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Increasing Retention in Higher Education Institutions Through Competency-Based Education

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INCREASING RETENTION IN HIGHER EDUCATIONAL INSTITUTIONS THROUGH COMPETENCY BASED
EDUCATION

By

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ABSTRACT

JEVAUGHN LANCASTER-JONES: INCREASING RETENTION IN HIGHER EDUCATION THROUGH CBE

Competency-based education allows students to advance based on their ability to become proficient within a topic at their own pace. Since students can work through various learning outcomes without time constraints, statistics show that competency-based education can provide students with higher results and a greater understanding of the subject matter without the additional stress of turning in assignments late or not understanding course materials in time to obtain a passing score on the assessment.

Higher educational institutions have been struggling with not only enrollment but also retention. Students opt for micro-learning opportunities and on-the-job training rather than obtaining credentials through higher educational institutions. This study aims to investigate the effects of CBE and the perceptions of higher education administrators, faculty, and students who have the lived experiences within an individualized holistic learning environment. The methodology included:

Surveys

- student based surveys

    o Likert scale

    o open-ended questions

- faculty-based surveys

    o Likert scale

    o open-ended questions

Primary data collection

- Statistics based on overall student grades.

Focus groups

- Students' participants of the CBE program

- Faculty participants of the CBE program

- Administration of the Universities

Survey results conclude that both administrators and faculty members alike believe that CBE courses are an effective way to deliver content allowing students to progress at their own pace. Survey results also concluded that students believe that a CBE course helps their GPA. The focus groups revealed common themes, including students needed to be educated on the concept of CBE before enrolling in such a course. This will alleviate the student's misconception until the end of the class to submit all assignments rather than staying on time and task completing each competency level on appropriate faculty feedback. Both focus groups and surveys conclude that faculty members need proper training on creating and delivering competency-based solid education courses. These training sessions will ensure that faculty members are assessing students in the proper form. The statistical analysis of the research concluded that there is a statistically significant difference in the GPA of students enrolled in CBE courses to those enrolled in traditional classes.

Acknowledgements

Dedication

My dissertation in practice is dedicated to my mother, father and son.

My parents immigrated to the United States from Trinidad and Tobago, a small island located off the coast of Venezuela. My parents always believed in my strive for success and my passion for education. My mother encouraged me as early as elementary school to start speaking in the church to gain comfort speaking in front of a large audience, gain fluidity in my reading, and most importantly, build the confidence that I needed to move on. As I progressed on to my college years, I first attended a small university in Miami. When I began, I did not have a car or an apartment. While my dad worked the night shift, he would not let my inability to get to school hinder my education. After leaving his job, he would come home in time to pick me up and drive me down to Miami. While I attended class all day, he would nap in the car until I was finished, go home, and we would get back in time for him to head back out to work. This process continued for an entire semester until an apartment was available for me. My dad always told me they could take away all your prized possessions, but they can never take away your knowledge. Thank you for being patient with me and allowing me to follow my dreams and passion for education. It's been a long time coming, but I found my way, and I appreciate how much you pushed me and never let me give up no matter what.

In 2008 my life changed significantly. I became a mother to the most incredible son a mother can ask for. Thank you for sacrificing precious bonding time for me to set the ultimate example for you. Thank you for being my breath of fresh air, my oxygen, my sunshine. Thank you for keeping me happy and making me laugh. Remember, this is all for you.

Mom, Dad, Nicholas, I love you all so much and I could not accomplish this degree without your guidance and support.

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Chapter I: Introduction

Background

Competency-Based Education, (CBE) is a learning model which focuses on the mastery level of a student. Fundamentally speaking, life skills can equal mastery levels of knowledge in many courses. Competency-based education allows students to advance based on their ability to become proficient within a topic at their own pace. Since students can work through various learning outcomes without time constraints, statistics show that competency-based education can provide students with higher results and a greater understanding of the subject matter without the additional stress of turning in assignments late or not understanding course materials in time to obtain a passing score on the assessment. Non-Traditional students are quickly becoming the new normal when it comes to education, and students of all types are in search of just in time education.

In a nutshell, education can be broken down into five different parts: time, delivery, pace, assessment, and evaluation. While competency-based education and traditional education have many similarities, including the fundamentals, they are accomplished differently. When it comes to CBE, many are interested in the role of the instructor and how instructor-based feedback is essential in the overall success of a CBE styled environment. The research throughout this study will go into depth on enhancing student engagement, not to mention, discuss how a CBE based program allows all students to reach mastery levels at their individualized speed. Ultimately, CBE is no longer for non-traditional students, but students classified under any category. "Competency-based education takes two primary forms:

1. Well-established prior learning assessments (PLA),

which grant credits for content that a student has

previously mastered; and

2. Newer competency-based coursework, where students progress toward a degree as

they demonstrate mastery of new academic content. (Kelchen, R.,2015)

With strong course development, and well-defined competencies and outcomes, students gain

the ability to focus on obtaining a mastery level of achievement while instructors can

personalize and deliver content fluidly.

This dissertation will not only enhance awareness of competency-based education but

show varied ways of applying this methodology with best practices. The research will

demonstrate the basics of CBE with a pre and post interactive assessment. The research will

demonstrate various methods of implementing CBE style courses, show statistics of how CBE

can enhance retention within private institutions. Competency-based education is still very new

in the world of education, however the wave of our educational future.

Significance of the Study/Statement of the Problem

Over the years higher educational institutions have been struggling with not only enrollment,

but retention. Students are opting for micro learning opportunities and on the job training

rather than obtaining credentials though higher educational institutions. Students want to

obtain higher education credentials through variable time, independent delivery, variable pace,

with flexible assessments that will lead to most students to succeed. Student retention is

decreasing in higher education because of undue levels of stress and trying to keep up within

the constraints of a semester, because of this, 30% of freshman students are not returning to

higher educational institutions. "Competency- based programs have spread briskly in higher

education over the past several years and their trajectory continues to rise. In spring 2014, a

review of the landscape of competency- based education (CBE; Kelchin, 2015) identified 52

colleges or universities with CBE programs underway (34) or in development (18). In winter

2015, Inside Higher Education reported that about 200 institutions were either planning or

implementing CBE classes or programs (Fain, 2015)(T. Nodine & Johnstone, n.d.)

Rationale for the Study

Students enjoy taking responsibility for their own learning, accomplishments, and abilities. With

that said, it is important for higher educational institutions to provide students with education

in a manner in which they want to learn. While there are indeed many stages that are needed

to accomplish such a task, there are a few standards including

1. to identify competencies associated with each degree, including working groups

   representing industry, faculty specialists, professional organizations, and others;

2. to organize the learning process through mastery of competencies rather than the

   delivery of courses;

3. to locate learning resources associated with each competency;

4. to develop a variety of secure assessments linked to the competencies;

5. to ensure that students received ongoing student supports at each stage of learning"

(T. R. Nodine, 2016)

Theoretical Framework

Competency-based education is a concept that has been around for many years. It has evolved

tremendously over time from the typical prior learning assessment (PLA). Without fail, there

have been varied attempts in moving traditional higher education programs to a CBE format.

The question remains, there is a more effective way? There are various theories in which CBE

has been either attempted or initiate. Studies show that many CBE models disregarded due to

cost. " The individualized approach is also associated with particular instructional techniques

such as self-paced instruction. This theory has led some educators to espouse the

"competency-based" learning model (Grant et al., 1979), whereby common learning objectives

(competencies) are formulated for all students, but the time allowed to reach these objectives

is highly variable, and the instructional techniques used are highly individualized"(Astin, 1985).

This research will extend on theories based on the following

- Benjamin Bloom

    o Bloom's Taxonomy

    o States that students learn through a hierarchy of levels

- Howard Gardner

    o Theory of multiple intelligence

    o Explain the variant methodologies in how students learn

Research shows that executing these theories correctly, coupled with proper pedagogy, robust

competency-based educational modules can enhance student learning.

The conceptual design revolves around the success of an institution that has created

competency-based education throughout the University. They have proven success that a

rigorous CBE education enhances the efficacy of students, increased their retention rate within

the freshman or first-year population while keeping costs down and maintaining an affordable

price for students. They have overcome varied barriers while implementing their CBE program

but utilized their resources wisely. If this institution can gain success with a student body of over 110,000 with a graduation rate of 85%, A private institution serving approximately 4000 students can accomplish the same.

Context of the study

This study took place within a small liberal arts university located in South Florida. While the population of the institution is roughly 4000 students, about 30% of these students are international therefore meaning that English is not their first language. While it can be frustrating for non-native language speakers to compete with their native speaking peers in a higher educational setting, they should still have the ability to gain the exact level of competencies they need in order to be successful.

Purpose of the Study

The purpose of this study is to enhance retention in higher educational settings by allowing students an individualized holistic learning environment, though competency based educational practices. CBE stands out in two ways. The first is that it reorients the educational process toward demonstrated mastery and the application of knowledge and skills in the real world. This reorientation builds a bridge between academics and employers, resulting in a better understanding of the knowledge and skills that students will need to succeed in work and in life. The second is that, while it can be a tactic or a tool to improve teaching and student learning, CBE's greatest strength is that it provides a means for helping quality and affordability co-exist in higher education. (Johnstone & Soares, 2014)

Research Questions

1. How a Competency-Based Education learning environment benefits student

    a. Improve retention and self-efficacy

2. How does faculty training enhance the competency-based education model

    Specifically, within a case design.

3. What are some of the outcomes of a Competency-Based Education (CBE) environment?

Assumptions

Students should be able to advance through their educational setting based on their ability to master a competency at their own pace. By enhancing higher educational programs and equipping them with the tools they need to create and build a viable competency-based education program, students will be allowed the opportunity to apply the competencies learned in their higher educational settings, to real life places of employment. Gone are the days where students learn theory and not application. Allowing students to gain necessary skills required to obtain employment post-graduation will ultimately enhance student retention, raise self-efficacy, and allow students to gain necessary on the job skill requirements.

Definition of Terms

Competency - A competency is a specific skill, knowledge, or ability that is both observable and measurable.

Competency-based education - Competency based education (CBE) is an alternative to the credit hour-based system of credentialing. Student progress is based on demonstration of proficiency and/or mastery as measured through assessments and/or through application of

credit for prior learning. In competency-based education programs, time is the variable and student competency mastery is the focus, rather than a fixed-time model where students achieve varying results. In competency-based education, as distinct from competency-based learning, the focus is on academic programs, practices, and policies.

Traditional students - individuals between the ages of 18-22 who received parental financial support and lived on campus. (Cross, n.d.)

Non-traditional students -   students aged 25 and over, but also include those under 25 who have characteristics indicative of adult responsibilities, such as working full-time, being financially independent, having non-spousal dependents, being a single parent, as well as having a nontraditional educational trajectory, such as delayed enrollment into higher education or did not complete high school (Chen, 2017; Soares, 2013)

Transformative education theory - a theory of adult learning that utilizes disorienting dilemmas to challenge students' thinking. Students are then encouraged to use critical thinking and questioning to consider if their underlying assumptions and beliefs about the world are accurate. ("Transformative Learning Theory (Mezirow) - Learning Theories," n.d.)

