her research was to add to the limited literature regarding implementation strategies for CBE, and also work to develop an implementation strategy within her own institution.

This study will build upon the previous 2015 dissertation by Dragoo, *Development of Competency-Based Business Degree Programs in Higher Education* (Dragoo, 2015). Dragoo's discourse (2015) has laid the foundation for this study and will be enhanced by evaluating CBE

implementation through the lens of Kotter's (1985) 8-step model for implementing change, as well as CBEN's newly published (2015) *Shared Design Elements and Suggested Practices of Competency Based Education Programs*. Chapter two will review these implementation strategies in greater detail and will provide a detailed review of the current literature regarding CBE.

This dissertation research explores the rationale, best practices, implementation strategies, barriers, and measurements of perceived success at institutions that have implemented CBE programs. The intent of this study is to contribute to the limited field of research on the challenges, opportunities, and implementation strategies of CBE programs at institutions of higher education. The research question in this study is as follows: For institutions of higher education who are contemplating the incorporation of CBE programs, what are the strategies and best practices used in developing and implementing a Competency-Based Education program? A qualitative study was conducted to explore this question and to contribute to the field of research regarding Competency-Based Education. Institutions of higher education who are considering implementing CBE programs will benefit from this study as it seeks to add to the body of knowledge regarding CBE implementation strategies and best practices.

### **Trends in Higher Education**

Higher education is experiencing many disruptions to what had been considered a traditional classroom, where students attended classes in person and an instructor was in the front of the classroom delivering content. Today, students can earn an entire college degree and not even step foot onto the physical campus. Online education, MOOCS, and Competency-Based Education are examples of the innovations as a response to the changing needs and demographics of students.

## **Student Demographics**

Traditionally, when one referred to a college student, they were referring to individuals aged 18-24 who attended full-time at a physical brick and mortar campus, who likely did not work, or did not work full-time. Today, institutions are seeing an increase in the number of “non-traditional” students, those over the age of 24, likely to have families, family obligations, and possibly full-time work responsibilities.

According to data from the National Center for Education Statistics (NCES), as cited by (Chen, 2014) “enrollment of students aged 25 and over in degree-granting postsecondary institutions is not only rising, but it is growing at a faster pace compared to the traditional 18-to 24-year old” (p. 406). Traditional methods of teaching and education typically do not work well for these students. Competency Based Education may be an option for the non-traditional student who might not otherwise be able to complete their goal of earning a college degree. In theory, CBE allows students to move through a college degree acquisition at their own pace, without adhering to traditional quarter or semester systems. This may allow students to decrease time spent earning a degree, and in turn may decrease the overall cost of their education.

## **Online Education**

Online education has seen rapid growth over the past few decades. This type of learning, once considered innovation in higher education, is becoming the norm. The United States has seen year after year growth in online education, and recent research data indicates that this trend is continuing. According to the May 2017 report on distance education enrollment, Allen and Seaman, (2017) state that, during the fall of 2015, there were more than 6 million students who were taking at least one online course, which was an increase of 3.9% over the previous year (p. 4). Online education is one of the responses to the changing demographics in higher education.

Many non-traditional students would not be able to achieve their educational goals without online education, due to work and family obligations. Online learning is also a viable option for many of the traditional college students who physically live on college campuses. They are considered to be “digital natives” who have grown up with technology and are completely comfortable with online learning. “Initially, online learning appealed primarily to those unable to access traditional higher education, it is becoming more attractive to mainstream students” (Christensen & Eyring, 2013, p. 49). Online learning is a trend that will continue to increase. A majority of the CBE programming found at institutions is delivered partially, if not exclusively, online. More detail regarding delivery models will be discussed in Chapter two.

### **Significance of CBE**

The United States is also facing a dilemma in degree attainment. There has been a recent exigence to increase the number of adults in the U. S. that have earned a college degree. The Lumina Foundation (2017) adopted a strategic plan referred to as *Goal 2025*. *Goal 2025* states that by the year 2025, 60% of the U.S. population will have obtained a high-quality postsecondary credential. In order to reach this daunting goal, 16.4 million people will need to earn such credentials. (Lumina Foundation, 2017). Many of these prospective students will not be able to earn credentials through traditional education models. Competency-Based Education is a focus and priority for many federal, governmental, and non-profit agencies, who are tasked to help the U. S. to reach this significant goal.

Data has shown that the United States is falling behind other developed countries in degree attainment. According to international comparative data produced by the Organization for Economic Cooperation and Development (OECD), as cited by Lumina, 2017, “the U.S. is lagging behind its global competitors. America now ranks a disappointing 11<sup>th</sup> in global

postsecondary attainment” (Lumina Foundation, 2017, para. 2). The chart below demonstrates a comparison of the United States in comparison to other developed countries.

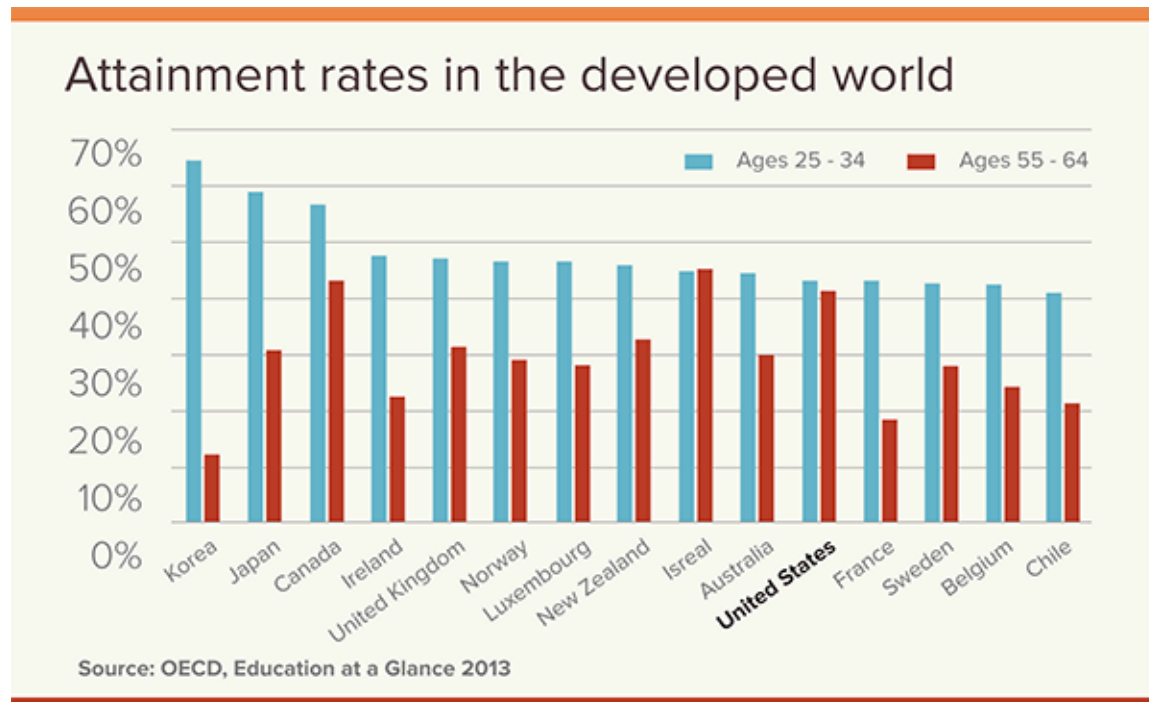


Figure 2. College Degree Attainment Rates in the Developed World. [Source: (Lumina Foundation, 2017)]

### Professional Organization Involvement

Professional and government organizations have taken notice of CBE programs. There has been an increase in organizations dedicated to research and innovation, quality and best practices for CBE programs and development. Organizations such as the Lumina Foundation, Competency-Based Education Network (CBEN), The Council for Adult and Experiential Learning (CAEL) and the Bill and Melinda Gates Foundation have become increasingly involved in the CBE arena. It is clear that CBE is an area of great interest to higher education and its constituents.

Federal Student Aid policies have furthermore focused on and supported the development of Competency-Based Education programs. In March 2013, the U.S. Department of Education

published a “dear colleague” letter that invited institutions to apply as an experimental site to receive federal financial aid funding (Title IV) for their Competency-Based Education programs. This meant that select institutions, who applied and were approved, could allow students to use federal financial aid for their CBE programs (Fain, 2015).

Accreditation bodies have also had to adapt and implement new or refined policies to include CBE programs. The Council of Regional Accrediting Commissions (C-RAC) released a joint statement in June 2015 that outlined the criteria that regional accreditors would use in defining and approving Competency-based Education programs. This common framework provides accreditation guidance for institutions seeking to implement CBE programs (Council of Regional Accrediting Commission [C-RAC], 2015). Prior to 2015, there were no clear criteria for evaluating CBE programs.

Former U. S. President Barack Obama also indicated his support and the significant need to increase the number of degree holders in the United States. President Obama and Secretary of Education, Arne Duncan, and the Department of Education all stated the importance and support to reduce the cost of higher education and increase the number of individuals with college degrees (Field, 2013; White House Office of the Press Secretary, 2013).

It is yet to be determined the impact that the new administration will have on higher education. At the time of this study, the researcher was not able to find any definitive information regarding the policies that President Trump and the new administration plan to pursue regarding higher education. Further investigation is needed in this area as additional information becomes available.



## Research Question and Conceptual Models

Even with all of the current attention within CBE in the higher education landscape, there is little evidence in the literature regarding best practices for designing CBE programs.

Institutions and administrators ought to develop an understanding of means to ensure quality and rigor of their programs when designing CBE programs. This qualitative study reviews two recently published guiding principles and design practices for the development of quality CBE programs. A review of implementation strategies to initiate change at the university level will also be reviewed by analyzing implementation and change strategies through the lens of Kotter's 8-step process for implementing change (Kotter, 1985).

The research question will seek to answer:

RQ1: "What are the strategies and best practices used in developing and implementing CBE programs at institutions of Higher Education in the United States?"

The strategies and implementation model will be briefly presented in this chapter and reviewed in greater detail in chapter two.

Johnstone and Soares (2014), in partnership with Western Governors University, and other partner institutions, as well as financial support from the Bill and Melinda Gates Foundation and the U.S. Department of Labor, were instrumental in developing principles of design for the development of Competency-Based Education. Their work has laid the foundation for institutions looking for guidance in designing CBE programs. The principles for developing Competency-Based Education (Johnstone & Soares, 2014) include the following:

1. The degree reflects robust and valid competencies. Competencies should be aligned with both academic expectations, as well as industry standards.
2. Students are able to learn at a varied pace and are supported in their learning. Students' progress at their own pace and just in time support must be provided.

3. Effective learning resources are available at any time and are reusable. They should be well-designed, high quality and adaptive to students' needs.
4. The process for mapping competencies to courses, learning outcomes, and assessments is explicit. They should be clear and transparent to all, including students.
5. Assessments are secure and reliable. They should be valid and verified. Steps should be taken to ensure student identity, especially in the online format (Johnstone & Soares, 2014).

Most of the institutions interviewed had incorporated these principles into their CBE programs.

More recently, the C-BEN, in partnership with Public Agenda, published a draft of their work *Shared Design Elements and Emerging Practices of Competency-Based Education Programs* (2015). These elements were first shared and introduced at the CBExchange conference in October 2016. The Competency Based Education Network (C-BEN) is a group of colleges and universities working together to address shared challenges to designing, developing, and scaling competency-based degree programs (C-BEN, 2017)<sup>1</sup>.

### **The Shared Design Elements**

- Clear, Cross-Cutting and Specialized Competencies
- Coherent, Competency-Driven Program and Curriculum Design
- Embedded Process for Continuous Improvement
- Enabling and Aligned Business Processes and Systems
- Engaged Faculty and External Partners
- Flexible Staffing Roles and Structures
- Learner Centered
- Measurable and Meaningful Assessments
- New or Adjusted Financial Models
- Proficient and Prepared Graduates

A majority of the institutions interviewed agreed on the importance of these elements and emerging practices, while evidence was sporadic in some areas. Institutions did vary in the level

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<sup>1</sup> The Shared Design Elements have been updated since 2015. Retrieved from [http://www.cbenetwork.org/sites/457/uploaded/files/CBE17\\_\\_Quality\\_Standards\\_FINAL.pdf](http://www.cbenetwork.org/sites/457/uploaded/files/CBE17__Quality_Standards_FINAL.pdf)

of commitment and focus that their institutions had within each individual element. CBEN's shared design elements are still new to the field, and the institutions interviewed were also at different stages of design, implementation, and scaling of their own CBE programs.

Change is inevitable for institutions of higher education that hope to succeed in today's competitive market; however, higher education is well-known for being resistant to change. How can administrators ensure that the implementation of a new program, such as CBE effectively? This study also looks at implementation strategies utilized by institutions through the lens of John Kotter's 8-step model for implementing change (Kotter, 1985).

Kotter (1985) is known for his 8-step model or framework for transforming change within organizations. Kotter suggests that most change processes happen through a series of steps or phases over an extended period of time, and also that a mistake during any of the steps can create drastic problems for the implementation of the change initiative (Spencer & Winn, 2005). In order to drive successful change, careful planning must occur. Kotter's eight steps process of creating major change includes the sequential stages listed here, and displayed in Figure 3.

1. Establishing a sense of urgency
2. Creating a guiding coalition
3. Developing a vision and strategy
4. Communicating the change vision
5. Empowering broad-based action
6. Generating short-term wins
7. Consolidating gains and producing more change
8. Anchoring new approaches in the culture.



*Figure 3.* Kotter's Eight Steps Model  
[Sourced via: (Edinburgh Napier University, 2017)].

Implementation strategies at each of the institutions was reviewed through the lens of Kotter's strategies for change management. Strategies for change management varied across institutions, as did their goals and outcomes for the development of CBE programs. This study will review and summarize lessons learned regarding best practices and implementation strategies.

### **Limitations and Delimitations**

This study was a qualitative investigation conducted by reviewing documents and institutional websites, as well as conducting in-depth personal interviews with administrators and faculty members at institutions involved with Competency-Based Education. Individuals were selected according to their position and roles at institutions that have implemented CBE programs and have been running them for at least one year at the time of the study. Limitations

may include a certain bias of the participants toward CBE due to their involvement and positions at these institutions. In addition, there is a lack of assessment tools to gauge the success of CBE programs. This will be an area of study in the future as more institutions implement and run CBE programs and there is more data to analyze.

Delimitations of this study are a limited amount of institutions and individuals who agreed to be a part of this study. A sample size of 10 institutions does not lend itself to generalizability across all institutions of higher education. Individuals who agreed to participate are collaborative supporters of the CBE movement with a personal stake in the success of CBE programming.

### **Chapter One Summary**

In summary, the field of higher education is changing at a rapid pace, while at the same time institutions, leaders, administrators, and staff are tasked with implementing new and innovative ways to assist the United States to reach its degree attainment goals and to meet the demands of new student demographics. Competency-Based Education is one of the innovations in response to these new demands and demographics. The literature review and study that follow will focus on the history of CBE, rationale, and best practices for designing and implementing CBE programming, and strategies for implementation at institutions that have already developed and implemented CBE programs within their institutions.

## CHAPTER TWO: REVIEW OF LITERATURE

### Introduction

The rising cost of higher education, the need to produce more graduates with degrees, and changing student demographics have led to the need for innovation in higher education. One of the responses to these challenges is a transition to Competency Based Education (CBE). While the literature states that CBE has been in practice since the 1970s, it is experiencing a recent resurgence in popularity (Gallagher, 2014). Klein-Collins stated that

In the 1970s, the U.S. Department of Education Fund for the Improvement of Postsecondary Education (FIPSE), provided significant grant support for adult learning programs to develop Competency-Based education programs at institutions such as Alverno College, DePaul University School for New Learning, Empire State College Regents College (Now Excelsior College), Thomas Edison State College and a number of others (Klein-Collins, 2013, p. 4).

