DEVELOPING A DISRUPTIVE INNOVATION IN U.S. HIGHER EDUCATION: A CASE STUDY OF COMPETENCY-BASED EDUCATION AT COLLEGE FOR AMERICA

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AT COLLEGE FOR AMERICA

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Direct assessment competency-based education (CBE) is an online, self-directed learning innovation that is disrupting higher education. This study examined the development and early diffusion of direct assessment CBE at a private, nonprofit university. The purpose of this case study was to investigate the presence of organizational factors and the ways in which they affect planning, development, quality assurance, and delivery of the direct assessment CBE learning model. This study was conducted at Southern New Hampshire University's College for America (CfA). Ten executive leaders and CfA administrators were interviewed during this study. The interview guide was designed to elicit participants' perceptions of the mission and vision of CfA, the involvement of external stakeholders in CfA's development, strategies and challenges considered during CfA's planning and implementation, the organizational structure and dissemination of resources between CfA and the university, critical success factors affecting CfA's development, practices to ensure that quality learning and demonstration of learning occur, and how success is measured and evaluated.

The researcher found that the missions of SNHU and CfA seem strongly aligned in support of student success and innovative learning models. CfA's culture incorporates these mission-oriented values as well as an appreciation for emergent, iterative improvement within an ongoing cycle of effort and feedback. This cycle is evident in CfA's direct assessment learning model and promotes organizational learning across its employees. A strategic vision and implementation process for CfA were evident, following steps from Clayton Christensen's disruptive innovation theory. Moreover, a balance between employee autonomy, leadership support, organizational decentralization, and dedicated resources (at the university and divisional level) were among the factors respondents consider critical to CfA's development.

The findings suggest that organizational factors did influence the adoption and development of direct assessment CBE at College for America. Accordingly, leaders who are in the planning stages of an innovative project should contemplate their organization's culture, how the organization is structured, the resources available to support the project, the extent to which project staff roles will depart from traditional employee roles within the institution, and how much autonomy and leadership support will be given to individuals in these roles.

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PREFACE

Thank you to my family for your love and support, and especially to Sean for always being there no matter what the request or time of day. Sincere thanks to my doctoral committee members, who prompted me to balance solid academic research with the understanding, as Dr. Bickel constantly reminded me, that *this is my first big study, not my last*! Thanks as well to President Paul LeBlanc and the folks at SNHU and College for America for welcoming me and sharing insightful perspectives. A special thanks to the professors throughout my higher education experience who motivated, challenged, and inspired me, including but not limited to: Barb Blackledge, Lynn Botehlo, Faedra Carpenter, Wendy Carse, Janet Goebel, Barbara Kraszewski, Laurie Frederick Meer, Charles Moseley, and Stu Sutin.

1.0 INTRODUCTION

I think we're at a moment of time where the meaning and quality of a credential is in question. The exclusivity of the institution in having control over credentials is under challenge, if not direct assault. There are a lot of entities that are selling credentials. They are saying that there are all kinds of learning that are not degree-based and not necessarily academic institution-based. Therefore, the next five to ten years will be about defining what credentials [academic institutions] are best suited for and what we are most credible at certifying. (Wolff, 2013, p. 31)

Commonly referred to as the Information Age, the 21st century has been defined largely through the Digital Revolution, in which rapid technological advances have led to a global, knowledge economy. These advances have directly influenced the content, delivery, and value of higher education. Hawkins (2007) argues that a dominant educational paradigm persists in which economic development has become the primary function of higher education. Moravec (2008) incorporates this economic imperative into his paradigm of knowledge production, asserting that the common mode of exchange in higher education is now the design, customization, and coconstruction of goods and services. Moreover, educational stakeholders engaged in this exchange expect value-added features and returns on their investments. Such technological and cultural changes might seem challenging enough for higher education institutions (HEIs), but they are also occurring within an environment of economic crisis. As state and national budgets continue to decrease their educational spending, and students are made to bear more of the tuition costs, stakeholders on all sides of the equation consistently demand that institutions increase access, affordability, and quality (Immerwahr, Johnson, and Gasbarra, 2008). Several scholars (Marshall, 2011; McFarlane 2011; Norris et al., 2013) posit that technology will remain a central driver of organizational change as higher education leadership seeks to address these issues. Indeed, digital technologies have driven disruptive change in higher education—and in organizations throughout the globe—since the turn of the 21st century. In particular, online learning has become a common element of higher education during this time. Today, 86.5% of higher education institutions offer some form of online coursework, online enrollment accounts for one-third of all higher education enrollments, and 70% of chief academic officers agree online education must be incorporated into their long-term institutional strategy (Allen and Seaman, 2013). Moreover, the percentage of institutions offering fully-online degree programs has *doubled* over the past 10 years (from 34.5% in 2002 to 62.4% in 2012). In other words, within two decades, online education has evolved from an entirely new learning tool to a common and integral component of higher education.

However, some technological changes have been more ephemeral or fad-like, temporarily disrupting higher education practices but then fading to the background. Massively Open Online Courses (MOOCs) stand as one such fad. While it surged into the higher education scene with vigor in 2008, it has since dwindled, as Allen and Seaman (2015) report, only 8% of institutions have MOOCs, and an overwhelming 87% are either undecided or unwilling to adopt this model.

Still, technological innovations in higher education abound, and online competencybased education (CBE) marks the latest in this line of disruptive technologies. Unlike MOOCs, CBE is gaining in prominence, most notably visible in the U.S. Department of Education's approval—on an experimental basis—of federal financial aid for direct assessment (Bergeron, 2013) and the current funding streams from the U.S. government and foundations like Lumina and Bill and Melinda Gates specifically earmarked for CBE experimentation in higher education. Cavanaugh (2013) suggests that historic emphasis on credits earned has overshadowed authentic assessment of learning outcomes, perpetuating subjective letter-grading that fails to accurately reflect levels of student learning. In contrast, online CBE—in particular, the *direct assessment* approach—favors education and assessment that is self-paced, asynchronous, industry-driven, and proficiency-based. To contemporary stakeholders, competency-based education is thus a tantalizing alternative to the traditional, arguably archaic model of higher education. Direct assessment CBE could be a fad that quickly dissipates, or it could be a lasting innovation with serious implications for higher education.

Accordingly, this dissertation investigates the defining features of direct assessment CBE, with focus on direct assessment as a distinct departure from traditional modes of higher education. I review available literature to understand direct assessment's diffusion into higher education and why it is having such an influence in the field, particularly from the lens of educational access, affordability, and quality. Finally, this dissertation uses a case study to explore the successful implementation of a direct assessment model at an institution of higher education.

1.1 PURPOSE OF THIS STUDY

If one accepts that the direct assessment approach to CBE may be a lasting disruptive innovation, then it is important to learn about the organizational factors and change management practices that will aid in its adoption at other institutions. The purpose of this study, therefore, is to identify such factors and attempt to discern the ways in which they affect the planning, development, quality assurance, and delivery of direct assessment in higher education.

1.2 RESEARCH QUESTIONS

To answer the overarching question of why certain nonprofit institutions of higher education are experiencing success in diffusing online competency-based education, I will consider the following research questions in this study:

- 1. When examining the implementation of a direct assessment CBE program at an institution of higher education, what organizational factors are present?
- 2. How do these organizational factors influence the diffusion of the direct assessment program?

These questions constitute the broad scope of this research study, and they are described in further detail with corresponding study propositions in Chapter 3. Largely, I hypothesize that the presence of select organizational factors, such as leadership support, strategic vision, and processes for implementation, positively affect the successful adoption of direct assessment.

1.3 DEFINITION OF TERMS

The following terms are defined as they apply to this study.

Competency-based Education (CBE): There are many different types of CBE that are being developed and implemented across the United States. A review of literature suggests most CBE programs share the following common principles:

• Competencies defined through multiple stakeholder input (e.g. employers, accreditors, academic subject matter experts) and with real-world application

- Assessment can take many forms, but it certifies mastery of competency rather than applying a grading system
- Clearly established standards for the demonstration of mastery of competency
- Continual feedback and support as students work to demonstrate mastery
- Competencies can be built around/conform to a credit-hour model

These common principles constitute the definition of competency-based education for the purpose of this study.

Direct Assessment CBE: Direct assessment follows most of the principles of competency-based education. A major distinction is that direct assessment programs are self-paced and not timebound. As such, they do not conform to credit-hour models. Another distinction is that direct assessment does not recognize prior learning assessment, because—as the term implies—it relies entirely on direct assessment of each competency within a given program. As a final note, the majority of direct assessment CBE programs are online programs, which leverages asynchronous learning to facilitate students' self-paced progress. Thus, for the purposes of this study, direct assessment CBE is also defined as inherently online.

1.4 SIGNIFICANCE OF THE STUDY

To date, little empirical research has been conducted that examines this issue. Professional associations like EDUCAUSE and C-BEN Network have conducted general case studies of institutions implementing CBE and direct assessment, but these studies do not incorporate a rigorous, academic research methodology. Dissertations, such as Dragoo (2015), Foster (2015), and Jones (2014) provide useful insights into case study methodologies surrounding CBE and

change management, and they also suggest growing academic interest in these topics. Nevertheless, there is much work to be done to empirically investigate the direct assessment phenomenon.

Another key reason supporting this study's significance is the plausibility that more HEIs will consider adopting direct assessment as it continues to receive strong endorsement from the U.S. government, major U.S. funding agencies, and accreditors. These institutions will benefit from this study as it reveals factors and implications for successfully adopting and implementing CBE's direct assessment approach.

1.5 OVERVIEW OF THE STUDY

Organizational theorists assert that no one paradigm is sufficient to explain processes of organizational innovation and change (Kezar, 2012; Bess and Dee; 2012). Rather, they encourage researchers to take a multiparadigm or meta-paradigm approach to their studies. My personal paradigm leans more toward poststructuralism or what Mertens (2010) terms *transformative*, as my research tends to focus around how and why people, processes, and organizations change. Perception is the pivotal component on which the diffusion of innovation rests, which lends itself to an interpretative approach to data analysis. However, it is also my goal with this research study to attempt to empirically measure the factors that affect such perception and corresponding action in the process of diffusing direct assessment CBE. Therefore, to accomplish this goal, I employ a pragmatic approach to analysis of a research model that incorporates multiple theories: diffusion of innovation, theory of reasoned action, and

technology acceptance. I further employ a case study methodology to gather data and test propositions based on this research model.

As will be expounded upon in Chapter 2's literature review, this qualitative study derives from a conceptual framework comprised of two main components. First, direct assessment is presented as a *disruptive innovation* (Christensen and Eyring, 2011), in that it uses technology to automate and integrate key processes, it realizes increased efficiency and affordability in the delivery of its programming, it complements the educational industry through serving a nontraditional, historically underrepresented population of working adults, and it is developing standard metrics for quality in accordance with regional accreditors (Soares, 2012). If we accept that efforts to scale and sustain direct assessment may succeed, then we must strive to understand how it may be effectively replicated within higher education institutions. Thus, the second component of this conceptual framework draws upon organizational science and change management theories to develop a research model through which to explore direct assessment design and implementation. Rogers' (2003) diffusion of innovation theory is particularly useful for investigating technology-driven disruptive innovations. Rogers defines innovations as new ideas, and *diffusion* as all the activities surrounding the spread of such new ideas. Most notably, diffusion involves communicating information about an innovation to reduce perceptions of uncertainty and risk in adopting the innovation. Xu and Quaddus (2007) combine Rogers' diffusion of innovation theory with Ajzen and Fishbein's (1980) social psychology theory of reasoned action and Davis's (1986) technology acceptance model to build a research model of organizational adoption of knowledge management systems. They identify eight categories of factors that influence organizational members' willingness to accept and adopt innovation-driven change. In Chapter 2, I discuss how I adapt their research model to the higher education context with focus on adoption of the direct assessment approach to CBE. While I present a research model that includes all eight categories of factors, for the purposes of this dissertation, I select only one of these categories, Organizational Factors, as the basis for my empirical research design.

Accordingly, I present this research design in Chapter 3. Within the Organizational Factor category, Xu and Quaddus (2007) list eight factors that influence the adoption of innovations. These are: Strategic Vision, Processes for Implementation, Locus of Control, Leadership Support, Structure, Culture, Infrastructure, and Social Networks. From each of these factors I develop study propositions to predict how I anticipate these factors influence the adoption of direct assessment CBE within institutions of higher education. These propositions, 14 in total, are described in Chapter 3 along with the site selection, sources of data collection and methods of data analysis I use to test these predictions through my case study. Chapter 4 discusses the findings of this investigative case study analysis, and Chapter 5 provides concluding remarks, study limitations, and implications for application and further research.

1.6 SUMMARY

Technology has become and will remain a central driver of organizational change as higher education leadership seeks to address the value of education in the 21st century knowledge economy. Technological innovations in higher education abound, and online competency-based education (CBE) marks the latest in this line of disruptive technologies. Direct assessment in particular leverages asynchronous online learning to facilitate students' self-paced progress toward competency mastery.

Few empirical research studies have been conducted to investigate the direct assessment phenomenon as a disruptive innovation in higher education. If one accepts that efforts to scale and sustain direct assessment CBE may succeed, then it is important to learn about the organizational factors and change management practices that will aid in its adoption at other institutions.

Therefore, the purpose of this study is to examine the diffusion of direct assessment CBE within a nonprofit institution of higher education, namely, Southern New Hampshire University's College for America (CfA). More specifically, this study investigates the presence of organizational factors and the ways in which they affect the planning, development, quality assurance, and delivery of CfA's direct assessment CBE learning model. Ultimately, this study will add to the growing discourse on the development of competency-based education and may inform educational leaders about how to facilitate adoption and implementation of CBE in their institutions.

2.0 **REVIEW OF LITERATURE**

This review of literature is divided into two main sections. In the first section I argue that direct assessment CBE is a disruptive innovation, providing its history, current iterations, and evidence to support its disruptive and innovative qualities. The second section builds the theoretical framework for my study, with emphasis on diffusion of innovation theory, its application in Xu and Quaddus's (2007) model of knowledge management systems adoption, and finally my adaptation of said model to study the adoption of direct assessment CBE in higher education.

2.1 DIRECT ASSESSMENT CBE AS DISRUPTIVE INNOVATION

U.S. higher education currently faces multiple challenges, among them: (1) meeting the learning needs of an increasingly diverse student population; (2) keeping higher education affordable and accessible to this student population; and (3) remaining accountable to stakeholders, both domestic and global, that include students and their families, businesses, professional associations, governments, accrediting bodies, and funders. In the midst of these challenges, competency-based education (CBE) has arisen as a viable alternative to the traditional, time-based credit hour model of education. Most notably, in 2013, the U.S. Department of Education recognized CBE in the form of *direct assessment* as a learning model that may be accredited and thus eligible for Title IV financial aid. Educational associations, like the American Association

of Colleges & Universities (AAC&U), Center for Adult Experiential Learning (CAEL), EDUCAUSE, and regional accrediting agencies, along with prominent funding sources such as the Lumina Foundation and the Bill and Melinda Gates Foundation, have been collaborating and advocating for institutions to transform CBE into sustainable practice with the long-term intention that it will completely replace the credit hour model. Accordingly, this section presents a review of the literature on competency-based education, starting with a brief history of CBE in the United States and concluding with a discussion of the reasons why direct assessment CBE is a 21st century disruptive innovation.

2.1.1 History of Competency-Based Education in the United States

Though aspects of competency-based education have existed in the United States throughout much of the twentieth century, the term gained significance during the 1960s and 1970s in the medical profession as educators sought to integrate scholarly, knowledge-oriented coursework with vocational training and practice (Boritz and Carnaghan, 2003; Cate and Billet, 2014; Frank et al, 2010). It also appeared in general education, for example in Pennsylvania in 1976 via its five-year educational plan: *Project 81* (Zaenglein, Kies, and Tardibuono). The plan was designed to inform a broad curriculum development initiative, with implications for both K-12 and postsecondary education, focused around the guiding question: "What should a high school diploma guarantee?" (p. 120). A major goal of the project was to transform citizens' answer to this question (derived from focus groups and town hall meetings) into statements of competence, defining competence as, "the application of a process or a skill to knowledge in a life situation" (p. 120). The Department of Education allowed districts substantial autonomy to interpret and implement competency-based curricula. In his dissertation, Wheeling (1983) analyzes factors

contributing to the successful and unsuccessful implementation of *Project 81* across Pennsylvania school districts. He argues that successful school districts utilized 1) casual communication methods that encouraged rather than mandated teachers to participate in using competency-based learning in class; 2) careful planning and clear statements of roles and responsibilities for teachers; 3) day-to-day leadership support at least in the form of a champion who has administrative backing; and 4) use of external resources to support program implementation and improvement. Ultimately, Wheeling notes, while some districts did implement significant changes, most districts did not experience much change at all.

Del Bueno (1978, p. 12) identifies five key characteristics to CBE in the context of adult postsecondary programs ranging from vocational to graduate education:

- 1. Outcomes are stressed.
- 2. It is *criterion-referenced*.
- 3. It provides for *flexibility in acquisition of learning*.
- 4. *No implicit sequence* for learning activities is required.
- 5. It considers the *relative value of outcomes*.

Competency-based outcomes are typically behaviors that students demonstrate of the learning they have attained (Ainsworth, 1978). In Ainsworth's view, the goal of CBE is to "define expertise in terms of the behaviors an expert in a particular skill or discipline exhibits" and to then educate students in these behaviors (p. 323). CBE is thus attractive to several stakeholders, because each understands expected educational outcomes in terms of these behaviors: students understand what behaviors they must perform to graduate; faculty understand how to assess these behaviors; administrators understand how to evaluate both faculty and student performance on the basis of these behaviors; and employers understand that graduates

they hire will perform these behaviors on the job. In sum, an idealized version of CBE replaces ambiguous assessment from higher education (that is, the letter grade system) with a more transparent, flexible, and accountable system of learning based on demonstrated proficiency.

In fact, the continued popularity of CBE stems, in part, from its emphasis on assessing learning outcomes that are specifically attached to occupational roles such as the medical profession (Frank et al 2010; Gruppen, 2015), teacher education (Houston, 1985); accounting (Boritz and Carnaghan, 2003); or vocational education in general (Hyland 1994). Furthermore, in summarizing competency-based education practices at the turn of the twenty-first century, Boritz and Carnaghan (2003) strongly align with del Bueno's five key characteristics. In addition to structural design, they also prescribe competency content oriented around work readiness:

- 1. Competencies specifically relate to occupational roles and "profession-related functions" and de-emphasize "broader education or societal context" (p. 14).
- 2. Competencies are assessed in the workplace or a work-simulated environment.

Similarly, as rapidly advancing technologies and the automation of the postindustrial workplace has resulted in the need for workers with new or improved skill sets (Carnevale, Smith, and Strohl, 2010), educational institutions increasingly identify competencies and the criteria for assessing them through employers and occupational practitioners. The influence of these employers in validating competency-based education cannot be overstated, as former U.S. Secretary of Education Margaret Spellings recently remarked, "businesses are starting not to care about 'degrees' at all. They care about what their workers know and can do. Once employers figure out what skills and competencies they want and need, that is all they will ask for. They will demand someone with those very specific credentials" (CAEL 2013, p. 8). This shift in the value of higher education credentials is part of what Neubauer (2014) identifies as the changing

ecology of higher education, and has strong implications for how external stakeholders influence not only the delivery methods of the curriculum, but also its content and value. Of note, such a shift often rejects legacy-based curriculum built upon historical standards and instead emphasizes just-in-time responsiveness to stakeholders (Gruppen et al, 2016).

Competency-based education has also resurged in K-12 education, as Sullivan and Downey (2015) point to the presence of 36 states that allow the granting of credits based on proficiency-oriented outcomes. Organizations like Gateways to College National Network and Reinventing Schools provide research and consulting efforts to assist schools in transitioning to CBE. Moreover, policy and legislation emphasizing increased accountability and student performance, such as No Child Left Behind, Race to the Top, and Common Core State Standards, have encouraged many schools to explore CBE (Sullivan and Downey, 2015). More recently, the reauthorization of the Elementary and Secondary Education Act (ESEA) further supports the implementation of CBE, including through an Innovative Assessment Pilot program to ease state processing and approval of competency-based and other new assessment systems. The number of states and schools developing CBE may increase as a result of this legislation.

Regardless of the exact form that competency-based education has taken over the years, its current conceptualization—particularly in higher education—stems from reactions against time-oriented (credit hour), norm-based (letter grade) education and assessment systems in favor of industry and profession-driven, outcomes-based education and assessment. Cavanaugh (2013) suggests that historic emphasis on credits earned has overshadowed authentic assessment of learning outcomes, perpetuating subjective letter-grading that fails to accurately reflect levels of student learning. In contrast, competency-based education requires students to "go beyond mere knowledge acquisition and demonstrate that they can apply what they have learned in different

situations" (Klein-Collis, 2013, p. 5). Such reliance on performance of competencies requires CBE programs to incorporate significant opportunities for individualized student assessment and feedback, resulting in a shift of faculty roles from a more traditional professor or lecturer to that of a learning facilitator, evaluator, and coach (Gruppen et al, 2016). Moreover, individual assessment and feedback is a timely investment that requires the personnel involved to constantly collaborate on and calibrate their learning assessment process.

2.1.2 The Emergence of Direct Assessment CBE

A critical aspect of access and persistence among working adults is the flexibility and agency students have in designing accelerated, individual pathways to meet their professional pursuits (Eyster, Callan, and Adams, 2014). Significantly, online education persists as one of the most accommodating options for students who are also working, live remotely from campus, and/or have family responsibilities. The increasing ability of students to design their educational pathways—including type of credential, delivery method (online, hybrid, classroom), and attendance schedule (open-lab, traditional semester, online, accelerated/Executive)—speaks to both the mass customization of higher education (CAEL, 2013) and the emergence of the student as an entrepreneurial agent empowered to individualize his/her educational experience (Mars, Slaughter, and Rhoades, 2008). This value proposition of a flexible, customized learning experience aligns strongly with CBE both from student and employer perspectives.

While varieties of competency-based education exist¹, this study focuses on the rise of self-paced, online direct assessment programs designed entirely around teaching and assessing

¹ One of the most notable is Prior Learning Assessments. See the Council for Adult & Experiential Learning, 2010.

student competencies. I gathered information from the websites and review of supplementary articles of five established CBE programs within the following institutions: Capella University, Kentucky Community & Technical College System (KCTCS), Northern Arizona University (NAU), Southern New Hampshire University's College for America (CfA), and Western Governors University (WGU). Of note, it is difficult to accurately ascertain how many and which institutions have qualified as government-approved, direct assessment programs For example, WGU is one of the earliest adopters of online competency-based education, but it aligns with the credit hour model and is thus not direct assessment. While Northern Arizona University received regional accreditor approval, the U.S. Department of Education refused to acknowledge it as direct assessment (Fain, 2014). Nevertheless, these institutions provide key insights into informed, established attempts to build online CBE programming moving toward if not actualizing direct assessment.

Overall, the programs share several commonalities. Each institution maintains regional accreditation. They tend to acknowledge the diverse ways in which students can learn (often referred to as personalized learning), emphasizing, for example, the ease with which students may transfer credits in or out of the institution via transcripts or prior learning assessment². Furthermore, each competency-based education program accentuates strong partnership between business and academia. This focus is often directly reflected in their program mission or goals; otherwise, it is discussed in the development of program competencies through Advisory Boards and Boards of Trustees largely comprised of employers. Three out of the five programs mention working adults as their target audience. Northern Arizona University's Personalized Learning and KCTCS's Learn On Demand market to working adults but also encourage those seeking

² Notably, prior learning assessment is not permitted within a direct assessment model, though most colleges will allow prior learning assessment within their other programming.

their first job to enroll. Furthermore, because these are online programs, each institution describes their target student as a highly motivated, disciplined, well-organized, and technologically savvy individual. While each program offers similar supportive services, including mentors, tutors, and the online community, they equally stress that the student will have an individualized learning experience for which he or she is ultimately responsible. Students develop customized learning plans, structure their own schedules, and electronically monitor their progress. Current program offerings range from Associate's to Master's degrees in such fields as Business, Information Technology, Healthcare, Teacher preparation, Psychology, Communications, Arts/Liberal Arts, Science, and General Studies.

Certain differences also stand out among the programs and their host institutions. Notably, CBE programs are not limited to any particular institutional classification. Rather, institutions that have developed CBE programs range from private, for-profit to public universities and community colleges, and at the latest count, there are over 600 institutions of all types and sizes developing CBE programs (Fain, 2015). As a result, some of the program offerings and marketing reflects differing institutional missions. For example, the Kentucky Community and Technical College System (KCTCS) was the only institution to require that students attach to a physical campus for certain exams and lab activities that could not be completed online. This may be in part due to the fact that some of the courses being developed for delivery in KCTCS's Learn on Demand program (e.g. those comprise the Integrated Engineering Technology degree) involve proficiencies (such as welding and industrial equipment repair) that necessitate in-person assessment. Furthermore, there is some difference in the structure of these online programs. Western Governors University, one of the earliest implementers of online competency-based education, began offering courses in 1999. As such, the institution attained federal financial aid through aligning its competencies to the traditional credit-hour model. KCTCS and NAU have also historically provided credit-hour equivalents for their competency assessment.