Learning outcomes - learning outcomes are observable and measurable statements of what a student knows, thinks, or is able to do as a result of an educational experience. Sets of learning outcomes can be defined at the level of the institution, programs, courses, learning modules, or in other types of groupings. Learning outcomes are generally at the same level of granularity as competencies, and sometimes the terms are used interchangeably. (Everhart, Sandeen, Seymour, & Yoshino, n.d.)

Seat-time - Seat time is often used in conjunction with "credit hour," referring to time-based educational requirements measuring student time in classes. However, according to the U.S. Dept. of Education, "There is no "seat time" requirement implicit in the definition of a credit hour. An institution that is offering asynchronous online courses would need to determine the amount of student work expected in each online course in order to achieve the course objectives, and to assign a credit hour based on at least an equivalent amount of work as represented in the definition of credit hour." (Everhart et al., n.d.)

Alignment - CBE depends on alignment of competencies to learning resources and assessments, which addresses the assurance of learning required for accreditation.

Formative assessment - Formative assessment is diagnostic in nature and refers to the use of assessment results by instructors or coaches to improve student performance. In the context of program assessment, assessment results are used to improve program performance. Also, sometimes referred to as "assessment for learning" as distinct from summative assessment, which is "assessment of learning." (Everhart et al., n.d.)

Summative assessment - Summative assessment is judgmental in nature and refers to the use of assessment results by instructors or coaches to determine whether and how well a student achieved a learning objective or competency. In the context of program assessment, assessment results are used to determine the extent to which the program goals were achieved. Another definition for summative is assessment occurring at the end of a defined milestone. (Everhart et al., n.d.)

Authentic assessment - Authentic assessment is the assessment of competencies in a manner

that as closely as possible approximates the way in which that competency will be

demonstrated in the individual's professional and/or civic life. (Everhart et al., n.d.)

Prior learning assessment - Prior learning assessment (PLA) is "the evaluation and assessment

of an individual's life learning for college credit, certification, or advanced standing toward

further education or training." Prior learning assessment is often applied to military and work

experience, as well as community service, informal online learning, and other learning acquired

outside traditional academic institutions. Prior learning assessment often uses evaluation of

competency mastery to "translate" these learning experiences into college credits. (Everhart et

al., n.d.)

Rubric - Rubrics are assessment matrices with criteria for evaluating a competency and levels of

demonstrated performance. Rubrics are applied to student work with the results used to

determine levels of achievement. Rubrics are used to evaluate student, course, and program

performance. (Everhart et al., n.d.)

Pace - Flexible pace allows students to progress through learning materials more quickly or

more slowly, within certain parameters and usually with date constraints for overall completion

of a set of materials. (Everhart et al., n.d.)

Proficiency - Proficiency is a term used to signify achievement within an educational program

context. Levels of proficiency are determined by the education provider and sought by the

student in the program. Proficiency in all program areas is the ideal goal. In competency-based

education, "proficiency" is sometimes used in conjunction with "mastery," where proficiency is

the level of achievement that is considered "passing" (e.g. 60%) but a higher level of

achievement (e.g. 85%) is required for mastery and progression through the program. (Everhart et al., n.d.)

Retention – staying in school until completion of a degree (Hagedorn, n.d.)

Learning artifacts - Learning artifacts refer to actual work produced by students. Learning artifacts can be test results, papers, portfolios, project reports, performances, presentations, paintings, work products, etc. which can be used in the process of assessing students or programs and can be used by learners as evidence of learning for numerous purposes. (Everhart et al., n.d.)

Mastery - Mastery is a demonstration of a specific competency. Mastery of specified competencies in competency-based education is the mechanism by which a student progresses through the educational process to the desired end state. (Everhart et al., n.d.)

Organization of the Dissertation

This chapter presents an introduction as it relates to Competency-Based Education including the background and history, from where it began, to where it is going in the future of higher education. This chapter also explained in detail the statement of the problem, theoretical framework, conceptual design, rationale of the study, definition of terms and assumptions. Chapter II will provide a review of the literature. The researcher will review the effects on improving retention as it relates to higher education at successful institutions. This chapter will also include alternative studies as it relates to competency-based education. Chapter III will describe the research design and method of data collection used varies questions will be answered including why these methods of research were chosen.

Chapter II

Literature Review

Introduction

Competency-based education (CBE) is undoubtfully a rapidly going phenomenon in the United States. When one thinks of disrupting the world of education, CBE comes to mind in various aspects. CBE programs provide a sense of flexibility in the way students are equipped to contribute to the workforce. Students gain credit only for what they know and continue to build on that knowledge base and other skills at their own pace. In the process, they can earn degrees and certificates from top universities that will provide them with long-term value in both their public and private lives.

Big companies and corporations are bypassing the world of higher education because they state that higher educational institutions are failing their students since they must train their employees to work. Why is this so? As educators, we need to be diligent in graduating individuals that not only understand the perception of theory but, at the same time, understand the importance of gaining real work knowledge with hands-on practice. The purpose of this study is to enhance retention in higher education settings by allowing students an individualized holistic learning environment, though competency-based educational practices. CBE stands out in two ways; it reorients the educational process toward demonstrated mastery and the application of knowledge and skills in the real world, building a bridge between academics and employers. While it can be a tactic or a tool to improve teaching and student learning, CBE's greatest strength is that it provides a means for helping quality and affordability co-exist in higher education. (Johnstone & Soares, 2014). Revisiting the research questions, as stated in chapter one.

1. How a Competency-Based Education learning environment benefits the student and Improve retention and self-efficacy.

2. How does faculty training enhance the competency-based education model, accurately, within a case design?

3. What are the effects of a Competency-Based Education environment and higher-grade point average (GPA)?

The review of the literature uncovered a variety of themes in which the research has documented in the following sections.

Literature review framework

· History

· Training and Development

· Implementation

History

Competency-based education (CBE) programs have spread briskly in higher education over the past several years, and their trajectory continues to rise. As competency-based education continues to disrupt education, it is essential to define the history and how it evolved into what it has become within the modern-day. "Competency-based approaches have been integrated into U.S. higher education programs for half a century since reforms of teacher training and vocational education first established the new contours of CBE in the 1960s and 1970s. Before that, several developments in K- 12 education regarding outcomes-based learning and mastery learning set the stage for CBE implementation in postsecondary education" (Nodine, 2016).

The current phase of CBE development is characterized by a wide range of colleges and

universities planning or implementing CBE programs, many of which are taking advantage of

online or hybrid models, advances in adaptive learning technology, or direct assessment"

(Nodine, 2016). While primary educational settings are beginning to implement a CBE

environment, one must determine if they are adequately trained and understand the concept

of creating a competency for a course, one can go even deeper in asking the question, can a

faculty member define the difference between an outcome and a competency? What is the

difference?

"Ralph W. Tyler, one of the most important educators of the twentieth century in the United

States. Subsequently, Tyler's work and thinking are analyzed to clarify some misunderstood

concepts in his work since the late 1970s" (EISNER, 2019). Competencies, defined by proponent

William Spady in 1977 as "indicators of successful performance in life-role activities," were

popular among curriculum development specialists during the mid-1970s. Although Tyler

undoubtedly would have considered competencies one type of objective, the term was more

palatable to educators concerned with the perceived rigidity of objective-based approaches.

(Guskey, 1994)

        In an interview conducted, Ralph Tyler had the opportunity to voice his opinion on his

curriculum model and defend his perspectives on where education was, and where it was

going. "He developed what we know as the "Tyler Model" This model was based around four

key items (Nodine, 2016).

1. What educational purposes should the school seek to attain?

2. What educational experiences can be provided that are likely to attain these purposes?

3. How can these educational experiences be effectively organized?

4. How can we determine whether these purposes are being attained?

(Tyler_Ralph_W_19021994, n.d.)

Ralph Tyler saw a change in education and was determined to make an impact. "The simple and elegant components of the Tyler Model include a few concepts that are, again, as rich today as they were fifty years ago. The fundamental question that Tyler always addressed was to question the sources from which we draw the basic goals of education and to ask ourselves how to refine these goals into appropriate instructional objectives" (Simpson, 1999). As educators, institutions and government officials began to understand the overall aspect of the Tyler Model, he gained great traction within the world of education where he was able to take his skills to the National Assessment of Education Progress to help with the creation of authentic assessment. "In the late 1960s, Tyler took on the job of designing the assessment measures for the National Assessment of Education Progress (NAEP), which are federally mandated criterion-referenced tests used to gauge national achievement in various disciplines and skill domains" (Tyler_Ralph_W_19021994, n.d.).

Much like Ralph Tyler, Benjamin Bloom was an outlier in the world of education. For the unfamiliar, Bloom's Taxonomy is a framework that aids teachers in selecting learning objectives and designing assessments. The Taxonomy is a product of 19th century behaviorist psychology, which viewed observable actions as the only knowable correlates for mental processes. (Bertucio, 2017) According to Bloom, the aim of education is not to impart objective knowledge of reality for its own sake, as "truth and knowledge are only relative, and there are no hard and fast truths which exist for all times and all places" (Bertucio, 2017)

 "Bloom and his colleagues, mostly university examiners, originally constructed the Taxonomy to assist instructors in creating testing materials which more accurately assessed their curriculum aims. Despite Bloom's expressed intentions, the Taxonomy has garnered almost dogmatic acceptance in the educational establishment" (Bertucio, 2017). Benjamin Bloom and his co-authors created a hierarchy of knowledge-based action verbs that aided teachers and professors alike to create healthy learning objectives when writing courses and curriculum. "Its authors conceived a hierarchy of six increasingly complex cognitive functions, represented by the following "action verbs" Knowing, Comprehending, Applying, Analyzing, Synthesizing, and Evaluating" (Bertucio, 2017). "Knowledge is the foundational cognitive skill and refers to the retention of specific, discrete pieces of information like facts and definitions or methodology, such as the sequence of events in a step-by-step process. Learners show comprehension of the meaning of the information that they encounter by paraphrasing it in their own words, classifying items in groups, comparing and contrasting items with other similar entities, or explaining a principle to others. Learning objectives that address comprehension will help learners begin to incorporate knowledge into their existing cognitive schemas by which they understand the world. This allows learners to use knowledge, skills, or techniques in new situations through the application, and analysis is where the skills that we commonly think of as critical thinking. Following analysis is the level of synthesis, which entails creating a novel product in a specific situation. Teachers often ask, "Where do the objectives come from?" Advocates of objectives have never satisfactorily answered this problem. Tyler (1949) argues that objectives come from three sources – students, subjects, and society – and are then siphoned through two filters – the philosophy and psychology of learning" (McKernan, n.d.).