This study focuses on rationale and strategies for implementation of CBE programs, opportunities, and challenges and overall institutional support considerations for institutions seeking to add the CBE delivery method to their institutions, specifically focusing on BA business degrees. The literature of the history, facts, and trends of CBE programs to date is limited. An extensive review of journal articles, books, government fact sheets, and publications was conducted. This review provided some valuable insights into the history, implementation strategies, and overall institutional support for CBE models. The review moreover revealed that there is a definite gap in the research as to best practices to measure the success of CBE programs. How does an institution prove that their specific CBE model is or is not successful? This may be an area for future research.

This review revealed several themes that will be discussed in this chapter. It is evident that the popularity of CBE programs is increasing. To date, it is difficult to determine exactly how many institutions are practicing, or have implemented, CBE programs, as new programs

seem to be added frequently. A recent report from The Learning House demonstrates how quickly CBE is growing. The results of their recent study suggest, “In 2015, there were more than 600 institutions adopting Competency-Based Education (CBE) degrees and courses, up from only 52 the year before” (The Learning House, 2016, p. 13).

### **Concepts and Definitions of CBE**

Competency-Based-Education is different from traditional models of education, as it tends to be divorced from the traditional credit hour model, also known as “seat time.” CBE programs are also typically self-paced and utilize prior learning to meet competencies. Instead of students completing required assignments, meeting credit hour requirements, and then moving on, they must prove proficiency in competency before advancing in the program (Klein-Collins, 2013; Negrea, 2015). A key distinction of CBE is that the learning is flexible. “Learning is fixed, and time is variable” (Weise, 2014B, para. 12).

CBE programs may vary in their approach to operationalizing the competency framework and assessing those competencies. There are two main CBE approaches: the most popular is the “direct assessment” approach. The direct assessment approach is not bound to traditional credit hours, as it relies solely on assessments as a demonstration of learning. The second approach links students’ progress to traditionally measured seat time, and is referred to as course-based, with credit equivalency. Differences in the type of assessment models used in CBE programs have a direct impact on federal financial aid, which will be discussed later in this chapter.

### **Key Concepts**

It is important to understand the defining concepts of Competency-Based Education. Rebecca Klein-Collins (2013) published a report for the National Institute of Learning Outcomes, which outlined five key concepts that define CBE, including: competencies, quality,

assessment, learning, and student centered. Johnstone and Soares (2014) subsequently published their *Principles for Developing Competency-Based Education Programs* which outlined key concepts to be considered for institutions seeking to implement CBE programs. The four principles of Johnstone and Soares (2014) include robust and valid competencies, variable pace, and access to resources, alignment, and assessment.

### **Models of CBE (Direct Assessment versus Credit Hour)**

There are currently a large number of institutions offering CBE programs; however, each program tends to be unique in its operation, scale, and alignment to other departments within the institution. Some schools offer full programs, housed within already-existing departments at the institution. Others may offer a few courses (not an entire program), and they may be managed by an entirely separate department or school within the institution. Porter and Reilly (2014) explained and identified three main approaches of CBE that we tend to see in institutions of higher education.

1. A traditional course-and credit-based system, with a focus on alternative assessments such as portfolios instead of examinations. (Example is Alverno College).
2. Another approach is a system where student's progress to degree by achieving proficiency in competencies, taking as little or as much time as needed. Students achieve mastery by studying the institution's curriculum and are assessed using institutional assessments. (WGU, SNHU, and U of Wisconsin Flex options are examples).
3. A final approach involved Prior Learning Assessments (PLA) where students take an assessment at college entry, such as an examination or construction of a portfolio, and are granted some sort of recognition for their knowledge that advances them toward their degree completion (such as awarding credits or competencies). College Level Examination Program (CLEP) is an example, although some schools have developed their own internal PLA assessment process (Porter & Reilly, 2014, p. 3).

The United States Department of Education (DOE), (ED.gov, 2015) has also taken interest in CBE programming and has published their own definitions of the different



approaches. The definitions are similar to those of Porter and Reilly (2014). One item that is not included in the DOE categories is specific verbiage regarding PLA.

1. Course/Credit-Based Approach: “programs are organized by competency but measure student progress using clock or credit hours.”
2. Direct Assessment Approach: “a type of CBE program that does not use credit or clock hours. Progress is measured solely by assessing whether students can demonstrate that they have command of a specific subject, content area, or skill.”
3. Hybrid Approach: “direct assessment program that measures student progress using both direct assessment and credit or clock hours” (Porter & Reilly, 2014, p.2)

While most institutions offer one approach for students, some offer the opportunity for students to combine approaches to best accommodate their needs.

### **Rationale and Opportunities for CBE**

There are a number of reasons that institutions choose to implement CBE programs.

Book (2014) stated that CBE

is now increasingly being embraced as a panacea for multiple pressing issues in higher education. It is often seen as having the potential to address accessibility, affordability, transparency, and improved learning outcomes, all relevant to graduates employability and strengthening the workforce (p. 2-3).

Porter and Reilly (2014) suggest that “Competency-Based education offers the intriguing possibility of a postsecondary innovation that can increase college access and completion, as well as lower the cost of college for students and the institutions” (p.3).

Review of the literature indicates that the main rationales for institutions to implement CBE include decreased cost (for both students and institutions), and a decrease in time to for students to achieve a completed college degree; other influencing factors emerged as well, such as strategic initiatives, development of new programming, and capturing new student

demographics. For institutions that are considering the addition of a CBE program, it is important to understand the rationale for implementing CBE.

CBE provides many opportunities to both institutions and students. This section will review the main opportunities identified in the review of literature. Institutions that have adopted CBE models indicate the ability to reach new student markets that would have otherwise been unobtainable. Many adult students who are not able to attend school full time in the traditional face-to-face format are able to take advantage of CBE programs. There are many adults in the United States who began college at one point, but were unable to complete their degree, as, “one in five people in this country right now-over 43 billion-have some college, but no degree” (Ordonez, 2014, p. 49). These individuals are the market that institutions will likely be able to reach with the implementation of CBE programs.

### **Cost and the Iron Triangle**

The price of obtaining a bachelor’s degree in the United States is rising at a rapid pace, far exceeding inflation. According to a recent study, since 2005 “tuition and fees have increased about 25 percent faster than inflation at four-year colleges and 40 percent faster at two year colleges” (The Chronicle of Higher Education, 2016, p. 7) Students are becoming informed consumers in their educational decisions and want to know that they are getting a good return on their investment (ROI). Institutions of higher education are feeling more pressure from students, parents, and the federal government to provide a high-quality degree, which provides a valuable ROI for students.

This dilemma has been termed by scholars as the *Iron Triangle* of higher education, one of the greatest challenges facing higher education today. It consists of questions of affordability, quality, and student success (Mintz, 2016). CBE has been proposed as a new model that may be

able to help institutions break through the *Iron Triangle* by increasing affordability (for both students and institutions), expanding the quality of the institution's programs by specific design of authentic assessments and outcomes, and increasing student success by requiring mastery in a specific competency, and not simply a passing grade.

### **Time to Completion and Need for More Degrees**

Another significant issue driving the increase of CBE programs is the need for more Americans to hold college or postsecondary degrees. Clerkin and Simon (2014) suggest that “the United States is falling behind other developed nations in the proportion of the young adult working population who are college educated- a worrying indicator about the future workforce” (p.7).

A recent report from The Learning House demonstrates how quickly CBE is growing. The results of their recent study suggested that in 2015 “there were more than 600 institutions adopting Competency-Based Education (CBE) degrees and courses-up from only 52 the year before” (The Learning House, 2016, p. 13).

The Lumina Foundation is a private, independent foundation that is committed to making learning opportunities beyond high school available for all. The Lumina Foundation has a great interest in higher education in the United States. In April 2017, they released an updated strategic plan for 2017-2020, which demonstrates the ambitious goals ahead for institutions of higher education in the U.S. The Lumina Foundation set forth *Goal 2025*, which aspires that by the year 2025, 60 percent of the American population will hold high-quality degrees, certificates, or other postsecondary credentials (Lumina Foundation, 2017, p. 3). To meet *Goal 2025*, Lumina states that we must increase college degree achievement by 16.4 million high-quality credentials above current rates to reach an attainment rate of 60% (Lumina Foundation, n.d.).

For this reason, Lumina has itemized competency-based learning as one of their priorities for their action list, as CBE may aid additional individuals who might not otherwise be able to attain a degree through a traditional program. For the United States to remain competitive in the global market, we must increase the number of citizens with degrees.

### **Expedited and Flexible Learning**

Two of the most cited benefits and reasons for implementing CBE programs are that it is believed to decrease the amount of time it takes students to earn their degree or credentials, and that it provides flexibility in scheduling. There is limited data in the current literature to state if indeed CBE does decrease cost to students and universities, and if CBE students really do progress at a more rapid pace than their non-CBE peers.

In a recent study (Rainwater, 2016), interviews were conducted with faculty and students at institutions that have implemented CBE programs. The results of the survey indicated that there were definite benefits to the CBE model from the students' perspectives. One of the most important was that CBE allowed students to learn at their own speed and pace. Students interviewed stated that they were able to work ahead or move at a faster pace. They did not have to wait for others or for the scheduled course to be finished in order to advance.

Financial savings for students were also evident from the student's comments. One student interviewed stated that she was able to demonstrate mastery in a subject at the beginning of a CBE course and paid only \$21. While this cost savings is evident for many students, a certain number of students will not advance until they have demonstrated required proficiency, which could entail repeating the competency. This may mean that some students take longer, and therefore pay more for a competency. A great deal depends on the CBE model and the

financial model in place set by each institution. This may be an area for future research to determine the true cost/benefit to students.

### **Employer Needs and Workforce Alignment**

Another pressing factor that is contributing to the rise in CBE programs is the fact that many employers are voicing concerns over recent college graduates who are not prepared for the workforce. According to Clerkin and Simon, citing a recent Gallup poll, just 14 percent of Americans and 11 percent of business leaders felt that college graduates possess the required skills and competencies to be successful in the workplace (Clerkin & Simon, 2014). In contrast, 96 percent of chief academic officers in higher education believe that their institutions are “very” or “somewhat” effective in preparing students for the workforce (Clerkin & Simon, 2014; Weise, 2014A). Many proponents of CBE feel that developing CBE programs, with competencies aligned to the needs and demands of industry will serve as the missing link between higher education and workforce needs. Weise (2014A) stated that CBE may be a true workforce solution, with the potential to bridge the widening gap between traditional postsecondary education and the workforce (p. 28-29).

### **Increase of the “Non-Traditional Student”**

The demographics of those who are attending colleges and universities across the United States are changing. Data indicates that the average age of the college student will continue to rise. An article in the Wall Street Journal, via The National Center for Education Statistics is cited as projecting that by 2020, 42 percent of all college student will be 25 years of age or older (Casselmann, 2013). Moreover, Laitinen (2012) stated that only 14% of all undergraduate students in the United States attend full time and live on campus. This may be due to the fact

that the average age of the college student is rising, and many of them are working, in addition to attending school.

Students who typically enroll in CBE programs tend to fit the demographic of the adult student. A recent study conducted by the American Institutes for Research (AIR) focused on the demographics of students enrolled in CBE programs. According to the results of the AIR 2016 study, CBE can be categorized as follows:

- Adult learners typically make up 68%-99% of CBE learners;
- Students with prior college experience make up at least 70% of CBE populations; and
- Female students make up 50%-84% of CBE populations (Parsons, Mason, & Soldner, 2016, p. 10).

### **Challenges**

While there are many benefits and opportunities provided by Competency-Based Education programs, there are also challenges that must be considered. While federal financial aid can be viewed through the lens of an opportunity, it can also be a challenge for students and institutions. Resistance to change has also been identified as a major hurdle for institutions. Plumlee (2016) suggested that one of the greatest obstacles institutions face in developing CBE programs is internal resistance to change. I

It is imperative that leaders and administrators tasked with developing new and innovative programming, including CBE, be aware of this resistance and develop strong implementation strategies to ensure successful development and launch of programming. CBE developers and innovators have described and identified numerous challenges. These challenges are wide-reaching and impact every aspect of the institution, these challenges will be discussed in the remainder of this section.

## Financial Aid and Accreditation

There have been numerous articles and studies in the higher education media in recent years, along with many published reports and policy initiatives surrounding the impact of financial aid and accreditation policies on CBE programs. Current accreditation criteria and federal financial aid policies may be a hindrance to CBE programs (Klein-Collins, 2013; Laitinen, 2012). In a review of the literature, Ford (2014) stated that

the belief is that current regulations and frameworks represent an essential disconnect with the underlying premise of CBE: the demonstration of competency mastery, rather than seat time, as the measure for student learning. Whereas traditional programs hold time as a constant and learning as variable, and that is the underlying assumption behind financial aid regulations (p. 13).

This is also true for many of the accreditation rules and regulations.

According to Porter (2014), the federal student aid system is not conducive to CBE for a number of different reasons. “Federal student aid is designed to fund education occurring within structured, discrete time periods. Because CBE depends on demonstrating learning, rather than time, this poses a problem within a time-based model of aid disbursement” (Porter, 2014, p. 3)

In January 2014, a number of institutions worked collaboratively to submit a joint response to the U.S. Department of Education’s request for information. Their response was titled *Our Case for Experimental Sites that Waive Specific Provisions in Title IV Laws and Regulations to Test Approaches that Enable More Students to Benefit from Competency-Based Degree Programs* (Experimental Sites Concept Paper: Competency-Based Education, 2014). In their letter, these collaborators asked permission from the Federal government to approve a number of experimental sites to offer *Direct Assessment CBE Programs*. Here is the exact wording:

We welcome the opportunity to work in partnership with department officials to realize the benefits of better, more personalized pathways for students, and we are willing to commit to working to mitigate the potential pitfalls of exposing federal Title IV funds to institutions and providers with new academic delivery and business models. It is clear that the current financial aid regulations are difficult for institutions to navigate when implementing CBE programs (Experimental Sites Concept Paper: Competency-Based Education, 2014).

### **Faculty Role: Support versus Skepticism**

Faculty support and endorsement are critical to the success of a CBE program. The review of literature identified the importance of faculty involvement and support in the design, implementation, and scaling of CBE programs. While the structure of CBE programs may be slightly different from traditional programs, it is similar in the fact that “faculty play key roles in both supporting and developing this type of initiative” (Cooper, 2016, p. 31).

And while it is important to gain faculty support for CBE, such innovative programming may also be met with skepticism by faculty. CBE can be a huge change for faculty members when it comes to compensation, roles, and the overall job description. The literature refers to this as “unbundling” of faculty roles. In CBE programs, faculty are no longer the “sage on the stage,” delivering information for the students to absorb; rather, they need to adapt and evolve into newly defined roles. Some of the new faculty roles in CBE may include: curriculum architects, component champions, subject matter experts (SMEs), and open educational resources (OERs) guru (Cooper, 2016).

Many institutions are realizing the importance of faculty support and are making it a priority to educate, train, and engage faculty very early on in process of designing and implementing CBE programs (Klein-Collins, 2016, p. 1). As evidence of this, the Council for



Adult and Experiential Learning (CAEL) has collaborated with the Lumina Foundation to fund the CBE Jumpstart Initiative, which provides CBE workshops and trainings that are designed to educate staff and faculty about CBE and help to get them involved in CBE design processes (Klein-Collins, 2016). The Jumpstart Initiative included 18 institutions and 3 systems that participated in the training.

A report by Plumlee (2016) reviewed the progress of the *Jumpstart Initiative* and provided key lessons learned and common challenges for institutions looking to implement CBE.