In contrast, Capella University with its FlexPath program and Southern New Hampshire University with College for America are the first two CBE programs to receive federal financial aid for *direct assessment*. While all of the CBE programs listed here assess competencies through demonstrated proficiency, the direct assessment programs rely on the aggregate of the mastered competencies to indicate unit or degree completion rather than credit hours earned. As CBE becomes more commonplace, institutions like KCTCS and NAU are beginning to transition towards the direct assessment model.

A final significant difference is the cost students pay to enroll in these programs. Capella University is the most expensive, at \$2,400 per quarter. While learners purportedly may take as many courses as they can manage within a quarter, they are restricted to completing two courses at a time. WGU's baseline tuition is \$2,890 per six-month term. The tuition increases for select programs, the most expensive being the B.S. Nursing at \$4,250. NAU's Personalized Learning program charges \$3,000-\$3,750 per six-month term, while SNHU's College for America is \$3,000 annually, though students must be employed by one of the program's employer partners. KCTCS offers its Learn on Demand program at a rate of \$156 per credit hour, which for a full-time course load of 15 credit hours would be \$2,340. KCTCS's payment model aligns with the traditional credit-hour structure, whereas the other programs boast a flat-rate or subscription structure in which students make the most of their time by completing as many competencies and courses as they are able during the term.

2.1.3 Direct Assessment CBE as a Disruptive Innovation

Since the 1980s, higher education administration has increasingly adopted business principles and corporate management practices (Alfred, 2006; Cohen and Kisker, 2009). Writing for the Society for College University and Planning (SCUP), Norris et al (2013) describe the adoption of such principles as part of higher education's transformation into the *Knowledge Age*, which involves the packaging, commodification, and capitalism of academic knowledge (Slaughter and Leslie, 1997). Characteristics of the Knowledge Age include: "technology synergies; just-in-time learning; perpetual learning; unbundled learning experiences based on learner needs; seamless, integrated comprehensive, and open systems; and point-of-access payment for exchange of intellectual property based on value added" (Norris et al, 2013, p. 21). Indeed, value, as a function of educational access, cost, and quality (U.S. Department of Education, 2006) has become a primary concern for higher education and its stakeholders. To acquire, maintain, and demonstrate this value in the face of ever-growing competition from other colleges, universities, and third-party learning providers, higher education institutions in the 21st century must continually adapt and improve (Norris et al, 2013).

Christensen and Eyring (2011) use the theory of disruptive innovation to explore such university adaptation in the 21st century. This theory involves two types of innovation: *sustaining innovation* which makes an existing product "bigger or better," and *disruptive innovation*, which "disrupts the bigger-and-better cycle by bringing to market a product or service that is not as good as the best traditional offerings but is more affordable and easier to use" (p. xxiv). Rather than compete with a mainstream market, a disruptive innovation disrupts it through introducing a new solution that appeals to underserved or non-consuming customers. Louis Soares (2012) further asserts that disruptive innovations are comprised of four interrelated

elements: (1) *technology enabler*—particularly to the extent that processes are automated and integrated; (2) *business model change*—increased efficiency and affordability in process delivery as a result of the innovation, (3) *new value network*—the ability of the innovation to complement other business services; and (4) *standards* that cross the industry. Online learning is one example of disruptive innovation. Fully-online competency-based education can be viewed as a sustaining innovation with regards to online learning, yet it is also disruptive in that it is combining two separate ideas: online learning with competency-based learning. Delivering fully online programs certainly situates online CBE (both the WGU and direct assessment models) as a technology enabler.

Moreover, direct assessment competency-based education affords a customizable and flexible learning experience that appears well-suited to working adults. In promoting the adaptive learning styles captured in CBE, Cavanaugh asserts, "Each student comes to us at a slightly different place on the learning continuum," and the goal of CBE is to meet students "at the edge of their learning" (2013, p. 3). For example, he argues that students who perform at an "A" level should not need to revisit the same competencies they mastered in English 101 when they move on to English 102, a common setback in traditional classes. Through allowing students to work at their own pace and according to their own schedules, he claims, CBE is a more efficient and effective way to educate. Likewise, the all-you-can-complete subscription service has the potential to reduce costs for students who are technologically savvy, independent, and disciplined learners. If such is not the case, it is possible for students' better value option to be a more traditional fee structure, particularly in the case of Pell Grant recipients (Kelchen, 2015). Nevertheless, these components of direct assessment CBE situate it to change the existing educational business model and bring a different value proposition to the educational enterprise.

Finally, while competency-based education has certainly enabled new technologies and promoted changes in the way higher education functions, there is still work to be done regarding validating its value network and industry-wide standards. Progress is underway, as the seven regional accrediting commissions published their Framework for Competency-Based Education (June, 2015), and in September 2015, the U.S. Department of Education released its Competency-Based Education Experiment Reference Guide. Additional resources include initiatives like The Partnership for 21st Century Skills (p21.org) and the Institute for the Future's Future Work Skills 2020, which represent the work of strategic partners to define student outcomes. Both initiatives emphasize career readiness and economic development in ways that may help to define competencies. In terms of assessment, the Lumina Foundation has worked with regional accreditors to develop the Degree Qualifications Profile (DQP), the goal of which is to provide "a baseline set of reference points stating what students should know and be able to do at each degree level, irrespective of field of study...a framework that can be used across the country to define learning outcomes" (McKiernan, 2013). In alignment with the DQP and their own Valid Assessment of Learning in Undergraduate Education (VALUE) rubrics, the Association of American Colleges and Universities (AAC&U) is using Bill and Melinda Gates Foundation funding to develop General Education Maps and Markers (GEMs). The primary goal of GEMs is to "help today's diverse and mobile students gain the skills and demonstrate the competencies outlined in the DQP," with emphasis on proficiency demonstration through handson activities, projects, and portfolios (AAC&U, 2014). Many institutions are using these resources to build their competencies and corresponding student assessments with the ultimate goal of achieving standardization and credibility for their CBE programs. Soares (2012) encourages continued experimental collaboration to develop the business models and value

networks needed to fully realize direct assessment CBE on a national scale. Overall, the involvement of so many stakeholders working to validate and standardize direct assessment CBE further reinforces this phenomenon as a disruptive innovation likely to have a lasting influence on higher education.

2.2 DIFFUSION OF CBE RESEARCH MODEL

21st century information and communication technologies (ICT) have spurred the development of a knowledge economy in which higher education institutions must compete for survival and legitimacy (Christensen and Eyring, 2011). Such external pressures have prompted many higher education leaders to adopt innovations that both give their institutions competitive advantage and maintain students at the center of their mission. Nevertheless, institutional members may perceive such disruptive innovation as threatening to their organizational culture, values, roles, and resources. Whether the change is introduced from the top-down or bottom-up, Marshall (2011) asserts that strategic leadership and formal processes for informing, persuading, and training staff are key components to successfully implement disruptive, technological change. Leaders have a responsibility to initiate and implement innovation and organizational change, yet it may be accomplished most effectively through the mutual empowerment and motivation of academic management and academic professionals. I suggest that it is within this complex space that organizational members negotiate and navigate disruptive change. Notably, to study such change in the context of direct assessment involves examining adoption of both the educational approach (competency-based education) and its technological mode of delivery (online learning and assessment). Accordingly, this next section discusses Rogers' (2003) diffusion of innovation

theory and how combining it with Ajzen and Fishbein's (1980) social psychology theory of reasoned action and Davis's (1986) technology acceptance model yields a research model through which to study the diffusion of online competency-based education in the United States.

2.2.1 Diffusion of Innovation Theory

Everett M. Rogers' (2003) diffusion of innovation theory is a useful approach to studying organizational innovation, culture, and change. Rogers defines *innovations* as new ideas, and *diffusion* as all the activities surrounding the spread of such new ideas. Most notably, diffusion involves communicating information about an innovation to reduce perceptions of uncertainty and risk in adopting the innovation.

Individuals largely base their decisions to adopt or reject an innovation on their perceptions of five key attributes. *Relative advantage*, one of the most influential attributes, is "a ratio of the expected benefits and costs of adoption of an innovation. Subdimensions of relative advantage include economic profitability, low initial cost, a decrease in discomfort, social prestige, a saving of time and effort, and immediacy of reward" (p. 233). *Compatibility* involves the innovation's alignment with an individual's values and needs: "An innovation can be compatible or incompatible with (1) sociocultural values and beliefs, (2) previously introduced ideas, and/or (3) client needs for the innovation" (p. 240). Not surprisingly, the more relative advantage and compatibility an individual perceives with an innovation, the more likely he or she is to adopt that innovation. Furthermore, *complexity* is the level of difficulty the individual perceives in adopting the innovation, *trialability* refers to an individual's opportunity to experiment with the innovation prior to full adoption, and *observability* is the individual's ability to observe others using the innovation prior to adoption. Logically, the greater the complexity of

an innovation, the less likely an individual is to adopt it. However, trialability and observability may mitigate an innovation's complexity, resulting in increased likelihood of its adoption. These five attributes affect innovation-decisions at not only the individual level but also the organizational level.

Rogers describes an organization's structure as consisting of five elements: (1) *Predetermined goals*, as in the mission, vision, and values of an educational institution; (2) *Prescribed roles*, visible in the various job titles and positions held by the institution's members; (3) Authority structure, evident in the institution's organizational chart; (4) Rules and regulations, established in employee handbooks, institutional policies, and guidelines for member behavior; and (5) Informal patterns of norms, customs, and social relationships that further inform member behavior and routines (p. 404). Organizational structure dictates the process of innovation decision-making and implementation. For example, higher education is often structured as a decentralized, loosely-coupled organization (Weick, 1976/2010). As such, *collective* innovation decisions, made through shared governance or other form of consensus, can occur. Nevertheless, higher education also usually has a hierarchical authority structure. Thus, *authoritative* innovation decisions, driven from the executive leadership, are more commonplace. In both situations, the decision to adopt relies on the match between an organizational problem and the innovation-as-solution. Organizational qualities, such as its degree of centralization (where power is concentrated), complexity (members' knowledge and expertise), formalization (adherence to rules and procedures), *interconnectedness* (interpersonal networking), and organizational slack (access to uncommitted resources), influence this matching process (p.412). Upon the decision to initiate an innovation, the implementation phase begins.

The innovation implementation phase offers substantial opportunity for social construction and change. This phase consists of three stages: (1) *re-defining/restructuring* the innovation to better fit within the organization, (2) *clarifying* what the innovation means to all of the organization's members, and (3) *routinizing* the innovation such that it is no longer distinguishable from daily organizational functions and activities. Accordingly, social construction largely occurs during the re-defining and clarifying stages, as organizational members initially interact with the innovation (Rogers, p. 426). Once again, perception influences how these individuals react to the innovation. The confluence of organizational culture, structure, and personality affect how members perceive the five attributes of the innovation. Ultimately, their perceptions direct members' acceptance or resistance of the innovation, thereby advancing or impeding the rate of organizational adoption.

Significantly, various diffusion strategies may influence how members perceive these innovation attributes. These include: (1) designing a large-scale *communications campaign* to spread persuasive information about the innovation across the organization; (2) *offering incentive* to facilitate trial use and/or full adoption of the innovation; and (3) engaging a *champion* to act as an opinion leader among peer members of the organization. The first two strategies are fairly self-explanatory and are often initiated from a position of authority. The role of innovation champion, however, is a more-complicated strategy that requires further elucidation.

Champions are institutional members who motivate their peers to accept an innovation. A champion may be a high-ranking leader, especially if the innovation is particularly disruptive or radical. More often, though, champions are "middle managers" who "(1) occup[y] a key linking position in their organization, (2) possess[] analytical and intuitive skills in understanding various individuals' aspirations, and (3) demonstrate[] well-honed interpersonal and negotiating

skills" (p. 415). Champions are highly variable in age, power, job title, and experience, yet they share the primary function of influencing organizational members' behavior and attitudes in favor of (or against, in the case of anti-champions) innovation.

In sum, diffusion of innovation theory provides a lens through which to view and analyze how an organization decides to adopt a new idea, as well as how its members perceive and accept or resist that idea. It examines the social roles, attitudes, and behaviors that members enact as they construct meaning around the innovation. Finally, it affords insight into the social change and organizational consequences that result from the diffusion process. Since its inception in the 1960s, diffusion of innovation theory has been applied to many disciplines of study, including education. Its simultaneous focus on product and technology innovations along with social construction and organizational change yields a comprehensive, multi-faceted approach well-suited to my exploration of online competency-based education.

Xu and Quaddus (2007) combine Rogers' (2003) diffusion of innovation theory with Ajzen and Fishbein's (1980) social psychology theory of reasoned action (TRA) and Davis's (1986) technology acceptance model (TAM) to develop a model of organization-level acceptance and innovation. Briefly, TRA examines an individual's propensity to adopt a new behavior based on two factors: (1) his or her attitude toward that behavior, and (2) his or her perception of social norms and pressures concerning the behavior. Similarly, TAM examines an individual's likelihood to accept and adopt new technology based on two factors: (1) the perceived usefulness of the technology, and (2) his or her perceived ease of using the technology. All three theories acknowledge that the interaction of multiple factors influence individuals' acceptance of change. Xu and Quaddus (2007) integrate these various factors into an adoption decision process. Four dimensions of factors—(1) Task Complexity; (2) Organizational; 3)

Individual; and (4) Organic Growth—influence potential adopters' (5) Perceived Benefits and (6) Perceived User Friendliness, which in turn affect their likelihood to adopt the innovation. Two additional dimensions of factors—(7) Subject Norms and (8) Perceived Voluntariness also influence individuals' acceptance of the innovation.

Xu and Quaddus define specific factors within each dimension, specifically relating to adoption of knowledge management systems. They assert that their model may be adapted to fit other innovation diffusion processes. Accordingly, in the following section, I combine findings from a literature review of the diffusion of online education with Xu and Quaddus's dimensions to construct a research model that will examine the diffusion of direct assessment CBE.

2.2.2 Developing a Research Model for Direct Assessment CBE

Given the dearth of empirical studies on direct assessment competency-based education, my ability to hypothesize factors that may affect its diffusion in higher education is somewhat limited. However, as mentioned previously, a comprehensive research design must account for both the diffusion of CBE and the diffusion of online education as they combine in the format that is direct assessment. In fact, CBE that is delivered online can be seen as a sustaining innovation of online education, which itself disrupted higher education a mere two decades ago. As such, I contend that the challenges, concerns, and benefits institutional members consider regarding the diffusion of online education may be readily adapted and applied to the diffusion of contemporary online CBE, specifically direct assessment—thereby informing the conceptual framework and valid research model for this study.

To achieve this adaptation, I reviewed approximately 20 peer-reviewed journal articles on the adoption of online education (including both fully-online and blended programming). The vast majority of these articles were case studies; a few additional articles were themselves compilations of literature review on this subject. Next, I compared these researchers' findings to Xu and Quaddus's (2007) research model to determine the extent to which the model accurately represents factors affecting the diffusion of online education. In all but one instance (Xu and Quaddus's original model also includes the factor *Error Recovery*, which was not represented in my literature review), I found correlation between the model's factors and those presented in the articles on the diffusion of online education. With this confirmation, I felt confident that I could in fact adapt Xu and Quaddus's model into a research model of factors affecting the diffusion of online competency-based education. The matrices to follow list each of the factors organized according to Xu and Quaddus's eight categories, provide a description of how these factors affect the adoption and acceptance of direct assessment CBE, and also cite the literature that supports each factor's inclusion in this model.

Several task-related factors affect institutional and individual decisions to adopt and accept technology innovations. Table 1 summarizes Task Complexity factors specifically pertaining to direct assessment CBE. In today's age of accountability, external stakeholders including government agencies, accrediting bodies, parents, and students demand transparency and evidence of institutional effectiveness. Automated processes of assessment and data analysis may help institutions meet this demand thereby influencing which technological innovation institutions attempt to diffuse³. Nevertheless, after choosing how to respond to such external demands, those leading the change must address the following internal factors to promote institutional acceptance of the chosen innovation.

³ In a later article, Xu and Quaddus (2012) distinguish between External Inspiring factors and Task Complexity factors. However, I argue that in the higher education context, these dimensions are interrelated as external demands for access and accountability drive the pursuit of complex, technological solutions; therefore, I retain them as one combined category.

Task Complexity Factors	Description	Evidence of this Factor Affecting Adoption of Online Education
Data Analytics	The extent to which an institution is concerned with generating and storing data analytics for benchmarking, planning, and other accountability-oriented activities may influence decisions to adopt and select/build learning management systems.	Amirault, 2012; Folkers, 2005; Macfadyen and Dawson, 2012
Student Demand /Access	Contemporary distance learning largely requires the adoption and use of online education. Competency-based education is likewise touted to increase student access and affordability. Thus, the extent to which an institution perceives that direct assessment CBE efficiently responds to its students' demands will influence the decision to adopt it.	Amirault, 2012; Dechant and Dechant, 2010; Folkers, 2005; Garza Mitchell, 2009; Gibson, Harris, and Colaric, 2008; Larreamendy-Joerns and Leinhardt, 2006; McLoughlin, Chen Wang, and Beasley, 2008; Niemiec and Otte, 2010; Owen and Demb, 2004; Wallace, 2002; Wickersham and McElhany, 2010;
Effective Knowledge reuse	Course shells, learning modules, curricula, and other instructional products may be more effectively stored, copied, and reused through online education than previous means.	Ertmer and Ottenbreit-Leftwich, 2010; Larreamendy-Joerns and Leinhardt, 2006; Niemiec and Otte, 2010
Student Assessment	The potential to standardize and largely- automate student assessment may influence institutions to adopt direct assessment CBE.	Larreamendy-Joerns and Leinhardt, 2006; Wickersham and McElhany, 2010

Table 1. Task Complexity Factors Affecting the Acceptance of Direct Assessment CBE

Table 2 depicts organizational factors that affect acceptance of direct assessment CBE. At the organizational level, diffusing an innovation requires a clear, strategic vision and a careful and deliberate implementation plan to enact that vision (Hiatt and Creasey, 2012; Kotter, 1996). One cannot overstate the importance of these components to the change process, as such steps help to establish the *relative advantage* of the innovation whose adoption will effect this change (Rogers, 2003). Plans most likely to succeed involve key stakeholders, institutional research, environmental scanning, and the compilation of data from these resources into evidence-based,

Organizational Factors	Description	Evidence of this Factor Affecting Adoption of Online Education
Strategic Vision	Institutions that possess and communicate a clear vision and strategy for implementing direct assessment CBE are likely to have a higher rate of adoption than institutions that lack such vision and strategy.	Dechant and Dechant, 2010; East, LaMendola, and Alter, 2014; Ertmer and Ottenbreit-Leftwich, 2010; Lin, Singer, and Ha, 2010; Macfadyen and Dawson, 2012; McLoughlin, Chen Wang, and Beasley, 2008; Niemiec and Otte, 2010; Owen and Demb, 2004; Pina, 2008; Simonson, Scholosser, and Orellana, 2011; Vaughan, 2007; Wallace, 2002; Wickersham and McElhany, 2010
Processes for Implementation	Institutions that develop their strategy into an implementation plan with supporting processes will have a higher rate of adoption than institutions that lack such processes.	Dechant and Dechant, 2010; Folkers, 2005; Macfadyen and Dawson, 2012; McLoughlin, Chen Wang, and Beasley, 2008; Niemiec and Otte, 2010; Wallace, 2002
Locus of Control	Institutions seeking to integrate or convert to direct assessment CBE must address concerns of intellectual property, autonomy, academic freedom, and role identity. Whether they use existing employees or hire new personnel, institutions must also consider the qualifications, roles, and quality evaluations of CBE implementers. Institutions must collaborate with stakeholders to develop quality control practices with closed feedback loops to ensure program credibility, value, and sustainability.	Amirault, 2012; Dechant and Dechant, 2010; Folkers, 2005; Garza Mitchell, 2009; Larreamendy-Joerns and Leinhardt, 2006; Lin, Singer, and Ha, 2010; Macfadyen and Dawson, 2012; McLoughlin, Chen Wang, and Beasley, 2008; Niemiec and Otte, 2010; Owen and Demb, 2004; Pina, 2008; Tabata and Johnsrud, 2008; Vaughan, 2007; Wallace, 2002; Wickersham and McElhany, 2010
Leadership Support	Whether the innovation originates from the top-down or the bottom-up, support from senior leadership helps to drive its adoption. Without this support, adoption of the innovation will occur only in pockets or not at all.	Dechant and Dechant, 2010; East, LaMendola, and Alter, 2014; Larreamendy-Joerns and Leinhardt, 2006; Lin, Singer, and Ha, 2010; Niemiec and Otte, 2010; Owen and Demb, 2004; Pina, 2008; Tabata and Johnsrud, 2008; Vaughan, 2007; Wallace, 2002; Wickersham and McElhany, 2010
Structure	Institutions that are more loosely- coupled, decentralized, and organic in structure are more likely to adopt innovations than more tightly- coupled, centralized and mechanistic institutions.	Dechant and Dechant, 2010; East, LaMendola, and Alter, 2014; Folkers, 2005; Garza Mitchell, 2009; Lin, Singer, and Ha, 2010; Vaughan, 2007; Wallace, 2002; Wickersham and McElhany, 2010

 Table 2. Organizational Factors Affecting Perceptions of Direct Assessment CBE

Table 2 (continued)

Organizational	Description	Evidence of this Factor Affecting		
Factors		Adoption of Online Education		
Culture	Institutional cultures that promote values such as avant-garde thinking, creativity, trust, and adaptability are more likely to be comprised of employees who accept and use innovations like direct assessment CBE.	Dechant and Dechant, 2010; East, LaMendola, and Alter, 2014; Ertmer and Ottenbreit-Leftwich, 2010; Folkers, 2005; Garza Mitchell, 2009; Lin, Singer, and Ha, 2010; Macfadyen and Dawson, 2012; Niemiec and Otte, 2010; Owen and Demb, 2004; Simonson, Scholosser, and Orellana, 2011; Vaughan, 2007; Wallace, 2002		
Infrastructure	An institution whose infrastructure reflects its values and incorporates resources to support those values is more likely to realize user acceptance of innovations. IT is one key component of this infrastructure, but emphasis on academic quality, institutional research and effectiveness may also be important facilitators of innovation.	Dechant and Dechant, 2010; East, LaMendola, and Alter, 2014; Folkers, 2005; Garza Mitchell, 2009; Lin, Singer, and Ha, 2010; McLoughlin, Chen Wang, and Beasley, 2008; Niemiec and Otte, 2010; Owen and Demb, 2004; Pina, 2008; Simonson, Scholosser, and Orellana, 2011; Tabata and Johnsrud, 2008; Vaughan, 2007; Wallace, 2002; Wickersham and McElhany, 2010		
Social Networks	The extent to which social networking and interpersonal communications occurs within an institution will also affect the rate at which direct assessment CBE is diffused and adopted. Change champions as opinion leaders can facilitate more rapid adoption through these means.	Ertmer and Ottenbreit-Leftwich, 2010; Garza Mitchell, 2009; Gibson, Harris, and Colaric, 2008; Lin, Singer, and Ha, 2010; McLoughlin, Chen Wang, and Beasley, 2008; Niemiec and Otte, 2010; Owen and Demb, 2004; Wallace, 2002; Wickersham and McElhany, 2010		

actionable decisions. Accordingly, the plan should directly align with and support the institution's mission and values (Alfred, 2006). No initiative should be recommended for implementation that does not in some way contribute towards the achieving of the institution's strategic goals and priorities. Niemiec and Otte (2010) recommend developing a strategic matrix that outlines the initiative's major goals (in line with the institutional mission), potential challenges to achieving those goals, strategies to overcome the challenges, and how these

strategies will benefit the institution. They assert that such a matrix, combined with a formative evaluation plan, will allow change leaders to monitor progress and make strategic adaptations as necessary. McLoughlin, Chen Wang, and Beasley (2008) discuss their use of annual reports, course evaluation forms, and student satisfaction surveys to continually assess and improve their technology plan and its implementation across the college. They also note the importance of evaluation to align internal initiatives with external expectations such as accreditation standards.

Moreover, decentralized organizational structures and democratic, forward thinking cultures are more likely to achieve innovation acceptance than their more mechanistic counterparts (Weick 1976/2010). Shared communication, decision-making, and support structures will naturally promote shared values—for example, pedagogical values (Garza Mitchell, 2009), which in turn can be used to build an institution-wide quality standard for teaching and learning assessments. Both faculty and administrators seem to favor an approach to quality that is fundamentally standard across the institution yet customizable depending on the subject matter or discipline (Dechant and Dechant, 2010; Wickersham and McElhany, 2010).

Finally, addressing the *compatibility* of the proposed innovation (Rogers, 2003) requires that change leaders consider how the innovation will integrate with the current institutional culture. Institutional culture is the compilation of history, values, beliefs, norms, rituals, and routines that guide and regulate behavior of the institution's members. It involves a shared perception of the reality and purpose of the institution that translates into the roles and responsibilities of each member (Bergquist and Pawlak, 2008). Transformational change involving technology necessarily challenges the institutional culture because it directly affects these roles and responsibilities (Owen and Demb, 2004). Changing technology often means changing not only *what* activities members perform, but also *how* they perform those activities.

Through disrupting members' daily routine, technological innovations have the potential to also disrupt their sense of identity and worth within the institution. Members need time and communication to learn about the change rather than to fear it (Hiatt and Creasey, 2012).