When instructors reflect on a teaching session and use learner feedback and assessment results to judge the value of the session, they engage in evaluation (Adams, 2015). Allowing students to consume information while progressing to a higher order of thinking would lead the student to not only higher assessment scores but allow them to retain the information and repeat it if put within a real-life scenario situation. As research continued to the cognitive domains, it became evident that revisions were needed in order to adapt to modern learners and to gain strength through synthesis. "In this later version, the levels are remembered, understand, apply, analyze, evaluate, and create. This reorganization places the skill of synthesis rather than evaluation at the highest level of the hierarchy (Adams, 2015). Ultimately, the goal was for educators to develop a curriculum based on mastery learning, which ultimately is the bases behind competency-based education. "Bloom's Taxonomy and the cognitive domain suggests that educators should develop curriculum around mastery learning. Research shows that at least 90% of students can obtain a mastery of given learning tasks" (Adams, 2015). All students have the opportunity to reach maximum educational potential however if these theories are not correctly being utilized are we as educators failing the youth of today? "Although teacher education is notoriously prone to trends, fads, and the assorted vicissitudes of fashion, Benjamin Bloom's Taxonomy of Educational Objectives has for several decades retained nearly universal obeisance. It has become impossible for pre-service teachers and their instructors to imagine lesson planning without those ubiquitous "action verbs" (Bertucio, 2017). To Bloom, outcomes were the desired results from any teaching and learning process. They were the purposes a school sought to attain, as Tyler stated in the first of his four fundamental questions. And because outcomes were untainted by previous use or misuse, it

would not be interpreted with the narrowness associated with objectives, competencies, and

goals. Hence the label outcome-based education, or OBE, was born in the late 1970s and early

1980s. (Guskey, 1994)

The history of CBE continued to flourish in the United States when ten colleges and

universities were challenged by the U.S. Office of Education to develop training programs for

elementary school teachers. CBE was ultimately broken down into 3 phases (Nodine, 2015)

1. Innovative teacher education program

2. Vocational education programs

3. Online and hybrid models and adaptive learning technology (Nodine,2015)

Higher education

Each university has its own way of introducing freshmen into the world of college life. It

is crucial that Freshmen are given fair opportunity to succeed. As it relates to competency-

based education, these faculty members, along with librarians put together an exam to see the

competency levels of freshmen enrolled in the General Education program. "Librarians, faculty,

and assessment specialists at James Madison University (JMU) collaborated to develop an

online Information-Seeking Skills Test (ISST) to measure competencies relating to information

literacy" (Cameron & Feind, 2001). This provides a strong starting basis for students; instructors

can now measure the levels of each student to create their individualized learning path.

As higher education moves forward with educational trends, competency-based education can

not only improve the quality of education but reduce cost is by adding a CBE component into

any online program. Broward College took a leap of good faith to start their pilot program with

computer systems. In doing so, they can build a robust online foundation that can then follow

suit for all other CBE programs to come. "The online competency-based program at Broward College targets students interested in learning computer systems support and analysis. The Department of Labor and Broward College have launched a pilot competency-based education (CBE) program in accelerated training for the job of computer system support specialist. As higher education searches for ways to improve college affordability and more accurately measure student learning, Broward's Accelerated I.T. Training Programs offer our online students a new path to completion through a CBE approach" (Myers, 2014).

Online education is changing the world of higher education as we know it. We are moving away from the traditional way of the lecture where the instructor would stand in front of a classroom whiteboard, writing down bullet points while the students take notes. In the wave of technology, students need right on time education. "Changing Educational Paradigms for Online Learning addresses the challenges and opportunities associated with information and communication technologies (ICTs) as related to education. From discussing new and innovative educational paradigms and learning models resulting from ICTs to addressing future student needs and international issues" (Buchanan, 2003). Online education has been such a leading factor in education from the creation. Year after year, professionals within the industry have been attempting to refine and re-create online learning to provide better quality and effective ways of teaching in a virtual environment—what better way than to include updated information and communication technology.

As competency-based educational programs and pilot programs began to gain popularity within the United States, the online educational format has become a top competitor within the CBE world. Western Governors University (WGU) is one of the frontiers of CBE programs.

WGU alongside the U.S. National Association of Manufacturers was examined on the aspect of student learning initiatives. "Western Governors University has been held up as the standard CBE model. It was an early model when there was no apparent direct assessment pathway for federal financial aid. Founded in 1997, WGU started using direct assessment but later backwards mapped everything to a course-based model with variable credit equivalencies in response to student needs, e.g., to transfer or matriculate into a credit-based program, and to qualify for federal financial aid. Their degree programs include bachelor's and master's degrees with a "subscription tuition" plan based on the type of degree and six-month periods" (Book, 2014).

While WGU was moving forward with intense CBE online courses, many students were concerned that their CBE education would not transfer if in case they wanted to move forward and pursue degrees of higher levels. To counter this notion and to promote a strong student body WGU was able to create credit equivalences to their assessment-based program. "WGU, for example, has a formula that they use to determine credit equivalencies for their courses. Their CBE assessments allow the student to demonstrate the competencies and mastery of the same material that would be covered in a course (Book, 2014). This is a seemingly important aspect as many students, both traditional and non-traditional appreciate the fact that once they are finished with a program, they can take their credits and either advance to another program or transfer their credits to an institution that may be better suited for them in the long run.

Internationally online education has also disrupted the traditional format of education where universities are piloting online programs throughout the student body. "What happens

when you take two groups of students from different early childhood degree programs in

Australia and drop them into a fully immersed online distance learning program? Well, this is

the exact study that this article described, one group, including students, peers, lecturers were

all placed in) in a collaborative online environment that mirrors the complexity that students

are experiencing in their workplaces. This group experienced an enhanced model of teaching

and learning in an online environment, while the other group experienced just the online

experience" (Green et al., 2010). The United States is usually the frontiers of higher education;

because of this, it is only natural that online education would be implemented internationally,

followed by competency-based educational models. While this does not deal directly with

competency-based education, it is evident that putting students out of their comfort level and

fully emerging them in an online environment would allow them to thrive. This type of online

collaborative learning disrupted the system of what was considered the norm. When it comes

to CBE programs, they are also known to disrupt the world of higher education, so their levels

of assessment and pedagogy are important.

Typically, higher education's focus leads towards an institution. There are few instances

where the community has come together to form their own versions of competency-based

educational environments. The community leaders saw this as an opportunity to create their

own educational program using CBE skills. By hiring the professors who were already vetted

educators made this transition easier. "In 1971, the School of Education at the University of

Wisconsin Milwaukee broadened its role as a teacher training institute by creating a community

education program for the purpose of reaching out to a non-traditional population of students

in the urban Milwaukee area. The original program was staffed by community organizers from

Chicago who held the academic ranks of lecturers and specialists. These organizers, after working in an outreach capacity with community groups in Milwaukee, discovered that people from the inner city wanted to learn community development skills" (Harris, 1982). From these initial contacts the staff in the community education program conceptualized a community development role for community educators within an urban setting. "These educators would know how to work with people in neighborhoods, organizing them into self-help projects that would improve their communities. In 1974, under the leadership of Dean Richard Davis, the community education program became an undergraduate department, and hired faculty with doctorates and for traditional professorial roles within the university. This faculty has created a competency-based curriculum that prepares students to become effective community developers, allows students to earn fieldwork credits, and grants credits for previous educational experiences" (Harris, 1982). Competency-Based educational programs can be effective in various environments.

Training and Development

Competency-based education (CBE) programs have experienced a resurgence in recent years in part as a response to employer concerns that college graduates and credentialed workers do not have the skills and competencies to succeed in the workplace.

· People outside the academy are asking:

· After all the money spent, what do graduates know?

· What can they do?

· Can they be productive working men and women? (Wax,2016)

For competency-based programs to meet and exceed expectations, colleges and universities must forge closer bonds with employers and hiring managers to ensure the programming is actually serving a demand (Wax, 2020). Students are often required to demonstrate competencies by completing the kind of projects or assignments that they would regularly encounter in an actual workplace. The idea is that through this kind of "authentic assessment," institutions will be able to say with confidence to employers that their graduates are well prepared for the workplace. (Wax, 2020)

For years, learning has been time-based. Whether in a community college, vocational school or workplace, the measurement of success has been based on classroom hours and letter grades. You know the drill: Attend classes, pass tests, move to the next course. But something particularly important is missing from that training model. There is no validation that the necessary knowledge and skills have been transferred in a meaningful, actionable and measurable way. ("Manufacturing's New Training Model," n.d.). Competency-Based education is just as crucial to the corporate world as it is to the higher education sector. When combined, students obtain the highest level of education and opportunity. According to the new training model of manufactures, the top five reasons for adopting a competency-based educational model are as follows.

1. Accelerates Competency: The flexibility of CBE can decrease time-to-competency and accelerate student-to employer readiness. CBE training for incumbent workers ensures consistency and cross-functionality across job roles. Bonus points: Based on true needs, training is accelerated, cutting costs.

2. Engages Future and Current Employees: CBE training is tailored for each student, defining clear career pathways. This clarity enhances employee contributions, confidence, and engagement.

3. Builds Capacity for Educators: A flipped classroom model helps buyback time spent on lecturing. For companies, Learning Management Systems automatically track employee education and results, allowing more time for hands-on skills development.

4. Ensures Validation: CBE programs include a validation process that not only tests a new skill but also continues to build on it. Current skillsets are validated through assessments, testing, and certifications. Do not forget; validation is needed to apply for grants.

5. Addresses the Skills Gap: With millions of manufacturing jobs available — and not enough skilled workers to fill them — CBE can provide current and future employees with the skills, knowledge, and abilities to be competent in the 21st century in an accelerated timeframe ("Manufacturing's New Training Model," n.d.)

In creating intense training and development modules within a competency-based education model, it is imperative that companies partner with higher educational institutions to define the needs of the company thoroughly. "Involving faculty in discussions with employers about competencies, for example, can result in recognition that the goals of faculty and employers are essentially the same. Both faculty and employers want students to gain broad, transferable skills that will enable the student to be a lifelong learner with the ability to apply their skills to a broad range of ever-changing circumstances" ("Competency-Based Education: A Powerful Way to Link Learning and the Workplace | The EvoLLLution," n.d.).

Implementation

Schools, industry, and government are working together to implement CBE, linking real

knowledge and skills learning, credentials, certifications, and employment to build career-ready

students and high-performance employees (Kunz, 2018). Although the United States is often

the examples in which other countries follow when it comes to education, there are often times

when the United States learns from others. Before the students are taught in a CBE

environment, educators must be trained on how to teach in such an environment. According to

Haipinge (2016), A Bachelor of Education at the University of Namibia attempted to develop

student teachers within a Project-Based Learning course. "The course further offered students a

model for applying learner-centered education, which is the recommended pedagogical

approach in Namibia. Challenges observed in the course, have been limited opportunities for

students to share project products and learning experiences. Also, since students use PBL for

learning and not as a pedagogical model, challenges are anticipated in using the approach in

their own teaching" (Haipinge, 2016). The overall premise of this is helpful; however, the

research fell short when they could not figure how to support proper communication and

mentoring within the online environment. This project was not an entire program, but just one

course. The students should have had a more collaborative environment, especially in a PBL

learning environment. It is interesting how education throughout different countries are

applying a new type of teaching and learning and documenting their challenges. The challenges

that were faced in project-based learning might be similar to the challenges faced while

implementing a new CBE program.