Key lessons included

1. A CBE “champion” or planning group driving CBE efforts forward;
2. Developing Institutional Leadership, Consensus, and Collaboration;
3. Developing Institutional Knowledge and Expertise through a Network of CBE Institutions; and
4. Strategic Development, Implementation, and Assessment of Limited Pilot Programs

Some common challenges identified by Plumlee’s study were

1. Building Business Process Systems necessary for CBE Delivery;
2. Technology and Content Development through Outside Vendors; and
3. Funding CBE program development (Plumlee, 2016 p. 14-16).

The results of the studies by Plumlee (2016) and Cooper (2016) indicate the importance of faculty support for the successful design and implementation of CBE programming. The importance of faculty support is evident in the theoretical framework for this dissertation in Kotter’s Change management theory, as well as the *Shared Design Elements*.

### **Best Practices-Limited Data**

With the increasing interest in CBE programs, there has also been an increase in the number of studies concerning CBE. There are still gaps in the literature regarding best practices, however, there are key lessons that can be learned from studies over the recent years. New

research is continuing to emerge and will no doubt provide additional information that will add to the field as the interest in CBE continues to grow.

Common themes and lessons learned emerged upon reviewing a number of different studies. While these themes and lessons learned provide some guidance, there is still a lack of definitive steps for institutions who are looking to implement CBE. The author anticipates that a plethora a research and data will emerge over the next few years regarding best practices and implementation strategies. This study will add to the field of new and emerging research.

### **Critics of CBE**

While there are many proponents of the CBE movement, there are also a number of critics and skeptics. The American Association of Colleges and Universities published an article in 2013 titled *Experience Matters: Why Competency-Based Education Will Not Replace Seat Time*. The article focused on the fact that CBE may be a good fit and work well for vocational fields, but not with the liberal arts. (American Association of Colleges and Universities [AAC&U], 2013). Interestingly, the AAC&U has also developed the *Liberal Education and America's Promise* (L.E.A.P), which will be discussed later in this chapter.

One of the main criticisms of CBE is the fear that institutions with CBE programs will become diploma mills that sacrifice quality for efficiency (Brower, Humphreys, Karoff, & Kallio, 2017). A significant amount of work that is being done in the CBE arena focuses on developing quality CBE programs and on how schools can ensure that academic integrity is not sacrificed in the process.

Gallagher (2014) suggested that there are many lessons that we can learn from CBE programs of the past. We must learn from history, and be cautious of considering CBE to be the answer to all higher education challenges. In his article, Gallagher referenced a three-year study

that was supported by the Fund for the Improvement of Postsecondary Education FIPSE (2014). The study looked at CBE programs in the 1970s and found: “high drop-out rates, poor student self-monitoring, lack of institutional preparation, inadequate institutional leadership, excessive bureaucratization, and higher than expected costs” (p.20). According to Gallagher (2014), there are cautions and lessons that are important to keep in mind regarding CBE programming. These lessons include the following

- CBE has not been proven superior to “traditional” education;
- No reform can flourish without support from faculty and students;
- CBE undermines the professionalism of college faculty;
- Competencies tend to become more numerous, and narrower over time, thereby shrinking the construct being taught and assessed;
- “Self-authored learning” may work best for those who need it least, and worst for those who need it the most; and
- The social, situated nature of learning cannot be given short shrift (learning theories need to be taken into account (Gallagher, 2014, p. 20-21)

### **History of CBE in the United States**

#### **Carnegie Unit-1900s**

The Carnegie unit, which was developed in the 1900s, is the foundation for the measurement of learning in the United States higher education system (credit hour). Interestingly, it was never designed to be a standard or measurement of learning; it was designed to track faculty workload. It has evolved into the standard for most measurements and assessments that are used in higher education today. “More than a century after it was introduced, the Carnegie unit has evolved into a credit system that influences nearly every aspect of higher education” (Silva & White, 2015, p. 69).

Competency Based Education does not fit well with the measurement of credit hours of the Carnegie unit model. If students are not required to spend a specific amount of time in a specific course, earning a specific number of credits, many issues arise. Everything from

financial aid, admissions, transcription of learning, faculty workload, and compensation are all impacted by deviation from the Carnegie unit.

Even with these issues posed by the credit hour systems, colleges and universities are finding innovative approaches to expand learning options and models for students. However, these approaches may definitely be slowed down by the parameters set in place by the Carnegie unit. Federal and State systems, including financial aid policies and accreditation terms and definitions are evolving to accommodate the different models that are developing. It will be important for institutions to stay abreast of the rapidly changing regulatory environment in this area (Silva & White, 2015).

### **Initiatives That Influenced CBE Development**

There have been many initiatives and policies that have contributed to the development of Competency-Based Education programs. Most often credited in the literature, is The Higher Education Act (HEA) of 1965. HEA was a law designed to strengthen educational resources of colleges and universities in the United States. The HEA was designed to increase federal monetary support and scholarships. The HEA of 1965 also contained six different titles that still have an impact on financial aid policies, specifically Title IV. Since the original act was enacted, it has been amended multiple times (National TRIO Clearinghouse, 2003)

In the 1970s, the United States Department of Education (DOE) launched the Fund for the Improvement of Postsecondary Education (FIPSE), which also helped to drive institutions to new and innovative methods to meet the needs of more learners (ED.gov, 2016A). More recently, the First in the World Program (FITW), also launched by the DOE, was developed to support new and innovative solutions in response to widespread challenges in postsecondary education. This program was specifically targeted to students considered to be at

risk for not persisting or completing their postsecondary programs, “including, but not limited to adult learners, working students, part-time students, students from low-income backgrounds, students of color, students with disabilities, and first-generation students” (ED.gov, 2016C).

### **Early CBE Adopters**

Competency-Based-Education has roots back to the early 1960s, according to some experts. “It is important to recognize that competency-based models are building upon decades of work by institutions such as Charter Oak State College, Empire State College, and Thomas Edison State College, to name a few” (Book, 2014, p. 3). There were a number of institutions that were considered “early adopters” of Competency-Based Education. Many of the programs offering CBE began in the 1970s as a growing number of adults were returning to college (Klein-Collins, 2012, p. 10).

In addition to the institutional work on CBE, there are other initiatives that have evolved and continue to develop in their work and dedication to CBE related programming and initiatives. The Lumina Foundation has provided support for the Degree Qualifications Profile (DQP), which proposes

learning outcomes and levels of performance on each of five dimensions for the associates, bachelors, and master’s degrees. Similarly, the Liberal Education and America’s Promise (LEAP) initiative from the Association of American Colleges and Universities includes learning goals and assessments that more than 150 of its members have adopted” (Book, 2014, p. 3).

In addition, the American Council on Education (ACE) developed a process of Prior Learning Assessment (PLA), which stems from work with military experience and credit from the 1940s. In the 1970s, the Council on Adult and Experiential Education (CAEL), developed their process of portfolio assessment. All of these programs and initiatives helped to lay to foundation for the current CBE models in place today (Book, 2014).

## **Obama Administration**

Former U.S. president Barack Obama and his administration had a substantial impact on the progression of CBE development in the United States. The majority of the research for this dissertation was conducted during the Obama administration; therefore, this section will focus on the former president's administration and initiatives.

In 2013, Obama released his Plan to Make College more Affordable: A Better Bargain for the Middle Class (ED.gov, 2016B). This plan outlined affordability, transparency, innovation; performance based evaluations and increased accountability. This plan set many new regulations into action, including the College Scorecard, which will be reviewed later in this chapter. Federal and State regulations are now in place to help ensure that students have affordable and accessible education (ED.gov, 2016B).

Accountability and transparency are two common themes that emerged from the Obama administration. This adds a new layer to the obligations and requirements that institutions of higher education must meet. The College Scorecard was one initiative that made a huge impact on institutions. First launched in 2013, and then revised in 2015, the College Scorecard is a tool that "provides students and their families with clear information through an interactive tool that lets them choose among any number of options based on their individual needs, including size, location, campus setting, and degree major and programs" (United States Department of Education. [ED.gov], 2013, para. 4).

The College Scorecard is one example of additional requirements that institutions must provide to help improve accountability and transparency for students, and their families to make better decisions about their education. It will be important for educational administrators and

leaders to follow new developments and initiatives that come from the new Trump administration.

### **Department of Education Experimental Sites**

While Financial Aid rules and regulations have posed some difficulties for CBE programs, there has been recent progress in this area. There are a number of institutions in the United States that have approval from the Department of Education as experimental sites for CBE, and based on those approvals allows students at those institutions (who have applied and been approved) to use Federal financial aid. This is part of the larger Experimental Sites Initiative (ESI), which passed in 2014 and was focused on allowing for more Americans to obtain skills for jobs, and to test innovate practices in higher education that emphasizes providing faster, improved, and more flexible pathways toward degree attainment.

The Department of Education has “waived specific statutory or regulatory requirements at the postsecondary institutions, or consortia of institutions, approved to participate in the experiments. The outcomes of the experiments have the potential to benefit all postsecondary institutions and the students they serve” (United States Department of Education [USDOE], 2017, para. 1).

Since the initial letter was released to institutions asking for their participation in 2013, a number of updates have been released. This will be an important area to watch for further developments, as the impact on CBE will be paramount. A number of institutions have since submitted or have begun the process of applying as experimental sites for implementation of CBE.

## Institutions Offering CBE

Current data indicates that there are approximately 600 institutions that are in varying stages of CBE design or implementation, and there are many variations in the models of CBE that are offered. Table 1 displays a snapshot of a handful of institutions that are currently offering CBE programming.

Table 1.  
*Institutions Currently Offering CBE Programming*

School	Delivery/Model	Program Level
Western Governors University <a href="http://www.wgu.edu">http://www.wgu.edu</a>	Course-Based/Credit equivalency	BA, BS, MA, MS, MBA
University of Wisconsin <a href="http://flex.wisconsin.edu">http://flex.wisconsin.edu</a>	Course-Based/Credit equivalency	BSN, BS, AAS
Kentucky Community and Technical College System <a href="http://learnondemand.kctcs.edu">http://learnondemand.kctcs.edu</a>	Course-Based/Credit equivalency	AA, AS
Northern Arizona University <a href="http://pl.nau.edu">http://pl.nau.edu</a>	Course-Based/Credit equivalency	BA
Southern New Hampshire University <a href="http://collegeforamerica.org">http://collegeforamerica.org</a>	Direct Assessment	AA, BA
Capella <a href="http://www.capella.edu/online-learning/flexpath">http://www.capella.edu/online-learning/flexpath</a>	Direct Assessment	BS, MBA

[Source: (Book, 2014)].



## **Best Practices and Organization Involvement**

Common themes emerged throughout the review of literature, often referred to as “lessons learned.” One of the most common and overarching lessons, or themes, was the importance of having support and encouragement from upper level administration, and also a CBE champion or planning group to steer the development of the program (Book, 2014; Johnstone & Soares, 2014; Plumlee, 2016,). These lessons learned seem to align with the theoretical framework of Johnstone and Soares’ (2014) principles for developing Competency-Based Education programs, as well as the foundational assumptions of Kotter’s change theory (1985).

In addition to the lessons learned surrounding best practices that have been reviewed, it is important to note the increased involvement from organizations with a personal stake in CBE and innovation in higher education. A number of new initiatives have recently occurred as a result of the increased interest and desire for accountability in CBE programming. This literature review will explore a number of these organizations and initiatives.

### **CAEL**

The Council for Adult and Experiential Learning (CAEL) is an organization that is devoted to linking learning to work. CAEL’s main focus is working to ensure opportunities for adults. CAEL’s Mission Statement:

We advocate and innovate on behalf of all adult learners, regardless of their socio-economic circumstances, to enhance their economic and educational opportunities. We do this in partnership with postsecondary institutions, employers, government, and communities. We conduct research and develop services and tools to expand opportunities for learning, employability, and career success. (CAEL, 2017, para. 2)

CAEL works closely with higher education, employers, workforce, and economic development and has been involved in a great deal of research surrounding Competency-Based-

Education and workforce alignment. They have developed a suite of CBE services that help institutions adopt CBE models. More information can be found at <http://www.cael.org/higher-education/competency-based-education>.

### **Competency-Based Education Network (C-BEN)**

The Competency-Based Education Network (C-BEN), which was also referenced earlier in this paper, is one of the largest drivers of CBE development. C-BEN, which was founded in 2014, is a “group of regionally accredited two-and four-year public and private college and universities working together to address shared challenges aligned with designing, developing, and scaling CBE programs” (C-BEN, 2017). The sole focus of C-BEN is to advance CBE, along with new and innovate models, and to work collaboratively to seek solutions for such implementations.

The author attended the CBExchange conference in October 2016, a conference dedicated to research and knowledge concerning CBE. The atmosphere was one of true collaboration and a desire to promote quality CBE programs. All participants in this study were also members of C-BEN.

C-BEN has also recently developed and launched a CBE Design Planner. C-BEN developed the CBE Design Planner, along with assistance from the Bill and Melinda Gate foundation, as well as the Lumina Foundation. The goal of the CBE design planner is to help “other institutions innovate responsibly by creating high-quality Competency-Based Education programs, capable of serving many more students of all backgrounds” (C-BEN, 2017, para. 1)

### **CBE Design Elements and Principles**

In 2015, Public Agenda, with support from the Bill and Melinda Gates Foundation, set out to determine program design elements that were common among successful Competency-

Based Education programs. After several months of research, ten shared design elements surfaced. The elements that emerged were discussed and vetted in collaboration with project sponsors, CBE program leaders and other professional partners. Some of the project sponsors included the Association of American Colleges and Universities (AAC&U), EDUCAUSE, Competency-Based Education Network (C-BEN), American Council of Education (ACE) and the Council for Adult and Experiential Learning (CAEL). All are major players in the CBE field.

These ten shared design elements are part of the theoretical framework for this study, and provide several vantage points through which the author has viewed implementation strategies for institutions of higher education in the design and scaling of CBE programming. The original draft of the design elements was launched and shared publicly in October 2016. Since the research and writing for this dissertation was conducted, a new and revised version of the shared design elements was published. It is evident that CBE is moving at a rapid pace and new developments are surfacing on a daily basis. It is important to note that the shared design elements of this study are focused on the 2016 version that was initially released in October 2016. Further studies may include a similar analysis using the updated version, launched publicly on May 2, 2017. More information may be found at [http://www.cbenetwork.org/news-and-insights/news-and-insights\\_subpage-326857/](http://www.cbenetwork.org/news-and-insights/news-and-insights_subpage-326857/).

The shared design elements and suggested practices that all thriving CBE programs should theoretically have in place, perhaps in different ways, but they should still be evident. The shared design elements and suggested practices are displayed in Table 2, shown below.

Table 2.  
*Shared Design Elements and Suggested Practices for CBE*

Design Elements	Evidence in Practice
1. Clear, Cross-Cutting and Specialized Competencies	Competencies are clear, concise, and easy to understand.
2. Coherent, Competency-Driven Program and Curriculum Design	Program structure and curriculum are designed to flex in support of the learner.
3. Embedded Process for Continuous Improvement	Encourage responsible innovation, adjustments, and reflection. Transparent and data-driven practices.
4. Enabling and Aligned Business Processes and Systems	Business processes and systems communicate with each other and work together to best enable various program components.
5. Engaged Faculty and External Partners	Faculty, Staff, and External Partners are invested and involved.
6. Flexible Staffing Roles and Structures	Faculty and Staff roles are arranged in a way that maximizes individual talent, strengths, and competence.
7. Learner Centered	Learner's needs and experiences are the focal point.
8. Measurable and Meaningful Assessments	Assessments are designed to measure what matters and inform decision-making.
9. New or Adjusted Financial Models	Financial models must enable accessibility and affordability, while ensuring the delivery of a quality program.
10. Proficient and Prepared Graduates	Graduates achieve proficiency and are prepared for appropriate field demands and career opportunities.

[Source: (Public Agenda, 2015)].