At the individual level, many of the challenges to adoption of direct assessment CBE relate directly to institutional members' perceptions. **Table 3** displays several factors that affect how individuals perceive innovation. Staff is unlikely to support an initiative they perceive is counter to the institutional mission. Market-driven initiatives seem particularly likely to encounter this negative perception. Likewise, cultural conflicts largely arise from one group's perception (e.g. faculty) that another group (e.g. administrators) is making decisions that disregard or disempower the former group. Essentially, such findings emphasize the importance of communication and trust-building among all stakeholders involved in the change process.

Ideally, the change implementers would be as enthusiastic about and engaged with the change as its initiators and champions. Such buy-in requires trusting that the change champions value the change implementers and have their best interests in mind. Building this trust involves communication between the innovation champions and implementers to the extent that all are systemically empowered to become active change agents. Marshall (2011) supports such agency, noting that institutions will be most likely to achieve organizational change when they have "change strategies operating simultaneously and synergistically at multiple levels" (p. 25). In other words, successful models involve clear communication and engagement with stakeholders through committees, task forces, meetings and other activities in which change champions operate as opinion leaders to sway the attitudes of their peers (Owen and Demb, 2004).

Individual	Description	Evidence of this Factor Affecting
Differences Factors		Adoption of Online Education
Involvement	The level of involvement that employees have with the decision to adopt and the implementation process of direct assessment CBE will affect their acceptance and use of this innovation.	Dechant and Dechant, 2010; Garza Mitchell, 2009; Larreamendy-Joerns and Leinhardt, 2006; Lin, Singer, and Ha, 2010; McLoughlin, Chen Wang, and Beasley, 2008; Owen and Demb, 2004; Pina, 2008; Simonson, Scholosser, and Orellana, 2011; Wallace, 2002; Wickersham and McElhany, 2010
IT Competence	IT Competence includes the experience users have with the technology surrounding online education, as well as the skills they have developed through that experience. The more competent users are with IT, the more likely they are to accept direct assessment CBE.	Dechant and Dechant, 2010; East, LaMendola, and Alter, 2014; McLoughlin, Chen Wang, and Beasley, 2008; Tabata and Johnsrud, 2008; Vaughan, 2007
Knowledge of Online Education	Knowledge of IT and online education also influence user acceptance. Users may lack direct experience with technology, but are familiar with its use elsewhere within the organization. Expanding users' knowledge of online education reduces uncertainty surrounding the innovation and thus encourages its adoption and use.	Dechant and Dechant, 2010; East, LaMendola, and Alter, 2014; Ertmer and Ottenbreit-Leftwich, 2010; Folkers, 2005; Lin, Singer, and Ha, 2010; Niemiec and Otte, 2010; Tabata and Johnsrud, 2008; Wallace, 2002
Knowledge of Competency- based Education ⁴	In cases of integration, faculty may already use elements of CBE in their teaching and can build upon this knowledge to fully adopt CBE. Likewise, knowledge of CBE is a key factor to consider when hiring new personnel. Conversely, acceptance will be more difficult among employees who lack knowledge of or experience with CBE.	
Roles & Responsibilities	Employees who perceive their roles as compatible with direct assessment CBE will be more likely to adopt and use it. Conversely, those who perceive their roles as challenged by the innovation are more likely to resist.	Amirault, 2012; East, LaMendola, and Alter, 2014; Ertmer and Ottenbreit-Leftwich, 2010; Folkers, 2005; Garza Mitchell, 2009; Lin, Singer, and Ha, 2010; McLoughlin, Chen Wang, and Beasley, 2008; Owen and Demb, 2004; Pina, 2008; Tabata and Johnsrud, 2008; Vaughan, 2007; Wallace, 2002

⁴ Direct assessment CBE requires knowledge of online education as well as CBE; hence, I include each as a separate factor.

Table 3 (continued)

Individual	Description	
Differences	L	Evidence of this Factor Affecting
Factors		Adoption of Online Education
Personal Innovativeness	The extent to which an individual is more or less open to innovations in general will affect the rate at which she or he adopts online education. This also examines an individual's willingness to innovate—21 st century educators may experience innovation fatigue in response to overwhelming pressures to constantly identify and adopt new ideas and methods.	Ertmer and Ottenbreit-Leftwich, 2010; Lin, Singer, and Ha, 2010; McLoughlin, Chen Wang, and Beasley, 2008
Attitude toward Online Education	Individual attitudes toward direct assessment CBE will also affect its rate of adoption. Attitudes may stem from users' technical competence, perceived role conflict, or a perceived conflict in values or institutional constructs (e.g. pedagogy, teaching methods) surrounding direct assessment CBE.	Dechant and Dechant, 2010; East, LaMendola, and Alter, 2014; Ertmer and Ottenbreit-Leftwich, 2010; Folkers, 2005; Lin, Singer, and Ha, 2010; McLoughlin, Chen Wang, and Beasley, 2008; Owen and Demb, 2004; Tabata and Johnsrud, 2008; Wickersham and McElhany, 2010
Career Trajectory	This includes both employees' history at the institution as well as their future goals. An employee used to doing things a certain way may wish to retain the status quo. In contrast, an employee seeking to advance within the institution might be more willing to adopt direct assessment CBE.	East, LaMendola, and Alter, 2014; Folkers, 2005; McLoughlin, Chen Wang, and Beasley, 2008; Tabata and Johnsrud, 2008; Wallace, 2002
Position	One's position within an institution encompasses constructs of knowledge, experience, and power and thus influences users' attitudes toward innovation. Tenured faculty may be more or less inclined to accept CBE than adjunct faculty. Senior-level administrators may have more or less sway in deciding to adopt direct assessment CBE.	Amirault, 2012; Ertmer and Ottenbreit-Leftwich, 2010; Folkers, 2005; Garza Mitchell, 2009; Lin, Singer, and Ha, 2010; Tabata and Johnsrud, 2008

The change process must also involve an early and consistent support structure with adequate resources to serve the needs of personnel and students (Niemiec and Otte, 2010). This support structure should incorporate opportunities for Organic Growth, as outlined in **Table 4**. Depending on the institutional culture, organizational members may respond well to a mixture of

mandatory and voluntary professional development for faculty, administrators, and staff (Garza Mitchell, 2009). Such development from the early stages of the initiative demonstrates concern for faculty and staff needs and thus may reduce their anxiety to change. Vaughan (2007) further claims that such development and support helps faculty to overcome their fears of new technology and to instead view their time as well-invested in skills improvement. Opportunities to learn and use the innovative technology are essential for all implementers, both existing and newly-hired. Moreover, professional development can educate personnel on change process theory and build change management competencies (Wallace, 2002). In fact, achieving institution-wide adoption of a technological innovation enhances technology aptitude and increases the likelihood that personnel will more willingly adopt the next innovation (Tabata and Johnsrud, 2008).

Professional development opportunities, decision-making input, and consistent support are all components of an intrinsic reward and motivation system. Of note, Pina's (2008) survey of distance learning faculty suggests that faculty prioritize professional advancement and teaching resources well above financial incentives (p. 435). This finding implies that incorporating these elements into the change process will contribute to its likelihood for success. Yet faculty and staff should also receive extrinsic rewards in the form of compensation (Dechant and Dechant, 2010). Personnel should be openly recognized for the increased time and labor they dedicate to such implementation processes as design, delivery, and evaluation for continual improvement. Annual performance reviews should incorporate these efforts, and they should also be included in consideration of advancement and adjustments to wages/benefits. Furthermore, change leaders should identify and celebrate positive outcomes throughout the change process (Wallace, 2002; Owen and Demb, 2004). As McLoughlin, Chen Wang, and Beasley (2008) describe, celebrating employee contributions and creative use of technology both

rewards effort and communicates the broad-ranging benefits of the technology.

Organic Growth Factors	Description	Evidence of this Factor Affecting Adoption of Online Education
Compensation	Compensation may take the form of additional resources, such as time or financial, or it could include recognition of efforts and celebration of positive outcomes.	Dechant and Dechant, 2010; East, LaMendola, and Alter, 2014; Folkers, 2005; Lin, Singer, and Ha, 2010; McLoughlin, Chen Wang, and Beasley, 2008; Owen and Demb, 2004; Pina, 2008; Simonson, Scholosser, and Orellana, 2011; Tabata and Johnsrud, 2008; Wallace, 2002; Wickersham and McElhany, 2010
Professional Development	This includes education and training activities at the onset of the innovation, as well as continued support through its implementation.	Amirault, 2012; Dechant and Dechant, 2010; Ertmer and Ottenbreit-Leftwich, 2010; Folkers, 2005; Garza Mitchell, 2009; Lin, Singer, and Ha, 2010; McLoughlin, Chen Wang, and Beasley, 2008; Owen and Demb, 2004; Pina, 2008; Tabata and Johnsrud, 2008; Vaughan, 2007; Wallace, 2002; Wickersham and McElhany, 2010
Individual Learning	Opportunities to test and experiment with direct assessment CBE will allow employees to self-learn, thereby reducing uncertainty and increasing likelihood of their acceptance and use.	Ertmer and Ottenbreit-Leftwich, 2010; McLoughlin, Chen Wang, and Beasley, 2008; Tabata and Johnsrud, 2008; Vaughan, 2007
Access to Resources	Having access to resources that assist in the use of direct assessment CBE will encourage employees to accept and use the innovation.	Dechant and Dechant, 2010; Ertmer and Ottenbreit-Leftwich, 2010; Larreamendy- Joerns and Leinhardt, 2006; Lin, Singer, and Ha, 2010; McLoughlin, Chen Wang, and Beasley, 2008; Niemiec and Otte, 2010; Owen and Demb, 2004; Pina, 2008; Simonson, Scholosser, and Orellana, 2011; Tabata and Johnsrud, 2008; Vaughan, 2007; Wallace, 2002; Wickersham and McElhany, 2010
Agency to Restructure	The degree to which employees are included in the development and deployment of direct assessment CBE, and their ability to restructure or redefine this innovation, will influence their acceptance and use of it.	East, LaMendola, and Alter, 2014; Ertmer and Ottenbreit-Leftwich, 2010; Folkers, 2005; Larreamendy-Joerns and Leinhardt, 2006; Vaughan, 2007; Wickersham and McElhany, 2010

Table 4. Organic Growth Factors Affecting	Percentions of Direct Assessment CBE
Table 4. Organic Orowin Factors Anteeing	I creeptions of Direct Assessment CDE

Each of the four categories of factors described above influence how institutional members perceive direct assessment CBE. Specifically, these factors shape perceptions of direct assessment CBE's Perceived Usefulness and User Friendliness, as presented in **Tables 5** and **6**.

Perceived Usefulness	Description	Evidence of this Factor Affecting Adoption of Online Education	
Creativity	Users of direct assessment CBE may create new services and delivery methods that they could not do before.	Ertmer and Ottenbreit-Leftwich, 2010; Lin, Singer, and Ha, 2010; McLoughlin, Chen Wang, and Beasley, 2008	
Productivity	Direct assessment CBE enhances productivity of employees, especially those involved with student learning.	East, LaMendola, and Alter, 2014; Garza Mitchell, 2009; Lin, Singer, and Ha, 2010; Tabata and Johnsrud, 2008	
Cost and Time Reduction	Users of direct assessment CBE experience a reduction in the cost and time needed to perform their daily tasks.	Amirault, 2012; East, LaMendola, and Alter,	
Profession Building	Users of direct assessment CBE gain relevant knowledge, skills, and abilities that improve their profession.	Ertmer and Ottenbreit-Leftwich, 2010; Garza Mitchell, 2009; Lin, Singer, and Ha, 2010; McLoughlin, Chen Wang, and Beasley, 2008; Vaughan, 2007; Wallace, 2002	
Efficiency	Use of direct assessment CBE reduces redundancies, enhances access, and streamlines daily tasks and routines	Amirault, 2012; Ertmer and Ottenbreit- Leftwich, 2010; Folkers, 2005; Lin, Singer, and Ha, 2010; Macfadyen and Dawson, 2012; Tabata and Johnsrud, 2008; Vaughan, 2007	
Effectiveness	Direct assessment CBE permits users to perform their jobs better through improved teaching strategies, approaches, and delivery methods	East, LaMendola, and Alter, 2014; Ertmer and Ottenbreit-Leftwich, 2010; Gibson, Harris, and Colaric, 2008; Lin, Singer, and Ha, 2010; Macfadyen and Dawson, 2012	
Quality Improvement	Use of direct assessment CBE facilitates the establishment of quality standards for educational content and delivery.	Dechant and Dechant, 2010; East, LaMendola, and Alter, 2014; Folkers, 2005; Garza Mitchell, 2009; Macfadyen and Dawson, 2012; Niemiec and Otte, 2010; Tabata and Johnsrud, 2008; Wickersham and McElhany, 2010	

Table 5. Perceived Usefulness of Direct Assessment CBE

User Friendliness	Description	Evidence of this Factor Affecting Adoption of Online Education
Simple to learn and use	Use of direct assessment CBE is straightforward and uncomplicated	East, LaMendola, and Alter, 2014; Folkers, 2005; Gibson, Harris, and Colaric, 2008; Lin, Singer, and Ha, 2010; Tabata and Johnsrud, 2008; Wickersham and McElhany, 2010
Cheap to learn and use	Use of direct assessment CBE is cost effective	Amirault, 2012; Folkers, 2005; Owen and Demb, 2004; Simonson, Scholosser, and Orellana, 2011; Vaughan, 2007; Wickersham and McElhany, 2010
Speed	Direct assessment CBE allows users to learn and work faster	Folkers, 2005
Accessibility	Direct assessment CBE grants users improved access to both current and past work/data/projects/information'	Lin, Singer, and Ha, 2010; Wickersham and McElhany, 2010
Quality of Knowledge	Direct assessment CBE is accurate and updated	Ertmer and Ottenbreit-Leftwich, 2010; Folkers, 2005; Lin, Singer, and Ha, 2010; McLoughlin, Chen Wang, and Beasley, 2008; Simonson, Scholosser, and Orellana, 2011; Wickersham and McElhany, 2010
Security	Direct assessment CBE is safe and secure for information-sharing and storage	McLoughlin, Chen Wang, and Beasley, 2008; Wickersham and McElhany, 2010

Table 6. Perceived User Friendliness of Direct Assessment CBE

Perceptions of Usefulness and User Friendliness direct affect individuals' acceptance and adoption of direct assessment CBE. Xu and Quaddus (2007) assert that two additional dimensions—(7) Perceived Voluntariness and (8) Subject Norms also have direct influence on this process. Accordingly, **Tables 7** and **8** depict the factors within each of these dimensions.

As these tables depict, multiple contextual factors at the organizational, individual, task complexity, and organic growth levels influence perceptions of direct assessment CBE's Usefulness and User Friendliness. These perceptions, combined with Perceived Voluntariness and Subject Norms, determine whether or not institutional members will accept and use direct assessment CBE. To sum, the interaction of all of these factors constitute my conceptual framework and research model of the diffusion of direct assessment competency-based education.

Perceived Voluntariness	Description	Evidence of this Factor Affecting Adoption of Online Education	
Voluntary use	Individuals who voluntarily agree to use direct assessment CBE will more readily accept the innovation than individuals who are forced or mandated to use it.	East, LaMendola, and Alter, 2014; Garza Mitchell, 2009; Larreamendy- Joerns and Leinhardt, 2006; Lin, Singer, and Ha, 2010; Owen and Demb, 2004	
Authoritative decision	Depending on the organizational culture, individuals may be more likely to accept direct assessment CBE if it is imposed from the top-down.	East, LaMendola, and Alter, 2014; Garza Mitchell, 2009; Owen and Demb, 2004	
Collective decision	Depending on the organizational culture, individuals may be more likely to accept direct assessment CBE if it is agreed upon through consensus	Folkers, 2005; Garza Mitchell, 2009; McLoughlin, Chen Wang, and Beasley, 2008; Wickersham and McElhany, 2010	

Table 7. Perceived	Voluntariness	of Direct	Assessment	CBE
			120000000000000000000000000000000000000	~~~

Subject Norms	Description	Evidence of this Factor Affecting
		Adoption of Online Education
Peer Pressure	Colleagues may pressure their peers into	Dechant and Dechant, 2010; Ertmer and
	accepting direct assessment CBE.	Ottenbreit-Leftwich, 2010; Garza
		Mitchell, 2009; Wallace, 2002
Following	Users may accept direct assessment CBE	East, LaMendola, and Alter, 2014;
leaders' lead	because their leader has accepted it.	Garza Mitchell, 2009
Opinion leader	Users may be more likely to accept direct	Amirault, 2012; Dechant and Dechant,
influence	assessment CBE if someone they respect	2010; Ertmer and Ottenbreit-Leftwich,
	champions its use.	2010; Lin, Singer, and Ha, 2010;
		Niemiec and Otte, 2010; Owen and
		Demb, 2004; Wallace, 2002
Superiors'	Encouragement from middle-managers and	East, LaMendola, and Alter, 2014;
encouragement	executive leaders (top-down) may	Garza Mitchell, 2009; Lin, Singer, and
	influence users to adopt direct assessment	Ha, 2010; Owen and Demb, 2004
	CBE.	
Subordinates'	Innovative employees may encourage	McLoughlin, Chen Wang, and Beasley,
encouragement	leaders to adopt direct assessment CBE	2008; Pina, 2008
	(bottom-up).	

2.3 SUMMARY

U.S. higher education currently faces multiple challenges, among them: (1) meeting the learning needs of an increasingly diverse student population; (2) keeping higher education affordable and accessible to this student population; and (3) remaining accountable to stakeholders, both domestic and global, that include students and their families, businesses, professional associations, governments, accrediting bodies, and funders. In the midst of these challenges, competency-based education (CBE)—and direct assessment in particular—has arisen as a viable alternative to the traditional, time-based credit hour model of education. Regardless of the exact form that competency-based education has taken over the years, its current conceptualization—particularly in higher education—stems from reactions against time-oriented (credit hour), norm-based (letter grade) education and assessment.

Reliance on students' performance of competencies requires CBE programs to incorporate significant opportunities for individualized student assessment and feedback, resulting in a shift of faculty roles from a more traditional professor or lecturer to that of a learning facilitator, evaluator, and coach (Gruppen et al, 2016). Moreover, a review of five HEI's models of online CBE notes such commonalities as: 1) strong partnerships between business and academia; 2) working adults as a target audience; 3) unpacking the traditional faculty model and turning to coaches, mentors, and online learning resources; 4) an environment in which the student is ultimately responsible for her or his learning experience; and 5) in the case of direct assessment programs, a subscription model in which students pay a fee to access all the content they can complete within a given timeframe. Such aspects of direct assessment CBE constitute a disruptive innovation within higher education.

Diffusion of innovation theory provides a lens through which to view and analyze how an organization decides to adopt a new idea, as well as how its members perceive and accept or resist that idea. It examines the social roles, attitudes, and behaviors that members enact as they construct meaning around the innovation. Finally, it affords insight into the social change and organizational consequences that result from the diffusion process. Xu and Quaddus (2007) combine Rogers' (2003) diffusion of innovation theory with Ajzen and Fishbein's (1980) social psychology theory of reasoned action (TRA) and Davis's (1986) technology acceptance model (TAM) to develop a model of organization-level acceptance and innovation. Due to the dearth of available research on CBE implementation, I examined case studies of online education implementation to determine whether or not Xu and Quaddus's factors are present and influential in those cases. Tables 1-8 present this evidence, leading me to deduce that multiple contextual factors at the organizational, individual, task complexity, and organic growth levels influence perceptions of direct assessment CBE's Usefulness and User Friendliness. This model thus serves as the conceptual framework for my research study.

3.0 RESEARCH METHODOLOGY

The purpose of this chapter is to establish the research design for my dissertation. First, I establish the purpose and rationale for this study. Next, I present the research design, following each of Yin's (2014) recommended steps for case study research, namely: research questions, propositions, unit of analysis, logic linking data to the propositions, and criteria for interpreting the findings. Overall, I draw upon the literature review and research model described in my conceptual framework to define guiding questions, corresponding propositions, and the case study methods I will use to examine those questions at my selected site.

3.1 PURPOSE OF THE STUDY

Educators in the United States are experiencing unparalleled challenges to their profession, as interested parties with various agendas weigh in on the so-called *Iron Triangle* of higher education: access, cost, and quality (Immerwahr, Johnson, and Gasberra, 2008). The federal government continues to fund educational experiments⁵ that push the envelope further away

⁵ The Department of Education's EQUIP (Educational Quality through Innovation Partnerships) pilot will potentially offer financial aid to new, accelerated programs that focus not on credit attainment but on the acquisition of industry-relevant skills. Similarly, the Department of Labor's TechHire and America's Promise initiatives advocate for competency-based training (whether short-term or degree-based) as part of viable career pathways.

from credit-based models and toward industry-driven models. Competency-based education in general and direct assessment in particular is frequently mentioned as a worthwhile educational model to pursue through these projects. Furthermore, since the U.S. Department of Education's approval of direct assessment programs as eligible for federal financial aid in 2013 (Bergeron, 2013), the seven regional accrediting commissions have been striving to standardize assessment criteria for CBE in higher education. In June 2015, they published their *Framework for Competency-Based Education*, and three months later, the Department of Education released its *Competency-Based Education Experiment Reference Guide*. Though a struggle remains to accredit and validate direct assessment programs⁶, CBE continues to influence the design and delivery of higher education. For the immediate future at least, online competency-based education is an innovation that merits close examination to understand how and why it has achieved such national attention.

Several scholars posit that a strategic, student-centric approach to learning is essential to developing actionable 21st-century educational innovations (Christensen, Johnson, and Horn, 2012; Lee and Hannafin, 2016; Martell, 2015). Successful innovation models also rely on the expertise and input of multiple stakeholders, both internal and external, including students, accreditors, government, employers, and educators (Jongbloed, Enders, and Salerno, 2008). Successful strategies both align with and further the institutional mission, vision, and values through evidence-based improvement strategies. Commitment to transparency, communications, and collaboration across all stakeholders supports successful planning, implementation, and long-term sustainability (Hutchings and Quinney, 2015). These are visible trends when one looks

⁶ See for example the U.S. Department of Education's Office of Inspector General's (2015) critical audit of the Higher Learning Commission, in which the department claims the commission did not "consistently apply its standards" in the evaluation of direct assessment programs.

broadly at the field of education. Yet it is also revealing to apply a narrower lens and focus in on how innovators achieve such transformative change using a specific model. As such, the purpose of this study is to examine the diffusion of direct assessment competency-based education within a nonprofit institution of higher education.

The emergence of online, competency-based education in its direct assessment format is a contemporary phenomenon that has real implications for U.S. society. As such, it fits the scope of a case study (Yin, 2014). As my adaptation of Xu and Quaddus's (2007) research model also suggests, there are many more factors affecting the diffusion of online competency-based education in higher education institutions than may be contained in any one study. Nevertheless, my investigation begins with a focus on the organizational perspective of the direct assessment phenomenon, with the hope that future studies will incorporate other perspectives and dimensions of factors as well. To that end, I used Xu and Quaddus's research model in combination with my literature review to identify several study propositions that establish theoretical patterns of the organizational factors influencing the diffusion of direct assessment CBE. These organizational factors, further described below, focus on leadership strategies, decision-making, and support in the process of adopting CBE. Moreover, the questions guiding my investigation will focus on "how" and "why" diffusion of direct assessment CBE occurred. Furthermore, I will use semi-structured interviews with senior leadership and administrators involved in the development and implementation processes; historical document review; and a site-based fact-checker to triangulate findings from the data I gather. Collectively, these features comprise Yin's (2014) definition of case study methodology. This study furthers the discourse started with Kristin Jones's (2014) dissertation, a case study of the adoption of CBE at a small, nonprofit university in Seattle. Such investigative research will hopefully provide fellow

researchers and educational leaders with valuable insight into common factors and promising practices for the diffusion of competency-based education in a direct assessment format.

3.2 **RESEARCH QUESTIONS & PROPOSITIONS**

3.2.1 Research Questions

As presented in my conceptual framework, several factors affect the rate at and extent to which an innovation is diffused within an institution. Specifically, I adapt Xu and Quaddus's (2007) research model—a combination of Rogers' (2003) diffusion of innovation theory, Ajzen and Fishbein's (1980) social psychology theory of reasoned action, and Davis's (1986) technology acceptance model—to postulate the factors present in the diffusion of online competency-based education within the field of higher education. Eight dimensions of factors are present: (1) task complexity, (2) organizational, (3) individual, (4) organic growth, (5) perceived usefulness, (6) perceived user friendliness, (7) perceived voluntariness, and (8) subject norms.

For the purposes of this research study, I focus on the second dimension, that is, the organizational factors surrounding the diffusion of direct assessment CBE. I select the organizational dimension for two main reasons. First, while it is conceivable to design a study that accounts for all eight dimensions and their 48 corresponding factors, such an in-depth study is beyond the resource constraints of this study. Second, not much academic research has been published on the CBE phenomenon. Arguably, researchers and educational practitioners around the nation are still striving to define and standardize CBE. Given that the United States is, on the whole, in such an early stage of adoption of this innovation, it thus seems reasonable to focus on

the organizational conditions that facilitate institutions to develop and adopt direct assessment CBE.