"Educational institutions implementing a mastery approach face two further challenges: determining what is meant by mastery in each subject area and identifying ways for students to demonstrate such mastery. Bloom's taxonomy (1956) identified the following general categories associated with mastery in the cognitive domain (starting with the simplest and moving to the most complex): knowledge, comprehension, application, analysis, synthesis, and evaluation" (Nodine, 2016). Regardless of if there is a program that has evident success, implementing a new program never comes without fail. "Because CBE may be a less common approach to teaching and learning, program leaders may encounter local barriers to implementation on their campuses, ranging from institutional processes and infrastructure to stakeholder buy-in. External factors, such as accreditation and financial aid regulations, also may affect an institution's decision to implement CBE. Given the broad range of potential barriers, the NSPCBE asked respondents to share their perceptions of what barriers exist to implementing CBE on their campuses" (Of & Field, 2018).

Summary

This chapter goes in-depth of the research that has been conducted in relation to competency-based education (CBE) The research discusses the following Theories in which closely match the concept of a CBE learning environment.

· The history of CBE

· How CBE enhances training and development

· The implementation process of a CBE program

It is proven that while higher educational institutions are new to the world of competency-based education students appreciate the fact that they can learn work related competencies while obtaining credit to earn respectful degrees without the basis of time constraints.

Chapter III

Methodology

Introduction and identification of a problem

The purpose of this case study research is to discover the importance of a competency-based education program based on the results of a pilot program at a small private university in the southeast region. A case study design will be used where the institution will be its own case. Surveys were developed and distributed to both faculty and participants of a pilot program and the results were analyzed.

Over the years, higher educational institutions have been struggling with not only enrollment but retention. Students are opting for microlearning opportunities and on the job training rather than obtaining credentials through higher educational institutions. Students want to obtain higher education credentials through variable time, independent delivery, variable pace, with flexible assessments that will lead to most students to succeed. Student retention is decreasing in higher education because of excessive levels of stress and trying to keep up within the constraints of a semester, because of this, 30% of first-year students are not returning to higher educational institutions. "Competency-based programs have spread briskly in higher education over the past several years, and their trajectory continues to rise. In spring 2014, a review of the landscape of competency-based education (CBE; Kelchin, 2015) identified 52 colleges or universities with CBE programs underway (34) or in development (18). In winter 2015, Inside Higher Education reported that about 200 institutions were either planning or implementing CBE classes or programs (Fain, 2015; Nodine & Johnstone, n.d.). There is little to no research on the perceptions of students enrolled in CBE programs or professors implementing CBE courses.

Hypotheses

The researcher believes that with well-built competency-based education course development, proper pedagogy, and appropriate instructor training and development that freshman retention rates will vastly increase within higher education.

Pseudo Problem
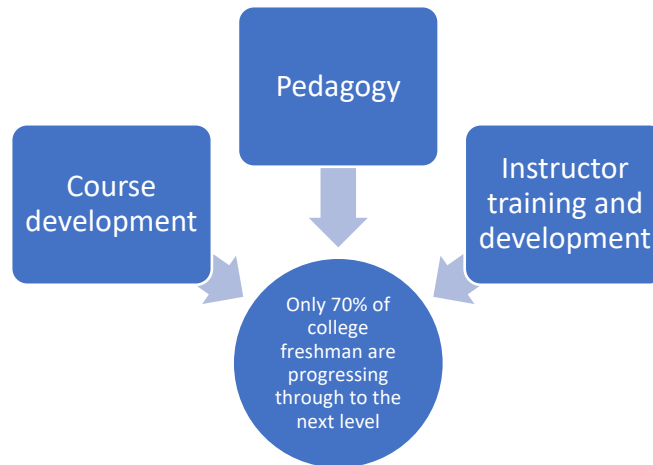
Research Question

Developing a research plan begins with the development of specific research questions that would be the primary focus of research. In regard to the research topic at hand, the research questions are as follows.

1. How a Competency-Based Education learning environment benefits the student and Improve retention and self-efficacy.

2. How does faculty training enhance the competency-based education model, accurately, within a case design?

3. What are the effects of a Competency-Based Education environment and higher-grade point average (GPA)?

In order to be clear in the results, the researcher has selected courses that include the exact content and taught by the same faculty. This case design is based on the premise that the underlying education is the dependent variable with CBE and traditional educational environments as the independent variable. The case study will be created to apply key findings to improve upon the overall online educational practices.

Setting/Context

The setting of the study is a small private university located in South Florida. The researcher will collect case study research data. This may prove that a CBE model will enhance the overall retention rates of students enrolled in a higher education program and how instructor training directly affects the overall success of a program. "The training also has the purpose of uncovering problems within the case study plan or with the research team's capabilities" (Yin, 2009). The researcher will conduct a case study focus group at the university. Since the researcher used case study research, the results of the data analyzed can be compared and used to apply for CBE programs along with valid training and development for instructors throughout similar institutions.

Description of Population

The target population will be:

- students currently enrolled within the CBE pilot program

- professors teaching CBE courses within the pilot program in South Florida

- administrators who would like to learn more regarding CBE

Research Design – Rationale for Design

This study was developed in partial use of the case study design; "The collective case study or multiple case study uses several cases selected to understand further and investigate a phenomenon, population or general condition. The researcher believes that the phenomenon is not idiosyncratic to a single unit and that studying multiple units can provide better illumination"(Ary & Jacobs, Irvine, Walker, 2017). This study will include focus groups and survey research. "In survey research, researchers ask questions about peoples' beliefs, opinions, characteristics, perceptions, and behaviors. The survey questionnaire is used widely as a source of data in studies in sociology, business, psychology, political science, and education." (Ary & Jacobs, Irvine, Walker, 2017).

Data Collection Plan

Throughout this research, data was collected in multiple ways, including:

- Surveys

    - student based surveys

        - Likert scale

        - open ended questions

        - on conclusion of the survey, participants will be asked if they would like

          to participate in a focus group.

    - faculty-based surveys

        - Likert scale

        - open ended questions

- Interviews were conducted as a follow up to the Survey. These interviews consisted of

  approximately 7 open ended questions.

    - Students

    - Faculty

    - Administration

- Primary data collection

    - Descriptive Statistics based on overall student grades.

    - attrition rates varied from each university.

    - Attendance

    - Grade point average

- Focus groups.

- Focus groups questions were developed and guided through the results of the survey results including:

  - Students participants of the Competency Based Education program

  - Faculty participants of the Competency Based Education program

  - Administration of the Universities

Data Analysis Plan

t-Test for independent samples was used within the data analysis plan. "a t-Test is a statistical procedure for testing hypothesis concerning the difference between two means; also used for other purposes (Ary, D; Jacobs, L; Irvine, C; Walker, 2017). "The t-Test for independent samples is a straightforward ratio that divides the observed difference between the means by the difference expected through chance alone (Ary, D; Jacobs, L; Irvine, C; Walker, 2017).

Assumptions, Limitations, and Delimitations

Assumptions

The researcher assumed that on the conclusion of this research, findings will show:

- once faculty members adopt competency-based educational strategies to an online environment, it will enhance student retention rates.

- increase faculty and student engagement.

- allow students to learn application and not just theory.

Ultimately, students will advance through their educational setting based on their ability to master a competency at their own pace. While enhancing higher educational programs and equipping faculty with the tools they need to create and build a viable competency-based

education program. Students will be allowed the opportunity to apply the competencies

learned in their higher educational settings, to real-life places of employment. Allowing

students to gain the necessary skills required to obtain employment post-graduation will

ultimately enhance student retention, raise self-efficacy, and allow students to gain necessary

on the job skill requirements.

Limitations

Potential weaknesses in this study could include:

- Data from courses taught before instructor training

  o If instructors do not receive proper training, they may not have enough

    knowledge to properly execute a CBE course

- Personal bias in the study

  o The researcher believes that students will achieve higher GPA's and increased

    retention through CBE environments.

- Does the student actually know what type of class they are taking

Delimitations

For this study, the researcher will not research the following

- Variances between traditional and non-traditional students

Summary

This chapter described the purpose of this case study, hypothesis as well as the

questions included within the research. The pseudo problem was also introduced throughout

this chapter. The settings and context were clarified and the rational for the design was

mapped out. The data collection plan explained that a variety of surveys, interviews, statistical data collection and focus groups will be gathered to determine the results of the study. Chapter I presented an introduction as it relates to Competency-Based Education including the background and history, from where it began, to where it is going in the future of higher education. Chapter I also explained in detail the statement of the problem, theoretical framework, conceptual design, rationale of the study, definition of terms and assumptions. Chapter II provided a review of the literature. The researcher reviewed the effects on improving retention as it relates to higher education at successful institutions. Chapter II also included alternative studies as it relates to competency-based education. Chapter III will describe the research design and method of data collection used varies questions will be answered including why these methods of research were chosen.

Chapter IV

Introduction

Competency-based education (CBE) is rapidly gaining popularity throughout the United States in both corporate and educational settings alike. Throughout the realm of disrupting education, competency-based education allows students to accomplish their educational goals at their own pace while meeting or exceeding the levels of competency required to move to the next level. The purpose of this study is to enhance retention in higher education settings by allowing students an individualized holistic learning environment, though competency based educational practices. CBE stands out in many ways including the fact that it reorients the educational process toward demonstrated mastery and the application of knowledge and skills in the real world. This reorientation builds a bridge between academics and employers, resulting in a better understanding of the knowledge and skills that students will need to succeed in work and in life. This chapter will describe the results of the research questions posed in chapter 1 through survey results and focus groups.

The purpose of this research is to discover the importance of a competency-based education program based on the results of a pilot program at a small private university in the southeast region. A case design will be used where each institution will be its own case. Surveys were developed and distributed to administrators, faculty and participants of a pilot program, followed by focus groups to strengthen the study. The overall aspects of the study were to answer the following questions.

1. How a Competency-Based Education learning environment benefits the student and Improve retention and self-efficacy.

2. How does faculty training enhance the competency-based education model, accurately,

   within a case design?

3. What are the effects of a Competency-Based Education environment and higher-grade

   point average (GPA)?

The preliminary surveys were used as a steppingstone to obtain more information gain

knowledge of the overall thoughts of how a CBE model was perceived by administrators, faculty

and students.

Administrator Survey Results

To determine if administrators had any interest in learning more about a CBE model, the

following questions were asked so the researcher can formulate leading questions for the focus

group. "How familiar are you with Competency-Based Education".