### **Theoretical Framework**

A number of theories and principles were used as vantage points to review the data gathered from the interviews in this study. The researcher builds upon previous research by

Dragoo (2015) and Johnstone and Soares (2014). Additional analysis regarding best practices and implementation strategies will be reviewed through the points of view of both Kotter's 8-Step model (1985) for transforming organizations, and Public Agenda's Shared Design Elements and Emerging Practices of Competency-Based Education programs. The theories are described and reviewed below.

### **Johnstone and Soares Principles**

Johnstone and Soares, along with research and data from WGU, and grants from the Bill and Melinda Gates foundation and the US Department of Labor, conducted a study which resulted in the development of the design principles. These design principles have been incorporated and used by a number of institutions transitioning toward CBE implementation. (Book, 2014; Kelchen, 2015; Klein-Collins, 2013). These principles were developed for institutional leaders who are eager to develop and implement CBE models, but are in search of practical approaches to assist in the process. The principles were created as a guide for the creation of new CBE programs. Johnstone and Soares stated that these principles should be present in the design and implementation of quality CBE programs (2014); principles and evidence are displayed in Table 3, next page.

Table 3.

*Johnstone and Soares' Principles for CBE*

The Principles	Evidence
1. The degree reflects robust and valid competencies	*Align with industry and academic expectations
2. Students are able to learn at a variable pace and are supported in their learning	<ul style="list-style-type: none"> <li>* Students move at their own pace</li> <li>* Just in time assistance</li> <li>* Asynchronous availability</li> <li>* Orientation for Students, Faculty, and Staff</li> <li>* Identify struggling students-Student monitoring systems</li> <li>*Monitor for Satisfactory Academic Progress (SAP)</li> </ul>
3. Effective learning resources are available anytime and are reusable	<ul style="list-style-type: none"> <li>* Materials must be readily available.</li> <li>* Materials must be high quality</li> <li>* Materials and resources must be updated and maintained on a regular basis.</li> </ul>
4. The process for mapping competencies to courses, learning outcomes, and assessments is explicit	<ul style="list-style-type: none"> <li>*Learning objectives drive the selection of learning resources and assessments.</li> <li>* Identify key individuals responsible for each stage</li> <li>*Checks and balances in place to ensure objectives and assessments match</li> </ul>
5. Assessments are Secure and Reliable	<ul style="list-style-type: none"> <li>* Built by consulting with outside subject matter experts</li> <li>*Pilot tested</li> <li>*Student identity verification</li> </ul>

[Source: (Johnstone & Soares, 2014)].

The principles described above will be used to analyze the responses from the interviews regarding design principles at the institutions where the interviewees are employed.

## **Kotter's Model**

John Kotter is well known as a change innovator and developed his eight step models for transforming change in 1985, after he conducted a large study of over 100 organizations and their change efforts, most of whom had failed. Competency-Based Education and the implementation strategies are a significant change for institutions. “Introducing CBE to a traditional campus represents a disruptive change. To be successful, leaders must employ change management strategies to ensure effective adoption and support” (Cooper, 2016, p. 32).

Kotter's model has been used and implemented in various types of organizations and has developed into a consulting organization known as *Kotter International* ([www.kotterinc.com](http://www.kotterinc.com), 2017). While Kotter's model was initially developed for businesses and organizations, his framework can be used to assess change processes in higher education (Spencer & Winn, 2005). This dissertation reviews CBE implementation strategies gathered from the interview data and compares those strategies to Kotter's eight steps.

The premise of Kotter's model identifies eight steps that create the change process. Two key lessons learned from the model are that the change process goes through a series of phases, each lasting a considerable amount of time, and that critical mistakes in any of the phases can have a devastating impact on the momentum on the change process (Mento, Jones, & Dirndorfer, 2002, p. 45).

Following are the details of the eight-stage process of creating major change, developed by Kotter in 1985. In his book, *Leading Change*, (2012), Kotter reviews each process in depth. For the purposes of this literature review, a summary of *Kotter's Eight-Stage Process of Creating Major Change*, providing details for each stage.

## **Kotter's Eight-Stage Process of Creating Major Change,**

1. Establishing a sense of urgency
  - \* Examining the market and competitive realities
  - \* Identifying and discussing crises, potential crises, or major opportunities
2. Creating the guiding coalition
  - \* Putting together a group with enough power to lead the change
  - \* Getting the group to work together as a team
3. Developing a vision and strategy
  - \* Creating a vision to help direct the change effort
  - \* Developing strategies for achieving that vision
4. Communicating the change vision
  - \* Using every vehicle possible to constantly communicate the new vision and strategies
  - \* Having the guiding coalition role model the behavior expected of employees
5. Empowering broad-based action
  - \* Eliminated obstacles
  - \* Changing systems or structures that undermine the change vision
  - \* Encouraging risk taking and nontraditional ideas, activities, and actions
6. Generation short-term wins
  - \* Planning for visible improvements in performance, or “wins”
  - \* Creating those wins
  - \* Visibly recognizing and rewarding people who made wins possible
7. Consolidating gains and producing more change
  - \* Using increased credibility to change all systems, structures, and policies that do not fit together and do not fit the transformation vision.
  - \* Hiring, promoting, and developing people who can implement the change vision
  - \* Reinvigorating the process with new projects, themes, and change agents
8. Anchoring new approaches in the culture
  - \* Creating better performance and more effective management
  - \* Articulating the connections between new behaviors and organizational success
  - \* Developing means to ensure leadership development and succession (Kotter, 1985; Kotter, 2012, p. 23)

These eight stages of Kotter's model will be used as a lens to review the implementation and change management models utilized by the universities taking part in this study. The



goal is to offer institutions that are seeking to implement CBE models (considered to be a major change) with a process for implementing change.

### **Change Management Theories/Implementation Strategies**

Throughout the review of literature, scholars in the field of CBE provided lessons learned from earlier studies. As noted, Porter and Reilly (2014) postulated recommendations for institutions considering CBE degrees. Book (2014), in her article, *All Hands on Deck*, reviewed 10 lessons learned from early adopters of Competency-Based Education. Plumlee (2016) presented an in-depth view of the journey an institution takes in shifting from CBE interest to design, development, and implementation, as well as specific barriers that may prevent an institution from moving in such a direction.

It is imperative that institutions develop a plan with clear goals and a vision to transition to a CBE model. Kotter's 8-step model (*Leading Change*, 2012), Johnstone and Soares' *Principles for Developing Competency-Based Education Programs*, (2014), and Public Agenda's *Shared Design Elements and Emerging Practices of Competency-Based-Education* programs will be the combined theoretical frameworks for comparison of the data collected during the interview process. Results of the research will be discussed in detail in chapters four and five.

### **Chapter Two Summary**

The rationale, concepts, and key features of Competency-Based-Education programs are complex. While there has been a recent surge in the number of institutions offering some form of CBE, there is still a great deal that is unknown. This study will contribute to the literature regarding implementation strategies, rationale for implantation, and key features of CBE programming.

CBE has been represented as a means to aid more students achieve a college degree or credentials in a shorter amount of time and at a reduced cost to both the students and the institutions. Book (2014) summarized in her recent review of literature that

what is clear from the literature to date is that the development and redesign of education programs around competencies and qualification frameworks represents a complex undertaking-one that requires significant institutional transparency, collaborative cultures, alignment of stakeholder goals and interests around student-centered learning, and effective integration of authentic assessments and other accountability reporting measures and means (p.16).

This review of literature provides evidence that there is still a gap in the research regarding best practices and implementation strategies for institutions looking to develop CBE programs at their institutions. The investigation that follows will provide additional information for institutions exploring the idea of CBE implementation.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **Introduction**

The purpose of this chapter is to discuss the research design for the dissertation. The rationale and significance of the study will be stated, along with the research question. The following sections will be included to explain the design of this study: research design, participants, procedures, instrumentation, and assumptions, limitations, and delimitations. This study will focus on the research question:

RQ1: For institutions of higher education who are contemplating the incorporation of CBE programs, what are the strategies and best practices used in developing and implementing a Competency-Based Education program?

The research question has been reviewed through the theoretical perspectives of both Kotter's 8-step change model of implementing change (1985) and CBEN's Shared Design Elements and Emerging Practices for Competency Based Education programs (2015). The results from this study will contribute to the field of higher education by providing evidence of best practices and implementation strategies used by institutions who have developed and implemented Competency-Based education programs. While the United States has seen a proliferation in the number of institutions interested in CBE, there are still gaps in the literature regarding best practices and implementation strategies.

### **Research Design**

This investigation follows qualitative methods of interviewing key individuals who are involved in the design, implementation, and operation of CBE programs at their particular institutions. According to Creswell (2013)

a qualitative approach is appropriate to use to study a research problem when the problem needs to be explored; when a complex, detailed understanding is needed, and when the researcher seeks to understand the context or settings of the participants (p.65).

Structured interviews were chosen to ensure focus and consistency across the multiple interviews. Exploratory qualitative research was selected due to the lack of concrete data available regarding implementation strategies and best practices for designing and implementing CBE programs.

### **Participants**

The institutions and participants in this research were selected purposefully. The researcher sent out an inquiry email to a list of all members who were participants in the Competency Based Education Network (C-BEN). C-BEN is “a group of colleges and universities working together to address shared challenges to designing, developing, and scaling competency-based degree programs” (C-BEN, 2017).

The C-BEN list was selected purposefully, as the researcher anticipated that all individuals would have possessed interest and influence in designing and developing CBE at their institutions by virtue of their association with C-BEN. Over 20 individuals responded to the initial email inquiry and stated their willingness to participate in this study. Two institutions were able to provide multiple participants to be interviewed in the study, which provided a more in-depth viewpoint and analysis of that institution’s overall implementation strategies and best practices for CBE programming.

The specific roles and titles of the participants in this study were wide-ranging and provided an expansive lens to view practices and procedures across institutions. Most of the participants held administrative roles within their institution, such as, president, provost, vice-president, program director, executive director, and academic dean. There were also a number of participants who were in a role of professor or instructor, as well as an academic success coach.

This variety of participant roles provided a well-rounded view of the CBE programming and implementation at the institutions investigated.

The institutions that participated in the study were also diverse in their background and demographics, with one commonality - they all offered CBE programming to varying degrees. Community colleges, private for-profit, private not for profit, and state institutions all participated in this study. Most of the institutions which participated in this study offered both CBE programming as well as traditional credit-based programs.

### **Procedures**

An initial email inquiry was distributed to members on the list of C-BEN, asking for participant's willingness to take part in a dissertation research study. Individuals responded directly to the researcher regarding their preference to be included, or not, in the study. The researcher then vetted those willing participants to ensure they had experiences in designing or implementing CBE programming, and that they were currently serving in roles at institutions that were administering CBE programs. Once it was determined that the participants met the qualifications, they were invited to join the study. Participants were ensured that their involvement in this study would be voluntary. Each individual was provided a consent form, which detailed their role in the study, risks involved, and assurance of anonymity. (See Appendix 1.)

Structured interviews were conducted with all participants. Structured interviews were selected to ensure focus and maintain consistency across multiple interviews. In instances where the participant held a faculty or support role, such as academic coach, some of the questions were modified to apply to their current experiences and roles. To protect their identity, all interviewees were provided with arbitrary pseudonyms. A total of ten interviews were

conducted over a two-month time period. Each participant was interviewed to provide a differed perspective on his/her own CBE initiative and to provide triangulation of the data. The institutions that participated in this study were two-year community colleges and four-year colleges or universities located in the United States. Both public and private institutions were included. Most of the interviews were conducted via WebEx due to geographic limitations. In cases when possible, interviews were conducted in person. (See Appendix 2.)

All interviews were recorded either online through a secure, password protected meeting in WebEx,<sup>2</sup> or via a voice recorder with password protection, stored securely by the researcher. Immediately after each of the interviews was completed, the researcher completed transcription of each interview. The dissertation committee chair then reviewed all transcriptions to ensure accuracy. To enhance triangulation of the data, all interviewees were sent the transcription of their interviews to review for accuracy. NVivo software was used to conduct data analysis to discover themes from the transcriptions of the interviews. The researcher discovered additional themes from the analysis and will be presented in chapter four of this dissertation.

### **Instrumentation**

The interview questions used for this dissertation had been vetted and field-tested from a previous study. Permission was obtained from the author of the previous study to use the vetted interview questions. Some additional questions were added, and also field-tested, to discover additional information and to explore implementation strategies used at institutions developing CBE programming.

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<sup>2</sup> WebEx is a secure video-conferencing platform supported by Cisco security and reliability (<https://www.webex.com/>).

The interview questions were structured questions. All of the interviews were recorded, either through a digital voice recorder for in person interviews, or via WebEx for virtual interviews. After the interviews were conducted, the researcher completed transcription of each interview. The researcher also consulted with the dissertation chair to review the transcripts of the interviews to ensure objectivity. The researcher also shared the transcription of the interviews with the participants to ensure accuracy in the information. This process helped to ensure triangulation of the data, along with document analysis, and review of each institution's CBE formal documentation.

Once transcription was completed for each of the interviews, the data was uploaded into NVivo software for data analysis. NVivo is software that is used in qualitative research to help organize and find themes or patterns to qualitative data, such as interviews (QSR International, 2017). Results from the data analysis will be presented in detail in chapter four of this study.

### **Assumptions, Limitations, and Delimitations**

Assumptions that the researcher will make in this study are that all of the participants in the study who were interviewed will answer the questions openly and honestly. The names of the participants, including the names of the institutions where they work will be kept anonymous, to encourage open and honest responses and dialogue.

Limitations of this study may include a certain bias of the participants toward CBE due to their involvement and positions at these institutions. In addition, there are limited agreed upon assessment tools to gauge the success of any given CBE program. This ought to be an area of study in the future, as more institutions implement and utilize CBE programs, which would naturally allow for more in-depth data to analyze.

Delimitations of this study include a limited amount of institutions and individuals who agreed to be a part of this study. A sample size of 20 institutions does not lend itself to generalizability across all institutions of higher education. Moreover, the individuals who agreed to participate are collaborative supporters of the CBE movement with a personal stake in the success of CBE programming.

### **Chapter Three Summary**

This qualitative study was designed to assist institutions of higher education identify best practices and implementation strategies for developing Competency-Based Education programs. Ten interviews were conducted with administrators, faculty members, and other key professionals at institutions where CBE programs have already been developed. The researcher conducted structured interviews with all participants to ensure consistency among the multiple interviews. All interviews were recorded by either voice recorder or via WebEx depending on the setting for the interview. Once the interviews were completed, the interviews were reviewed, transcribed, and analyzed by the researcher and the dissertation chair. The transcribed data was then uploaded into the NVivo software for data analysis and theme generation. The results for the data analysis will be provided in greater detail in chapter four of this dissertation.



## **CHAPTER FOUR: RESULTS AND FINDINGS**

### **Introduction**

The purpose of this qualitative, exploratory study was to explore the landscape of Competency-Based Education in institutions of higher education; and how these institutions have successfully implemented a new model into their existing structures. As discussed in detail in Chapter three, this study focused on the results of 10 structured interviews that were conducted over a two-month period during the summer of 2017. Once data saturation occurred, the author was confident that an adequate number of interviews had been conducted.

The significance of this study is evident, because of the number of institutions in the United States interested in, pursuing or operating CBE programs continues to increase. It is important for administrators and leaders to understand the benefits and challenges of this great undertaking (Fain, 2015).

This chapter will review the results from the interviews and in relation to the theoretical frameworks of Kotter's Change theory, Johnstone and Soares principles for developing Competency-Based Education programs and Public Agenda's Shared Design Elements. New insights and themes did emerge through the analysis of the interview transcripts; they will also be reviewed and discussed in this chapter.

### **Instrumentation and Sample Population**

The author of this study chose a previously field-tested list of interview questions. Permission was obtained from the original author of the interview questions (Dragoo, 2015) for use in this dissertation. The original email correspondence can be found in (Appendix 3) Additional questions were added by the author to investigate additional topics not covered in the

original research by Dragoo (2015). The additional questions were vetted and field-tested to ensure reliability. A list of the complete interview questions can be found in (Appendix 2).