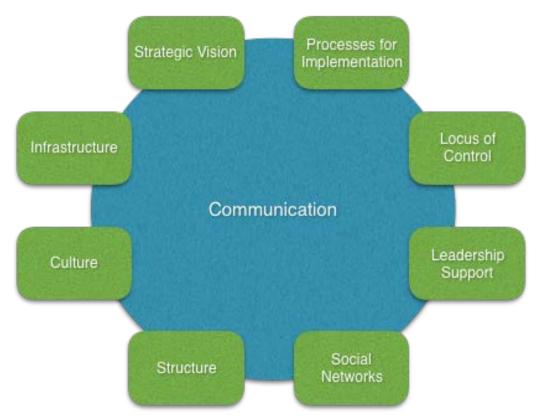


Figure 1. Organizational Factors Affecting the Diffusion of Direct Assessment CBE

Source: Adapted from Xu and Quaddus, 2007

Figure 1 above depicts each of the organizational factors essential both for the design of CBE and its effective diffusion. Communication is placed in the center of these factors as the tool or mechanism through which these factors are engaged and interact. For example, a leadership committee can develop a strategic vision and process for implementing the innovation, but without effective communications, faculty, staff, and other stakeholders will struggle to understand, respond to, and accept the recommended changes.

Thus, to answer the overarching question of how certain nonprofit institutions of higher education are able to diffuse direct assessment competency-based education, I will consider the following research questions in this study:

- 1. When examining the implementation of a direct assessment competency-based program at an institution of higher education, which of the identified eight organizational factors are present?
- 2. How do these organizational factors influence the diffusion of direct assessment CBE?

These questions comprise the scope of this research design, emphasizing a chronological narrative of players, decisions, and actions surrounding the diffusion of direct assessment CBE within an institution of higher education. Yin (2014) asserts that a second key component of a case study research design is the extension of the research questions into *study propositions* that will directly link the questions to theory and inform the collection of relevant data.

3.2.2 Study Propositions

Accordingly, in this subsection I reiterate the descriptions for each of these organizational factors and provide corresponding propositions—based upon my literature review—to establish theoretical patterns for how these factors are likely to influence the diffusion of direct assessment CBE within a nonprofit HEI.

Strategic Vision	Institutions that possess and communicate a clear vision and strategy for implementing direct assessment CBE are likely to have a higher rate of
	adoption than institutions that lack such vision and strategy.

Proposition 1. The institution's mission, vision, and values are aligned with and facilitate innovations like direct assessment CBE.

Proposition 2. The institution developed a clear vision and strategy for implementing direct assessment CBE.

Processes for	Institutions that develop their strategy into an implementation plan with
Implementation	supporting processes will have a higher rate of adoption than institutions that
Implementation	lack such processes.

Proposition 3. The institution developed an implementation plan for direct assessment CBE.

Proposition 4. This implementation plan reflects the institution's strategy and builds in processes that support direct assessment CBE.

Institutions seeking to integrate or convert to direct assessment CBE must address concerns of intellectual property, autonomy, academic freedom, and role identity. Whether they use existing employees or hire new personnel, institutions must also consider the qualifications, roles, and quality evaluations of CBE implementers. Institutions must collaborate with stakeholders to develop quality control practices with closed feedback loops
stakeholders to develop quality control practices with closed feedback loops to ensure program credibility, value, and sustainability.

- Proposition 5. The institution's strategic vision and implementation plan included careful consideration of employee roles, qualifications, and performance measures.
- Proposition 6. Employees at the institution have retained a satisfactory degree of autonomy and/or control in how direct assessment CBE is used at the institution.
- Proposition 7. The institution consulted with external stakeholders, employer in particular, but possibly also accreditors, government, and funders—to design and implement direct assessment CBE.
- Proposition 8. Effort has been made to insert quality controls with closed feedback loops into the program in a manner that conforms to industry-accepted practice, e.g. regional accreditation standards, employer expectations, and reliable student assessment and program evaluation methods.

Leadership Support	Whether the innovation originates from the top-down or the bottom-up, support
	from senior leadership helps to drive its adoption. Without this support,
	adoption of the innovation will occur only in pockets or not at all.

Proposition 9. Across the institution, senior leadership has provided consistent direction and support for direct assessment CBE's implementation.

Structure Institutions that are more loosely-coupled, decentralized, and orgative structure are more likely to adopt innovations than more tightly-co	
	centralized and mechanistic institutions.

Proposition 10. The institution is loosely-coupled, decentralized, and organic in structure.

	Institutions whose infrastructure reflects their values and incorporates	
Infractructura	resources to support those values are more likely to realize user acceptance of	
mirastructure	innovations. IT is one key component of this infrastructure, but emphasis on	
	academic quality, institutional research and effectiveness may also be	
	important facilitators of innovation.	

Proposition 11. Dedicated resources support direct assessment CBE. These likely include IT, institutional research/effectiveness, finance, and CBE-specific staff.

Culture	Institutional cultures that promote values such as avant-garde thinking, creativity, trust, and adaptability are more likely to be comprised of employees	
	who accept and use innovations like direct assessment CBE.	

Proposition 12. Employees at the institution express shared values that support innovation, including avant-garde thinking, creativity, trust, and adaptability.

	The extent to which social networking and interpersonal communications occurs	
Social	al within an institution will also affect the rate at which direct assessment CBE is	
Networks	diffused and adopted. Change champions as opinion leaders can facilitate more	
	rapid adoption through these means.	

Proposition 13. Communications, such as newsletters, meetings, website postings, etc., regularly keep employees aware of and involved in direct assessment CBE.

Proposition 14. Select employees have championed direct assessment CBE to their peers through narrative, incentive, or other means—to facilitate its adoption.

For my dissertation, I conducted an exploratory case study to investigate the presence of

these organizational factors and whether or not they influenced the diffusion of CBE innovation at Southern New Hampshire University (SNHU). The following sections of this methodology chapter explain the research design in terms of: selecting SNHU as the case for this study, research questions, approach and rationale, data collection, data analysis, and research limitations.

3.3 UNIT OF ANALYSIS

This section provides contextual background and rationale for the selection of the unit of analysis for this research case study. Qualitative research permits the use of purposeful sampling to identify an appropriate case. In particular, I follow Patton's (2015) single-significant-case sampling strategy to select an "exemplar of a phenomenon of interest" (p. 273). As direct assessment competency-based education is still relatively new, significant case samples are limited. My criteria for deeming a case significant include that it:

- Is regionally accredited and approved for federal financial aid specifically for an online, direct assessment, competency-based program;
- Is a nonprofit institution with a traditional governance structure; and
- Has some measurable, positive track record of implementing direct assessment CBE

To date, only six institutions of higher education have received approval from the U.S. Department of Education for their direct assessment programs. As the first institution to receive this approval (for their Associate's degree), the first to operate a complete direct assessment Bachelor's degree, and a founding member of the ever-expanding Competency-Based Education Network (C-BEN), Southern New Hampshire University's College for America is indeed an exemplar of the direct assessment CBE phenomenon. In the following section, I provide further context and detail surrounding the selection of this institution for my case study.

3.3.1 Site Selection

Southern New Hampshire University (SNHU) and its subsidiary, College for America, make an excellent case for this study for several reasons. The university's student-centered mission statement (SNHU, 2016) reflects the institution's commitment to innovative educational solutions:

Southern New Hampshire University transforms the lives of students. Our success is defined by our students' success. By relentlessly challenging the status quo and providing the best support in higher education, Southern New Hampshire University expands access to education by creating high quality, affordable and innovative pathways to meet the unique needs of each and every student.

SNHU has a history of actively responding to changing times and carefully navigating among faculty, staff, and external stakeholders who perhaps are or have been hesitant to change. SNHU is regionally accredited through The Commission on Institutions of Higher Education of the New England Association of Schools and Colleges. The university was founded in 1932 as the New Hampshire School of Accounting and Secretarial Science. It was incorporated as the New Hampshire College of Accounting and Commerce in 1961, and the state granted its university charter in 1963. Over time, the college expanded to introduce several graduate degrees. The college was among the early adopters of online learning during the 1990s, initiating what is now known as SNHU Online in 1995, on the heels of CalCampus's launch of the first fully online curriculum (1994) and alongside the establishment of Western Governors University (1995) (snhu.edu, 2016). In 2001, the college signaled its continued growth with a name change to Southern New Hampshire University. In 2003, Paul LeBlanc became President of SNHU.

As the university struggled with declining funds and enrollment mid-economic recession in 2009, LeBlanc encouraged his Board of Trustees to invest heavily in a student-as-customer driven, no-frills, cost-efficient model of online education targeting working adults (Kahn, 2014). This commitment to providing flexible, distance learning and asynchronous digital access to higher education paid off, as evident in its enrollment numbers. By 2011, the online division had reached an enrollment of around 8,000 students generating \$80 million in revenue. Enrollment has continued to grow exponentially, and today the university serves over 3,000 students on-campus and over 60,000 students online.

Building off of the success of SNHU Online, in 2011 LeBlanc instituted the Innovation Lab, a project dedicated to creating an entrepreneurial model of higher education that "was based on competencies instead of credits, was radically affordable, and was of high quality" (Clerkin and Simon, 2014, p. 7). The result of this project, College for America (CfA), opened its doors for student enrollment in 2012 and shortly thereafter became the first higher education institution to receive approval from the U.S. Department of Education for its delivery of the direct assessment model of competency-based education.

College for America is building a solid track record as a model of student access and completion of higher education linked to employer-driven career pathways. The college currently enrolls approximately 4,700 students and offers Bachelor of Arts degrees in Communications, Healthcare Management, and Management; Associate of Arts degrees in Healthcare Management and General Studies with a concentration in Business; and several employerdefined certificates.

Notably, this past year College for America administered the ETS® Proficiency Profile assessment to students who were essentially halfway through their Associate's degree at the institution, meaning they had completed at least 60 of 120 required competencies. Data from this assessment was then compared with that of 7,815 students who had completed at least 30 college credits at 27 traditional Associate's degree-granting institutions across the United States. Out of

the seven assessment categories of Reading, Writing, Math, Critical Thinking, Humanities, Social Sciences, and Natural Sciences, CfA students averaged as high or slightly higher than the comparison group (CfA institutional mean = 439.5 out of 500 possible points; Associate's granting institutional mean = 435.6 out of 500) in all but Math, in which CfA students averaged approximately 1 point lower than the comparison group⁷ (Fain, 2015; Wilkes, 2016). ETS does not guarantee that each student sample is representative of its institution's total student population. Neither is this a large sample size of Associate-granting institutions. Nevertheless, this external assessment does provide some initial evidence (notably with a need for and lack of other such studies) that CfA students may be performing at least as well as students in traditional Associate degree programs.

While employers drive the competencies of these degrees, the college is a division of SNHU and thus builds the university's accreditation standards into each degree program. With a subscription fee of \$3,000 per year, CfA has maintained one of the lowest fees for service across all institutions offering competency-based education programs. Arguably, it is among the most cost-effective higher education degree programs in the nation (Kelchen, 2015). Moreover, as student acceptance into CfA is dependent upon employer sponsorship, many attendees do not pay the full subscription fee; rather, their employer pays a portion as well. Over 65 employers in Massachusetts and across the nation partnered with College for America within its first year of operation to provide education to their workforce (Clerkin and Simon, 2014), and this number has since grown to approximately 120.

If one removes the 60,000+ students who make up its online enrollment, SNHU seems much more like a typical small, liberal arts university—the very type to face a "'death spiral' of

⁷ Each category was individually scored on a scale of 0-130 points. Additional notes about the scoring method are available at https://www.ets.org/s/proficiencyprofile/pdf/CredH_Carn4_AllTabs_UNP.pdf

declining admissions, tuition revenues, and contributions" in the lackluster post-recession economy (Clark, 2015). It has no major endowment or prestige on which to rely for sustainability. In fact, prior to President LeBlanc's innovative initiatives that brought in those tens of thousands of students, the university was financially struggling (Parry, 2011). The slow but persistent decline of small, private institutions, as recently evidenced in the cases of Sweet Briar College and Tennessee Temple University, seems to be increasingly common. Yet, with a series of innovations that started with an early adoption of online learning and a consistent openness to alternative educational delivery models⁸ and which has culminated in College for America, SNHU stands in complete contrast as a university that has grown by leaps and bounds. The university's abilities to spring forward amidst economic decline and to implement disruptive innovation within a traditional institutional structure are evidence of a story worth telling.

3.4 LINKING DATA TO THE PROPOSITIONS

3.4.1 Data Sources

From my initial exploration into SNHU, I deduce that there is a much larger story of innovation and strategy over time that has built the institutional culture, structure, and infrastructure needed to develop CfA's competency-based education programming. To uncover this story and learn about the factors that influenced CfA's development, I conducted field research consisting of

⁸ See Bradley, Seidman, and Painchaud, 2011, for a discussion of SNHU's adoption of a competency-based, threeyear Bachelor's degree model—a project that started with a federal grant in 1995 and persists today. Also see Christensen and Eyring's 2011 book *The Innovative University*, which highlights SNHU's Advantage (a "no-frills" Associate degree) and College Unbound (a 3-year Bachelor's that emphasizes experiential learning) programs.

data gathered through document review, participant interviews, and collaboration with a factchecker at SNHU to help ensure reliability and validity of my findings.

Data sources for my document review included:

- Newsletters, blog posts, mission/vision/value statements, history, program descriptions, and other relevant information published on the SNHU and CfA websites
- Print and digital media sources that specifically discuss College for America
- Academic journal articles authored by CfA staff
- Promotional materials about CfA
- Curriculum and Assessment Development Process Map
- Three NEASC Substantive Change Requests (from 2013 & 2015)—these requests to SNHU's regional accreditor provide significant insight into the original design and evolution of College for America
- Next Generation Learning Challenges grant application materials

I received permission from SNHU President Paul LeBlanc and IRB approval from both the University of Pittsburgh and SNHU to conduct this study. I coordinated with the Director, Office of the President as well as the Executive Director of College for America to secure access to appropriate documents and to schedule in-person interviews with personnel over a 3-day visit to SNHU. This visit also allowed me the opportunity to tour the facilities and observe the institution and its culture in action. I took field notes during my visit and during participant interviews.

3.4.2 Participants

I interviewed executive leadership (of CfA and SNHU) as well as administrative staff involved in each of the major functions of CfA, namely academics, curriculum and assessment, marketing and strategy, research analytics, student success, technology, and workforce strategies. As CfA does not employ faculty in a traditional sense, the focus of my interviews were on staff working within CfA's main physical office building. I conducted 10 interviews in total. Through engaging these diverse participants, it was my aim to achieve a rich, comprehensive narrative of how and why College for America has emerged out of Southern New Hampshire University as a direct assessment model of online competency-based education. However, it is also important to acknowledge that most of these interviewees are direct implementers of College for America. While this means that they could provide greater insight into the organization and operations of CfA, it also means that they may be approaching this topic with certain bias. For this reason, I emphasize that this case study is exploratory with the intent of gleaning insight from those directly involved in the decision to adopt direct assessment CBE as well as its initial design and development. In other words, this study constitutes the first step of what could become a larger, more in-depth and longitudinal study of perspectives and processes at College for America.

The majority of interviews were conducted during my 3-day site visit. Interviews that could not be held in person due to scheduling conflicts were conducted over the phone. Participant consent was obtained prior to each interview, and all interviews were digitally recorded and subsequently transcribed. Moreover, I used pseudonym codes rather than personal identifiers to ensure that participants' identity will remain anonymous and will never be linked to their interview responses. See **Appendices** for the invitation to participate, informed consent form, and list of questions asked during the interviews.

Questions for the interviews were designed around each of the eight organizational factors under study. My intention in asking these questions was to determine whether any patterns that emerge from the participants' responses correspond to or depart from the study propositions described in **Section 3.2.2.** While I allowed inductive reasoning to guide the interview process, in large part all data was collected and categorically analyzed according to each study proposition from the sources of information outlined in **Table 9** below. Additional methodology around my data analysis of these questions is described in the next section.

Org Factor	Proposition	Sources of Information
Strategic Vision	1. The institution's mission, vision, and values are aligned with and facilitate innovations like direct assessment CBE.	 Interview Questions A & E Document review Mission, vision, values on website
Strategic Vision	2. The institution developed a clear vision and strategy for implementing direct assessment.	 Interview Question C, L, & O Document review CBE planning documentation
Processes for Implementation	3. The institution developed an implementation plan for direct assessment CBE.	 Interview Question D Document review NEASC change requests Campus communications
Processes for Implementation	4. This implementation plan reflects the institution's strategy and builds in processes that support direct assessment.	 Interview Questions D, F, G, & L Document Review NEASC change requests
Locus of Control	5. The institution's strategic vision and implementation plan included careful consideration of employee roles, qualifications, and performance measures.	 Interview Questions B, C, L, & M Document review NEASC change requests (includes organizational chart)
Locus of Control	6. Employees at the institution have retained a satisfactory degree of autonomy and/or control in how direct assessment is used at the institution.	• Interview Questions J, L, & M
Locus of Control	7. The institution consulted with external stakeholders—employers in particular, but possibly also accreditors, government, and funders—to design and implement direct assessment programming.	 Interview Questions B, H, & K Document review Materials that discuss external partner engagement (e.g. Workforce Strategies) NEASC request documents Curriculum design materials
Locus of Control	8. Effort has been made to insert quality controls with feedback loops into the program in a manner that conforms to industry-accepted practice.	 Interview Questions C, I, J, K, & M Document review NEASC change requests Review of NGLC grant Curriculum and Assessment Process Document
Leadership Support	9. Across the institution, senior leadership has provided consistent direction and support for direct assessment CBE's implementation.	 Interview Questions B, F, & G Document review Evidence of leadership in the NEASC documents Campus communications
Structure	10. To a significant extent, the institution is loosely-coupled, decentralized, and organic in structure.	 Interview Questions C & F Review of governance and administrative structures

 Table 9. Matrix of Study Propositions and Sources of Information

Table 9 (continued)

Org Factor	Proposition	Sources of Information
Infrastructure	11. Dedicated resources have been made available to support direct assessment CBE. These likely include IT, institutional research & effectiveness, finance, and CBE- specific staff.	 Interview Questions F & G Evidence of resources added and/or created to support direct assessment CBE
Culture	12. Employees at the institution express shared values that support innovation, including avant-garde thinking, creativity, trust, and adaptability.	• Interview Questions F & L
Social Networks	13. Communications, such as newsletters, meetings, website, etc., regularly keep employees aware of and involved in direct assessment CBE.	 Interview Questions D & N Document review Newsletters, articles, etc. Website updates/postings
Social Networks	14. Select employees have championed direct assessment CBE to their peers—through narrative, incentive, or other means—to facilitate its adoption.	 Interview Questions C & L Evidence of networks in place: groups, committees, incentive-based initiatives, shared stories, etc.

3.5 CRITERIA FOR INTERPRETING FINDINGS

To interpret my findings, I employed a pattern-matching technique to explore the influence of the eight organizational factors as nonequivalent dependent variables affecting the diffusion of direct assessment CBE at College for America. Each of the 14 study propositions is an *observed* (Hak & Dul, 2010) or *predicted* (Almutairi, Gardner, and McCarthy, 2014) pattern that explains the presence and influence of the organizational variable it represents. To test whether or not these variables are present and influential, I analyzed the data I collected to establish actual or *empirical* patterns and then attempted to match these empirical patterns with the predicted patterns. Yin (2014) describes this form of pattern-matching as follows: "If, for each outcome, the initially predicted values have been found, and at the same time alternative 'patterns' of

predicted values (including those deriving from methodological artifacts, or 'threats' to validity) have not been found, strong causal inferences can be made" (p. 145). Almutairi and colleagues (2014) provide a visual model of this pattern matching process in **Figure 2**. Of note, my study did not include surveys; however it did utilize both interviews and document review, and thus my data collection and analysis followed the process presented in **Figure 2** for these methods.

First, I used historical documents, such as the NEASC substantive change requests, LeBlanc's white paper, "The Next Big Thing?", Clerkin and Simon's (2014) published journal article on CfA, blog posts on the CfA website, and publically-available news articles to establish a contextual understanding of how CfA was developed. I read each document a minimum of two times and would reference the documents several times thereafter. I conducted content analysis of these documents, noting where and how information provided in the documents linked to the study propositions. Finally, I compared patterns emerging from the interview responses to the information presented in these documents to see if the patterns matched, thereby ensuring a richer, more accurate story.

To make these comparisons, I read through the interview transcriptions multiple times, coding the interview data according to its relevance to the study propositions. As the interview questions were open-ended, participant responses frequently coincided with more than one study proposition (e.g. several respondents to Question L. *What are the critical success factors affecting CfA?* listed more than one factor, like culture, decentralized structure, and leadership support.). I accounted for each instance in which the topics discussed by respondents matched the topics of the study propositions. I also watched for instances in which participants provided responses that went beyond the scope of the propositions, thereby suggesting factors apart from those contained in this study. The only instances in which this occurred were when the

conversation moved away from the interview questions (for example, in a couple instances institutional leaders shared information about processes occurring at COCE and UC. While this information was interesting, it was not directly relevant to CfA and the development/diffusion of direct assessment CBE). Thus, I was confident that the interview responses could reliably be compared to/tested against the study propositions.

Interview coding allowed me to establish empirical data pattern that I compared to patterns emerging from the document review. Finally, I compared these empirical patterns to the predicted patterns, that is, the 14 study propositions, to determine the extent to which the patterns matched. As these researchers illustrate, this model required me to remain open to the possibility that the empirical patterns established through the data may *not* match with the patterns I have predicted. In such an instance, I would strive to establish an alternate explanation for the emergent empirical patterns⁹. In sum, using a pattern-matching data analysis technique permitted me to categorize the data according to patterns that make the most sense and reveal whether or not these patterns fit with my theoretical propositions regarding the effect of organizational factors on the diffusion of direct assessment CBE through SNHU's College for America.

⁹ Notably, a divergence of empirical and predicted patterns occurred once with the organizational factor **Social Networks**, specifically, study proposition 13 (See pages 117-118).

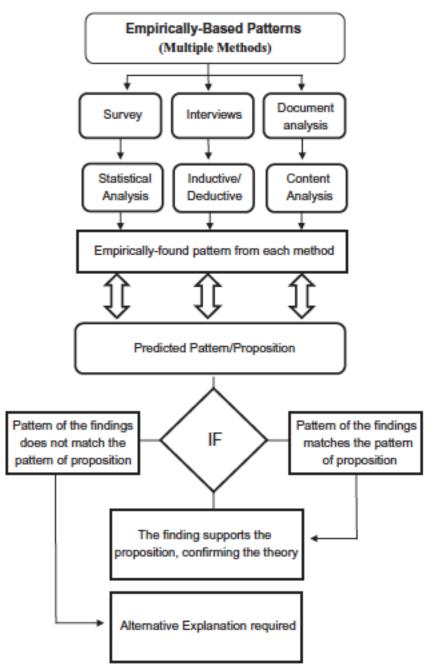


Figure 2. Model of Pattern Matching Process

Source: Almutairi, Gardner, and McCarthy, 2014. © 2013 Wiley Publishing Asia Pty Ltd. Reprinted with permission.

4.0 DATA ANALYSIS

The purpose of this study was to examine the diffusion of direct assessment competency-based education within a nonprofit institution of higher education, namely, Southern New Hampshire University's College for America (CfA). More specifically, this study attempted to identify organizational factors and discern the ways in which they affected the planning, development, quality assurance, and delivery of CfA's direct assessment CBE learning model. The organizational factors under study are: Strategic Vision, Processes for Implementation, Locus of Control, Leadership Support, Structure, Infrastructure, Culture, and Social Networks. One to four study propositions were devised for each of these organizational factors, for a total of 14 propositions. Document review and interviews with CfA administrators revealed organizational patterns that were compared to each of these study propositions. Analysis of these patterns and the extent to which they support the presence and influence of the eight organizational factors are presented in this chapter.

4.1 STRATEGIC VISION

The organizational factor Strategic Vision is comprised of the first two study propositions: *Proposition 1: The institution's mission, vision, and values are aligned with and facilitate innovations like direct assessment CBE.* Proposition 2: The institution developed a clear vision and strategy for implementing direct assessment.

Proposition 1 was measured through document review of the mission, vision, and values of SNHU and College for America as well as through participant interview questions regarding the respondent's perception of the mission of CfA (Question A) and how CfA's direct assessment model fits with the mission of SNHU (Question E).

Review of the espoused missions of the university and College for America reveal distinct similarities:

SNHU's mission (viewable on their webpage): Southern New Hampshire University transforms the lives of students. Our success is defined by our students' success. By relentlessly challenging the status quo and providing the best support in higher education, Southern New Hampshire University expands access to education by creating high quality, affordable and innovative pathways to meet the unique needs of each and every student.

CfA's mission (printed on the wall in the college cafeteria): College for America is rapidly expanding access and improving the quality of higher education through low-cost, competency-based college degrees and credentials, designed to drive success in the workplace.