Graph 1
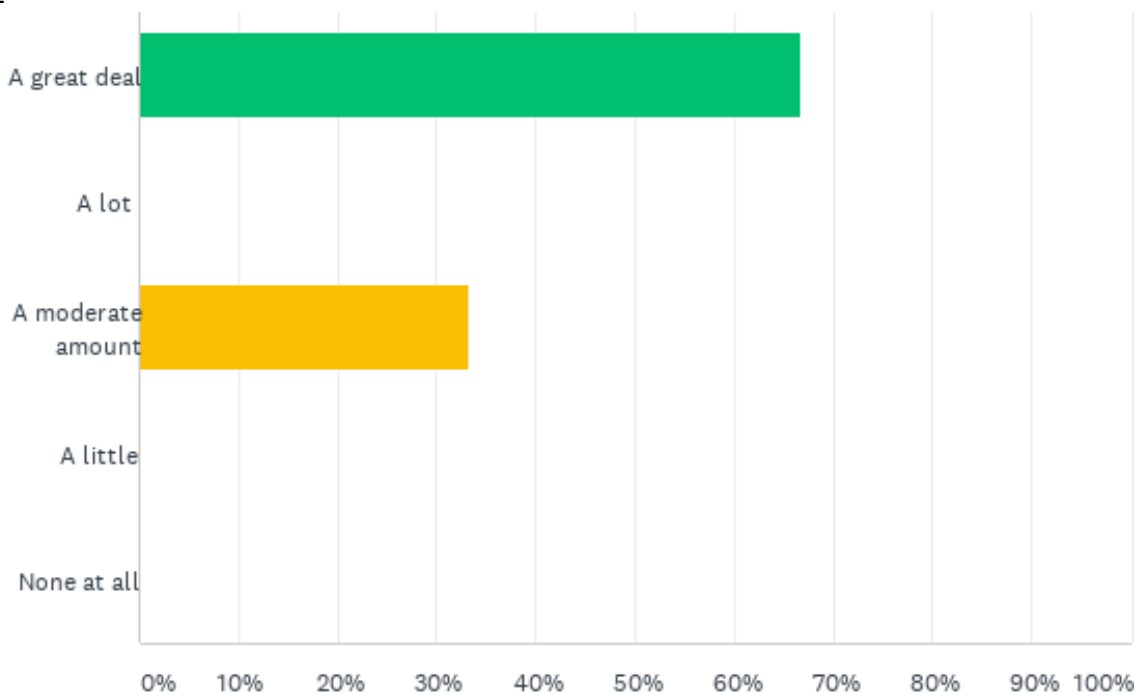
66% of administrators felt that they knew a great deal regarding CBE while 33.3% of

administrators felt they knew a moderate amount. This was quite interesting as CBE concepts

are not widely utilized throughout the university.

CBE courses are still newer to the world of higher education, it was found that many

administrators feel that a CBE model is ineffective. The survey asked the administrators how

effective they felt a CBE model was.

Graph 2
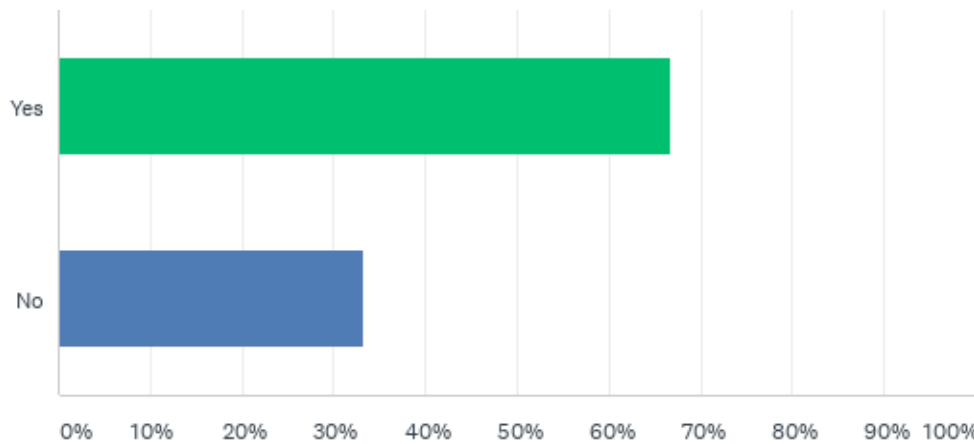
Again, 66% of administrators believe a CBE model is effective while again, 33% feel that is not

an effective educational model. Administrators hold a high level of power when it comes to

implementing change at any institution. With that being said, administrators were asked if

there were any personal interests in adopting a CBE model.

Graph 3
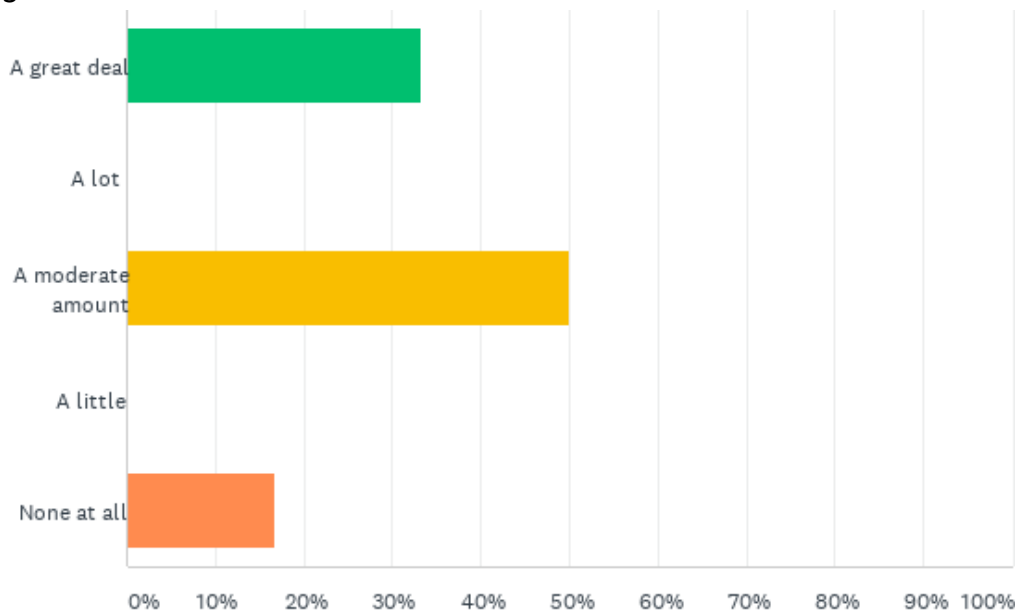
33% stated that there was a great deal of personal interest, 50% stated that there was a

moderate amount of interest and 16% stated that there was no interest at all in adopting a

competency-based educational model.

Although administrators implement change, faculty members drive ideas. With that

said, faculty members were also asked to complete a survey. To determine the levels of training

and development that may be needed in the course development phase of creating a CBE

styled course, faculty was asked if they are currently teaching a CBE course.

Graph 4
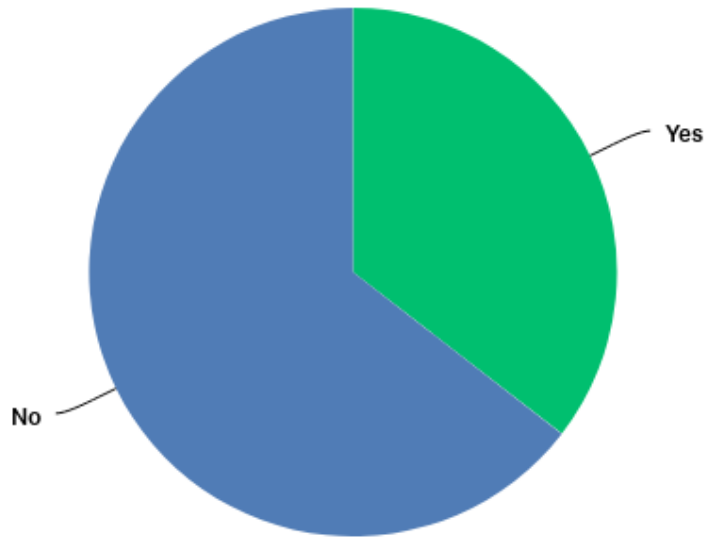
35% of faculty stated that they are teaching a CBE styled course while 64% of faculty members

stated that they are not currently teaching a CBE course. Similar to a question that was asked to

administrators, faculty was asked, do you find CBE courses effective?

Graph 5
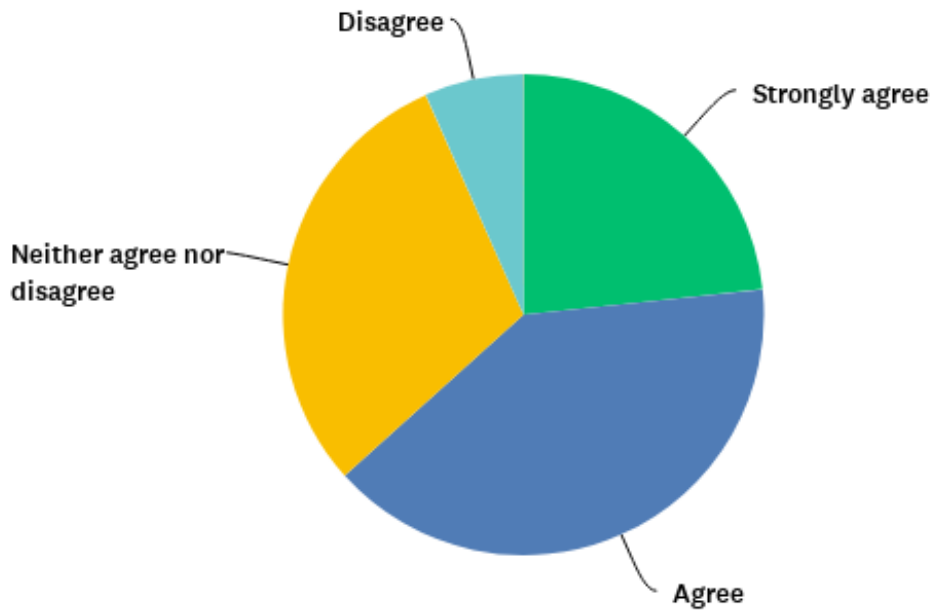
It was found that 63% of faculty members either strongly agree or agree that a competency-

based education course is effective while 6% disagree and 30% neither agree or disagree.

Course creation can be a difficult part of creating an effective CBE course. Faculty members

were asked how difficult was it to develop your CBE course?