A purposeful sample was used to select participants who were involved with Competency-Based-Education programs. Maxwell (2013) suggests that there are a number of reasons purposeful sampling is used. In this study, purposeful sampling was selected to ensure the heterogeneity of the population. Once approval was received from the researcher's Institutional Review Board (IRB), an initial email was sent out to a list of Competency Based Education Network (CBEN) members requesting participation in the dissertation research focusing on CBE. Sending the request for participation to the list would ensure that all participants in the study would have experience with Competency-Based Education. Twenty individuals responded to the initial request, and a total of ten interviewees from nine schools participated in the interview process. All participants were assured that their participation was voluntary and they were asked to sign a participation consent form. This participation consent form can be found in (Appendix 1) Participants were also assured anonymity to ensure honest answers to the questions. The names of the institutions, as well as the names of the participants were changed in this dissertation to protect them identify. Table 4 lists the participants according to their pseudo-names, assigned to protect the identity of each participant.

Table 4.  
*Participants Pseudo-Names, Institution, and Institution Type*

Name	Institution	Institution Type
Dr. Brown	Birch University System	Public University
Mrs. Green	Boulder Community College	Public Community College
Mr. Black	Aspen University	Private for profit
Dr. Crimson	Boulder Community College	Public Community College
Dr. Teal	Pine College	Private-Not for profit
Dr. Pink	Palm University	Public University
Dr. Gray	Oak University	Public University
Dr. White	Willow University	Private-Not for profit
Dr. Yellow	Maple University System	Public University
Dr. Silver	Elm State University	Public University

There were two individuals from the same school, which provided for additional triangulation. A diverse sample of multiple types of institutions were represented in this study. Having a diverse sample was important as it provides multiple perspectives to CBE implementation at different types of institutions. Table 5 identifies the number of participants within each school type.

Table 5.  
*Demographics of Participating Schools*

School Type	Number of Schools Participating
Public 2 Year Institution	1
Public or State 4 Year Institution	5
Private For Profit	1
Private Not For Profit	2

All institutions offered CBE programs at either an Associates, Bachelor, or Master's degree level. Three of the schools offered only face to face CBE programs, and six offered

either online or hybrid models of CBE programs. The diverse sampling of the schools that participated in this research study adds to the richness of the data.

The background and work/professional experiences of the participants had some variation, but there were also many similarities between them. Participants interviewed were mainly serving in administrative roles at their institutions and all had been involved in the implementation phases of incorporating CBE programming in some capacity.

### **Instrumentation and Data Analysis**

The interview questions for this study were previously vetted and field-tested from a prior study, and were used with permission from the original author, Amie Dragoo. Additional questions were added and field-tested by working with an administrator currently serving on a CBE taskforce. The additional questions were added to capture additional information about CBE programs at institutions. All the questions were structured to ensure the researcher and participants stayed on task.

Interviewees were emailed a consent form, stating that they agreed to participate, and their participation was voluntary. (See Appendix 1.) Prior to beginning any interviews, the researcher had all participants' sign the consent form and send back to her for her records. Participants were also sent a copy of the general questions that would be asked during their interview to provide them time to think about their answers to the sometime complex or in-depth questions, and to ask for clarification to any questions or topics that were unclear.

All interviews, with the exception of one, which took place in person, were conducted via WebEx video conferencing and were recorded for later transcribing and review. All participants were notified and asked permission to record their interviews. Interviews lasted approximately

one hour in length. One interview that was geographically possible was conducted face to face and recorded with a digital voice recorder for transcribing.

All interviews took place over a two-month period during the summer of 2017. Once all of the interviews were complete, the researcher manually transcribed all of the interviews conducted. When all of the interviews were transcribed, the researcher sent each of the participants the transcript from their interview to ensure accuracy and provide additional credibility and trustworthiness in the data collection process.

Nvivo software was subsequently used to analyze the data and code the answers to look for patterns and themes in the answers provided. The Nvivo codebook can be found in (Appendix 4) at the end of this paper.

The remainder of this chapter is organized according to the themes discovered for each question asked during the interview and also how those answers may have aligned with the theoretical frameworks of Kotter's model, Public Agenda's Shared Design Elements and Johnstone and Soares Principles for implementation of CBE programs. Table 6 summarizes the theoretical concepts and provides abbreviations that will be used to demonstrate alignment to participant's responses to the questions. The abbreviations will be listed immediately after the themes to which they aligned in the participant's answers.

## Theoretical Framework Abbreviation Guide

Table 6.  
*Theoretical Principles and their Abbreviations*

Kotter's Model	Shared Design Elements	Johnstone and Soares
K1 Create a Sense of Urgency	SDE1 Clear, Cross-Cutting and Specialized (clear, concise, and easy to understand)	JS1 The degree reflects robust and valid competencies/Aligns with industry standards
K2 Build a guiding coalition	SDE2 Coherent, Competency driven program and curriculum design/ designed to flex to support learner	JS2 Students are able to learn at a variable pace and are supported in their learning
K3 Form a strategic vision and initiatives	SDE3 Embedded process for continued improvement/transparent and data driven practices	JS3 Effective learning resources are available anytime and are reusable
K4 Enlist a volunteer army/communicate the change every was possible	SDE4 Enabling and Aligned Business processes and systems	JS4 The process for mapping competencies to courses, learning outcomes and assessments is explicit/checks and balances
K5 Enable action by removing barriers/Changing systems or structure	SDE5 Engaged Faculty and External Partners	JS5 Assessments are secure and reliable
K6 Generate short term wins	SDE6 Flexible Staffing roles and structures	
K7 Sustain Acceleration/hire and promote those who share vision	SDE7 Learner centered	
K8 Institute change/Anchor new approaches in the culture	SDE8 Measurable and meaningful assessments	
	SDE9 New or adjusted financial models	
	SDE10 Proficient and prepared graduates	

Additional themes that emerged upon analysis will be discussed at the end of this chapter. Not all aspects of each of the theoretical models were present in the interviewee's response. That does not however mean that they were absent. The time limitations along with the specific questions asked may not have solicited that information out from each of the respondents.

## **Results**

### **Implementation Strategies**

A number of overarching themes emerged in response to the research question: For institutions of higher education, what are the implementation strategies and challenges of implementing a Competency-Based-Education program? Collaboration and the development of working groups were essential elements to the implementation strategies at all ten of the institutions interviewed. Themes that emerged through the data analysis will be presented in the following sections.

### **Rationale (K1), (SDE10)**

One of the first questions that institutions must ask themselves when contemplating the addition of a CBE programs is why? In her whitepaper, Kahlon focuses on the importance for institutions to understand their why? "The first and foremost step is to answer the question what problem is CBE going to solve for your institution. Implementing a CBE curriculum takes a lot of time and effort; thus, it is very important to identify the end goal" (2016, p. 6).

Chapter two of this paper discussed the importance and rationale of CBE in higher education today. Cost, time to completion, and flexibility for learners are the hallmark features of CBE in the literature. (Book, 2014; Dragoo & Barrows, 2016; Klein-Collins, 2012). The results from this study support that institutions feel that the issues of cost, time and flexibility are important reasons to incorporate a CBE program. There were however, additional themes that

emerged that align with Kotter's Model principle one (K1), Creating a sense of urgency, as well as Public Agenda's Shared Design Element 10 (SDE10), to ensure prepared and proficient graduates. The list below represents additional rationales that the institutions interviewed expressed for incorporating CBE programs to their existing programs.

- Meet demand-Development of new programs
- Way to launch new and innovative programs
- Meet Goal 2025- we need to produce more graduates
- Alignment to workforce/employer demands
- Ensure graduates are adaptable for jobs and future work world
- Learners demand flexibility
- Align to mission of institution, strategic initiatives
- Meet the demands of adult learners, traditional does not work for them
- Need to change higher education, what we have been doing is not working
- Students need more pathways

#### **Professional/Work Experience and Background (K7), (SDE6)**

As previously stated, the experiences and professional training of the participants did vary in some respects. There were however, certain themes and characteristics that emerged from the analysis of data. Past teaching experience was a commonality among a majority of the participants. Almost all of the participants had some previous experience with teaching or curriculum and assessment design. Innovation was another topic that emerged from the data analysis. Mr. Black from Aspen University shared that he became involved with CBE programming at his institution due to his previous experiences with innovative initiatives. Similarly, Dr. Teal from Pine College also began his career as a faculty member, but through innovation experiences and involvement with CBE and similar initiatives, became the Director of Innovative Learning. The work experiences and professional tracks for participants interviewed support step 7 in Kotter's Change Model (K7), "Hire and promote those who share the vision". Mrs. Green, of Boulder Community College, noted



I was not hired here to be involved in Competency-Based Education, but shortly after I started working here, they realized that I had a strong background in it and there were a lot of competency-based initiatives going on at the college and so I got roped in. So, I have been fairly involved in the two large competency-based initiatives that we have going on at the college.

This was a common theme for many of those interviewed, as they had been identified at their institutions as innovators and sharing in the vision and mission of the change initiatives.

Dr. Teal from Pine College shared his experiences,

In May, the individual who had been running our CBE programs left the institution and there was a void for about a year. We were not sure who was overseeing our CBE efforts. In that time, I started to do more and more, beyond just my faculty responsibilities. The next March, I accepted the position to become the Director of Innovative Learning.

Responses to question one also supported Public Agenda's (2015) principle number 6, SDE6, *Flexible Staffing Roles and Structures*. SDE 6 states that, "for some CBE programs, this means a totally new organizational structure, with a new set of professional positions" (p.13). A number of respondents stated that their institutions either had developed new schools, or were in the process of creating partnerships or centers within their institutions to support CBE programming.

### **Institutional Alignment (K2), (K3), (SDE4)**

During the interviews, a question was asked to help gain a better understanding of how CBE programs are aligned within institutions. The responses to this question were split in their responses about where their CBE programs were aligned. Four institutions indicated that they operate their CBE programs within a stand-alone department, often a different *arm* of the institution, such as a department of continuing studies, or a school of extended learning. Both Mrs. Green and Dr. Crimson, of Boulder Community College, referred to having two different models, even two different initiatives within their institution. Five institutions housed their CBE programs within the traditional schools that their programs represented. For example, the BA in

Business degree offered in a CBE modality was still housed within the College of Business.

That

Other interviewees stated that they housed their CBE programs within their traditional colleges or schools. Dr. Gray discussed the partnership model within the University system stating, “Practically speaking, we are just like any other program in the Oak University system, within a traditional academic unit, however, we follow a Competency-Based Education approach.”

Evidence was discovered in support of (K2), *Build a Guiding Coalition* as well as (K3), *Form Strategic Vision and Initiatives*. A majority of the participants stated the importance of engaging with multiple partners across the university, for those within a larger university system, this became even more important. It was important at all of the institutions to have a working group that worked collaboratively to promote CBE within and across the institution.

Dr. Brown, from Birch University System provided examples of how his institution was enabling and aligning business processes and systems (SDE4):

Our program is lead and coordinated through Birch Acceleration, and we partner with all the other Birch University institutions to offer it. All of the support systems, (instructional design, back office, financial support) is all shared across the system (Dr. Brown, 2017).

This may be easier to carry out at larger universities, or within larger university systems that have more resources and support, but does support SDE4.

### **Defining Competencies (JS1), (JS4), (SDE1)**

Johnstone and Soares’ (2014) *Principles for Developing Competency-Based Education Programs* focuses heavily on the importance of competencies. All of the respondents indicated that competencies were at the heart of their CBE programs. Common themes in definitions of competencies were knowledge, skills, and abilities that students should be able to complete or

accomplish. Klein-Collins (2012), also mentions that competencies and learning outcomes are often used interchangeably. Mrs. Green also supported that idea, stating,

our school already has what we call student learning outcomes. So, every course has a course curriculum outline, and within that, it defines what student learning outcomes will be measured for each course.

Dr. Crimson at Boulder Community College, which offers technical CBE degrees stated the importance of using industry designed assessments and competencies, (JS1):

The way that we have developed our competencies, the way that we have designed them is we want industry to be able to look at our competencies and say “yeah, if you tell me that a student has mastered these competencies, I would absolutely hire them.

Other institutions with healthcare related and technical degrees also relied heavily on industry defined standards and requirements in the creation of their competencies.

The importance of working with an instructional designer, assessment designer or outside consultant was a theme that emerged at many of the institutions. Dr. Silver at Elm State University articulated, “we actually worked with a consultant from Blackboard who helped us deconstruct and propose the competencies, you know, deconstruct the books and the knowledge and to formulate that specific competencies.” This support JS4 “The process for mapping competencies to courses, learning outcomes, and assessments is explicit, there are checks and balances”.

Public Agenda’s (2015) *Shared Design Elements* (SDE) also focus on the importance of competencies. Dr. Pink at Palm University responded to how they defined competencies as “we were motivated by several things, one was a research study, and also *AAC&U’s Value Rubrics*.” Dr. Pink’s response supports SDE1, *Clear, Cross-Cutting and Specialized Competencies*. To identify essential competencies, “CBE programs look to authoritative sources, like the Lumina Foundation’s *Degree Qualifications Profile* (DQP), and AAC&U’s LEAP and industry

standards” (Public Agenda, 2015). Other institutions also mentioned alignment of competencies to DQP and AAC&U Value Rubrics.

Additionally, Dr. Pink noted the importance of incorporating the university’s core and embedded learning outcomes when designing competencies. Doing so helps to ensure that programs, competencies, and outcomes are consistent across different modalities that may be offered across the institution.

### **Assessment (SDE9), (JS4)**

Public Agenda’s (2015) Shared Design Elements 9 (SDE9) state that assessments should be measurable and meaningful. In addition, Johnstone and Soares’ (2014) principle 4 (JS4) indicates that assessments should be secure and reliable. Responses from participants indicated that these are also important elements of the quality of assessments and quality CBE programming at their institutions.

Assessment and specifically authentic assessment are the hallmark of quality CBE programs. According to Klein-Collins (2012), “Assessment is the core of the entire CBE enterprise” (p.7). Assessments are designed to measure what students can do and have learned. All of the nine institutions interviewed indicated that assessments were an integral part of their CBE programs. Assessments included assignments, projects, and real-world simulations, with an emphasis on authentic assessment. The use of rubrics and the importance of constructive feedback were also common among participants.

The use of instructional designers or assessment designers were used at multiple institutions. Instructional or assessment designers help to ensure the reliability and integrity of assessments. Dr. Crimson, at Boulder Community College, described the process for developing assessments:

Essentially, the way we build our assessments is that the faculty will build it initially and they are looking at what they are saying the student is going to learn. The assessment designer then starts to in a nice way poke holes in what was given to them to find out if it is valid, reliable, and robust.

One point of caution was mentioned when using instructional or assessment designers.

The relationship between faculty members and instructional or assessment designers can sometimes become strained or tenuous. Faculty take pride in their work and it may be difficult to have an outside person come in and review their work, finding issues or updates that may be needed. It is important to acknowledge that this may become a point of contention that will need to be addressed.

Institutions also indicated that they used industry-designed assessments, specifically in areas like health care, computer science, or technical trades. Dr. White at Willow University referred to program level assessments,

we assessed Capstone work against the competencies and we also cross-walked between competencies and external measures like AAC&U's *Learning Outcomes Value Rubrics* and Lumina Foundation's *Degree Qualifications Profile (DQP)*, so for instance the AAC&U, how does our competence line up against that?

While no institutions define, design, or implement assessments in the same way; it was evident from the responses of all participants that assessment was important and it must be thoughtfully and carefully designed.