Both missions address what Immerwahr, Johnson, and Gasberra (2008) deem the Iron Triangle

and what SNHU President Paul LeBlanc terms the *holy triad* of higher education: access, quality, and cost. Each also identifies student success as the key outcome of their work, though CfA

positions the workplace as the boundary for their success metric. CfA's identification of

competency-based education as the vehicle to such success may also be viewed as a specific

example of SNHU's broader concept of innovative educational pathways. Notably, one

interviewee did point to CfA as a division that serves the larger, shared SNHU mission:

R-06: We all have one common mission at the university, and that is to provide access to higher education for as many people as we can. That's a huge general kind of mission. I would say that CfA's mission...is basically to do the same, but to provide it to adult learners in the workplace—and really for learners who never

saw themselves as ever acquiring a college degree—and to do it at an extremely low price point.

Nine out of 10 interviewees provided their perception of CfA's mission. These interviewees represent a breadth of experience with the college, from employees who were part of the original conceptualizing process that began in 2011 to those about to celebrate their oneyear anniversary at CfA. Given this range of experience, one might expect to see divergence in their responses. However, all nine of the respondents included low-cost education in their definitions of the mission, as well as the importance of serving individuals who would not otherwise have access to higher education. All nine also mentioned a focus on learners who are working, as CfA is strictly a Business-to-Business model in that employers choose to partner with the college, thereby allowing their employees to enroll. Seven of the nine respondents further emphasized workforce relevance in the quality of learning as part of CfA's mission. Significantly, each of the interviewees presented his or her perspective of the mission, largely extemporaneously¹⁰, and each of these responses captures the essential components of the printed version. This finding suggests at minimum a shared understanding of these mission components that may help to facilitate the behaviors needed to translate ideas into missiondriven action.

Seven out of the 10 interviewees responded to the question: How does CfA's direct assessment model fit with the mission of SNHU? Respondents typically pointed to ways in which CfA's model of direct assessment facilitates student success, which is the main goal of SNHU's mission. One respondent pointed to CfA's low-cost subscription-based fee, which, when coupled with financial aid, serves SNHU's mission in terms of access and cost:

¹⁰ Participants received the interview guide several days prior to their interview and thus could have prepared their responses. However, none of the interviewees gave evidence of speaking from prepared notes.

R-05: Because we are able to offer financial aid and because we're accredited, what that does is it meets the institution's mission of being accessible, increasing the accessibility of education and certainly the affordability. Probably one of the statistics that I'm most proud of is that 70 percent of [CfA] students report that they will graduate with zero debt.

Another respondent discussed the modality of direct assessment as facilitating student

persistence and completion:

R-09: We don't do time. We do competency, we do mastery. And so the program in its design where we focus on the direct assessment of learning instead of time—it is mission-related. Because again, in our case when we talk about students for whom college is not a guarantee, part of what makes that true is that life is complicated and big and gets in their way. If we can remove time as a factor in that mix, that's hugely helpful to them.

Similarly, respondents discussed ways in which direct assessment serves working adults

particularly well, thereby fitting CfA into SNHU's larger mission of student success, as depicted

here:

R-01: [SNHU's] really all about targeting the group of students who, by and large, has not been well served in the past, and that includes incumbent workers who have taken college off the table, didn't feel like they were college material, or didn't feel like they were ever going to have the resources, time, ability to attain that college degree. So [CfA] has really targeted that particular group and is looking to make college available to them, relevant to them, and ensure that they can be successful. It really dovetails so importantly and well with SNHU's mission.

Finally, respondents emphasized the innovation aspect of SNHU's mission as essential

and aligned with CfA. They argue that CfA was able to leverage not only SNHU personnel's

expertise in assessment of student learning, but also their openness to educational innovation and

experimentation:

R-04: SNHU has a lot of expertise, but unbundling it, seeing how to combine it differently, really experimenting with things in terms of what's working and what's not—it's something that doesn't happen in every institution of higher ed.

R-010: [CfA's] ability to kind of unbundle the faculty role to focus specifically on these various skill sets is, I think, consistent with the way SNHU thinks about supporting students.

The fact that these respondents were able to readily answer this question and draw specific connections between elements of CfA, its direct assessment model, and SNHU's mission suggests that the university mission is (1) an important aspect of the institution, (2) well understood by several College for America employees, even if they are physically removed from the main campus, and (3) considered during the design and implementation of new initiatives. Furthermore, innovation is specifically mentioned in SNHU's mission, and College for America represents not the first but the second major division (after the College for Online and Continuing Education) to be developed to provide new pathways for student learners in SNHU's recent history. This further suggests that the first study proposition—alignment with mission facilitates innovation—is likely true in the case of SNHU and College for America.

With regard to Proposition 2—the institution developed a clear vision and strategy for implementing direct assessment—document review provided insight into how College for America evolved from concept to launch. Interview participants were asked to discuss strategies and/or challenges considered in planning CfA (Question C), critical success factors affecting CfA (Question L), and to speak to any planning documents of which they were aware (Question O).

A key document is SNHU President Paul LeBlanc's thinking paper, "The Next Big Thing," which he wrote in 2011 on a flight from Malaysia. This paper outlines his concept of a disruptive, new model of higher education that unpacks the traditional credit hour, seat time, and ways of learning, focusing instead on assessment of learning:

The whole model hinges on excellent assessment, a rock solid confidence that the student has mastered the student learning outcomes. If we know with certainty

that they have, we should no longer care if they raced through the course or took 18 months or if they worked on their courses with the support of a local church organization or community center or on their own. The game changing idea here is that when we have assessment right, we should not care how a student achieves learning. We can blow up the delivery models and be free to try anything that shows itself to work. (p. 2, emphasis in original)

LeBlanc further points to Clayton Christensen's work on disruptive innovation as the conceptual framework within which he designed his strategy to develop this new model of education¹¹. As LeBlanc describes in a 2015 interview with Michelle Weise, former senior research fellow in higher education at the Christensen Institute, he has followed Christensen's "playbook" in terms of purposefully moving innovative projects away from SNHU's University College. Doing so, he argues, allows these projects to experiment freely and develop their own processes, personnel, and culture. SNHU's College for Online and Continuing Education (COCE), College for America, and Motivis learning management system are all projects that have developed in this manner. In each instance, President LeBlanc encouraged the division to operate as a start-up, emphasizing collaboration, urgency, product scalability, data analytics, and product quality (Weise, 2015).

In the case of College for America, in November 2011, LeBlanc selected a team of four individuals who were already SNHU employees at COCE. These individuals were moved into an entirely new space—The Innovation Lab—and charged with transforming LeBlanc's concept paper into an actionable strategy. Creating a core team from existing employees, one respondent notes, can be risky, as it requires removing busy workers away from their current projects. Yet it is also an important strategic move:

R-09: Good people are super busy. So it's one of those very counterintuitive, hard things to do, but take people from jobs where they're doing really good and

¹¹ Clayton Christensen is a Harvard Business School Professor and a founder of the Clayton Christensen Institute for Disruptive Innovation. He is also a prior Board Member of SNHU's Board of Trustees.

important work for you. And then say, "Stop doing that," and put them somewhere else to do this new thing.

Two early members of the CfA team—Kris Clerkin, CfA's executive director, and Yvonne Simon, CfA's chief learning architect—discuss the project's strategies, noting, "LeBlanc's only mandates were that the model produce learning outcomes that were unassailable, be low cost at scale, and be based on student-success indicators" (2014, p. 7). This team worked for approximately 6 months to develop what was then codenamed the "Pathways Project," attaining a \$1 million Next Generation Learning Challenges grant through the Bill and Melinda Gates Foundation for its pilot (Boutselis, 2012). Review of planning notes maintained by the original team reveals a consistent emphasis on Christensen's principles of disruptive innovation—in line with LeBlanc's vision. The team delved into extant literature, met with many potential partners, such as Educational Testing Service (ETS), Open Educational Resources universitas, the Urban League, and employers. The team also conducted extensive research and development to build a Knowledge Map of competencies that align with existing SNHU associate and bachelor degrees and to build the methods for assessing mastery of these competencies.

One respondent describes the development process, noting, "being emergent, that was part of the strategy," referring to the team's ability to try out different ideas without fear of failure. Nearly all of the respondents likened CfA to a startup or entrepreneurial venture in which they had the freedom to take risks and try new solutions—concepts that further reinforce CfA's application of Christensen's strategy of separating and incubating the innovative project (Anthony et al, 2008). Notably, in reviewing interviewees' responses, a parallel construct becomes evident between the team's ability to engage challenges and allow innovative solutions to emerge and their final version for the CfA learning model in which students engage challenges, meet them, and develop a continual growth mindset:

R-02: What we decided early on was that what students are going to "do" in CfA is: they're going to do projects, and projects are going to have certain features, and that work that students do will be evaluated by reviewers. Students will also have coaches who focus on the learning process...One of the other things that has developed nicely is this idea of the student community—the idea that students can really help each other in many ways that are probably more effective than hiring somebody to do it. We were really trying to develop self-direction and self-efficacy...It was the idea that you really wanted students to have the capacity to keep learning and keep developing not just get through a certain thing.

Over time, the team identified the project's audience as not only low-income individuals

for whom college was not a guarantee, but specifically frontline, incumbent workers needing

higher education to ascend their career ladders. As one respondent notes,

R-07: We knew that it was important to have employers involved, to have industry involved, and that was one of the first big ideas—that we really should offer this through employers rather than spending all of our money trying to market to individuals.

The Business-to-Business model that emerged through this planning process further followed

Christensen's playbook through marketability as a high quality, low-cost to students who lack

any other educational option:

R-09: One of the things that [Christensen] writes about and is often neglected is: if it's a generally disruptive innovation, it will get traction first with audiences whose next best option is nothing at all, a non-consuming market...Part of our strategy for B-to-B is that many of our employer partners have tuition programs greater than the cost of a year of CfA. So it really becomes a free college option, and for lots of our students, free is the only way they're doing it—even community college is out of their reach.

As another respondent argues, this B-to-B marketing strategy has allowed CfA to save

marketing costs and scale more effectively than if they had marketed directly to students

as many online programs do:

R-010: Our business model—and our price point—is really based on being able to enroll students at a low cost...We're really working with employers who are identifying and saying to their employees, "This is a good opportunity, this is a quality program." We have really low debt levels, but it's because in part we're able to save a lot of that money on the marketing and admissions counseling.

Overall, in the case of College for America, Strategic Vision does appear to play a significant role in the success of their CBE program. First, SNHU's institutional support of innovation is readily stated in their mission. Second, that mission emphasizes student success through high quality and affordable education, so the strategic vision for CfA needed to and does include those aspects in its design. The radical departure from credit hours and seat time to a subscription-based, low-cost, employer-sponsored, fully-online, direct assessment program likewise required a strategic approach to its development. Accordingly, interviewees continually cited Clayton Christensen's "playbook" on disruptive innovation¹² as informing this approach. Respondents attribute the decisions to situate CfA development within its own space, with institutionally-sanctioned permission to operate differently than the other divisions, to build its own staff/processes, to identify and serve an audience for whom the direct assessment option was the "good enough"—and possibly only—option for higher education, and scalability as strategic elements that were both from the disruptive innovation playbook and essential to CfA's success.

¹² The respondents did not cite an exact title for this playbook. However, as I argue in another article (publication forthcoming), respondents' comments align strongly with Christensen's steps for growing disruptive innovation as outlined in Anthony et al (2008).

4.2 PROCESSES OF IMPLEMENTATION

The organizational factor, Processes for Implementation, is comprised of two study propositions: *Proposition 3: The institution developed an implementation plan for direct assessment CBE.*

Proposition 4: This implementation plan reflects the institution's strategy and builds in processes that support direct assessment.

Within this study, I was not permitted access to view the specific business models, strategic plans, or tactical/implementation plans through SNHU or CfA. Nevertheless, I did encounter evidence that such plans exist. First, portions of SNHU's grant application to the EDUCAUSE Next Generation Learning Challenges (NGLC) are publically available. This includes the Pathways Project Logic Model, which provides key insight into the Innovation Lab's initial goals and activities. In alignment with the original concept and strategies behind CfA, the long-term outcome of the Pathways Project was to build "a replicable, competency-based model, ending traditional education's stranglehold on delivery, and providing a high-quality, low cost education for motivated learners." The intermediate outcome supporting this goal was that "Disadvantaged students obtain Associate's degrees preparing them to enter the workforce at a higher level or continue to Bachelor's degree (5,000 students or more within five years at a cost of \$5,000 or less and student price of \$3,000 or less)" (NGLC, 2016). To achieve these and several short-term outcomes, the logic model proposes the following activities:

- Create learning community (Mentors/ students)
- Disaggregating traditional, higher cost faculty model
- Recruiting students
- Develop Knowledge Maps

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- Develop learning objectives, activities, assessments, and rubrics for evaluation
- Develop self-paced environment with rewards/badges/incentives
- Create learning community to connect students/mentors/peers
- Create learning-to-learn, goal setting, and portfolio tools/resources students gain skills and ability to direct their learning process and pace

Moreover, as described in the Strategic Vision subsection above and also stated in SNHU's NGLC application, existing university personnel and resources were dedicated to planning the Pathways Project nearly a year in advance of submitting the grant proposal. Thus, the application situates the project as having several components already in place. In addition to this internal team, this includes strategic industry and community partners who provide assistance in such areas as: student recruitment, open educational resources, student learning support, assessment, and technology for content delivery and learning management. The proposal further asserts that the project is rapidly moving toward an implementation of a pilot launch in fall 2012. Four phases of preparation for this launch include developing the curriculum, technological platform, additional partners, and a program website. It would also involve hiring additional staff—such as a System Administrator and Program Director—and recruiting 30-50 students for the pilot. Moving beyond the pilot, the application also includes a 5-year growth plan outlining how the project will expand to reach its long-term target of 5,000 students.

Each of the three NEASC substantive change documents that I reviewed support the presence and use of an implementation plan. While the August 2012 change document in particular mentions a January 2013 date for the pilot launch—thereby implying a 6-month delay in the timeline submitted for the NGLC proposal—the processes it describes are largely in

keeping with the phases the NGLC proposal outlined. For example, the document discusses user testing of the learning management platform developed for the project. It also lists a core leadership team that now includes an Executive Director and Director of Technology. Six employer partners—including one new partnership since the NGLC proposal—are listed along with the intent to establish an Employer Advisory Council to further ensure the program maintains its workforce relevance and responsiveness.

The two 2015 NEASC substantive change documents depict how SNHU's implementation of the project-now College for America-has allowed them to obtain additional support from stakeholders, including: Title IV Financial Aid from the U.S. Department of Education, \$1.8 million from the Lumina Foundation to develop the website and host meetings for the Competency-Based Education Network (C-BEN), and a \$3.9 million U.S. Department of Education "First in the World" grant leveraging CfA's CBE programming to provide Just-in-Time Contextualized and Empowering (JUICE) Academic Assistance to college students as an alternative to remedial education. The list of CfA partners has grown over 15 times in scope to about 120 collaborators, the majority of whom are employers (the others comprise community-based agencies, business service providers, and schools). Likewise, CfA's dedicated staff has expanded to an 8-member core leadership team, several directors and coordinators, including the newly-hired Director of Research responsible for data analytics and institutional research for the college, six Curriculum and Assessment Developers, seven full-time Learning Coaches, two full-time Reviewers, and many more part-time Learning Coaches, Reviewers, and contracted Subject Matter Experts. Finally, the authors of the document assert that in addition to internal processes of program evaluation and continual improvement, external review via the NGLC grant and NEASC accreditation has reinforced their commitment to

carefully planning and implementing College for America. One respondent even shared that CfA will reach its NGLC goal of 5,000 students this year—well under the five-year target the team originally set.

In sum, significant evidence exists to suggest that both Propositions 3 and 4 are applicable to the CfA case study. Specifically, these documents suggest SNHU leadership and initial Innovation Lab staff did develop an implementation plan that incorporated President LeBlanc's strategic vision for an affordable, accessible, online competency-based model of education. This evidence is further supplemented with participant interview responses.

To engage study participants around the Processes of Implementation organizational factor, I first asked whether or not they were aware of a structured process or plan to implement CfA (Question D). Other questions that provoked responses pertaining to the scope of an implementation plan included CfA's relationship to SNHU (Question F), resources that have been made available to support CfA (Question G), and critical success factors affecting CfA (Question L). While some participants who had been hired at CfA within the past two years refrained from answering Question D, because they felt they could not give an accurate, historical perspective, most respondents did acknowledge the existence of strategic, business, and tactical plans for CfA.

One respondent described the general process of implementation in this way (**R-09**):

You write the business plan, figure out how you want to staff it up, what are the questions you want to address, get it to the design phase, hire the right people, [and] work through the regulatory process.

A second respondent expounded upon several such implementation questions that were addressed (**R-07**):

We've come up with a disaggregated, unbundled model of instructional staff, coaching, reviewers, instructional designers—Who would do these things, and

what would it look like? We faced regulatory challenges and were the first to be approved for direct assessment by the Department of Ed for financial aid—What did that mean? How do we comply? In terms of tying back to the credit hours, in terms of this controversy over substantive interactions with faculty—How do we provide that in a model that's different? How do we build a business plan...that over some period of time would be sustainable for the university? How would we keep our costs low? What technology platform would we use? Developing processes for students—how do we know they're engaged? I think in about three years, we've built a lot of complex processes and policies.

Nearly half of the respondents used the phrase "this is where the rubber meets the road"

to describe how the innovative ideas generated at CfA also need to be transmuted into actionable,

comprehensive solutions. In some instances, this meant working at the intersection point of

multiple needs and values, such as the goal for CfA to provide a learning model that is at

individualized, standardized, and scalable at a low-cost:

R-04: A lot of the work is about: how do we integrate all these pieces? How do we continue to get feedback from our employer partners [and] our students on the curriculum side? On the support side, how does the data continue to inform the model about what students need? This is where the rubber meets the road in some ways. How do we keep doing and knowing what's most important as we scale?

In other instances, respondents discussed realizing that existing components of the solution need

to be adjusted or improved:

R-02: We were going to use open educational resources to the extent possible. The problem is it really takes a lot of time to find good ones. Though we were very eager to save students the money of buying [] expensive textbooks...we were then spending a lot of time and money ourselves trying to find just the right resource that would support the scenario. So we've ended up developing more and more of the resources ourselves.

R-08: I came in at the tail end of what I would call the pilot phase of the technology where we were only looking at 20 or 30 students being enrolled per month, and at that time it was okay for the pilot model version of our technology to work that way. We, only in the last year, at multiple forms of expediential growth, now need updated systems that are much more scalable and handle a lot more automation than they did as initially designed, and my team is responsible for taking the application probably to the next level....When you're in the phase that we're in now, which is we're starting to feel growing pains and starting to

feel scale pains, you have to have a little bit more of that rubber to the road mentality, and a shift needs to occur. I think we're in the midst of that right now.

As mentioned in the Strategic Vision section above, one respondent described the implementation process and strategic vision behind CfA as being emergent—that CfA not only built a growth-oriented learning model centered on helping students broaden their perspectives and adapt to challenging situations, but also the staff have adopted this same learning model in their approach to CfA's overall development. It is evident that all of the interview participants feel empowered to voice ideas and recommend changes to CfA and how it is implemented. Another respondent described joining the team in March 2013 in the midst of CfA's official launch. Even at that point, the respondent asserted, "there's no question that I had an opportunity to influence how this rolled out."

Thus, in taking both the document review and interview responses together, it appears that Processes of Implementation was an important organizational factor for CfA. In part, such preparation met the requirements of external funders and accreditors. It also assisted staff members in organizing their approaches to several questions and moving parts that needed to be addressed in order to transform the project from concept to actualization. Equally important, however, seems to be the staff members' ability to adjust the implementation processes. Pilots are postponed, learning resources are revised, technology is revamped, and substantive change documents are submitted—not necessarily in a top-down fashion, but rather through staff recommendations. The significance of such adaptability and agency is further explored in the next organizational factor, Locus of Control.

4.3 LOCUS OF CONTROL

Locus of Control corresponds to who has what influence on how the innovation is designed, delivered, evaluated, and improved. Accordingly, it is one of the largest of the Organizational Factors, as it is comprised of four study propositions (Propositions 5, 6, 7, and 8). This section considers each proposition separately as it contributes to College for America's Locus of Control.

Proposition 5: The institution's strategic vision and implementation plan included careful considerations of employee roles, qualifications, and performance measures.

Review of the three NEASC substantive change submissions illustrates the organizational development that has occurred over time at CfA. Notably, the Innovation Lab's initial Pathways project began with a core leadership team of five employees. This included the Executive Director who reports directly to the President of SNHU, as well as a Chief Academic Officer/Chief of Assessment, Chief Learning Architect, Director of Technology, and Director of Marketing/Partnerships. By 2015, this team expanded to eight members, separating Marketing and Partnership Development into two roles, and adding a Chief Workforce Strategist and Chief Operating Officer. Currently, College for America's website provides a list of 18 individuals with leadership roles. Combining this document review with interview responses reveals several key functional areas of the college, represented in Table 10.

Notably, the division and organization of key employee roles has remained fairly consistent for at least the past four years. As will be discussed further in the Infrastructure subsection, these roles support, reinforce, and enhance College for America's main intersecting components: (1) the learning model utilizing direct assessment of competencies, (2) the B-to-B enrollment model serving workforce development/employer partners, (3) the online learning

platform offering flexibility and scalability, and (4) student support through coaching and data analytics. That these four components are visible in the titles of the first four core leaders suggests purposeful planning and visioning that have remained constant throughout CfA's development.

Interviews with respondents further reinforce such planning. Before delving into these responses, however, I must note that since this proposition involved obtaining CfA employees' perspectives of hiring decisions that they made and/or that were made about them, I sought to avoid leading interviewees' responses with direct questioning (Patton, 2015). Thus, the questionnaire purposefully does not specifically ask about hiring considerations and how hiring decisions were made. Instead, asking questions about stakeholders and decision-makers who were involved (Question B), strategies and challenges in the launch process (Question C), critical success factors (L), and evaluating success (M) allowed for a broader field of responses within which patterns about employees could emerge (or not, as a lack of discussion of employees' roles in the process would be equally significant).

For instance, one respondent naturally moved into a discussion of hiring decisions as a strategic process that occurred in stages. After uniting the core leadership team, as **R-09** describes, "the next stage was, 'All right, we need to build a team to make this happen." The respondent portrays the team portrayed as "mission-driven, smart, they really understand what they're doing." The respondent summarizes the hiring process, noting that, "after that, it just becomes very operationally driven—what problems we're trying to solve over what periods of time—and phase your hiring accordingly."

Functional Area	Description	
Executive leadership	CfA's Executive Director, chief officers, and the SNHU President— linking College for America to the larger university	
Academic	This includes both the curriculum—the development of competencies, project-based learning, and meeting of SNHU accreditation standards—as well as assessment of learning. Developers collaborate with subject matter experts to build curriculum, SNHU's academic officers to ensure institutional alignment, and reviewers to ensure calibrated assessment of each project using analytic rubrics.	
Student Learning/Success	Includes managing a student community and several learning coaches who help students access resources to overcome barriers to persisting and completing.	
Workforce Strategies	Involves extensive literature review of labor market trends and talent needs with curriculum validation through employer interviews, focus groups, and partnerships.	
Research & Analytics	Within the student success team, this group informs coaches through direct feedback of student learning pulled from their interactions with the online platform. Also partners with workforce development to understand how learning is actualized in the labor force. This role also encompasses Institutional Research.	
Technology	This function supports all technology related to program enrollment and delivery as well as internal staff administration. This includes the ability to scale the model. Notably, the technology team operates within an agile scrum methodology for application development, an iterative approach that is uncommon in higher ed, even among IT departments (Philbin, 2015).	
Partnership Services	Involves sales and relationship building with organizational/employer partners as well as account managers who act as liaisons with existing partners. Account managers frequently engage with employer partners to ensure their satisfaction with CfA.	
Marketing & Strategy	Supports partnership development and also student marketing through awareness and enrollment campaigns. Also develops and maintains CfA's brand, website, design, and public presence as a thought leader in higher education/workforce innovation.	

Table 10. Functional Areas of College for America

Another respondent details how this next phase of hiring occurred:

R-07: We kind of approached this like we're a hybrid of an ed tech startup and a higher ed institution. So we had this drive to do things quickly, to get the team to really work together to build a business model...From the beginning, I think we had a team that was focused on the whole model. Everything—the B-to-B channel, the student support, the technology. We saw the potential of the model and we started thinking about the B-to-B channel as a way to recruit students and

support what we were doing. So we hired a team of people who really know how to work with employers, who were good business development people. And they started the outreach from there, and then we started figuring out how to use media and public relations to expand that effort nationally.

Another interviewee also reinforced the importance of hiring employees based on

required business functions (some of which may not be as common to a traditional higher ed

staff):

R-06: I think one of the critical factors to success is having a sales team that can make the outside world understand why this is so valuable. I think a key critical factor of success is hiring staff who understand this method of learning, so they can build the tools and the products and assess them successfully. Again, to me, it's always about leadership—having an Executive Director who can make the business unit run as successfully as it has. And then honestly, I would credit the entire university's success to the vision of the president and the guts of the trustees to say, "Move forward. Go ahead."

Such skills-based hiring was also emphasized from the technology perspective:

R-08: [Human Resources] has supported our group, but most of the hires and most of the work have either been via myself or my team in terms of referrals and people that we know, because we need such a specific skill set. Or third party vendors that I basically hire to recruit for me. We've had to do that because it's been very difficult through traditional methods to find people who fit the mold of what we're looking for here.