Graph 6
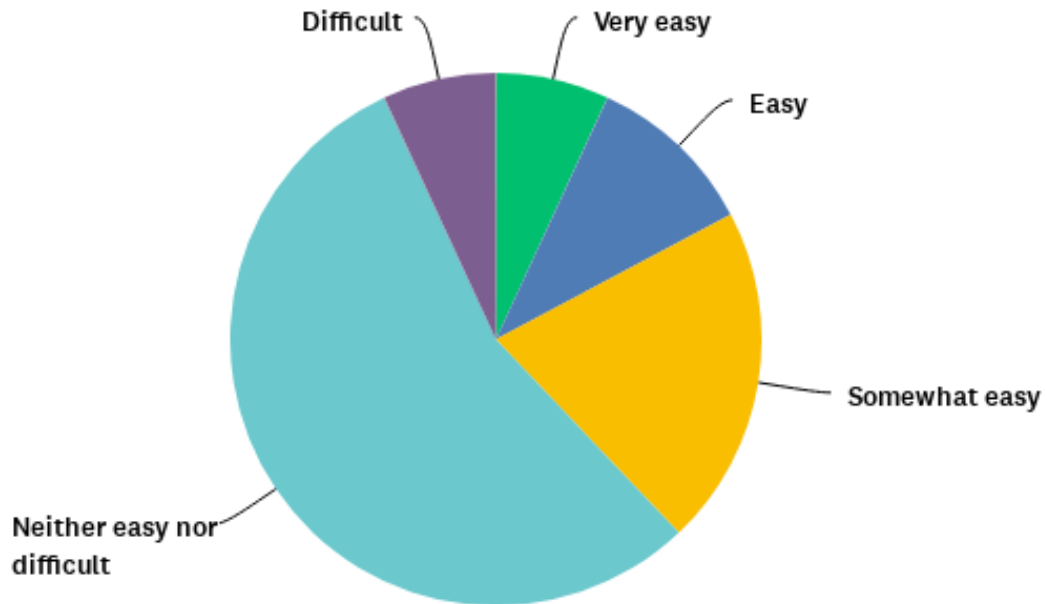
6% of faculty members stated that it was easy to create their course, 10% stated somewhat

easy, 21% stated somewhat easy, 55% neither easy nor difficult and 7% stated that it was

difficult.

How a Competency-Based Education learning environment benefits the student and

Improve retention and self-efficacy. The student survey posed a question, "How has CBE helped

your GPA. It was found that most students felt that a competency based educational model

helped their GPA.

Graph 7
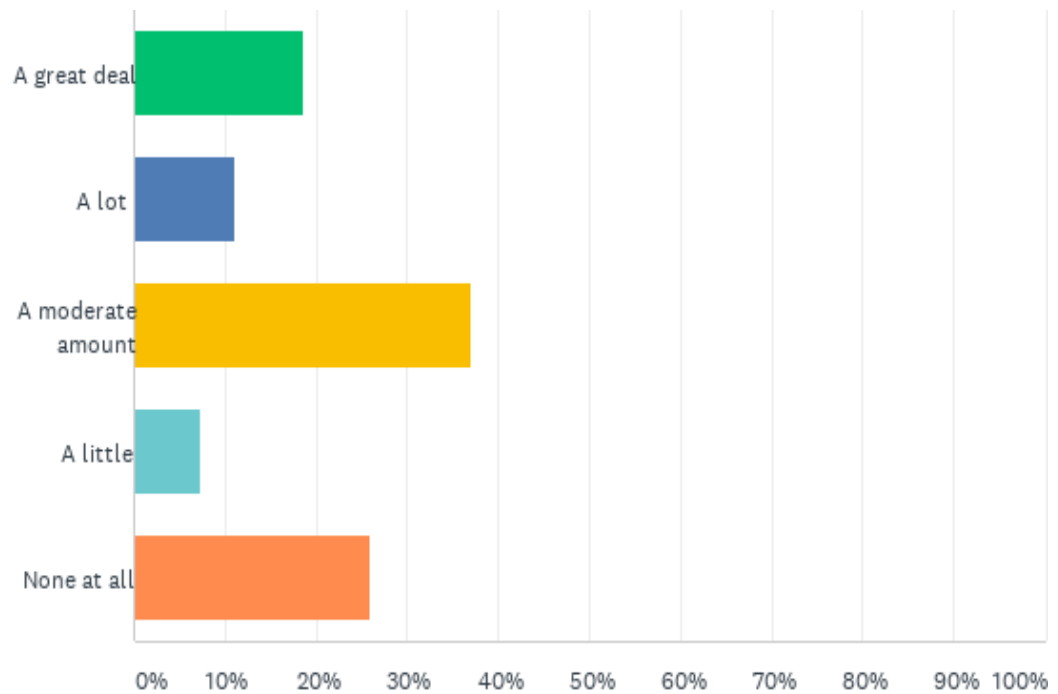
19% of students felt that a CBE model helped their GPA a great deal, 11% felt that it

helped a lot, 37% felt that a CBE model moderately helped their GPA while 33% of students felt

that CBE model helped either a little or none at all.

Focus Groups

On conclusion of the surveys, the researcher solicited participants of a focus group. There were

2 focus groups conducted, one for administrators and one for faculty members. Both groups

were asked questions similar in nature. The Q and A is as follows:

How do you define competency-based education?

Admin A: CBE is about setting a standard for competence, in a variety of different components

of your field. Each student needs different skills and should be able to accomplish different

tasks depending on their discipline. There is a level of competence each discipline has to attain,

and we need to set that standard. Competency-based education is assuring that everybody

meets that minimum competency, that standard. Competency based education is a way for us

to really assure that our students are competent in the areas that we have deemed important

for them to graduate. Prof. Jedi: Learning is dynamic, you learn different. Some people may be

70% competent. CBE flips that to where the learning outcome is the goal and how you get there

is, is fluid, how you get to mastery of the class or the material is different for each person. CBE

is about, can you master the tasks that you are given? Prof Leia: I teach specifications grading

which has a lot in common with CBE.

Question: How do you think CBE will enhance or impair your discipline? Admin A: I think that a

CB type program can enhance any discipline and any program If one, the student learning

outcomes are written in competency-based language. Prof Leia: Essentially, one of the basic

principles of CB is that students should be able to do the course on their own. Faculty can

tweak the courses any way they want, if you're following the basic principle. The basic principle

is that time does not determine the student's learning within boundaries. Prof. Obi: So, I think

in one sense, it enhances the teaching because if have students that are able to work on their

own, they can be independent learners, it enhances them because then they can put

themselves on whatever pace they want. I have found it impairs learning because some

students just have real difficulty just keeping on track of the assignments. I mean, the deadlines

provide some structure for them and suddenly, they find themselves in a structureless

environment. I think that the impair side of it is we must realize that when students come to a

class, there are not many cases that can work well independently and being disciplined and

having the responsibility to work them themselves through the course, again, in a larger

university, that may be a non-issue because that's just the way it is.

Question: Do you think that students should be educated a little bit more on what exactly the differences are between traditional, competency-based, and maybe an online course for them to make a stronger decision on what is best for them? Prof. Nye: I think it would be good if every student took a CB class early on, or they can sharpen some of these skills where they can be more independent and they can sort of see that if they have this skill, just like the skills to drive helps you live in society, the skill to do your own directed learning makes your college experience much easier. Prof. Jedi: The first day of class, I will tell them this course is for you. If… and I'll give them a checklist. If you are a self-starter, if you know how to work on your own so on and so forth.

How does faculty training enhance the competency-based education model, accurately, within a case design? Question: Do you think that training and development is necessary to create and teach a CBE course? Admin A: It's going to take a good amount and I mean, a good amount of training for faculty, because I think that faculty don't always see things as competencies, as much as grades. We'd have to definitely do a lot of training for faculty, and we'd have to get a clear view of what CB education is, because I would guess if I took different CBE course taught by faculty members at the university, even though they've been in the same group, I would guess that right now their class was run very differently.

 Prof Solo: We cannot teach, unless you understand what you are teaching or at least a methodology to do it justice. So, I think you must understand that you can always customize CBE to your teaching style, but I think you must have an idea of certain parameters. What are the purposes of it and what is the philosophy behind it? Prof Obi: I think what would be helpful is faculty development or information about CBE to show it is not an all or nothing choice. A lot

of people are already using a lot of these techniques in their courses and without knowing that

they're using a CBE model.

Common Themes

CBE should have excellent feedback	ADMIN A: If I said you're competent in diagnosing for instance, then the student shouldn't even have to complete that assignment, because it was already determined that the student is competent. The student will then have to show competence in the next assignment. You're only taking my rich feedback and not applying it to obtain levels of competence. I know that writing means rewriting, and I understand that all fields do that, if the competency is in a skill part, then it should be generalized because otherwise I can't really say you're competent in that skill. Prof Ross: "if you get it wrong the first time, I always let you turn it in as many times as you need to achieve the objective. I want to see that you know how to do it. That's my ultimate goal. So I'll continue to give that feedback until they hit that benchmark.

	Prof Leia: So, I think it's good for them to learn how to revise and get feedback and process feedback, which they find tremendously difficult by the way.
Student education (student training)	Prof. Nye, Most of my students don't really know my class at CB, I, you know, I get this glazed look when I describe it and they like it, but I don't think they are advising department note has given us a good sales pitch. Prof Ross: I was thinking maybe a good course that this could be implemented is the freshman 101. Students work through the curriculum. I teach it partially as a CBE course. I state if you want to, go ahead, and get it done. If it was set up as a CB course, I think that would be a good course to implement because every freshman takes it. So, every student will have the opportunity to say this has worked for me or does it not.

CBE and Covid-19	Prof Obi: It's a barrier with us with COVID with the observations. We know our kids are assigned to schools, to intern at the schools and observed, and obviously we can do that. Prof Nye: with COVID, it's hard to even write it in the lab. So, the mastery level skills, would have to be modified, but you could still think about the chemistry I have in terms of being able to use the balance and do some reactions and understand anything chemical techniques and that you can, you can really design as a lab with proficiency. Admin A: I feel like there's been a break in pedagogy. I think that everyone just wants to get through this pandemic, and we almost don't care what we're doing at this point. I don't mean that in a negative way. I mean that in a survival way. We have to either teach. If we're teaching, we've got to figure out a way to teach. We've got to move, you know, lab online. How are we doing that?

	And I think that people just want to get through the day.

A comparison of student grades

What are the effects of a Competency-Based Education environment and higher-grade point average (GPA)? To determine the significance of a CBE program an independent sample t-test using SPSS was conducted. The 500 CBE courses (M=92.01, SD=10.55) compared to 500 NON-CBE courses (M=78.90, SD = 27.28) demonstrated significantly higher scores t(998)= 10.31, p=<.00001

T-Test

Group Statistics

	section	N	Mean	Std. Deviation	Std. Error Mean
current score	CBE	500	92.0140	10.54916	.47177
	NON	500	78.9039	27.27892	1.21995

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
current score	Equal variances assumed	200.665	.000	10.023	998	.000	13.11004	1.30799	10.54331	15.67677
	Equal variances not assumed			10.023	644.984	.000	13.11004	1.30799	10.54160	15.67848

Independent Samples Effect Sizes

		Standardizer[a]	Point Estimate	95% Confidence Interval	
				Lower	Upper
current score	Cohen's d	20.68120	.634	.507	.761
	Hedges' correction	20.69676	.633	.506	.760
	Glass's delta	27.27892	.481	.353	.608

Summary of Analysis

Survey results conclude that both administrators and faculty members alike believe that CBE courses are an effective way to deliver content allowing students to progress at their own pace. Survey results also concluded that students believe that a CBE course helps their GPA. The focus groups revealed common themes, including students needed to be educated on the concept of CBE before enrolling in such a course. This will alleviate the student's misconception until the end of the class to submit all assignments rather than staying on time and task completing each competency level on appropriate faculty feedback. Both focus groups and surveys conclude that faculty members need proper training on creating and delivering competency-based solid education courses. These training sessions will ensure that faculty members are assessing students in the proper form. The statistical analysis of the research concluded that there is a statistically significant difference in the GPA of students enrolled in CBE courses to those enrolled in traditional classes.