### **Workforce Alignment (JS2), (SDE4)**

The importance of aligning programs and competencies to workforce and industry standards is an essential component in both Public Agenda's *Shared Design Elements (SDE)* (2015), as well as Johnstone and Soares' (JS) (2014) principles. 1. SDE4-Engaged Faculty and External Partners. 2. JS1- The degree reflects robust and valid competencies that align with industry standards. Further support for workforce alignment was also supported in a recently

published article from Kahlon (2016). “Since the overarching goal of CBE is to create competent employees, employers then become an integral part of planning for a CBE program” (p.10). Greer (as cited by Kahlon, 2016) indicated, “besides providing feedback, industry partners can also help design the competencies themselves” (p.10).

Participants reinforced the importance of workforce and industry alignment as well. Institutions that had technical CBE programs, such as Boulder Community College, or healthcare related CBE programs within the Oak University system had more natural industry alignments as many of those industry have predefined industry standards or competencies. However, even at institutions that had a more liberal arts-based programming, alignment with industry and workforce was still important. Dr. Pink from Palm University stated that they had originally based much of their competency design on results of a study by Hart Research Associates, which focused on employer priorities for college learning and student success.

### **Collaboration and Working groups (K2),( SDE5)**

Kotter’s (1985) second principle (K2) for implementing change is to create a guiding coalition. This was a practice that was found at all of the institutions interviewed. Dr. Brown, at Birch University described the implementation process as “highly collaborative, there were a ton of stakeholders. Implementation strategies really focused on working groups of faculty, curriculum, roles and responsibilities.” Similarly, Mr. Black at Aspen University revealed that they formed an executive steering committee and a CBE core team, where he was the leader in charge of driving the initiative forward. Communicating this change, the rationale, and the steps for success early on in the process is essential for a successful program with supporters across campus.

The importance of identifying early adopters or CBE “champions” emerged from this question and aligns with the *Shared Design Element five (SDE5) Engaged Faculty and External Partners*. Dr. Crimson at Boulder Community College described this process in detail, as he set out to find these champions early on in the process.

I said, if you are interested in having your program(s) be on the pilot for CBE, come and talk to me. I had about five faculty that came up and said, “yeah, I would like to learn more,” or, “I am all in, I want to do this.” And, it was so, so important to have those champions there, had that not happened, we just would not be where we are today.

Engaging faculty members in the process early on was another factor that was considered important by nine out of ten individuals interviewed.

### **Training**

Engaging those who will be impacted by the change was a theme that recurred throughout the interviews. While training for staff members is also important, the results of this study focused on the importance of faculty training. Administrators stated that it was essential to the success of their programs to ensure that time was provided for dialogue as well as thorough training, not just one large training session. Mr. Black felt strongly about the importance of this step when implementing CBE at Aspen.

What did work well was creating a space for dialogue among faculty as soon as possible, and not assuming that one big bang training or a few training sessions would do that job for faculty. It has to be an ongoing dialogue. I wish I would have done that sooner with the staff.

A white paper recently published by Kahlon (2016) also stresses the urgency and importance of faculty training. As faculty members have typically been primarily classroom instructors, many are most familiar with the “sage on the stage” model of teaching. “Transitioning to CBE is a mind-shift for faculty, just as much as it is for students, thus, a proper training process is important for faculty” (p.10).

## **Faculty Role: (JS2)**

The role and definition of the instructor posed significant challenges for all of the institutions interviewed. The literature also suggests that the role of faculty is significant in CBE programs. In a recent article, Newbold, Seifert, Doherty, Scheffler, and Ray (2017) suggest that each institution may have a different model or title for their faculty under this new CBE model. Examples of titles they may hold include, content experts, instructional faculty, assessment faculty, subject matter experts, community partners, coaches, mentors, among others. (Newbold et al., 2017). The responses indicated that there are indeed variations to the faculty role across institutions. What was consistent was the fact the CBE does change the faculty role.

Dr. Brown at Birch University noted that the role of their instructors is mainly “unbundled,” meaning that they develop the competencies and assessment, assign assessments, provide feedback to students, and the same faculty may or may not do all of these things. There may be one instructor who provides student support throughout the course; and another who grades the assessments. They do however use the same instructors in both their CBE and non-CBE courses. According to Dr. Brown,

there is an ancillary benefit to using the same faculty who teach the brick-and-mortar classes; those faculty are now focused on a new way of learning for their brick-and-mortar classes.

Many of the interviewees echoed Dr. Brown’s opinion, stating that they felt that developing CBE programs and digging down to the foundation of the programs helped to strengthen all of their programs, as well as the teaching methods of their instructors.

Similarly, Mr. Black discussed their model at Aspen University, which has a disaggregated faculty model, separating the instruction component from the assessment piece. The other institutions shared that the faculty role is still mainly “bundled” and the instructor



performs all of the functions within the course. As previously stated, making the transition to CBE does change the faculty role. Dr. Crimson at Boulder Community College stated (when he is addressing faculty members) “CBE is actually making your role much stronger. But that is not to say that it is not changing your role, and when I say change, I mean radically changing the role.” He refers to the instructor role moving from “guide on the side” to “sage on the stage” (noting that he did not coin this term). So, “that radically alters what a normal classroom looks like, but, faculty now have the ability to work one on one, two to one, or three to one with the students who need the help.”

The instructor’s role in CBE programs supports Johnstone and Soares (2014) *Principle Two* (JS2) that “students are able to learn at a variable pace and are supported in their learning”. As students who are grasping the content and moving ahead, those who may be struggling are able to receive more support from their instructors. Often, the participants discussed how instructors in their CBE programs had taken on more of mentor or coaching role in working with students.

One of the main challenges for institutions and the role of the instructor in moving to CBE models is workload or compensation. Mrs. Green at Boulder Community College shared that “we spent months talking about the faculty role, and particularly faculty load. I felt like we went in circles, it was really difficult for us and in the end, I am not sure that we came up with a good solution, it is still a work in progress.” In addition, Dr. Pink from Palm University also stated that the role of the instructor is still a work in progress; they are still experimenting with the best way to define the role.

## **Perception (K4), (K5)**

One of the main hurdles that CBE faces is negative perceptions. This research focused mainly on the overall perceptions of faculty members toward CBE. Newbold et al. (2017) shared some of the challenges that may be driving these perceptions:

Faculty, many of whom have spent their entire careers teaching in traditional classroom environments, may feel inadequate, underqualified, or ill prepared to teach in a CBE format. Additionally, faculty may exhibit resistance to CBE and online teaching because it inherently changes their approach to teaching. (p.3)

The responses in the interviews confirmed that most institutions still struggle with overall faculty perceptions of CBE. Moving to a CBE model is a fundamental change to the structure and methods of teaching for most, and sometimes that is a hard sell. Mrs. Green at Boulder Community College shared the overall perceptions of their faculty regarding CBE:

I think that it is a mix. I think that some of the faculty members are very much in favor of it; we have faculty advocates who just go out and fight for it. On the other side, we have faculty, particularly in our general education areas that are still very skeptical of it.

Dr. Teal at Pine College indicated that most people do not even really understand what CBE is, and even if they do, they do not really understand how it is related to higher education. A common sentiment from the interview participants was that those who really, truly understand what CBE is are in support of it, those who do not are the ones who are skeptical. Dr. Teal also shared

I think that there has been a negative connotation surrounding the word competency for a long time. I think that people have preconceived notions that it means that it is just a curriculum that instructors just rip through and that they are not highly qualified and do not need to be because they are just working off of a very standardized curriculum, and nothing could be further from the truth.

One concept that emerged as a challenge for faculty that was not found in the literature was the importance of time and support for faculty members in developing CBE coursework. Faculty members already have full workloads, and often face the demands of additional research

and scholarship. Often it is not that they are resistant to CBE, it is the simple fact that they are already stretched thin and do not have the additional time to devote to redesigning their courses.

Dr. Gray at Oak University acknowledged

I think that interested faculty judge that the CBE approach is intriguing and that it has value. However, they are stressed, they have teaching service and research requirements. Having them invest time and effort and interest in any activity that takes away from those aspects is seen as, they have this cost benefit analysis of themselves, is any amount of my time worth moving over to this?

Training of faculty and staff were also important themes that emerged that may help with the perception of CBE within institutions. CBE is a big change that will impact virtually all departments within an institution. It is essential to take the time for open and honest dialogue, especially for faculty. Mr. Black at Aspen University indicated that the majority of their faculty had a positive view of CBE. The reason for that being “because we spent years creating dialogue, we didn’t rush it. Had we tried to rush it, I don’t think that we would be so lucky.” Overall, there was a consensus in the interview responses of the importance of training faculty and staff prior to beginning the implementation of CBE programming. This is supported in Kotter’s Model stages four and five (K4), (K5). In K4 and K5, leaders must communicate the vision and empower other to act on the vision. By involving faculty and staff in the process and training those involved, this also created buy in.

### **Learning Resources (JS2), (JS3)**

Johnstone and Soares’ (2014) principle two (JS2) states that students are able to learn at a variable pace and are supported in their learning. JS3 states that effective learning resources are available at any time and are reusable. Again, there was some variation in the responses of participants, but all had additional support and resources that were available to their CBE students at any time. Johnstone and Soares (2014) stated that “a CBE program should allow

students to progress through the curriculum at an individual pace, which means that just-in-time academic assistance and other support must be provided to keep them motivated and academically on track” (p. 16).

The theme of academic success coaches came up multiple times when discussing this topic. Dr. Brown at Birch University indicated, “Academic success coaches are essential for the success of these students. They need a proactive, almost intrusive person who leads them through.” Additionally, Dr. Teal at Pine College purported the importance of coaches, but used a different model. He shared:

we have employed coaches to help the students above and beyond the faculty. A lot of times we hire former students who have gone through the program who are familiar with that type of learning and the projects that students are doing.

Open Educational Resources (OER) was another topic that came up at three institutions. OER are becoming important in the higher education landscape as institutions are trying to keep costs down for students, while ensuring that they have access to quality materials. OER’s are not only being used in CBE courses and programs, but across institutions.

All participants agreed that student support in CBE programs must be high quality and available “on demand” It is still an area for improvement at some institutions as they are working to make supports available online and on-demand.

### **Measuring Success**

There is little evidence in the literature regarding frameworks or models to use to gauge the success of CBE programs. Therefore, no theoretical lens is reviewed here; rather, the themes that emerged from the interviews will be presented. Evidence that was discovered in this research validates findings from Dragoo (2015) regarding methods that institutions use to gauge success of their CBE programs.

Participants distinguished that there are different lenses through which they may view “success” in terms of CBE programming. One lens is through the administrator’s lens, looking at how the overall program is doing, is it enrolling enough students; is it producing a positive return on investment? The other lens is through the student success lens. Are students maintaining satisfactory academic performance, are they retaining, are they persisting to graduation? There are also other ways to gauge the success of CBE programs. Dr. Gray at Oak University stated

Deeper measures would include the employability of our graduates, the level of lifetime earnings, their continued progression and development; do these folks move on from the bachelor’s degree to the master’s degree and beyond? What is the level of employer satisfaction, what is the level of student satisfaction?

Gauging the success of CBE programs does not appear to be that different from that of more traditional programming. Institutions are still looking at graduation rates, student enrollment, retention, and similar metrics to assess the success of programs.

### **Leadership Support**

A final theme that emerged from the data was the importance of having support, both organizational and financial from the top level of leadership. A number of institutions indicated extreme challenges after a member of senior leadership left the institution, who had been a supporter of CBE. Often it is difficult to maintain momentum for new initiatives during a leadership transition, especially if the next person in the position is not a supporter. It is essential to have a “contingency plan” to accommodate any member of leadership leaving; and a diverse working group that supports the change initiative.

Leadership also need to ensure that CBE is a top priority within the school or institution. There must be clear organizational support from the top down. With so many other competing

priorities, it is essential that this be well communicated across the institution. Dr. Gray with Oak University demonstrated the importance of support and leadership

One area that is essential is to establish that this is an organizational priority and that there is some clear leader or manager that has the authority and standing to be able to direct and coordinate CBE developmental activities at an institution is essential. In the absence of that, you are going to have varying levels of commitment or compliance and that is disruptive to having consistent and coordinated activities.

Other responses supported Dr. Gray's statement as well. In addition, Kotter's (1985), model stresses the importance of leadership support.

### **Challenges**

Competency-Based Education programs face many challenges. The literature suggests that many institutions looking to implement CBE programs may face the following challenges, including, but not limited to:

1. Aligning programing and competencies to university standards;
2. Integrating non-term based learning into existing structures that do not support it (back end office processes);
3. Financial Aid and State/Federal Regulations that have not necessarily kept up with the changes in Higher Education;
4. Faculty and Staff training;
5. Faculty and Staff perceptions of CBE; and
6. Financial/Business Models (Ford, 2014; Klein-Collins, 2012; Laitinen, 2012).

Participants reinforced the literature reviewed regarding challenges experienced when implementing CBE programs. Overall perceptions of CBE continue to be a challenge. One administrator shared that faculty really do not view CBE as a quality education. Others indicated that there were and continue to be challenges with business models and internal operations when

trying to fit CBE into their existing term-based structures. Legacy systems are difficult to manipulate.

Leadership challenges were also a topic of concern for a number of institutions interviewed. It was evident that support from upper level administration was extremely important. Leadership turnover was a challenge for one institution in particular.

I would say that leadership because as I mentioned the champion left. Therefore, we did not have stability at the very top. In 2012, 2013, we hired a new president, and this president was lukewarm about our CBE agenda, so the resources were not there like there were previously and my predecessor left. So, as happens in academic circles, you have different agendas of different leaders as they come in and leave, so that was one of our big obstacles, how do you pick up the pieces and move on. That was one of our biggest obstacles. It just so happened that was the timing of things, we had a lot of turn over from the top down so that made things a little bit more difficult, it certainly made my life more difficult (Dr. Teal, interview).

Economics or business models were another challenge for institutions. In order for CBE programs to thrive and sustain, they must be profitable. Dr. White at Willow University expressed challenges with the movement to streamline and centralize across the university to be more efficient, which does not work well for programs that are different (like CBE). Dr. White also indicated the issue of economics stating

The big schools are making it with a really low price point, but it is not clear how many other schools have, there are a lot of schools in startup mode, but it is not clear to me at least, how many other schools who are smaller programs are really showing that they can run CBE programs if not in neutral or a slightly positive revenue stream. So, that is a challenge, we have a hard time coming back and making the case and saying yes, this can work, when I can only find two programs where they have a positive financial outlook (currently in the black) with their program. And, it is a challenge communicating to the market (Dr. White, interview).

Institutions must also consider the pricing structure and business model for their CBE programs. Many institutions have subscription models where students may enroll for a specific period (i.e., 3 months, or 6 months) and can then complete as many competencies as they wish.

The only consistency in the models across the institutions interviewed was that they were all different. Each institution must find a financial or business model that works well for them.

One point to note is that while all of those interviewed discussed multiple challenges, all unanimously agreed that the challenges are worth it when investing in CBE programming.

### **Other Findings/Lessons Learned**

While there was a great deal of support for the theoretical frameworks reviewed, there were also new themes, ideas and lessons learned that emerged from the data analysis. The additional themes that emerged from this research may also be helpful things to consider for institutions implementing Competency-Based Education programs.

### **Grants and External Funding Sources**

Funding and financial support are important, and often challenging topics at institutions. When looking to develop and launch a new program, institutions must ensure that they have the financial support and backing to launch and sustain a quality program. While this topic is relevant to Public Agenda's (2015) *Shared Design Element* nine (SDE9), *New or Adjusted Financial Models*, a number of institutions had arrived at their funding sources as grants or support from donors. At least three of the institutions interviewed indicated that their CBE programs were funded, at least initially, through grants or donor support.

### **Market Demand**

For CBE programs to be successful, there must be a market for the program. While not specifically supported through any of the theoretical frameworks, the importance of market demand was a recurring theme in the data, and is worth noting. This theme was also supported in Dragoo's (2015) research as well. Dr. Gray, at Oak University, indicated marketability is important when contemplating a CBE program



I think that a key aspect that contributed to our success was to have a good sense of where there is a meaningful mission. Serve a group of students or a targeted segment of the market that would want and need at first this degree and would be appreciative or that this is a match for CBE.