Respondents who work in the curriculum, assessment, and student success functions of

CfA spoke at length on the necessity of ensuring that personnel have academic qualifications and

training in order to effectively perform their job responsibilities:

R-03: Our developers are expert curriculum people, and they have an instructional design background, an education background, and assessment background. But obviously they're not content subject matter experts in all areas, so when we are working on things like communications skills, and we develop competencies in that area, we work with communications experts who are academically-qualified people. Usually they're terminal degree holders who have industry experience as well.

As the respondent further explained, once competencies for a particular degree are developed, they are vetted through employers in industries related to that degree. After the degrees are finalized and launched, reviewers conduct the assessment of studentsubmitted projects.

The reviewers are the closest thing to faculty that you would think of as our faculty. Like our SMEs, they are academically qualified in the content that they're assessing. So if there's math competencies, that's a math person. If there's writing competencies, it's an English person. They have those traditional credentials, but we train them on what we are doing here—the competencies and then we train them on the rubrics. The curriculum and assessment developers create things called reviewer guidance that help [reviewers], and then they work together to try to benchmark and calibrate, so we do a lot of training so that everybody's assessing as equally as they can be.

It also seems that these academic employee roles will remain critical to CfA's operation. This is particularly noteworthy when considering that these roles were developed out of the unpacking of traditional faculty roles. One criticism of CBE—especially given direct assessment's online model-has revolved around the U.S. Department of Education's requirement for regular and substantive interaction with faculty as part of eligibility for federal financial aid (See Fain, 2016 for a discussion of this argument). While it was beyond the scope of this dissertation to discuss the roles of learning coaches and reviewers within the context of this requirement, it is worthwhile to note that CfA employees are aware of this requirement. Moreover, they seem to approach the issue from the student perspective as well as a business perspective—considering at once what aspects of the learning process are capable of being automated and what aspects must always involve human interaction. Even as the college continues to scale through the use of its learning management platform, several respondents also touted the mantra: "Humans where only humans will do." They pointed specifically to coaching (student success), reviewing (assessment), and subject matter experts (competency/curriculum development) as functions that will never be automated because the human touch and perspective is essential:

R-05: One of the things that's been so striking to me—before this position, I spent almost 10 years as a faculty member—is the amount of feedback, and the

quality of the feedback that our reviewers give to students. That's where the learning is taking place, in the reflecting on that on the part of the student, then trying to apply that guidance to their own work. That's not something that can be automated.

A final aspect of employer roles that respondents continually remarked upon is the

coalescing of different skill sets to effectively serve the mission of the college:

R-010: I think one thing that's interesting—because I think about talent and people a lot—we have a team that has come from a lot of different sectors. We have people that come from higher ed, but then from assessment or from workforce development, or...from publishing. Everyone's very mission-driven, but everyone is coming with a slightly different set of skills, and I think that's kind of special.

R-04: People are very committed to the mission, very mission-driven, and also willing to do the work. [They're] not afraid to roll up their sleeves and say, "This is hard, this is challenging, but we see a path through it and to it."

This constant connecting back to the mission and purpose of CfA reinforces the importance of a cultural and values fit among the employees. Another respondent referred to it as building the "right team," indicating that—along with skills and qualifications—cultural fit was an integral part of hiring decisions.

Proposition 6 – Employees at the institution have retained a satisfactory degree of

autonomy and/or control in how direct assessment is used at the institution.

Similarly to Proposition 5, no question in the Interview Guide directly asks about employee autonomy. Rather, discussion of autonomy emerged organically through respondents' answers to strategies and challenges in launching CfA (Question C) and critical success factors affecting CfA (Question L).

As half of the respondents mentioned, SNHU leadership purposefully chose to give the initial Innovation Lab's core team the autonomy to develop the project that would eventually become College for America. As discussed in the first subsection, Strategic Vision, this was a

strategic decision derived in part from Clayton Christensen's approach to disruptive innovation.

One respondent explained this reasoning,

When you're trying to create something new, give it safe space in which to incubate....Give it its own staff. Keep it off the radar screen so that the organization isn't trying to pull it back in, so give it some autonomy. Give it permission to break rules, try different stuff—all the things [Christensen] writes about.

Interviewees also felt that there was an understanding that university leadership not only

chose employee autonomy as a strategy, but also actively worked to support this decision. As

one respondent explains:

R-02: Look, I don't know much about football, but I know that you need to protect the quarterback, and I think that was kind of how we were in the essence that we were being protected....I mean, let the talented people do what they're good at, you know? Obviously Paul [President LeBlanc] was very involved, I can't say he wasn't involved, because he was very excited about it. But he didn't interfere for the most part.

Two respondents emphasized the choice that employees were given to not use existing

university resources where it did not serve CfA. As an interviewee further describes:

R-07: I think this is a really important point: at no time were we told that "You have to use Blackboard," or "You have to use University Systems." We were really given just complete freedom to do this. And...looking at the other [CBE] institutions, that's a pretty rare situation. Most of them have—and rightfully so—existing faculty situations that they have to maintain, or faculty contracts, or unions, or technology. There are just all sorts of constraints. But we were told, "Just do this the best way that you can think about doing it."

Significantly, the autonomy given to CfA employees affects not only the development of

direct assessment CBE, but also the technological platform through which it is delivered. One

respondent asserts that having the autonomy to use agile methodology in CfA's technology

department is critical to building and rapidly enhancing the application programs that support the

college:

R-08: We operate very independently of the rest of the university, and we've been given the ability to implement and build our own process that fits our own needs because we are so different....We get so many requests and operational changes beyond just the product stuff that if we were in a waterfall methodology, we probably would never do any new features. We'd just be fixing existing issues. So we cannot do it that way.

Another important point, of which interviewees were aware, is that employee autonomy

primarily occurred within College for America rather than across all of the university. For the first five years of its development and implementation, direct assessment CBE has been concentrated at College for America. To a large degree, other SNHU employees have not had to accept or adopt it. Several respondents indicate that allowing CfA operate independently facilitated its rapid development while diminishing its potential threat to the other divisions:

R-05: I think that's been incredibly helpful because...there didn't have to be a conversation about how traditional faculty would have to conform or exist within this new situation. They felt as though their delivery methods were protected, so there was less resistance.

R-06: Another reason I think [SNHU is] successful in so many ways is that we have a pretty hands-off policy in terms of allowing the three divisions to do what they need to do to serve the students that they serve....They serve different students, they have different challenges. The one common factor that ties all three together is one, our utter dedication to students, and then serving them in the way that's suitable for the profile of the student that's in the school.

In sum, all but two of the respondents mentioned employee autonomy as either a purposeful strategy or a critical success factor that has facilitated the rapid and effective

development of College for America.

Proposition 7: The institution consulted with external stakeholders—employers in particular, but

possibly also accreditors, government, and funders-to design and implement

direct assessment programming.

The Interview Guide does include select questions that directly pertain to Proposition 7,

namely who were the key stakeholders involved in developing CfA (Question B), to what extent

were employers/industry experts engaged in this process (Question H), and how does USDOE approval and regional accreditation influence CfA (Question K). Respondents openly answered these questions if their employee roles gave them specific experience in each area, or they would encourage me to ask the questions of their colleagues if they felt they lacked sufficient experience themselves.

Respondents share that the decision to create College for America's B-to-B model arose out of early interactions with employers and the realization that focusing on workforce development had implications for successful implementation. As one respondent explains:

R-09: In the very, very beginning we reached out to people we knew and people where we could leverage our relationships. So one of our earliest adopters was Anthem Blue Cross Blue Shield. Well, its president sits on our board. She knew what we were talking about. She said, "Hey, I'd love to try this at my place." They did a pilot. They're now our largest user. They rolled it out nationally as their free college option for all 55,000 of their employees. They did that this fall [2015]. So about 35,000 of their employees have no college degrees. They're call center workers, customer service reps making \$22,000 a year. [CfA is] perfect for them, and they've been doing really well. So that's where we started.

As the respondent continues, the decision to focus on B-to-B builds logically from the

current call for higher education to focus primarily on jobs and economic development:

Jobs has become the Number 1 thing [higher education] has been asked to deal with, that's the Number 1 thing we're asked to do right now...CBE feels like just the right answer, just the right time, because it gives us a *lingua franca* with employers that we have not had before. They think about the world in terms of competencies; we never have...So CBE for the first time gives us a common language with employers, and I think that's a powerful piece as well.

CfA created a Workforce Strategies to ensure the curriculum aligns with

employer expectations for talent development, as a respondent explains:

R-01: Even before [Workforce Strategies] came on board, there was a lot of connection among the folks who had created the original curriculum with the Department of Labor, with Lumina Foundation, with employer stakeholders. The degree qualifications profile influenced how our curriculum was developed. Then

when we came on board, we really started digging very deeply into labor market intelligence. We were looking at what's going on in different industries, what's happening with occupations within those industries, and what kind of skills and competencies do people need to do their jobs everyday....We do that from the secondary labor market perspective, and we use a lot of data analytics, and then we go out to industry stakeholders. We talk to a lot of employers. We do focus groups and interviews, a lot of community presentations, and gather feedback. We've published some of what we've learned, and it's all with an eye toward ensuring that we're getting stakeholder feedback from industry.

Another respondent gives an example of an employer focus group to design and validate

curriculum:

R-03: Sometimes we'll have a focus group where we'll bring people together from the insurance industry and we'll share with them: "We've developed some of this curriculum; can you give us feedback? Does it seem realistic? Would these projects be something that somebody would actually do working in the insurance industry as an agency or customer service representative on the phone, etc?"...We want [the curriculum] to be vetted, for it to be realistic, to immerse the student in a setting and in a context that is very workforce relevant.

In terms of the level and position of the employers who participate in these interviews

and focus groups, an interviewee replies:

R-010: I think HR people are very important, but you also try to get to the operational leaders and people that are actually doing the jobs. HR might be able to inform on the career pathways and the skill sets that are advertised, but then in terms of how the work actually happens, we really try to talk to operational people, too.

Interviewees note that as College for America's initial curriculum was being developed,

they relied on a combination of internal faculty and external subject matter experts (SMEs). As

one respondent noted, while faculty were generally open to helping with this development,

instances of time management and areas outside of existing faculty expertise both required

external assistance:

R-06: [SNHU] never had a history of having nursing or medical programs of any type. So [CfA] literally had to go to the outside to look for that. But in terms of business, in terms of psych, they would also use faculty from University College, but not always...Part of the reason they've been able to be so quick and so agile is

you can't ask full-time faculty who are teaching eight courses in a year, who are advising students, who are advising on clubs, who are doing research to then stop and take 40% of their time and help this other unit. So [CfA] literally had to go outside and get subject matter experts.

In describing how the SMEs inform the curriculum, a respondent discusses the

use of "evidence-centered design," meaning:

R-02: We work very closely with subject matter experts (SMEs) both to look at what a whole degree is going to look like and then to think about what are the competencies that make up that degree....We don't start with the curriculum, which is kinda the usual place. What we start with is really the end, which is: what are the claims we want to make about what a graduate of this program knows and can do? So then we say, "Well, how would we know if they knew and could do those things?" And then that brings us to the specific tasks that are necessary to elicit that evidence.

Another important aspect of the curriculum development was for it to be regionally accredited through the New England Association of Schools and Colleges. College for America relies upon NEASC accreditation for each degree that they develop, and these degrees are conferred upon students through SNHU; therefore, each degree meets the university's accreditation standards. On the whole, interviewees respond favorably to this accreditation

requirement:

R-05: I think it's great. I think of the regional accreditor the same way as an author may think of boards of reviewers, which is: You hate them at the time. You hate getting ready and answering all the questions, but at the end of the day, the product is always better than you have going in. And so, in terms of NEASC, it's good to have that external [perspective], to have the benchmark, certainlyjust from a fiscal perspective, in terms of students being consumers. They know that there's some stamp of approval that's been met. So I think that's important.

Once a substantive change passes NEASC accreditation requirements, it must also receive approval through the U.S. Department of Education to maintain Title IV financial aid. Interviewees mentioned that they have been able to consistently obtain both approvals with each of their substantive change requests. One respondent attributed this success to the CfA team's

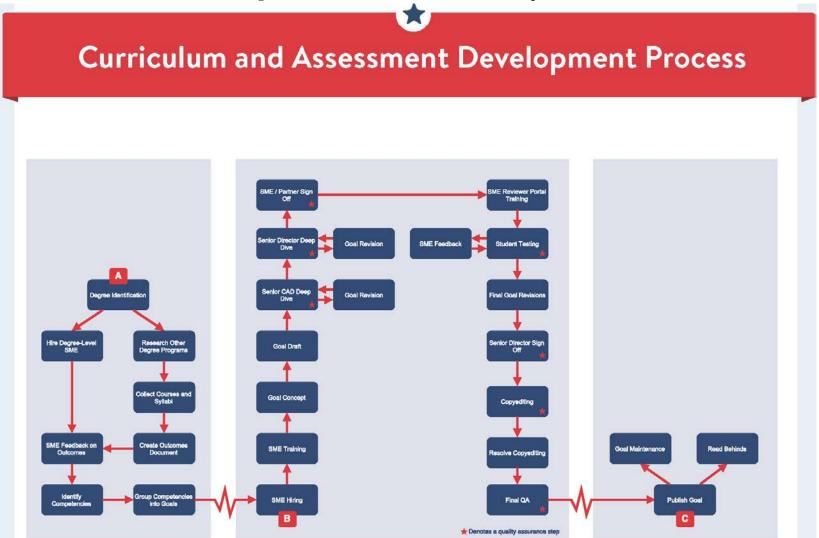
ability to comprehend the NEASC requirements and to meet those requirements during the curriculum development process. This process is further described as part of the fourth proposition to influence the Locus of Control factor.

Proposition 8: Effort has been made to insert quality controls with feedback loops into the program in a manner that conforms to industry-accepted practice.

Document review of the three NEASC documents provides significant evidence of conformity with regional accreditation standards for student learning and assessment, as well as curricular alignment with employer expectations. Furthermore, CfA's Curriculum and Assessment Development (CAD) team works within a specified process (see **Figure 3**) to build and modify degree programs. This process is divided into three multi-step phases.

In Phase A, the CAD team identifies the degree to be built. The team collaborates with the Workforce Strategies team, credentialed industry experts, and—to some extent—SNHU faculty to conduct research of the labor market and other degree programs. From this research, the team builds a learning outcomes document. The process's first feedback loop occurs as the SMEs provide feedback on these outcomes, which could require additional research and development. Once the team has built a satisfactory outcomes document, they begin work to identify the competencies students must master in order to achieve these learning outcomes. These competencies are then clustered into project goals.

Figure 3. CfA Curriculum and Assessment Development Process

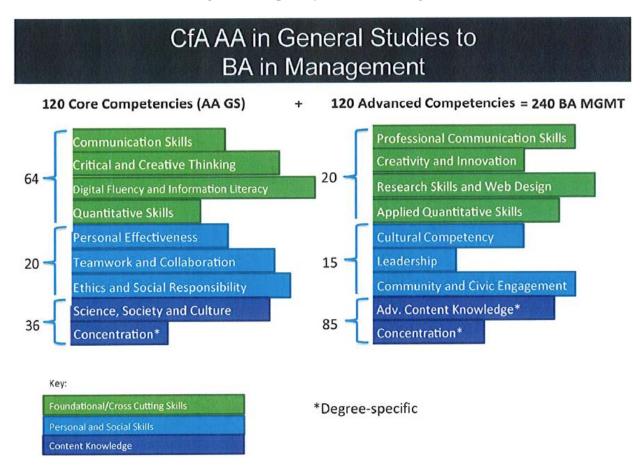


Source: College for America, 2016. Reprinted with permission.

Phase B involves the translation of each goal into workforce-relevant projects through which students demonstrate mastery of the specified competencies. As displayed in **Figure 4**, an Associate's degree is comprised of 120 Core Competencies that are clustered into 20 goals. Each goal has at least one coinciding project that students must complete. Bachelor's degrees are comprised of 120 additional Advanced Competencies also grouped into 20 goals. Each goal is equivalent to earning 3 SNHU college credits.

The CAD team collaborates with credentialed SMEs to build the projects for each goal. Two additional feedback loops occur during this part of the process. As a first quality check, the Senior CAD members perform intensive review and revision of the goals. Once these Senior CAD members approve the goals, they are then submitted to the Senior Director for a second round of revision and review. A third quality check occurs with final review through the SMEs and business partners to ensure the workforce relevancy of the projects and goals.

An assessment rubric for each project is also built during this part of the process. Next, qualified reviewers are trained and calibrated to assess student project submissions according to these rubrics. As aforementioned, assessment is not an automated process; humans always conduct the reviews. A fourth feedback loop and fourth quality check occurs through student testing of the new degree. This often takes the form of a small, pilot cohort of students. Student testing, as one interviewee explains, is imperative "to make sure that what we intended is actually what the students experience." Reviewers provide feedback to the CAD team based on their engagement with and assessment of the students. This feedback leads to final goal revisions, which the Senior Director signs off on as a fifth quality check. **Figure 4. Competency Areas in CfA Degrees**



Source: NEASC Substantive Change Request – Addition of BA in Management, College for America, 2015, p. 17. Reprinted with permission.

Nearing the end of Phase B, copyediting of the projects and goals occurs as a sixth quality check. Almost finalized, the product is submitted for the seventh and final quality assurance check. Upon approval, each goal enters Phase C, where it is published. Once a degree is implemented, goals are monitored and maintained in conjunction with the Student Success and Research Analytics teams.

Employers are engaged with both the development and implementation of competencies. As described in the CAD process above, employers may be engaged through interviews and focus groups as part of informing and/or later validating goals, competencies, and projects. Moreover, once the curriculum is in implementation, CfA continues to engage with employer partners to ensure that they are satisfied with the progress of their employed students:

R-01: Every business partner that we have is assigned an account manager, and the role of that account manager is to check in with the employer... They're sort of the day-to-day, making sure everything is going well. So there's a constant feedback loop there as well.

While Partnership Services focuses on quality assurance and feedback from employers, the CAD and Student Success teams focus on engagement with students. Part of the CAD team's charge is to ensure that the projects clearly present what the competencies are and what students must do to successfully complete the projects and demonstrate mastery of those competencies. The following figures present a project for a student working toward a BA in Healthcare Management.

Figure 5 lists the title of the project ("Develop a Patient Handbook"), the competencies to be mastered, an overview, and specific directions for how to complete the project. A navigation bar in the upper left corner provides additional clarity. Students can obtain a more-detailed list of the deliverables that will satisfy the project. If students need to learn more about the topic area, they can access project and skill-building resources that CfA team members have gathered from external sources. In this sample project, such resources include a document outlining patient handbook expectations, a video overviewing the US healthcare system, and a video that describes how to pay for healthcare. Finally, as displayed in **Figure 6**, the students can view the rubric and criteria for mastering the project.

PROJECT 1 PROJECT 2 PROJECT 3 PROJECT 4 **Overview and Directions** Deliverables Develop a Patient Handbook Project Resources Skill Building Resources COMPETENCIES TO MASTER Rubric Can compare and contrast private and public models of financing and delivering SCHEDULE PROJECT healthcare services Can describe the basic structure, primary features and major stakeholders of the U.S. healthcare system Overview You are an administrator at Vibrant Valley Patient-Centered Medical Home, a healthcare facility that serves a diverse and multicultural community. As part of your role, you are charged with ensuring that patients and medical home staff have access to high quality information about healthcare policies, financing and regulations. In order to help them, you will develop materials that support patient understanding of basic healthcare structures and systems. You will also create training documents for staff members to improve their knowledge of key healthcare laws and regulations and enable them to address some of the ethical issues in healthcare practice. Directions During a recent meeting, your colleague, Dr. Sylvia Shaw, expressed concern that many new patients do not understand critical information that could impact the healthcare they receive. In response to this issue, she has asked you to develop a patient handbook that describes the basic structure and features of the US healthcare system, how healthcare services are financed and delivered to patients and how the Affordable Care Act is changing how US citizens obtain access to health insurance. This handbook should provide a clear and accessible overview for a multi-cultural community of patients who may not speak English fluently or who may be new to the US healthcare system. In order to develop the contents of the handbook, refer to the Project resources, including the Patient Handbook Expectations. Be sure to use your own words as you develop the handbook and properly cite any information sources you access.

Figure 5. CfA Sample Project Instructions for a BA in Healthcare Management

Source: College for America, 2016. Reprinted with permission.

Figure 6. CfA Sample Project Rubric for a BA in Healthcare Management

Rubric

The Rubric is used to evaluate your Project. Satisfying all of the Rubric criteria shows that you have mastered the project and the relevant competencies.

Criteria	Mastery?
Clearly and accurately describes how the US healthcare system is structured Clearly and accurately explains how the US healthcare system is financed	

Source: College for America, 2016. Reprinted with permission.

As one respondent describes, several components are in place to ensure the learning model provides a feedback loop to students in that they clearly understand project requirements upfront, the rubrics reinforce these requirements, and reviewer feedback further reinforces the requirements. Thus, a student should receive useful information and feedback to perceive, complete, submit, revise, and resubmit any given project. This feedback loop is part of a student "growth mindset," as several interviewees mentioned, that is built from the rubric's lack of grades. As evident in **Figure 6**, competency mastery is defined as "Yes," meaning it has been achieved, or "Not yet." Using this binary option, respondents opined, first removes the sliding scale of subjective grading. Secondly, "not yet" should not be thought of as dichotomous to "Yes"—it is not the equivalent of failure. Rather, it gives students permission to test their competence at any given moment, learn from that experience, and work to improve. As a respondent expounds:

R-02: Not yet has become our mantra. Because students have infinite opportunities to resubmit, get feedback, resubmit, get feedback, resubmit, it changes the whole dynamic. It's no longer about passing the course, or just get[ting] the paper in...It really is about actually developing these competencies...It changes into this kind of virtual cycle of effort, feedback, effort, feedback, and then achievement. So I would say one thing we've done in College for America is shifted the whole emphasis from the student as the passive recipient of grades from the teacher to the active agent who can withstand disappointment and deal with obstacles. It's a growth mindset.

Using the "not yet" method of assessment to build this growth mindset, another respondent argues, is about "normalizing the struggle" for students. The respondent further makes the case that teaching students that they can overcome learning challenges in an educational setting also equips them to learn and adapt in a work setting:

R-04: Think about the change in the dialogue, and the conversation that can happen when 'not yet' is the norm. You want to get it right, but we know there's a learning curve...A lot of our coaching is [] saying, "Okay, maybe you can't dive into this project, but what is the next right-sized challenge you can take on to have just that little bit of dissonance, but enough challenge to inspire you? And as your coach, I'm going to be with you through that struggle, and then soon you'll understand that you're gonna come through it." ...I think that's really aligned with what most employers want—people who are willing to take a chance on a new job and know that the employer is gonna support them if they're "not yet" [proficient], and give them the feedback they need.

A significant part of providing feedback to students occurs through data analytics. SNHU

has invested heavily in predictive analytics, in particular within the College of Online and

Continuing Education:

R-09: We can predict within 2 percentage points how students will perform their first semester in COCE. We have done that through regression analysis, looking at thousands of successful students and non-successful students. We know the factors, the correlations. The closer to the first day of class in which you matriculate—that's an at-risk factor. So someone who enrolls three months beforehand, our thesis is that's a sign of someone who's organized and a good planner. That's a good thing if you're starting education. If you're enrolling for the first time the day before classes start, what was that about? Are you a procrastinator? Is this a rash decision? So we look at about ten factors of people and then we do a predictive score.

Based on that predictive score, the COCE staff can identify potential areas of struggle for a particular student and interventions that may better support that student to persist and complete her or his education.

Staff members within CfA are working to achieve a similar process. Currently, CfA utilizes real-time data analytics that will flag a potentially at-risk student for the learning coaches. The learning coaches then take a closer look at the circumstances and determine if an intervention is necessary. As one respondent notes, the job of the data analytics team is to

R-010: look at how students are using the program and progressing. Where are they getting stuck? Because it's all online, we have a lot of information about students' interaction with the LMS and also with their coaches. We're starting to see patterns of what's helpful in terms of keeping students in the program and keeping them moving at a good pace.

The respondent gives this following example:

We know that when students hit the 30 competency mark, which is 25% of the program, they're much more likely to persist. So those first 30 competencies, the first quarter of the program is a place where the learning style gets cemented and people hit their stride. That has operational implications...that's the period where you really want to focus and you really want people to be oriented to that milestone and to reach the milestone. So we can make changes in the way that we interact with students to reflect what we know about that milestone.

Another respondent asserts that such use of real-time data to drive differentiated

instruction and just-in-time learning interventions is a critical improvement to the student

learning experience that has significant implications for the future of higher education:

R-05: We continue to ask and use the data and dig into it, even if it doesn't tell a story we like on a given day or a given week. Are we meeting our goals? Are we helping students? And using that to say, "Okay, well what if we did this?" or "What if we moved this here?" That, to me, is really powerful. We're leveraging the online nature of the institution and the fact that students are moving at their own pace. 'Cause we don't have to wait. We're in a position that traditional ed isn't. They have to wait until the end of a term, look at everything, and then draw a conclusion. Faculty are nimble and can be, but an entire degree program cannot be nimble. Just the sheer nature—you gotta wait 4 years to get even your first data

about whether or not anything made a difference. We don't have to wait 4 years. So we're leveraging that agility, and that makes me proud.