Conclusion

The surveys were used as a preliminary means of obtaining information to gather leading questions for the focus groups. The surveys were also used to solicit participants for the focus groups. The focus group sessions were truly the primary method of obtaining authentic information from all stake holders of competency-based education courses including administrators, faculty members and students. The variances between that of the administrator and the faculty were sound with a variety of commonalities which ultimately developed themes including feedback, student training and covid-19.

Chapter V

Conclusions

The purpose of this case study research was to discover the importance of a competency-based education program based on the results of a pilot program at a small private university in the southeast region. A case study design was used where the institution was its own case. At the before stage of research, surveys were developed and distributed to administrators, faculty and participants of the pilot program. The survey results were analyzed. Higher educational institutions have been struggling with not only enrollment but retention.

In attempting to close the gap between higher educational institutions and corporate environments, it was determined that competency-based educational programs would enhance the overall efficacy of the students while increasing their employability on graduation. Micro credentialing, on the job training, and competency-based education allows students to move through course work independently at a variable pace with flexible assessments. The goal is to increase retention in higher education by allowing students to study in ways that allow them to get the most out of their learning opportunities. Many corporate giants including Apple, Google and Amazon to name a few, has done away with the requirement of employees having to be college educated. They (the corporations) strongly believe that applicants are no longer employable with a mere college degree. It is believed that they will do a better job educating their prospective employees using methodologies and strategies that they have determined to be more effective than that of a college degree. Higher educational instructions must update their educational methodologies to keep up with technology and the ever swiftly growing corporate environments. Gone are the days of teaching theory without practice.

Summary of Results

Throughout this research study, administrators, faculty members and students were surveyed on their knowledge of competency-based education. Three overarching questions were the focus of the study.

1. How a Competency-Based Education learning environment benefits the student and Improve retention and self-efficacy

2. How does faculty training enhance the competency-based education model, accurately, within a case design?

3. What are the effects of a Competency-Based Education environment and higher-grade point average (GPA)?

It was found in the focus group that faculty and administrators alike thought it was extremely beneficial for students to follow some type of competency-based education model. Both faculty members and administration agree that the use of authentic feedback would drive students to the level of competencies they need to achieve in order to move to the next level. An example that was given on multiple occasions were that of a writing course and how feedback and re-writing allows the students to build their overall efficacy in their abilities to write academically. Since students have the opportunity to re-take assessments to strengthen their abilities, they become more confident within the higher educational environments.

Throughout this entire study the lack of faculty training and development was a common factor. First and foremost, many faculty members had a misconception of what exactly meeting a level of competency is. It was determined by faculty that if a student obtains a 75 or 80% on an assignment, the student has attained the level of competency. However, in a true CBE styled

course, a competency is not equivalent to a grade. Competencies are broken down into smaller chunks while grades tend to look at the bigger picture. Since academic writing was spoken about on multiple occasions, an example of this nature will be used. If a student is being assessed on obtaining a competency in grammar and punctuation, therefore writes a short essay utilizing this skill, the student should be only assessed on the grammar and punctuation aspect within the short essay rather than content building. The content building portion of an essay would be a separate component of competency assessment. A graded assignment on the other hand, would look at the entire essay, perhaps graded against a rubric, looking for grammar, punctuation, content, etc.

Faculty members also have the idea that their way is the right way. Competency-based educational courses require attention to the course creation process. Assessments should be scaffolded in a manner where one concept builds upon each other while giving students the opportunity to gain more information where needed including lectures, readings, videos, and activities. Ultimately, building a CBE course takes time, patience and efforts and proper training and development is required to deliver a quality yet rigorous course to exceed the educational demands of both students and employers.

Faculty and students alike believe that CBE models help increase their grades. Strong faculty feedback empowered students to realize where they were falling short and how to complete a variant of the assessment in a manner which will allow them to meet or exceed the level of competency they were initially trying to achieve. Per both the survey and t-Test results show that a competency-based educational model shows that it enhances the level of student education.

Discussion of Results

The results of both the survey and focus groups indicate that faculty needs training on how to create and deliver an academically sound competency-based education course. Faculty members who are not fully trained to do so, feel as though a CBE model is either not appropriate for their line of expertise, or gets frustrated with the fact that many students may need extra guidance to obtain the levels of competencies need for them to move forward. On many occasions, it goes un-noticed, that competencies are typically already embedded within each course in the form of student learning objectives (SLO's). Using these SLO's is a good starting point in a CBE model. The researcher agrees that higher educational institutions that want to encourage a CBE model, it is vital to provide faculty members with sufficient training along with the tools that they need to create and deliver a strong CBE course that will be rewarding for both the students and the faculty members.

Limitations

This research study relied heavily on survey results which was sent out to students, administrators and faculty members, followed up with invitations to participate within a focus group study. While there were many responses obtained from the surveys, the response for the focus groups were minimal for faculty, only one administrator was in attendance for the administrator focus group and although students volunteered to participate, none of the students showed up meaning that the student focus group did not happen. The researcher feels that the limitations are heavily in result to the pandemic, students have embraced learning in a variety of ways, and perhaps suffering burnout from all the virtual meetings they

are required to attend. Administrators have also been consumed with updating schedules and

virtual meetings as well resulting in poor focus group attendance.

Recommendations for Future Research

Based on the results from this study, many recommendations for future research can be

made including:

- Inviting focus group participants to training sessions on how to build a CBE course.

- Including corporate industries to see how CBE can enhance training and reduce

  turnover.

- Including k-12 in the study to see how a CBE model might enhance education of all

  sectors including:

  - Public

  - Charter

  - Private

  - Online

- Provide education to students enrolled in CBE courses so they are fully knowledgeable

  about the type or course they are taking.

Summary

In conclusion, creating holistic learning environments through competency-based

education is important when keeping the students' educational goals in mind. Competency-

based education (CBE) is an alternative to the credit hour-based system of credentialing. CBE

bases student progress on demonstration of proficiency and mastery as measured through

assessments and the application of credit for prior learning. In competency-based education

programs, time is the variable, and student competency mastery is the focus, rather than a fixed-time model where students achieve varying results. CBE allows students to advance based on their ability to master a competency at their own pace. Since students can work through varied learning abilities, competency-based education can provide students with higher outcomes and a greater understanding of the subject matter. They are ultimately allowing students to determine their educational path. Many misconceptions are stating that a CBE learning environment is only conducive to an online course setting; in reality, there are various ways to implement competency-based education.

1. Online and Hybrid – Online courses are the future of higher education. Many institutions still use a Hybrid model as well, and this is where students take a portion of their course work in a traditional face to face setting and another portion of the coursework fully online. Once a CBE component is added, the overall educational experience will expand for both the student and the instructor.

2. Modular – Most programs follow a modular style. Modular means each topic is created within one module. After a student goes through the content within a module, takes an assessment, and obtains at lease the pre-determined level of mastery, they will be able to progress to the next module. If a student does not pass the assessment at the level of mastery, they will be allowed to re-visit the course content, discuss the problems they are facing with their instructor and re-take the assessment when they are ready. Students can re-take assessments as many times as they need to obtain the appropriate level of mastery.

3. Assessment – While every CBE model includes multiple assessments, there are a few

   older CBE models (PLA) That allow students to test out of certain areas. However, an

   assessment is an integral part of any CBE program. A professor needs to evaluate what a

   student already knows on the topic before the student viewing the course content. A

   pre-assessment would allow professors to measure how many competencies each

   student already knows and determine the individualized progression of each student.

   Remember, assessments can be administered differently throughout a course, and an

   assessment does not always necessarily mean a test.

Regardless of the CBE model used within the course, instructor feedback is critical. Students

take feedback from instructors very seriously. It allows students to understand how to improve

if they need to re-take the assessment, or it shows them where they excel. To learn more about

Competency-Based Education, visit my website www.SheDesignsEducation.com.

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Cross. (n.d.). What Does "Traditional Student" Even Mean in America Today? Retrieved October 9, 2019, from https://www.national.edu/what-does-traditional-student-even-mean-in-america-today/

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Johnstone, S. M., & Soares, L. (2014). COMPETENCY-BASED EDUCATION PROGRAMS.

Nodine, T., & Johnstone, S. M. (n.d.). Leadership Challenges. Retrieved from www.changemag.org61www.changemag.org

Nodine, T. R. (2016). How did we get here? A brief history of competency-based higher education in the United States. The Journal of Competency-Based Education, 1(1), 5–11. https://doi.org/10.1002/cbe2.1004

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Appendix A – Approval by University Supervisors

LYNN UNIVERSITY
Donald E. and Helen L. Ross
COLLEGE OF EDUCATION

APPROVAL OF DISSERTATION IN PRACTICE COMMITTEE

The composition of the *Dissertation in Practice* committee is not approved until all signatures, including the Ed.D. Director, have been obtained. Committee membership may change according to Lynn University policies governing the appointment of the *Dissertation in Practice* committee. All information, with the exception of signatures, *must* be typed.

JeVaughn Jones
Student Name

Student ID No.

Title of *Dissertation in Practice*:

INCREASING RETENTION IN HIGHER EDUCATION THROUGH CBE

The individuals listed below have agreed to serve on this *Dissertation in Practice* committee:
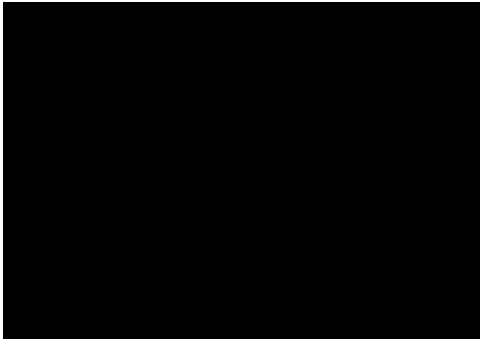
Committee Chair:

Dr. Kathleen Weigel

Committee Member:

Dr. Kelly Burlison

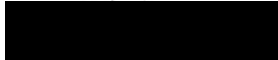External Committee Member:

Dr. Jennifer Lesh
(Note: A 1—2 page vita for the External Committee Member must be attached to this form.)

The Ed.D. Director has reviewed these appointments and has approved the committee membership.

Dr. Kathleen Weigel, Dean/Ed.D. Director

Date

Rev. 6/2019

Appendix B – Flyer and email soliciting participants

Appendix C – Informed consent for survey

Purpose of the Research
The purpose of this study is to enhance retention in higher education settings by allowing students an individualized holistic learning environment, though competency based educational practices.

Specific Procedures
Your participation in this study will assist in learning more about progression and success within a competency-based education environment.