CBE is a large endeavor and institutions must conduct a thorough market analysis to ensure demand before investing resources.

### **Start Small**

Another key lesson learned, specifically from one institution that initially launched a large number of CBE programs simultaneously, is to start small. Perhaps, begin with one program, or a certificate in a CBE modality, learn from the process and then decide on the scalability. Dr. Crimson at Boulder Community College shared the importance of starting small, and within an area that is fitting for goals and strategies of the institution to increase chances of success. Crimson compared it to have 20 different fires going that you are trying to manage and juggle, as opposed to one or two fires that you can more easily supervise and maintain. Then you begin thinking about scale.

### **Institutional Autonomy**

When participants were asked about the institutional alignment of their CBE programs, there were a variety of answers. Some institutions implemented their CBE programs through various branches of the university, for example, coursework for a degree in Business Administration might be operated through the school of continuing education or extended learning. Others had CBE completely aligned within already existing structures. While it is evident that there is a need for checks and balances, as well as alignment to more traditional programs, there was a strong consensus among a number of the individuals interviewed that having institutional autonomy would make the transition to a CBE model a bit easier. Programs

that were run through a separate school or department had more autonomy and were able to make changes and updates to policies and procedures with a bit more ease.

### **Sustainability**

All interview participants were asked the question, “Do you feel that CBE is a sustainable model in higher education, and what will it look like five years from now.” All respondents indicated that they do feel that CBE is a sustainable model, but it must have proper foundational supports. The true variant to their answers was the scale of CBE, or how big do institutions want to implement CBE? Some large institutions, such as Western Governor’s University, have enrollment numbers over 40,000, whereas other smaller institutions may have a CBE program with enrollment numbers of around 50. Institutions must make the decision of how large to plan the scale their programs. Mr. Black at Aspen University shared his views, stating that he does feel it is sustainable, but “CBE won’t supplant everything, it won’t replace all other modes, but it will be a strong and viable option for a lot of students.”

### **Chapter Four Summary**

In summary, this qualitative study provided a wealth of information regarding implementation strategies and challenges faced by institutions when implementing Competency-Based-Education programs. Public Agenda’s (2015) *Shared Design Elements* as well as Johnstone and Soares (2014) *Principles for Developing Competency Based Education Programs* have provided the theoretical lens for analysis of the data. In addition, Kotter’s (1985) eight-step model for transforming change was used to review change implementation strategies at the institutions participating in this research.

Overall, there were a number of common themes that emerged from the responses of the institutions interviewed. Collaboration, working groups, training, and strong leadership support

were overarching themes that were discovered and supported by the theoretical frameworks reviewed. There were also aspects of the theoretical frameworks that were not present or were not discussed in the interviews. This does not mean that they did not exist, rather, questions may not have been asked to elicit those responses. The following chapter will review and discuss these results and will present areas for possible future research.

## CHAPTER FIVE: DISCUSSION

### Introduction

The purpose of this qualitative, exploratory study was to explore the landscape of Competency-Based Education in institutions of higher education; and how these institutions have successfully implemented a new model (CBE) into their existing structures. Interviews were conducted with ten individuals from nine different institutions with experience in competency-based education. Overarching themes of implementation strategies and challenges emerged as a result of this study. The findings were consistent with the current literature; and will contribute to the body of research available for institutions with an interest in competency-based education. The theoretical frameworks used were John Kotter's (1985) eight-step change model in reviewing implementation strategies. In addition, Johnstone and Soares' (2014) *Principles for developing Competency-Based Education Programs* and Public Agenda's (2015) *Shared Design Elements for Developing Competency-Based Education programs* provided theoretical lenses through which to view CBE programs at the institutions participating in this study.

The results of this study that were presented in Chapter four will be discussed in this chapter. Analysis of the results and the impact that this study has on the field of higher education will be reviewed. Finally, the author will provide ideas for future research that have evolved because of this study.

### Re-Statement of the Problem

This dissertation reviewed the implementation strategies at institutions who have experience with competency-based education programs, as well as characteristics of CBE programs at various institutions. At the time of research commencement, there had been little evidence in the literature regarding theories of best practices for programming and

implementation strategies. As the number of institutions who are contemplating CBE continues to increase, this study adds new data to the current field of research surrounding CBE and adds to the previous work of Dragoo (2015).

### **Review of Methodology**

The researcher chose to do a qualitative study to investigate implementation strategies and program characteristics for CBE programs. Structured interviews were conducted with ten individuals from nine different schools. All interviews were recorded, transcribed, and then analyzed via qualitative coding and Nvivo analysis software.

### **Summary of Results**

As presented in chapter four, a great deal of information was collected and analyzed during this research. These findings will be discussed in the following sections. Suggestions for future research will be provided, along with an overall summary and conclusion from this study.

### **Rationale**

One of the first steps and decisions that administrators must make when determining if a CBE program is a good fit for their institutions is rationale. It is important to have a clear understanding of what problem CBE will solve for the institution. Sebesta, 2016 (as cited by Kahlon, 2016) stated that “you have to ask yourself two primary, very related questions: What problem will CBE solve? And, what students will CBE serve?” (p. 6).

The literature suggests that cost, time to completion, and flexibility for learners are the main rationales of CBE in the literature. (Book, 2014; Dragoo & Barrows, 2016; Klein-Collins, 2012). The results from this study did reveal that institutions feel that the issues of cost, time and flexibility are important reasons to incorporate a CBE program. There were however, additional themes that emerged that align with Kotter’s Model principle one (K1), creating a sense of

urgency, as well as Public Agenda's *Shared Design Element 10* (SDE10), to ensure prepared and proficient graduates.

The results of this research indicate that there are also other driving factors when it comes to making the decision to implement CBE programming. Institutions are turning to CBE as a way to meet the market demand for programs such as nursing and related health care programs. Students in these markets may not be able to complete a program offered in a more traditional face-to-face modality. Dr. Gray at Oak University stated a market analysis was conducted in the area and it was discovered that there were a large number of individuals in the healthcare field who needed an advanced degree. Due to their work schedules, family obligations and lifestyles, a traditional program would not be an option for them. CBE is a way for institutions to meet these students where they are at to provide a more manageable, and often more efficient way to earn their degree. Similarly, CBE may also be used at institutions as a way to develop new and innovative programs.

There is also a sense of urgency for institutions to help meet Goal 2025. Goal 2025 states that by the year 2025, 60% of the U.S. population will have obtained a high-quality postsecondary credential. In order to reach this daunting goal, 16.4 million people will need to earn credentials. (Lumina Foundation, 2016). Dr. Brown at Birch University specifically stated the importance of CBE in helping to meet this goal. As the current structure of higher education stands, there is not a realistic way that we can produce that many additional graduates by 2025 without CBE or similar innovative methods.

An additional overarching reason that schools are moving to CBE programming is to ensure alignment with workforce or employer demands. The importance of aligning programs and competencies to workforce and industry standards is an essential component in both Public

Agenda's *Shared Design Elements* (SDE) (2015), as well as Johnstone and Soares' (JS) (2014) principles. 1. SDE4-Engaged Faculty and External Partners. 2. JS1- The degree reflects robust and valid competencies that align with industry standards. Many of the participants indicated the importance of engaging with industry and workforce partners as a main rationale for CBE implementation.

Other overarching themes regarding rationale emerged as well and included, ensuring that graduates are adaptable and prepared for a future work world that is ever changing. The students themselves are changing and the more traditional models that have been in place in higher education for a number of decades are just not going to work for all students. One participant poignantly stated "The way that we have been doing things in American higher education for the past 140 years has to some degree seen its day. We have a responsibility to do a better job, particularly by adult learners" (Mr. Black, interviewee). Other participants also expressed the fact that adult learners require a more flexible approach to their education and CBE is one method that frequently works better for them.

The rationales for implementing CBE programs did align with both Johnstone and Soares' (2014) *Principles* and Public Agenda's (2015) *Shared Design Elements*. In addition, learner flexibility and working to meet *Goal 2025* were also major motivators for institutions in seeking CBE programming. The results from this study suggest that it is imperative for institutions to have a clear understanding of the rationale for implementing a CBE program. Having a clear sense of why will also help down the line when looking to increase buy in and support for CBE. A clear understanding of the rationale is important.

## **Institutional Alignment**

Institutions interviewed varied in the alignment of their CBE programs at their institutions. Four institutions indicated that they operate their CBE programs within a stand-alone department, often a different *arm* of the institution, such as a department of continuing studies, or a school of extended learning. As presented in chapter four, the results supported Kotter's (K2), *Build a Guiding Coalition*, as well as (K3), *Form Strategic Vision and Initiatives*.

A majority of the participants stated the importance of engaging with multiple partners across the university, for those within a larger university system, this became even more important. It was important at all of the institutions to have a working group that worked collaboratively to promote CBE within and across the institution. One interesting discovery in analyzing the data was that some of the institutions who housed their CBE programs within existing schools indicated that they were in the process of transitioning their programs to separate schools or sections of the school to provide more autonomy. Dr. White, from Willow University, recommended that having as much independence as a unit is preferred. This was also supported in the literature by Book (2014) and Porter and Reilly (2014) who suggested that starting a new innovation may be easier to do when started within a standalone unit.

## **Competencies and Assessments**

Both competencies and assessments are essential components of any successful CBE programs. Participants indicated the importance of clearly defined and scaffolded competencies. Common definitions that participants used to describe competencies were knowledge, skills, and abilities, or essentially, what a student can do. Institutions used assessments to measure the competencies. All of the institutions involved in this study indicated the importance of quality



assessments, and clearly defined competencies, which supports Johnstone and Soares' (2014) *Principles*, as well as Public Agenda's (2015) *Shared Design Elements*.

Again, the significance of industry alignment within CBE learning occurred in multiple responses. This supports JS1: The degree reflects robust and valid competencies and aligns with industry standards. Multiple participants discussed the value of using an instructional designer. While not specifically mentioned in any other the theoretical models, there is evidence to support alignment with JS4: The process for mapping competencies to courses, learning outcomes and assessments is explicit with checks and balances. An important point to note is that many institutions suggested the impact of using an instructional designer in the process, there may also be some points of tension created between instructional designers and the faculty members. As faculty are integral to the process of designing competencies and assessments, it will be important for administrators to be cognizant of this potential point of tension.

Evidence was also discovered in support of Public Agenda's (2015) SDE1, clear, crosscutting, specialized and easy to understand. Respondents indicated the use of programs, like the Lumina Foundation's *Degree Qualifications Profile (DQP)*, and AAC&U's *LEAP* and industry standards were used in designing competencies and assessments. While there was not a specific question asked in relation to these programs, it is important to note that many institutions indicated their importance.

### **Learning Resources**

The imperative of high quality and on demand learning resources and support were evident in all responses from participants. The data collected supports two of the main principles in Johnstone and Soares' (2014) framework. JS2- Students are able to learn at a variable pace and are supported in their learning. JS3- Effective learning resources are available any time and

are reusable. Respondents reported the importance of having these support services and learning resources available for students at any time, not just during normal business hours, such as Monday through Friday, 8:00am -5:00pm.

Academic Success Coaches came up as an essential student support at three of the institutions interviewed. The support of a success coach was a new theme that emerged that was not previously found in the reviewed literature. Faculty mentorship was also a feature for CBE programs that participants stated was different from their traditional programs. There were more opportunities for students to receive on demand or individual help and support. While this model does provide additional support for the students when it is needed, it should be noted that it does greatly affect the faculty role, which will be discussed in the next section. A study by Kahlon (2016) discussed the importance of having student support systems that also have strategies in place to intervene when students are at risk or not making satisfactory academic progress.

Open educational resources (OER) were also a feature of the learning resources for CBE programs. Institutions are aware of the difficulties students face in affording a college education and OERs are one way that they are trying to help to keep the costs down. A number of institutions have integrated OERs into their LMS and library resources as well.

Overall, institutions reported that having learning resources available to students online and on demand is essential for CBE programs. Another important finding was the significance of having a student success or academic success coach.

### **Faculty Role/Training**

The importance of faculty in CBE programming was a common theme from all of the participants. As stated in chapter four, the role and definition of the instructor posed significant challenges for all of the institutions interviewed. All institutions indicated that moving to a CBE

model greatly affects the faculty role. While there was variation across the institution as to the definitions of the role of faculty (whether referred to as unbundled, bundled, or disaggregated), all participants noted the significant impact CBE has on their role.

The instructor's role in CBE programs supports Johnstone and Soares' (2014) Principle Two (JS2) that "students are able to learn at a variable pace and are supported in their learning". As students are mastering the content and moving ahead, those who may be struggling are able to receive more support from their instructors. Frequently, participants discussed how instructors in their CBE programs had taken on more of mentoring or coaching roles in working with students. Nodine and Johnstone (2015) found that the most successful CBE programs were those that provided students with mentors or coaches who maintained regular contact with them. This was previously discussed in the learning resources section.

While the role of faculty is changing, a challenge that many faculty face, is that CBE is a deviation from their previous teaching methods of lecturing, sometimes referred to as *sage on the stage*, to more of a mentorship model, known as the *guide on the side*. To address this challenge, participants recommended a heavy focus on training and open and honest dialogue with faculty. One participant stated the importance of understanding that not all faculty will be in favor of or supportive of CBE, and that is OK. What institutions need to do is look for the champions and supporters of CBE and work with them. Another new finding from this research was the importance of transparency and open and honest dialogue with faculty well before the launching of a CBE program. A recent article by Newbold et al. (2017), supports this as well, recommending that institutions provide a space for extended dialogue for faculty involved in CBE programs.

Faculty need to be given complete and thorough training regarding CBE; as it is a huge deviation from what they have been accustomed to in their roles. Frequently overlooked is the amount of time needed to devote to developing or redesigning curricula for CBE. Faculty are already stretched thin in their teaching obligations and scholarship requirements. To ensure success, participants recommended providing space for dialogue; adequate training and time to work on implementation to ensure a quality experience and faculty buy in. The results of the studies by Plumlee (2016) and Cooper (2016) also indicate the importance of faculty support for the successful design and implementation of CBE programming. It is clear from the literature and the results of this study that institutions must include and engage faculty in the CBE process to ensure success.

### **Leadership Support/Collaborative Working Groups**

The support of top-level administration and leadership was perhaps the most evident finding in this research. All the participants stressed the importance of having support, both organizationally and financial from the top levels of administration. Without this support, CBE programs will not succeed. These findings support Kotter's model of implementing change by ensuring that there is a guiding coalition for guiding the change process. Moreover, Book (2014), also found that ensuring support from the top levels of leadership is essential to the successful implementation of CBE programming.

Three of the participants shared the struggles that they faced when a top-level administrator left their institution and the support and momentum was not there. As this is a situation that often happens in higher education, it is also important to have collaborative working groups that are designated to focus on and support the CBE programming. These

working groups should also have a designated leader with the power and authority to enforce decisions and processes.

### **Challenges**

While it is evident from the research that there are many advantages to CBE programs, it is important to also understand and consider the challenges that might occur. The literature suggests that many institutions looking to implement CBE programs may face the following challenges, including, but not limited to 1. Aligning programming and competencies to university standards, 2. Integrating non-term based learning into existing structures that do not support it (back end office processes). 3. Financial Aid and State/Federal Regulations that have not necessarily kept up with the changes in Higher Education. 4. Faculty and Staff training. 5. Faculty and Staff perceptions of CBE 6. Financial/Business Models. (Ford, 2014; Klein-Collins, 2012; Laitinen, 2012). The results from this study indicated that many institutions did face some of the challenges indicated by the literature findings.