While CfA does not yet have predictive analytics, their goal is to continue to gather data and eventually move into that realm.

Such use of what may colloquially be referred to as "big data" is one of several aspects of online, direct assessment CBE that are pushing the boundaries of the higher education industry. Accordingly, because direct assessment CBE is still fairly novel and not mainstream, standardized quality control checks do not yet exist for certain aspects of its design and implementation. This lack of standardization is perhaps most visible in the ongoing efforts of the U.S. Department of Education and regional accrediting bodies to develop content and assessment standards. It is also evident, as one respondent describes, in the search for effective technology platforms to deliver and scale CBE programming.

The respondent discusses several efforts of consortia across the nation to solve some of these standardization issues from the technology perspective. As an example of one such issue, the respondent discusses how it would be helpful to take a student's transcripts from a traditional university and automatically convert them into CBE equivalents. The solution would require not only the higher education industry to agree on the standards of credit/competency equivalency, but also technology applications that can consistently and accurately perform the conversions. Accordingly, the respondent speaks to the need for standardized integration of technology applications across higher education, noting:

R-08: The need for integration and for technology standards is critical, and I think that over the next 2 to 5 years those will have to be refined in order for the industry to thrive. Because universities aren't gonna keep hiring large IT staffs to maintain custom applications. They just can't afford to do that...There will have to be a point in time in which industry standards start to dictate that there are more packaged, off-the-shelf type applications that higher ed can use to implement their CBE programs.

In addition to commenting on quality assurance processes, study participants were also asked how they evaluate success at CfA (Question M). The majority of respondents indicate that student transformation was of the utmost importance, followed by business/financial sustainability. Below are typical responses to how CfA staff measure success:

R-05: It all boils down to students and then sustainability...It's about graduation, and it's about really increasing accessibility. And we only do that if it's affordable, and graduation is only a success if it's meaningful, so it has to be a quality product.

R-010: We have the academic metrics, like persistence to term, withdrawal rate, graduation rates, pace of the program, pace of completion, and we've also looked at some outside benchmarks....From our employer perspective, we're doing more and more surveys of: What are you finding about these students? Are they more engaged? Are they doing better at work? Are they happier, are they staying at the company longer? Are they getting promoted?...There's also the satisfaction. We ask students all the time: how happy are you? Are you feeling like you're learning? Are you feeling like you're getting things that are relevant to your day-to-day work? Are you thinking more about your career plans? Are the coaches helpful?

R-09: How are we doing by students: Are they graduating? Are they getting jobs in the places that they hope to? Are they doing it without inordinate debt? For us, that's the prism through which we look at everything. Secondarily, we want to look at financial performance: is this a program that is self-sustaining or not? And because we're not-for-profit, we have the luxury of saying, "No, it isn't self-sustaining, but it's important."

This final response is particularly notable because CfA has not yet become financially

sustainable. Part of its strategic development, respondents shared, was understanding that it would take several years for the college to scale and sustain itself. This has put impetus on leadership to budget efficiently—currently CfA comprises less than 2% of the university's operating budget and is sustained through surplus revenues from COCE. Investment in R&D also means the measures of success must include not only the intended outcomes but also the pace at which those outcomes are (or are not) being achieved. Furthermore, SNHU needed to be in the

position to take a calculated risk and make a significant investment in a project whose returns would not necessarily be realized within five years. As the respondent notes, however, because SNHU is not profit-motivated and is in a situation of economic surplus, such return can come in the mission-supporting form of student achievement.

Such adherence to the university's mission to transform student lives is further reflected in another respondent's argument that the single most important aspect to improving the CfA learning model is "continuous quality engagement" with students: "If we can do that one thing, everything else falls out from there." To me, this argument implies that the link between students and business is not simply that both must be satisfied (an effective student experience and also an effective business plan), but rather they are inextricably integrated: the student experience is essential to the success of CfA's business-to-business model. In other words, a learning model that incorporates work-relevant competencies and robust student support changes how students learn and furthers their talent development. When students apply these skillsets and growth mindset to their workplaces, their employers achieve return on their investment in their employees, and they are thus more likely to encourage more employees to enroll. The college's reputation likewise continues to build as employers and graduates share their positive experiences. Thus, student success begets business success. Hence, student engagement is a critical piece to improving the quality of the program. Yet, as the respondent adds: "there's still more work to define the elements of what that quality engagement looks like. The student has to feel connected. They have to be engaged in the learning process....I think really both a challenge and the key to success is how do we keep that student voice informing the model." The invoking of the student voice suggests that such quality engagement should be through a combination of data analytics and direct interaction—quantitative and qualitative data. I think it will be insightful to watch how CfA's staff continues to strive to achieve this combination.

The NEASC documents further depict CfA's commitment to regular performance and program evaluation as part of maintaining their accreditation. One respondent gives an example of an internal evaluation:

R-02: We had our evaluators compare [CfA students'] work to that of students in the other colleges within SNHU who, for the most part, have more time, are better prepared, [and] tend to be of a higher socioeconomic status....We took projects that had analogous assignments in the other colleges and basically said, "Look, here's the work from the three different colleges. How do you see College for America students performing in relationship to the other two colleges?" And [the evaluators] said [CfA students] seem to be at or above the same level.

In the NEASC documents, CfA further expresses accountability to external stakeholders. For example, the Bill and Melinda Gates Foundation commissioned third-party evaluation of CfA as part of the NGLC grant. This evaluation included a survey of students and employer partners to assess satisfaction with CfA as well as application of learning. Similarly, CfA participated in the ETS® Proficiency Profile study to compare student achievement across Associate-granting institutions. Moreover, case studies published on CfA's website highlight positive employer partnerships and student outcomes. Granted, such accounts may be subjective and purposefully selected to represent the college favorably. However, interview participants in this study also discussed how the college has obtained additional grant funding to conduct an intensive return on investment study to obtain more reliable, empirical evidence of 1) the extent to which students apply their degrees in the workplace (and with what results); and 2) employers' perception of the return on the investments they have made into CfA-enrolled employees. With four study propositions influencing it, Locus of Control is a substantial organizational factor that encompasses employee roles and qualifications, employee autonomy, consultation with and accountability to external stakeholders, and quality controls with feedback loops that conform to industry standards. There is much evidence within CfA to suggest patterns that support the presence and influence of each of these four study propositions. It is important to note, though, that as CfA is a standalone division, the autonomy granted to its employees does not necessary extend to other SNHU employees. COCE and UC employees have not been required to engage with CBE—a fact that is further discussed below in the Structure subsection. What this does suggest is that SNHU leadership carefully considered the locus of control regarding CfA's development. In choosing to create it as a new division with largely external hires and significant reliance on external stakeholders, SNHU leadership was able to generate a new product that is at once untethered from yet aligned with the institution as a whole. As the next subsection expounds, the achievements of CfA would likely not have happened without this leadership vision and support.

4.4 LEADERSHIP SUPPORT

The organizational factor, Leadership Support, is fairly straightforward and is thus comprised of one proposition:

Proposition 9: Across the institution, senior leadership has provided consistent direction and support for direct assessment CBE's implementation.

Similarly to Propositions 5 and 6, no direct questions were asked about leadership. Rather, a measure of patterns around this proposition emerged naturally through responses to the resources that have been made available to support CfA (Question G) and critical success factors affecting CfA (Question L).

One respondent considers CfA's biggest success factor to be the "special culture" that has been cultivated in the college. While this is more expounded upon later in subsection **Culture** (pg. 109), it is noteworthy here because, the respondent shares, the culture "comes from the top. It's reinforced at the top." The respondent specifically points to President LeBlanc, explaining:

R-03: He is completely dedicated to the students. He is trying to move the needle. He's about transformation. He's about positivity. He is about us all together. He's even looking at this—the whole university—and the great things that we're able to do together.

Both this and another respondent also pointed out that the president has a physical office at each business location: College for America, College for Online and Continuing Education, and University College. As one of the respondents noted, there is a symbolic importance in simply having these dedicated spaces within each division, as it suggests that each is as important to the president as the others. However, both respondents noted that President LeBlanc is actively present in these locations, thereby evidencing that the support is not merely symbolic but actualized as well: "He's here all the time. I see him all the time."

Significantly, no respondent interviewed mentioned any neutral or negative perception of the leadership at SNHU and its support of CfA's development. Rather, respondents were quick to acknowledge the difference that Paul's leadership and support from the board of trustees made to the development of the college:

R-07: We had a tremendous amount of support from Paul....By 2013, by the end of that year, we had built a five year business plan. And we went to the board of trustees and got them to authorize a lot of additional investment. So we had tremendous support all along, largely thanks to Paul's leadership and belief in this. We've had support from the board, support from other leaders....So, critical success factors looking back? Leadership is always No. 1.

R-02: I think what made all this possible was support from Paul and support from the board. Paul has been spectacularly successful with SNHU, and I think the board was inclined to believe what he said, that [CfA] was a really good idea....Paul is unique; you can't duplicate him. I think his willingness to have the vision, go to bat for it, and then leave it alone enough that it could really do its thing...He's a visionary, but he is also a strategist. Many visionaries just [think]: "It's gonna happen somehow," you know? [Paul's] really good at reading the chess board, figuring out who needs to be involved, how to get them excited, how to get them supportive, and so on. So that, I think, made a huge difference.

R-010: Everyone you talk to is gonna talk about Paul, and I do think that the ability—[you need] to have a president who is committed to doing new things and who does not have a lot of barriers in terms of the board or faculty in getting behind him. I think he was able to have a vision of "Let's reinvent the wheel, and we're going to do it." He was able to put that into place, which is pretty unique in this sector, I would say.

Notably, the leadership quality that respondents seemed to appreciate most was President

LeBlanc's balance in being present and supportive but also willing to step back and empower team members to use their talents effectively and make operational decisions. There was also an appreciation for his business acumen and strategy—the ability to not only conceive of an idea ("The Next Big Thing") but also assemble a strong team and provide the leadership to actualize that idea. It is further interesting to note the ease with which interviewees referred to the president. Only one interviewee referred to him as President LeBlanc; the rest all called him Paul. Their tones and phrasings implied a casual informality—which could easily be interpreted as approachability—and also respect, trust, and appreciation for Paul's leadership.

4.5 STRUCTURE

The organizational factor, Structure, is also comprised of a single proposition:

Proposition 10: To a significant extent, the institution is loosely-coupled, decentralized, and

organic in structure.

Extant literature suggests that because competency-based education is a disruptive innovation, its most successful implementation will occur in environments where the CBE program is structurally separate from the more-traditional higher education institution. As Weise and Christensen (2014) expound:

Overwrought with constraints, most colleges and universities are structurally incapable of facilitating innovations that deviate from the way they currently deliver education. To complicate matters, shared governance between the various stakeholders on campus—faculty members, administrators, leaders, and boards of trustees—exacerbates the orchestration of so many moving parts. (p 15).

To overcome these constraints, the authors encourage allowing disruptive innovations like CBE to be separated from the traditional institution and given "breathing room" in which to develop as a distinct business model.

In a subsequent interview with SNHU President Paul Le Blanc, Weise (2015) discusses with him the decision to separate what has become four main divisions of SNHU (University College, College of Online and Continuing Education, College for America, and Motivis Learning). In response to Weise's question of how the physical separation of these divisions worked within the university's shared governance structure, LeBlanc asserts:

We believe in decentralization. So each business/academic unit is quite separate from each other because the jobs to be done that each are asked to do are quite different, thus the student markets that they serve are very different. Thus they need to have their very specific structures, culture, governance, and way of being in the world, if you will. As I mentioned, every unit now has its own discrete governance process. And I don't know of any other not-for-profit that has done that. Based on this information, I expected to see evidence of such decentralization reflected in the participant interviews. As with propositions 5, 6, and 9, the interview questionnaire did not specifically ask about decentralization or even organizational structure. Rather, participants brought up decentralization independently when identifying strategies considered in the planning and launching of CfA (Question C) and critical success factors affecting CfA (Question L). In fact, several respondents considered the de-centralization of CfA to be a critical success factor:

R-010: Organizationally, I think that being set aside and started as kind of a startup within the University—that didn't use a lot of the same staffing or resources as the main campus and the online campus—was very important.

R-04: CfA was really operating very autonomously to begin with, and I think that was critical for that phase.

Notably, respondents appreciated how decentralization facilitated the implementation of

CBE programming, in lieu of the constraints and restrictions staff face at other, more-traditional

HEI:

R-05: I've done some work interacting with other CBE programs through Gates Foundation and others. What I've found is that a lot of issues that arise have to do with taking existing individuals and making them then conform to a mold that is believed to be competency-based and being told, "In some way, deliver this different form of education and make it available." And instead, what [SNHU's] board of trustees and the president did was essentially say, "OK, where there is an advantage to having it come out of an innovation lab is to first have it incubate there and then spin it off as a distinct business unit within the broader canopy."...So I think that's been a real strength, the decentralization.

R-07: We were never told, "You have to get people to accept this." Whereas I see a lot of my colleagues in other institutions spending a lot of their time trying to get people to understand what they're doing and accept it. But because we were separate, we really weren't threatening anybody, and we weren't using anybody else's resources....The university is very decentralized like that, and I think it's been a big contributor to our ability to move quickly and get out in front on [CBE]. As another respondent indicates, this decentralization is purposeful and consistent across the institution:

R-06: We allow a lot of freedom and growth...Give [each division] room to run....We not only tried to have governance designed in a way that had a pretty hands-off, *laissez-faire* policy to the schools, we physically separated them.

Additionally, respondents shared that while CfA, COCE, and UC operate as distinct business units with individual business managers, they are still considered part of one whole institution. **Figure 7** provides a brief list of functions interviewees identified¹³ as centralized or decentralized. For instance, while each unit has some HR, IT, and budgeting functions that are unique to that unit, most aspects of those operations are centralized for organizational efficiency. Similarly, though the units have distinct governance structures and the autonomy to determine how they deliver education, each degree is a SNHU degree; thus the Provost signs off on all academic programming and ensures connectivity across like-named degree programs. Compliance, accreditation, and other university regulations are all centralized.

¹³ In other words, the author acknowledges that this is likely not an exhaustive list of core institutional functions. It does however represent interviewees' responses, which suggests a degree of importance to these listed functions.

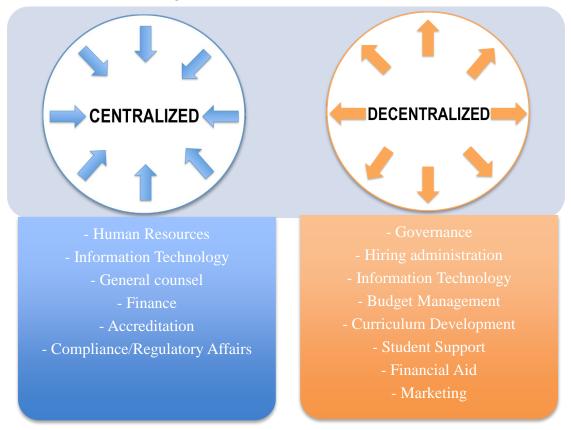


Figure 7. (De)Centralization of Functions at SNHU

Decentralization is also often attributed to the university mission, that is, how best

to serve students. As respondents describe:

R-03: We are three separate colleges under the one university umbrella with three separate governance structures. But that being said, the Provost is over all. So the governance is really separate here, but when I make a new program proposal and submit it, the Provost still signs off on it....But essentially, we have our own products separate from their products. We have our own staff, our own students that are—they're all SNHU students—but we manage them here...We have our own student support staff here, because the model's very different, so in a sense it wouldn't be fair to try to expect the greater university to figure out how to support CfA students when they have no experience doing that or staff really to do that.

R-09: Anything that is student-facing is decentralized—even financial aid interactions...The back-facing processing that students never interact with, that is literally formulaic—we centralize that for economy of scale....So where it makes sense we centralize, but generally speaking we are big believers of decentralization, because we think of the units as very different student markets.

And our belief is that when you centralize the whole, what you end up having then are ways of being, ways of operating that are compromised. Because they're trying to make the one way work for very different students and very different needs.

In sum, the interviews do follow the pattern established in President LeBlanc's (2015) interview, namely, that SNHU strategically operates with a decentralized structure. That the majority of respondents attribute their ability to create and implement CfA to this decentralized structure thus supports the theory that structure is an important organizational factor for the diffusion of direct assessment CBE. Moreover, this decentralized structure precipitates the Infrastructure of CfA.

4.6 INFRASTRUCTURE

Infrastructure is another organizational factor that is comprised of one study proposition:

Proposition 12: Dedicated resources have been made available to support CBE. These likely include IT, institutional research, finance, and CBE-specific staff.

As depicted in **Figure 7** (p. 106), SNHU's combination of centralized and decentralized functions indicates that some university-wide resources have been made available to CfA, and some resources have been developed or acquired by CfA independently. Review of CfA's public-facing website and the three NEASC documents further outline the personnel resources that have been dedicated to CfA in accordance with its major business functions, as outlined in **Table 10** (pg. 80). These include functional teams that are largely unique to CfA, such as its Workforce Strategies team and Partnership Services team, both of which support CfA's B-to-B model. Other teams, such as Academics, IT, Research and Analytics, and Marketing and Strategy

may collaborate with equivalent departments in other divisions, but they still have dedicated CfA functions (e.g., project reviewers, learning management system, data analytics, marketing).

Correspondingly, the interview questionnaire includes direct questions about the infrastructure within CfA and its connection to SNHU. Respondents were asked to describe the relationship between CfA and SNHU in terms of organizational structure, governance, communication, and finances (Question F) and to identify available resources that support CfA (Question G). One respondent discussed how CfA's physical and operational separation encouraged staff to develop their own resources:

R-08: We had our own office space, we started our own technology platform. There are things that we take advantage of at the university in terms of financial services support and legal—a lot of the overhead functions—but really when we started, we were kind of on our own, and I think that forced us to do things differently.

As mentioned previously, the ability to build their own learning management system—which itself eventually became a spin-off product—is one such example of how infrastructural resources were developed and dedicated to CfA. The unpacking of the faculty role into areas of specialization around student support and assessment comprise additional examples of resources that are specific to CfA. Another respondent speaks to such resources CfA has developed for direct assessment as a critical success factor for the college:

R-010: I think because [CfA's] a new model, there's a lot of scrutiny, and being able to have good processes in place for quality assurance and replicability of the assessments, and being able to stand behind the assessments is really important and that's something that's really difficult operationally. I think we have an amazing process, but I'm not sure how many universities could do what we're doing just in terms of being able to route the student projects through the reviewing queue and making sure their systems can check for quality and consistency.

Significantly, financial support for CfA is largely sourced through surplus revenue that

COCE generates. Several respondents remarked in particular upon Paul's ability to persuade the

Board of Trustees to invest some of this surplus revenue into CfA. As one respondent notes (R-09), CfA's operating costs comprise less than 2% of the institution's overall operating budget, allowing leadership to frame the investment as research and development: "If we were struggling for resources, if we were looking at program cuts elsewhere, we might have a different perspective. But we're not, we're happy to be in a place where we can fund R and D." Moreover, another respondent asserts, while the three divisions each build individual budgets, they also collaborate when appropriate to share costs and budget effectively overall:

R-06: I think that the three executive vice presidents of University College, COCE, and CfA are all very good stewards with the university's money....For example if we have to make a major investment in software for administrative purposes for all three, those are made collectively by the senior leadership team. Some expenses are directly related to each of the business units, and those stay within the units. I think resource allocation has been wise. It has been well governed [and] has been distributed fairly.

Overall, respondents acknowledge that the combination of centralized and decentralized resources in the structure and infrastructure of the institution has allowed them to be more productive and effective in delivering direct assessment CBE.

4.7 CULTURE

The organizational factor Culture is comprised of one study proposition:

Proposition 11: Employees at the institution express shared values that support innovation, including avant-garde thinking, creativity, trust, and adaptability.

For me, culture is a difficult concept to address in a single study. To ascertain its presence, defining qualities, and scope within an institution and/or its divisions within a brief study window and arguably limited employee interactions seemed unachievable. The interview

questionnaire did not include any direct questions about culture, and—given my personal paradigmatic mix of postmodernism and social constructivism—I was not convinced I could elicit specific responses pertaining to culture without in some way leading the interviewees.

It was thus surprising for me to discover that most of the respondents value culture so much that they consistently brought it up on their own as a critical success factor affecting CfA (Question L) or in response to my asking if there was anything else that they wanted to share (Question P). At one level, participants discussed culture within CfA specifically:

R-03: This is a special place. Really special. People here are so critically devoted to the mission. People that work here—it's a different breed of people. I've never seen anything like it in higher education. It's really interesting. And it's really tight. We're all in it together, and I don't know what your sense is about how much culture can affect the success of a business, but my sense is greatly—and so we have that....I feel like one of—if not the biggest—success factor could be that special culture.

One respondent ($\mathbf{R-08}$) described aspects of CfA's culture as "one of innovation, where there's a

ton of great ideas...CfA is a very collegial, supportive, positive, innovation-type mindset that, I think, when you're in start-up mode, works really well." This description reinforces the cultural elements depicted in proposition 11. The respondent further depicts the development of a department-specific culture and how it will integrate into CfA's broader culture:

R-08: [In the IT department,] we've had to collectively work to be less innovative initially to get our procedures and processes in place and get some of these pains resolved. But as we move forward and are able to make sure that our capacity and our capabilities are put on the right things—not just everything—we're going to be able to slowly but surely generate the innovation in the platform over time that will align with the broader CfA group.

At another level, an interviewee associates CfA culture with organizational development. In the Strategic Vision section, I noted a parallel between CfA's staff purposefully using an iterative, emergent strategy in their development of a learning model that is itself about encouraging students to work within an effort-feedback loop (via the "not yet" assessment) to build a growth

mindset. This respondent argues that the strategy is indicative of CfA's organizational learning

culture:

R-04: Sometimes we say, "We've created a monster!" because everything that's true for the students is true for us...We have a not-yet culture. One of the great things about the not yet, for many reasons—so you've learned about it from a learning standpoint, but the cultural aspect of that is very useful as well because if we want to keep that mentality of always learning, always knowing, [we] have to be open to be not yet, right? Which is very different from how higher ed has positioned itself and seen itself. How do we be open to unknowing, open to learning, open to knowing some experiments won't work as well as others? I think that's one of the reasons why the culture and the foundation of SNHU has been fertile for that.

Such a perspective also reinforces a culture supportive of innovation. Indeed, respondents extend

CfA's innovation and growth culture to the institution as a whole. In identifying "a culture that's

willing and embraces change" as a critical success factor, one respondent asserts:

R-05: That's a Southern New Hampshire University culture. Change, rewarding good ideas regardless of ownership; it's very non-hierarchical in that way...[SNHU's] not a flat organization, but it doesn't matter who has a good idea. It doesn't matter. In fact, there have even been organization-wide competitions: "Here's the design competition, here's the problem." It just goes out to everybody. And that is part of walking the walk. You don't usually see that in higher ed, but I think that's how you maintain success: Just have people buy into the mission and feel like they're a part of it.

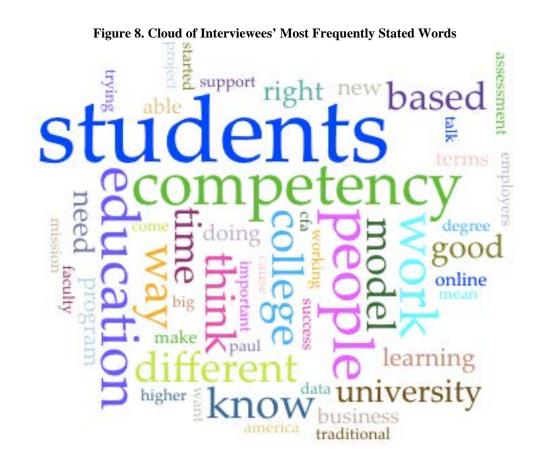
R-09: It's the Drucker line that culture eats strategy for lunch, right? So you can have a great strategy, you can have on paper everything right, and if the culture is dysfunctional, the thing will fail. So we spend a lot of time thinking about culture in our organization. The university has its culture writ large, and the business units have their cultures and they can't be inconsistent, obviously, but they can take variations on the heart of the thing. And at the heart of the thing is this monomaniacal focus on student success and transformation. That's really it—it's in our DNA; it runs across the place. There's enormous pride in transforming the lives of people for whom college is not a guarantee. That's what we do, and people have drunk the Kool-aid on that—they will run through the walls for students here.

Respondent 09's assertion that a "monomaniacal focus on student success and

transformation" constitutes the primary cultural value for SNHU employees is noteworthy to me.

My field observations and subsequent reading of the interview transcriptions suggested to me

that the study participants were fairly consistent in their discussion of the major concepts of CfA, its mission, its cultural values, and its connection to the university overall. To test this observation—and indirectly test Respondent 09's claim—I conducted a word frequency analysis of the interview transcriptions. The following word cloud presents the 55 most frequently stated words¹⁴ from the interview transcriptions. Frequency is represented by size: the larger the word in the word cloud, the greater the frequency with which it was mentioned by the interviewees.



Source: Sinclair and Rockwell, 2016, Voyant Tools.