Duration of Participation and Compensation
The total duration of your participation should be no longer than 10 - 15 minutes. There will be no compensation for participation.

Risks
This online survey is strictly voluntary, and no penalty will be imposed for non-participation. There are minimal risks in participating in the survey. However, if you feel uncomfortable or anxious at any time, you may press the "X" button in the upper right-hand corner of the survey and exit out of the survey.

Benefits
There are no benefits for answering the survey questions; however, participants may enjoy answering questions regarding competency-based education.

Confidentiality
This survey is strictly anonymous and there is no identifying information. No IP addresses will be kept or known to the researchers. Your answers to questions will be stored for two years on a password protected computer and after that time will be deleted. This project's research records may be reviewed by the departments at Lynn University responsible for regulatory and research oversight.

Contact Information
If you have any questions about the research project you may contact the researcher JéVaughn Jones (phone: _____ ; email: jjones@lynn.edu). Dr. Kathleen Weigel, Dissertation Chair at _____ or kweigel@lynn.edu. For any questions regarding your rights as a research participant, you may call Dr. Jennifer Lesh, Chair of the Lynn University Institutional Review Board for Protection of Human Subjects, at jlesh@lynn.edu

Documentation of Informed Consent
I have had an opportunity to read the consent form and have the research study explained. I have had an opportunity to ask questions about the research project and my questions have been answered. I am prepared to participate in the research study described above.

By clicking "AGREE" I am consenting to participate in the study. Please note, all survey and focus group participants will remain anonymous and participation is confidential. All data collected will be located on a password protected computer. Data will be kept for up to 2 years then destroyed by deleting pertinent files.

Appendix D – Survey

Student Survey
Competency-Based Education for Students
Informed Consent
Thank you for participating in our survey. Your feedback is important.

Purpose of the Research
The purpose of this study is to enhance retention in higher education settings by allowing students an individualized holistic learning environment, though competency-based educational practices.

Specific Procedures
Your participation in this study will assist in learning more about progression and success within a competency-based education environment.

Duration of Participation and Compensation
The total duration of your participation should be no longer than 10 - 15 minutes. There will be no compensation for participation.

Risks
This online survey is strictly voluntary, and no penalty will be imposed for non-participation. There are minimal risks in participating in the survey. However, if you feel uncomfortable or anxious at any time, you may press the "X" button in the upper right-hand corner of the survey and exit out of the survey.

Benefits
There are no benefits for answering the survey questions; however, participants may enjoy answering questions regarding competency-based education.

Confidentiality
This survey is strictly anonymous and there is no identifying information. No IP addresses will be kept or known to the researchers. Your answers to questions will be stored for two years on a password-protected computer and after that time will be deleted. This project's research records may be reviewed by the departments at Lynn University responsible for regulatory and research oversight

Contact Information
If you have any questions about the research project you may contact
JéVaughn Jones (phone: ; email: jjones@lynn.edu).

For any questions regarding your rights as a research participant, you may call Dr. Patrick

Cooper, Chair of the Lynn University Institutional Review Board for Protection of Human Subjects, at jlesh@lynn.edu

Question Title
*1. I have had an opportunity to read the consent form and have the research study explained. I have had an opportunity to ask questions about the research project and my questions have been answered. I am prepared to participate in the research study described above.

By clicking "Agree" I am consenting to participate in the study
Agree
Bottom of Form
2. What is your age? w
Under 18
18 to 20
21 to 23
24 or older
Question Title
3. What is your gender? w
Female
Male
Other
Prefer not to say
Question Title
4. What is your ethnicity? w
White or Caucasian
Black or African American
Hispanic or Latino
Asian or Asian American
American Indian or Alaska Native
Native Hawaiian or other Pacific Islander
Another race
Question Title
5. Are you enrolled in a Competency-Based Education course? w
Yes
No
Question Title
6. Do you feel that competency-based-education courses helped your GPA? w
Strongly agree
Agree
Neither agree nor disagree
Disagree
Strongly disagree
Question Title

7. How much has a competency-based education course helped your GPA? w

A great deal

A lot

A moderate amount

A little

None at all

Question Title

8. Explain the pros and cons of your competency-based education courses w

Question Title

9. How has the Covid 19 pandemic affected your competency-based education experience? w

Question Title

10. Would you like to take part in a focus group? w

Yes

No

Faculty Survey
Competency-Based Education for Faculty
Informed Consent
Thank you for participating in our survey. Your feedback is important.

Purpose of the Research
The purpose of this study is to enhance retention in higher education settings by allowing students an individualized holistic learning environment, though competency-based educational practices.

Specific Procedures
Your participation in this study will assist in learning more about progression and success within a competency-based education environment.

Duration of Participation and Compensation
The total duration of your participation should be no longer than 10 - 15 minutes. There will be no compensation for participation.

Risks
This online survey is strictly voluntary and no penalty will be imposed for non-participation. There are minimal risks in participating in the survey. However, if you feel uncomfortable or anxious at any time, you may press the "X" button in the upper right-hand corner of the survey and exit out of the survey.

Benefits
There are no benefits for answering the survey questions; however, participants may enjoy answering questions regarding competency-based education.

Confidentiality
This survey is strictly anonymous and there is no identifying information. No IP addresses will be kept or known to the researchers. Your answers to questions will be stored for two years on a password-protected computer and after that time will be deleted. This project's research records may be reviewed by the departments at Lynn University responsible for regulatory and research oversight

Contact Information
If you have any questions about the research project you may contact
JéVaughn Jones (phone: ; email: jjones@lynn.edu).

For any questions regarding your rights as a research participant, you may call Dr. Patrick Cooper, Chair of the Lynn University Institutional Review Board for Protection of Human Subjects, at jlesh@lynn.edu

Competency-Based Education for Faculty
Top of Form
Question Title
2. What is your age? w
Under 30
36 to 40
41 or older
Question Title
3. What is your gender? w
Female
Male
Other
Prefer not to say
Question Title
4. What is your ethnicity? w
White or Caucasian
Black or African American
Hispanic or Latino
Asian or Asian American
American Indian or Alaska Native
Native Hawaiian or other Pacific Islander
Another race
Question Title
5. Are you currently teaching a Competency-Based Education course? w
Yes
No
Question Title
6. Do you find competency-based education courses effective? w
Strongly agree
Agree
Neither agree nor disagree
Disagree
Strongly disagree
Question Title
7. How difficult was it to develop your competency-based education course? w
Very easy
Easy
Somewhat easy
Neither easy nor difficult
Somewhat difficult
Difficult
Very difficult
Question Title

8. Were you involved in faculty training to help you develop the competency-based education course? Please explain w

Question Title

9. How has the Covid 19 pandemic affected your competency-based education experience? w

Question Title

10. Would you like to take part in a focus group? w

Yes

No

Bottom of Form

Administrator Survey
Competency-Based Education for Administrators
Informed Consent
Thank you for participating in our survey. Your feedback is important.

Purpose of the Research
The purpose of this study is to enhance retention in higher education settings by allowing students an individualized holistic learning environment, though competency-based educational practices.

Specific Procedures
Your participation in this study will assist in learning more about progression and success within a competency-based education environment.

Duration of Participation and Compensation
The total duration of your participation should be no longer than 10 - 15 minutes. There will be no compensation for participation.

Risks
This online survey is strictly voluntary and no penalty will be imposed for non-participation. There are minimal risks in participating in the survey. However, if you feel uncomfortable or anxious at any time, you may press the "X" button in the upper right-hand corner of the survey and exit out of the survey.

Benefits
There are no benefits for answering the survey questions; however, participants may enjoy answering questions regarding competency-based education.

Confidentiality
This survey is strictly anonymous and there is no identifying information. No IP addresses will be kept or known to the researchers. Your answers to questions will be stored for two years on a password-protected computer and after that time will be deleted. This project's research records may be reviewed by the departments at Lynn University responsible for regulatory and research oversight

Contact Information
If you have any questions about the research project you may contact
JéVaughn Jones (phone: ███████; email: jjones@lynn.edu).

For any questions regarding your rights as a research participant, you may call Dr. Patrick Cooper, Chair of the Lynn University Institutional Review Board for Protection of Human Subjects, at jlesh@lynn.edu

Competency-Based Education for Administrators

Top of Form
Question Title
2. What is your current position? w
Question Title
3. What is your gender? w
Female
Male
Other
Prefer not to say
Question Title
4. What is your ethnicity? w
White or Caucasian
Black or African American
Hispanic or Latino
Asian or Asian American
American Indian or Alaska Native
Native Hawaiian or other Pacific Islander
Another race
Question Title
5. How familiar are you with competency-based education? w
A great deal
A lot
A moderate amount
A little
None at all
Question Title
6. Do you find competency-based education courses effective? w
Yes
No
Question Title
7. Is there a personal interest in adopting a competency-based education model? w
A great deal
A lot
A moderate amount
A little
None at all
Question Title
8. Do you feel a competency-based education model is similar to project-based learning model or micro-credentials? Please explain w
Question Title
9. How has the Covid 19 pandemic affected your competency-based education experience? w
Question Title
10. Would you like to take part in a focus group? w
Yes/No

Bottom of Form

Appendix E – Informed consent of focus group

Purpose of the Research

The purpose of this study is to enhance retention in higher education settings by allowing students an individualized holistic learning environment, though competency based educational practices.

Specific Procedures

Your participation in this study will assist in learning more about progression and success within a competency-based education environment.

Duration of Participation and Compensation

The total duration of your participation should be no longer than 45-60 minutes. There will be no compensation for participation.

Risks

This online survey is strictly voluntary and no penalty will be imposed for non-participation. There are minimal risks in participating in the focus group. However, if you feel uncomfortable or anxious at any time, you may exclude yourself from continuing.

Benefits

There are no benefits for answering the survey questions; however, participants may enjoy answering questions regarding competency-based education.

Confidentiality

This focus group is strictly anonymous and there is no identifying information. Your answers to questions will be recorded and stored for two years on a password protected computer and after that time will be deleted. This project's research records may be reviewed by the departments at Lynn University responsible for regulatory and research oversight

Contact Information

If you have any questions about the research project you may contact JéVaughn Jones (phone: ██████; email: jjones@lynn.edu). For any questions regarding your rights as a research participant, you may call Dr. Patrick Cooper, Chair of the Lynn University Institutional Review Board for Protection of Human Subjects, at jlesh@lynn.edu

Documentation of Informed Consent

I have had an opportunity to read the consent form and have the research study explained. I have had an opportunity to ask questions about the research project and my questions have been answered. I am prepared to participate in the research study described above.

Appendix F – Focus Group Questions

1. Can you please state your expertise or discipline?
2. How do you define competency-based education?
    1. Can you describe your thoughts and feelings towards CBE?
3. How can a CBE program enhance or impair your area of study?
4. Suppose you had a moment to discuss CBE with university administrators, what would you say?
5. How can teaching methodology change in the realms of higher education?
6. Think back to when you were a student, what were some of your fondest memories about how an instructor impacted your educational success?
7. How has the Covid-19 Pandemic affected your teaching?