Many participants indicate that fitting CBE into their existing LMS or SMS was a challenge. These systems were not designed to work with programs and models that do not fit into the traditional credit hour or semester based systems. Overall, back end process such as billing, registration, admissions process, and transcribing processes had all been issues for the institutions interviewed. These challenges are also supported in the literature. Nodine and Johnstone (2015) interviewed university leaders regarding the challenges they faced when implementing CBE programming. All of the leaders involved in their study indicated that they experienced difficulties with adapting their existing LMS systems. They simply were not designed to accommodate non-term based or CBE models of enrollment. As technology

continues to improve and evolve there will likely be additional solutions for institutions with CBE programs.

Federal and state policies, rules and regulations also pose a huge challenge for CBE programming. The rules and policies in place have not necessarily kept up with this new model of education. They are based on the credit hour model and measuring learning in seat time and are not designed to include CBE type programs. Federal financial aid policies seemed to be the main challenge for those interviewed. However, there has been a good deal of attention from state and federal policy makers surrounding CBE. For example, according to CBEN's website, there has been recent work by HCM Strategists and Lumina Foundation to develop a CBE state toolkit and state policy considerations for CBE in Higher Education.

(<http://www.cbenetwork.org/news-and-insights/>). There have also been new initiatives such as the *Experimental Sites Initiative* (<http://www.cbenetwork.org/news-and-insights/>). It will be important to watch as new developments emerge that may impact CBE programming; however, existing government regulations still prove to be a hurdle for many institutions.

Perception was also a challenge faced by many of the institutions. Competency-based education often has a negative connotation. One of the administrators shared that they experienced a great deal of resistance from faculty, as they did not view CBE as quality programming. They felt that it was the administrations way to sell a diluted product and make a bunch of money, that it was not a quality program. There was also the perception or fear that CBE would replace the need for faculty, which is not the case at all. Most indicated the CBE actually enhances the importance of the faculty role. Another issue is that most people do not truly understand what CBE is and if they do, they do not really understand how it relates to higher education. It is essential for those involved in CBE to become better at storytelling and

sharing about CBE at their institutions. This is one area where groups like the Competency-Based Education Network (CBEN) have been integral to driving the success and growth of CBE programs.

A final challenge indicated by the participants was the importance of a business model. Most Competency-based education programs require a huge investment of time, money, and resources up front. It cannot be stressed enough that it is essential to have a strong business model built around this concept. Many institutions stated that it often takes up to five years to see a positive return on investment (ROI) for CBE programs. This must be taken into consideration in the business model and strategic planning for the institution.

This also leads to the discussion of scalability for programs. How big do institutions need (or want) their CBE programs to be once they reach scale? There are the large institutions like Western Governors (WGU) and Southern New Hampshire University (SNHU) that have massive CBE programs. While that is a sustainable model for them, it may not be at all institutions. It will be important for institutions to decide on what their scale and business model will be for CBE from the beginning stages.

### **New Findings**

While there was a great deal of evidence from this research in support of Kotter's (1985) eight step model for change, Johnstone and Soares (2014) *Principles for Competency Based Education Programs* and Public Agenda's (2015) *Shared Design Elements*, there were new findings that emerged.

### **Grants and External Funding Sources**

When looking to develop and launch a new program, institutions must ensure that they have the financial support and backing to launch and sustain a quality program. Many of the

institutions participating in this research shared that it is essential to have adequate funding devoted to the new programming.

While this topic is relevant to Public Agenda's (2015) *Shared Design Element* nine (SDE9), New or Adjusted Financial Models, a number of institutions had arrived at their funding sources as grants or support from donors. At least three of the institutions interviewed indicated that their CBE programs were funded, at least initially, through grants or donor support. This is an area that institutions may want to explore as CBE is viewed as a new and innovative modality, there may be grant or donor money available to allocate to CBE startups and programming.

### **Market Demand and Research**

For any program, including CBE, to be successful, there must be a market for its offerings. While not specifically supported through any of the theoretical frameworks, the importance of market demand was a recurring theme in the data and is an additional theme. This theme was supported in Dragoo's (2015) research. CBE is a large endeavor and institutions must conduct a thorough market analysis to ensure demand before investing resources.

### **Scale and Sustainability**

It is important for institutions to determine the scale of their CBE programs. The consensus of all participants is to start small with your CBE initiative. This will ensure that you have the time and energy to devote to getting your CBE program up and running before you move it to scale. Institutions must determine the scalability of their CBE programming.

A question was asked of all participants regarding their perceptions on the sustainability of CBE in higher education. All stated that they do feel that it is a sustainable model, but it must have the right foundation and support. An interesting point that was discussed in many



responses was the fact that they do not feel that CBE will by any means take over higher education, but will be a complimentary pedagogical approach.

### **Recommendations for Institutions**

One of the final questions that was asked of participants in this research “what recommendations do you have for institutions looking to implement a Competency-Based Education program”? Below is a list of the recommendations that were given by participants. This information will be helpful for institutions that are looking to implement CBE programs

- Be Patient and Persistent
- Ensure Collaboration and a Working group or task force
- Ensure Institutional Leadership and Support
- Decide on Scalability, How big do you want it to get?
- Start Small
- Provide Adequate Time and Training for all Involved (Especially faculty)

### **Suggestions for Further Research**

There is a plethora of areas for future research in the area of CBE. As the researcher analyzed the research data, many new areas emerged for future exploration. The literature regarding cost savings and time to completion for CBE students is an area that is still evolving. As more CBE programs become well established and start producing the first cohorts or graduates, future research may look at overall cost savings and time to completion, compared to the traditional students and programs.

Another area that was only briefly reviewed in this research was the faculty model. Further research could investigate to most effective faculty models, whether bundled or unbundled faculty roles are more successful. Faculty training models or programs could also be an area for further review as the importance of training was a finding in this research. This study

could also be replicated and different institutions could take part. Results could be compared to this study, along with an earlier study by Dragoo (2015).

### **Summary and Conclusion**

The purpose of this qualitative study was to contribute to the limited body of literature surrounding Competency-based education implementation strategies. The interviews conducted resulted in a great deal of information supporting John Kotter's (1985) eight-step model for implementing change, Johnstone and Soares' (2014) Principles for Developing Competency-Based Education Programs and Public Agenda's (2015) Shared Design Elements.

The overall findings and recommendations from participants in this study that will be beneficial for institutions looking to implement CBE programs are: 1. Ensure support (financial, resource and time) from top-level administration. 2. Engage and train faculty and staff. 3. Start Small. 4. Collaboration-working groups.

In conclusion, all participants expressed that CBE is a very worthy cause. To quote a few of the participants, "It will not be easy, but it will be worth it." "Be patient and be persistent." A key takeaway for institutions that are contemplating the addition of a CBE program is that while all of those interviewed discussed multiple challenges, all unanimously agreed that the challenges are worth it when investing in CBE programming.

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**APPENDIX 1:**

Participant Consent Form: Competency-Based Education Strategies Interview



## Participant Consent Form: Competency-Based Education Strategies Interview

### Purpose:

Greetings! You are invited to participate in a research project designed to explore the strategies used for implementation, best practices, challenges, and faculty roles in designing Competency-Based Education (CBE) programs at institutions of higher education in the United States. I am a doctoral student at Concordia University, St. Paul, conducting this research as part of my doctoral degree in educational leadership. I am very passionate about this topic and am excited to learn more about the lessons and current practices at your institution!

### Study Procedures:

Your participation in this qualitative, experimental research is greatly appreciated and is voluntary. The anticipated time commitment you can expect is anticipated to be approximately one hour. As a participant, you will receive a list of the interview questions ahead of time and I will work with you (or your assistant) to determine a time that will work well with your schedule. Due to geographic limitations, most interviews will be conducted via WebEx. Specific invitations and instructions will be sent to you prior to the interview. As a participant, you will need Internet access and a computer with a working microphone and webcam in order to participate.

### Benefits/Risks:

There is no monetary compensation for participating in this study. There are anticipated benefits, including an opportunity to reflect on your current practices and status with CBE programs. You will also be adding to the field of knowledge and scholarly research in Higher Education. The results of this study will be shared with you, and may help to improve your current practices by lessons learned.

Risks associated with this study are minimal. All interviews will be stored in a secure location and will only be reviewed by the principal investigator and her advisor. All names and school/university names will be modified in the results and dissertation to maintain your privacy, as well as your institution's privacy.

### Voluntary Participation:

Your participation in this study is voluntary. Should you wish to withdraw from this study at any point, please notify the researcher. The researcher will attempt to answer any questions or concerns you may have regarding this study. You may also contact the chair of the IRB committee at Concordia University, St. Paul with any questions regarding your rights as a research participant.

Researcher  
Sara Kellogg  
Doctoral Candidate  
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IRB Committee Chair  
Dr. Steve Ross  
Concordia University, St. Paul  
275 Syndicate St. N. St. Paul, MN 55104  
651-603-6193 sross1@csp.edu 651-

Authorization: I, \_\_\_\_\_, have read this informed consent form and have elected to participate in the research project described above. My signature indicates that I plan to participate in interviews with the researcher and I give my permission for the use of the data gathered during the interview in a published dissertation. I also understand that the dissertation, in its entirety or in part, may be reprinted in other publications, such as research articles, electronic publications or presented at research symposia or education workshops.

**APPENDIX 2:**

CBE Implementation Rationale, Implementation, and Challenges Interview Questions

## **CBE Implementation Rationale, Implementation, and Challenges: Interview Questions:**

1. Tell me about your background and how you became involved or what your role is in the development of the CBE degree program(s).
  - a. Probe: Tell me about your experiences in teaching here.
  - b. Probe: Have you taught or administered in non-competency-based education programs.
2. Is the CBE program at your institution housed under one of your traditional departments, or is it a standalone program? Is your CBE program considered to be "Direct Assessment"?
3. How do you define a competency? As you started to develop competencies for the CBE program, how did you do it? How did you identify the competencies?
  - a. Probe: How did you choose or design these competencies?
  - b. Probe: So, how did you go about this...what process did you use?
  - c. Probe: Are competencies different from learning outcomes?
4. Can you describe the implementation strategies, planning and development of the CBE program at your institution? Who was involved in that process?
5. How are these competencies connected to what the instructor does (you do) in your course? What is the role of the faculty? (Unbundled roles?)
  - a. Probe: How are the competencies that you developed related to the established curriculum, if at all?
  - b. Probe (for faculty): If you are teaching a course with these competencies, what do you do with these competencies?
  - c. Probe (for administrators): Once these competencies have been developed, what do you expect your instructors to do with them?
  - d. Does the role of faculty differ for CB courses vs. traditional courses?
  - e. Probe: How is this different from traditional education?
6. Do you use the competencies for assessment? Can you describe how you use them?
  - a. Probe: How were the assessments developed? Were there some things (criteria) that were really important for you here at this institution?
  - b. Probe: Is this process different from what you do in the non-CBE courses? How?
  - c. Probe: How do you ensure that the assessment is measuring what you want it to measure?
  - d. Probe: Referring back to your explanation of a competency, how do you assure that the assessment measures the competency that you care about?
7. Can students move through courses at a variable pace? If yes, can you describe the process at your institution (department)? Entry points?
8. What learning resources and assistance are available for students in this program? (Are they different than that of other programs that are non-CBE?)
  - a. Probe: Are resources available beyond one term?
9. What strategies do you think have been helpful in implementing a CBE degree at your institution? Were there some strategies that were tried but did not work well? If so, what were they?
10. What are/were the challenges in implementing a CBE degree program at your institution?
  - a. Probe: Were there any other challenges?
11. How will you know if the program is successful? How will you measure student success?
  - a. Probe: What will be the criteria for measuring success?
  - b. Probe: Who will be involved in determining the criteria?
  - c. Probe: Who would be involved in evaluating the criteria?

12. When people from other institutions or departments ask you why your (University or department) decided to move to CBE, what do you say?
  - a. Probe: Were there any other reasons?
  - b. Probe: Do you think there is widespread support (or skepticism) for a reason?
  
13. Do you feel that the CBE program at your school (or CBE in general) is a sustainable model in higher education?
  - a. Probe: What will this program look like 5 years from now?
  
14. How do you think that faculty overall view the concept of CBE?
  - a. Probe: What do you think has influenced their viewpoint?
  
15. Is there anything else about the CBE program in your school that you would like me to know?
  
16. What advice do you have for institutions that are contemplating the addition of a CBE program?

**APPENDIX 3:**

Request for Permission to Use Interview Questions

Hello Sara!

Yes, you absolutely may use the questions. I'd be happy to help in anyway that I can.  
I have a new email address starting in August: [amie.dragoo@yahoo.com](mailto:amie.dragoo@yahoo.com)

Best of luck Sara!  
Amie

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**From:** Sara Kellogg <[kellogg@csp.edu](mailto:kellogg@csp.edu)>  
**Sent:** Monday, July 11, 2016 10:36 PM  
**To:** Amie Dragoo  
**Subject:** Dissertation question regarding CBE

Hello Amie,

I had connected with you a few months back regarding my interest in focusing on Competency Based Education for my dissertation for my Ed.D. program. I am an Ed.D student at Concordia University, St. Paul.

I am contacting you to seek your permission in using some of the questions that you used for your interviews for your dissertation. I am also going to be looking on faculty perspectives of CBE and how that impacts the implementation strategies and challenges that might occur due to opposition.

I may also look at financial strategies and the rationale that may have on the decision of institutions to implement CBE programs.

I thank you in advance and hope to add some additional data to the field on this exciting topic!

I hope that your summer is going well!

Sara

**APPENDIX 4:**

Nvivo Codebook



Nvivo Codebook

<b>Codes and Sub codes</b>	<b>Codes and Sub codes</b>
<b>Interviewee Work Experiences</b>	<b>Instructor/Faculty Role</b>
Professor/Faculty	Bundled
Provost/President	Unbundled
Assessment Development	Faculty Load and Compensation
Curriculum Designer/Instructional Designer	Instructional Faculty
Innovation Experience	Assessment Faculty
Workforce Training	Faculty as Mentor
Dean/Assoc. Dean/Program Director	Stronger Role
<b>Competency Definition</b>	<b>Assessment</b>
Skills, Knowledge and Abilities	Authentic and Reliable, Valid and Robust
Backwards Design	Outcomes
Outcomes and Assessment	Rubrics
Faculty Driven	Mastery
Measurable	Faculty Developed
Workforce Alignment	Assessment Designer
<b>Implementation Strategies</b>	Industry Aligned and Driven
Collaborative/Buy-in	Skills and Competencies
Working Groups/Task Force	DQP and Value Rubrics
Rationale	<b>Entry Points and Pacing</b>
Training/Onboarding	Variable/Individualized
Institutional Lift and Alignment	Subscription Period
Executive Steering Committee	Academic Engagement Requirements (SAP)
Administrative Support	Minimum Pace and Progress
Champions/Early Adopters	Rolling Enrollment
Workforce and Industry Partnerships	Tied to Academic Calendar
External Consultants	Title IV Requirements
<b>Learning Resources and Support</b>	<b>Helpful Strategies</b>
Academic Success Coach	Leverage Branding
Open Educational Resources (OER)	University Partnerships
Online/24/7	Business Model/Plan
Orientation	Training/Dialogue
Student Coaches	Small Scale
Faculty Mentor	Institutional Alignment and Fit
Writing, Tutoring, Library Support	Involvement/Working Group
Career Advising	Institutional Priority
<b>Rationale</b>	<b>Sustainability</b>
Demand	Foundation and Business Plan
Goal 2025	Scale and Quality
Adult Students/Pathways	<b>Alignment</b>
Employer Demands	Partnerships
Prepared Students/Adaptability	Models and Initiatives
Strategic Goals	Schools or Divisions
	Departments/Centralized
<b>Challenges</b>	
Faculty/Perception	
Operations/Systems/Technology	
Training	
Transition of Leadership	
Streamline and Centralize	
State/Federal Regulations/Title IV	
Scale and Economic Capacity	