The most common words were: *student/students* (389 times), *competency/competencies* (197), *people* (187), *education* (181), and *work* (166). While one may assert that the distribution of

¹⁴ The transcription used for this analysis omits the interviewer's words as well as articles (the, a, an), conjunctions (but, and), prepositions (of, before, from), pronouns (she, we're, they), basic verbs (is, are, have), and colloquial phrasings (you know, I mean, kinda, like).

spoken words does not take into account the context within which those words were spoken, it is nonetheless informative to note that *student/students* is the most commonly spoken word across the interviews. This frequency does suggest students hold a degree of primacy in the participants' focus.

To provide a bit of contextual analysis, I used the Voyant software further to examine the most-common links between words. The image in **Figure 9** presents a visual representation of these linkages. The thicker the line, the more times the terms appeared in proximity to, that is linked with, one another. In particular, the links between *students* and *success, support*, and *work* provide visual evidence of how often and in what context respondents tended to speak about CfA students.

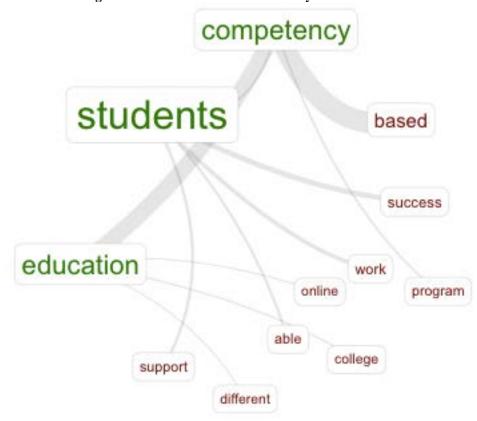


Figure 9. Interviewees' Most Commonly Linked Words

Source: Sinclair and Rockwell, 2016, Voyant Tools.

The fact that study participants predominantly talked about student support, student success, competencies, and competency-based education tends to support the argument that such is their primary focus. An objection to this argument could be that their responses are largely a function of the interview topics and questions asked; however, only one of the 16 questions from the interview guide (See Appendix B), Question J, mentions students directly. This word analysis thus provides an additional measure of insight into the culture and common language of CfA employees.

As a final comment on culture, each interview participant referred to CfA as operating, at least in part, as a start-up or within an entrepreneurial environment. One respondent (**R-06**) argues that this start-up aspect of CfA is an extension of the larger SNHU culture that goes back to the institution's origins. The respondent briefly recounted SNHU's history as a family-owned business located in Manchester, NH, which is well-known for its international, refugee, and U.S. military populations. Correspondingly, as an early adopter of distance education, the institution has demonstrated a continual commitment to serve the diverse needs of adult students. As the respondent remarked: "Entrepreneurial spirit is in our blood." Without this institutional culture of entrepreneurialism and innovative learning solutions, the respondent argues, CfA would not have been created:

I can't stress enough to you how the importance of the academic climate is in terms of allowing something like a CfA to happen. I can't stress enough. I don't know that CfA could have flourished, just even come to fruition without a climate that is comfortable and committed to entrepreneurship. I think maybe three to five percent of the schools out there today would have enabled CfA to happen.

In sum, the patterns emerging from the interview respondents suggest that culture matters at the departmental, divisional, and institutional levels. Shared commitments, both to the mission and to innovation that directly supports that mission, were evident in the participants' responses.

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As indicated in the comments above, several respondents believe that this cultural commitment is critical to CfA's creation and developmental success. Of note, it does not appear necessary that all SNHU employees share the educational values that CfA espouses, that is, the components of the innovation itself, i.e. direct assessment, the replacement of the credit hour, flexibility in scheduling, the B-to-B model of student recruitment, unbundling of the faculty role, etc. It is likely that many employees at COCE and UC would give preference to the learning models and business models that comprise their individual divisions. Rather, what matters is that these employees share the cultural values that encourage innovation to happen and give it space and resources within the institution to materialize.

4.8 SOCIAL NETWORKS

The organizational factor **Social Networks** is comprised of two study propositions, 13 and 14. *Proposition 13: Communications, such as newsletters, meetings, website, etc., regularly keep employees aware of and involved in direct assessment CBE.*

Not much evidence exists to suggest that cross-division or cross-college communications have historically occurred around College for America. Select press releases—such as mentions of CfA in presidential speeches, academic publications, and other forms of media—are viewable from SNHU's main webpage. Similarly, archives of the *Monthly Journal of the Vice President for Academic Affairs*—largely a University College publication—occasionally mention CfA and provide briefs pertaining to the college. On the whole, communications about CfA to the broader SNHU population appear limited.

This apparent informational divide appears to align directly with the purposeful decentralization of SNHU's divisions. Study participants reinforce this observation, as one respondent describes:

R-010: I think when we first started [CfA]...there wasn't as much communication [across the divisions], there weren't a lot of things that we worked together on that applies to the university, and that was by design.

CfA's focus on a nontraditional working adult population, its B-to-B model, and its direct assessment learning model were all facets that tended to differentiate it from the other divisions. Moreover, because CfA was purposefully and physically separated from the other divisions, there was little reason to raise UC or COCE employees' continual awareness of or involvement in CfA. Leadership did not even need to obtain these employees' acceptance of direct assessment CBE, because the employees were not expected to adopt it. Instead, as another respondent notes, CfA staff spent much more effort communicating with external stakeholders to build support within the higher education industry:

R-07: We actually started talking more to the world than we did [within the institution] about what had happened, how we were the first to get Title IV financial aid for direct assessment, and we started doing a lot of PR and a lot of media.

This approach to communications departs somewhat from the diffusion of innovation theory guiding this doctoral study. The emerging patterns suggest that CfA began with internal stakeholder buy-in at the executive leadership and Board of Trustees level. Select employees were made aware of the project and were moved into new positions as the core leadership for what would become CfA. At that point, however, communication and information sharing efforts moved largely outside of the institution. New hires were brought in whose qualifications fit CfA's start-up culture. Engagement with external stakeholders further supported and promoted CfA's growth toward sustainability. Now, approximately five years into the project, leadership is actively turning focus inward and looking for ways to share information and effective practices across the three colleges through the One University Initiative. The implementation of this initiative suggests a pattern that largely corresponds to study proposition 14.

Proposition 14: Select employees have championed direct assessment CBE to their peers through narrative, incentive, or other means—to facilitate its adoption.

As interview participants share, the decision to create the One University Initiative arose as leadership acknowledged the disadvantages inherent to operating highly decentralized divisions within SNHU. Such disadvantages include: 1) redundant acquisition of resources, 2) incoherence and incongruence in how the divisions tell their stories and market SNHU externally, and 3) missed opportunities to share information and build upon existing intellectual property and processes within the institution. To overcome these disadvantages, senior leadership developed the One University Initiative as a set of working groups based on major functions that run across all of SNHU's divisions. As one respondent (R-09) notes, each working group has "a champion who is a member of the executive team." The purpose of each champion is to represent his or her division, share useful information with other working group members, and glean useful information that can be used to enhance that champion's division.

Over half of the interview participants brought up the One University Initiative, either as part of their discussion of sharing resources (Question F), or as an extension of culture as a critical success factor (Question L). The respondents generally spoke about the initiative in similar terms, indicating a common understanding of its purpose:

R-03: There could be a lot of really great idea generation, you know, really good brain power, isolated in these [divisions] that could have solutions and ideas that would be directly applicable to the other units, but without that facilitated cross-discussion, it might never happen. It might never be known, right? So it's really an idea to come together and...collectively to manage this bigger picture of the university and how we're gonna move forward to have a culture that's the same.

Moreover, many of the interview participants spoke positively about the One University

Initiative not only from the perspective of what they as CfA staff could share, but also from the

perspective of what they could learn:

R-04: I'm really excited to see what things can go across the university. I think the autonomy has been really important, and it will be challenging to figure out how much autonomy do we need to keep moving and serving our different populations in our different formats. But then what can we share across?

R-05: We talk about enrollment, and we talk about "How are you measuring this?", and that's been really helpful. Because now you have a sounding board of folks who are going through the same things, but you can speak openly in a way that maybe you don't with other institutions...So I think that sharing of expertise and human resources has been really key.

With particular regard to proposition 14, the presence of CfA champions on these

working groups suggests a potential for them to facilitate the adoption of direct assessment CBE

throughout the institution. Indeed, interview participants indicated that this is already happening.

One respondent discusses ways in which specific aspects of CfA, such as data analytics and

student assessment rubrics, is being adopted—even in small ways—at University College:

R-06: University College is a better program because of what we've learned from our colleagues in the online division and our colleagues in CfA. And I mean colleagues in the design and build who aren't traditional full-time faculty [or] tenured faculty. They're not [faculty], but they are as good as it gets in terms of design and assessment, incorporating assessment into projects, [and] designing rubrics. 90% of [UC] faculty didn't use a rubric. So we are all better—all three colleges—are better....One thing [UC] learned from the online division was how the use of big data—which scared the hell out of everybody—is actually instrumental in informing our decisions about student behavior.

Another respondent discusses how a CBE-specific working group is influencing adoption of

CBE itself in the other divisions:

R-09: There's a CBE working group, so [CfA staff] plays a big role in that. While they're doing their direct assessment model, online [is] developing an accelerated CBE model that looks more like Western Governors, and they're collaborating on a hybrid CBE model which should be CfA for your Gen-Ed and now you're

moving into more traditional accelerated models for the rest of your course load. We're trying to develop a full portfolio of CBE programs, so [CfA staff is] a major player in that working group.

This use of cross-divisional communication is more recent in CfA's history, suggesting perhaps that proposition 13 was not initially important from an internal perspective. However, it may also be argued that CfA's achievements as a standalone division have become of sufficient magnitude to now warrant its acceptance and—to some extent—adoption within the other internal divisions. While there does not appear to be a direct incentive to the other divisions to adopt CBE, there is an apparent value proposition and an alignment with SNHU's mission to support student success in its adoption. Through the working groups, SNHU is using CBE champions to enhance UC and COCE employees' understanding of the benefits of and increasingly adopt aspects of CBE. This activity reinforces proposition 14, and overall suggests that Social Networks is becoming more and more influential for CfA's (and SNHU's) continued growth and sustainability.

4.9 CHAPTER SUMMARY

The data collected and analyzed through document review and interviews with 10 executive leaders and administrators provided detailed insight into how the diffusion of direct assessment CBE within SNHU through CfA. Table 11 outlines the findings of this study.

These data suggest that each of the eight organizational factors is present and influencing—to varying degrees—the planning, development, quality assurance, and delivery of CfA's direct assessment CBE learning model. These findings are discussed in more detail, along with implications for policy and practice, in Chapter 5's Conclusion.

Table 11. Summary of Findings

- The missions of SNHU and CfA seem strongly aligned around such values as student success, access to affordable education, and innovative learning models
- CfA employees understand and appear committed to these values—these values create the foundation of CfA's culture.
- Such values are further evident in the strategic vision for CfA—a vision that uses principles of Christensen's disruptive innovation theory to pursue direct assessment CBE as a promising alternative educational model.
- This strategic vision includes: (1) situating CfA within its own space with permission to operate independently of other divisions, (2) building its own staff/processes, (3) serving an audience for whom direct assessment was likely the only option for higher education, and (4) planning from the outset to scale the model over time.
- Early CfA leaders developed an implementation plan that includes these processes: (1) disaggregating traditional faculty roles across curriculum and assessment, coaches, and reviewers; (2) building quality CBE programs that are project-based, industry-relevant, and aligned with SNHU degrees; (3) designing the technology platform for learning management; (4) complying with regional accreditation standards; (5) using a Business-to-Business model for student enrollment; and (6) crafting a business plan to keep costs low and also scale for sustainability.
- CfA hires employees—both from internal divisions and externally—who have the specific skill sets needed for the job and who also fit the CfA culture.
- CfA's culture incorporates mission-oriented values as well as an appreciation for emergent, iterative improvement within an ongoing cycle of effort and feedback.
- A balance between employee autonomy, leadership support, organizational decentralization, and dedicated resources (at the university and divisional level) are among the factors respondents consider critical to CfA's creation and development.
- Championing of CBE adoption across SNHU's divisions is increasing through the One University Initiative.

5.0 CONCLUSION

Direct assessment competency-based education is a recent phenomenon, particularly in higher education, that offers an alternative learning model with operational implications around the roles of faculty and staff, the use of technology, student engagement and assessment, and the influence of external stakeholders. The literature review presented in Chapter 2 situates direct assessment CBE as a disruptive innovation. It further builds a theoretical framework around the diffusion of innovation in an attempt to explore how an institution of higher education has adapted its operations to adopt direct assessment CBE.

Understanding how direct assessment CBE has been diffused through a HEI may allow other institutions to determine whether and how they might also adopt this innovation. Such insights may further be of benefit to the higher education industry, accreditors, and government policymakers, as they seek to standardize and effectively evaluate CBE implementation. Accordingly, this study's research model outlined in Chapter 3 attempts to identify organizational factors and discern the ways in which they affected the planning, development, quality assurance, and delivery of CfA's direct assessment CBE learning model.

This final chapter will summarize and synthesize the findings from Chapter 4's data analysis in a discussion of the research questions. I will then discuss the study implications for practice, the higher education industry, and policy. Finally, I will address the limitations of this research and will offer recommendations for future inquiry.

5.1 ANSWERING THE RESEARCH QUESTIONS

The research questions guiding this study are:

- 1. When examining the implementation of a direct assessment competency-based program at an institution of higher education, which of the identified eight organizational factors are present?
- 2. How do these organizational factors influence the diffusion of direct assessment CBE?

Empirical evidence gathered through this research study suggests that—to greater and lesser extents—all eight organizational factors are present and influential in this case. With regard to strategic vision, CfA has a clearly presented mission statement that aligns with SNHU's mission statement. This mission statement is written on CfA's cafeteria wall and is thus readily visible to employees. Alignment between SNHU's mission and CfA's mission creates at the very least a consistency in espoused theory and a voiced commitment to shared values such as student success and innovation. At best, these shared values inform employee behavior as staff members embody these values and act in accordance with them. When this occurs among staff with administrative and leadership roles, these mission-driven values help to direct strategic planning and decision-making.

Correspondingly, interview respondents were able to talk about the strategy and vision for CfA and how this aligned with SNHU's mission-related commitment to student success. Document review further outlined a strategy that had its foundation in applying disruptive innovation principles to the question of how to serve students who otherwise could not gain access to higher education. Most notably, document review and interviewee accounts collectively suggest that the direct assessment CBE program emerged from this process as a vehicle to student success. In other words, the need to serve the mission and values came first and directly influenced the visioning of an innovative direct assessment solution.

With regard to processes of implementation, review of the three NEASC substantive change requests and the NGLC application indicates that leadership developed an implementation plan for CfA. Study respondents continually commented on the challenge of integrating multiple pieces—such as CfA's direct assessment learning model, the B-to-B model, and technology platform—into a cohesive program. Yet it is equally noteworthy that participants spoke about these challenges in highly-informed ways; while the processes participants undertook to address these challenges were organic, or as one respondent termed it, "emergent," such processes did not appear disorganized, haphazard, or chaotic. Participants spoke about creating plans (e.g. committing to the use of open educational resources and piloting a new set of degree competencies) and then allowing for adaptation in the implementation of these plans (e.g. deciding to build their own educational resources instead of taking time to find them and changing the learning projects based on student feedback).

This ability of employees to shape and reshape the implementation of CfA also points to the presence and significant influence of the locus of control factor. Employee roles comprise a key aspect of locus of control that interviewees discussed. Role identity appears largely associated with the specific functions that comprise CfA. That is, respondents typically described themselves along the lines of what they do within a particular team, such as workforce strategies, marketing and strategy, research and analysis, curriculum and assessment development, and so forth. Both executive leaders and administrators with hiring responsibilities mentioned the consideration they give to candidate qualifications. Largely, such qualifications included meeting the requirements of a particular function ("academically-qualified," or with a "specific skill set") and fitting into the CfA culture ("mission-driven," "innovative").

Employee autonomy was another aspect of locus of control that interviewees deemed influential. All but two of the respondents mentioned employee autonomy as either a purposeful strategy or a critical success factor that facilitated CfA's rapid and effective development. Conversely, discussion of intellectual property and traditional notions of academic freedom did not occur with interviewees, largely because CfA is set apart from University College. CfA has its organizational structure and does not participate in shared governance. Furthermore, the faculty role is unbundled in this CBE model, primarily disaggregated across the curriculum and development team, learning coaches, and reviewers. Thus, while the freedom to operate autonomously and with the freedom to experiment is important to CfA employees, more traditional faculty concepts of academic freedom and intellectual property rights were not of concern.

A contributing reason to why intellectual property rights is not a concern in the case of CfA is that the curriculum and assessment development team largely relies upon external stakeholders and contracted subject matter experts to inform curriculum development (versus an internal CBE model in which faculty may be the primary curriculum developers). Even though faculty do not play as much of a role in CfA's learning model, the university Provost reviews each degree to ensure that it conforms with SNHU and NEASC accreditation standards. Likewise, account managers and focus groups with business partners ensure a constant feedback loop with employers. CfA's use of data analytics, project reviewers, and learning coaches are also in place to gauge student effort and progress, providing a student engagement feedback loop as well. Thus, there are internal and external quality checks to inform from both industry and

academic perspectives that inform, validate, and improve upon the design and delivery of CfA's learning model. Such multi-stakeholder quality assurance efforts further support the presence and influence of the locus of control factor.

In terms of the leadership support factor, none of the study participants mentioned any neutral or negative perception of SNHU and/or CfA leadership. Rather, respondents spoke favorably about President LeBlanc's leadership, attributing CfA's creation and successful implementation to his vision and the Board of Trustees' trust and investment in the project. Leadership support was most notably linked to employee autonomy in that employees felt that they had "the best of both worlds"—the freedom to innovate and experiment without fear of failure coupled with the right amount of support from leadership to transform employees' ideas into reality.

The structure and infrastructure organizational factors are closely connected to this notion of the right amount of support and autonomy. Specifically, as document review revealed, SNHU operates with a decentralized structure. Each division, including CfA, operates independently of the others. Only select, back-facing operations, such as general counsel, finance, and accreditation, are centralized. As mentioned above, each unit has a distinct governance structure. Yet simultaneously, select resources can be directed and dedicated toward specific initiatives, such as surplus revenue generation to fund CfA's development. As with the balance of autonomy and support, interviewees responded favorably to the largely decentralized nature of CfA. Several respondents also discussed the fact that while they were connected to the larger university, decentralization meant that they did not require the university as a whole to accept direct assessment CBE in order to operate effectively. As such, they tended to attribute the relatively rapid development and deployment of CfA to its ability to operate largely as a "startup" firm.

This idea of CfA as a "startup" was constant across all of the study participants, and it speaks to the presence and influence of CfA's culture as well as the larger culture of SNHU. SNHU's history of entrepreneurialism and espoused commitment to innovation is evident from the mission and history depicted on its website. Interviewees in positions of executive leadership further reinforced their awareness of and belief in the influence of this entrepreneurial history. Student success and innovation were the two values that are clearly described in the SNHU mission and that were discussed most by study participants. Indeed, most respondents commented on the differences between working at CfA and working in "traditional higher education," noting with appreciation their ability to influence actual change. While there was certainly an element of personal satisfaction in being a part of innovative change through direct assessment CBE programming, the language respondents used tended to focus not so much on "What's in it for me?" (Hiatt and Creasey, 2012), but rather on "What's in it for our students?" The concept of innovation, of transformative programming, and of adopting a "not yet" culture in which employees constantly improve upon the organization's products all seem to have student success as their central focus and binding agent. That these values are so apparent in the empirical evidence suggests both a strong presence and influence of culture.

Finally, the social networks factor appears to have had less initial presence at CfA, but this presence has grown over time. As respondents shared, initially CfA communicated much more with external stakeholders—employers, accreditors, and policymakers—than they did with the internal divisions, because these stakeholders had more influence over the potential success and sustainability of the college. While respondents stand by the importance of autonomy and decentralization, they nevertheless acknowledge that it is important to remember—especially as the division grows—that CfA is part of a larger "university umbrella." Accordingly, the recently implemented One University Initiative provides evidence of a growing influence of social networking to champion direct assessment CBE across the institution. Respondents are already providing examples of how cross-divisional efforts under this initiative are leading to the adoption of select CfA processes (e.g. assessment rubrics and data analytics) and even CBE programming. Though social networks may have not had much initial influence in this case, the One University Initiative suggests that this factor is becoming more influential for next-level growth for CfA as well as strategy and sustainability at the institutional level.

5.2 IMPLICATIONS AND FUTURE RESEARCH

This research study was designed to measure the presence and influence of eight organizational factors in the diffusion of direct assessment competency-based education in a private, nonprofit higher education institution. The findings that each organizational factor was present and influential in the case of College of America has implications for higher education practice, the industry, and policy.

5.2.1 Implications for Practice

First, educational leaders should be aware of the potential for these organizational factors to influence how employees approach, perceive, and accept or reject innovation and change within the institution. As suggested in the discussion of the findings above, several of the factors

overlap and influence one another. For example, strategic vision and culture seem mutually reinforcing in that a strong strategic vision reflects the institution's mission, vision, and values, which are also—particularly in this case—embodied in the institutional culture. Moreover, College for America's case reinforces the proposition that institutional values that support and encourage innovation further influence institutional members to be receptive to adopting innovative change. When combined with employee autonomy, as several interviewees indicated, CfA's culture of innovation—with reinforcement at the university level—also seems to empower staff members at all levels with the confidence to voice their ideas, because it is understood that their contributions have value.

Furthermore, locus of control, leadership support, structure, and infrastructure also appear to be overlapping factors. This case study's findings suggest that successful division of direct assessment CBE also derived from a balance between 1) employee autonomy and empowerment to take risks; with 2) leadership supporting these employees and backing their recommendations; and 3) a decentralized structure that reinforces not only employee but also operational autonomy; with 4) access to institutional resources, such as funding and accreditation, as well as the ability to obtain resources dedicated to the division, such as staffing, governance, and the learning management system. While this study cannot generalize and point to a level of autonomy and decentralization that is fitting for all institutions seeking to diffuse a direct assessment innovation, I argue it is important to consider the tension between allowing the innovative project to incubate on its own, and, as some respondents put it, "tethering back to the mother ship." Thus, leaders who are in the planning stages of an innovative project should contemplate how their organization is structured, the resources they have available to dedicate to and/or generally support the project, the extent to which project staff roles will depart from traditional employee roles within the institution, and thus how much autonomy and leadership support will be given to individuals in these roles.

Furthermore, internal and external communications create significant linkages among the organizational factors explored in this study. Limiting cross-divisional communication in the early stages of College for America appears to have had some part in its successful development. This also reduced potential criticism and resistance from the other divisions, thereby—to some extent—freeing all parties to continue business as usual for a time. The eventual decision to use social networks to engage in cross-divisional information sharing appears a more democratic, peer-based, and low-risk way to persuade staff members from these divisions to adopt aspects of CBE. In contrast, extensive external communications to glean upfront buy-in from employers and regulators seems to have been essential for several steps of CfA's development, including: 1) defining the scope of the direct assessment learning model; 2) selecting and building the business-to-business model; 3) obtaining regional accreditation and U.S. Department of Education approval for Title IV Financial Aid; 4) informing the creation of their learning management system; and 5) furthering conversation and action towards CBE standardization across the higher education industry.

5.2.2 Implications for the Higher Education Industry

Accordingly, CfA's case study of direct assessment CBE has implications for the higher education industry as a whole. One such implication is around how educators will continue to engage with ICT providers to effectively and efficiently leverage digital technologies for student engagement and learning. As one respondent pointed out, this engagement is going to become increasingly important not only for institutional scaling of CBE programs, but also for crossindustry standardization and resource management:

R-08: You really have to have good procedures and have good processes as you scale new business. Technology only makes a good process better, but technology does not fix a bad process....CBE to me should become more cost effective and scalable because you won't be talking about a whole bunch of custom solutions; you're gonna be talking about managed packages of applications that work for major functions that companies can point and click and configure, versus build and build and have to maintain a large IT staff to continually customize and support on their own.

The respondent pointed to IMS Global Learning Consortium as a convener of several technology working groups on initiatives surrounding these issues, including: Connecting Credentials, Credentialing Transparency, Open Badges, CBE, and Extended Transcripts for CBE. Among the most pertinent technology issues pertaining to CBE, IMS Global (2016) asserts, is to define a *common interoperability standard* for CBE. The need for this standard reflects the above study participant's concerns, namely, that it is difficult for edtech providers to justify investments in technology applications and solutions that only serve the needs of a small number of institutions.

The solution IMS Global's (2016) working group seeks, would

define a minimal data model that is sufficient to support interoperability needs and also flexible enough to sustain local differences in terminology and approaches...For example, the higher-order curricular elements assessed at the end of a program are referred to as "program outcomes" at some institutions, while other institutions might call these "competencies." Either way, the important commonality they share is the need for student outcomes data related to these elements to reflect the structure of the CBE program and resulting credential.

To realize such a solution, IMS Global asserts, would require developing 1) a competency hierarchy that organizes the relationship of competencies within programs; 2) a data model based on competency type, thereby accounting for variants in institutional terminology; 3) competency coding (akin to higher education course codes, e.g. ENG 101) that would allow for the

development of competency code equivalents across institutions; and 4) competency scores that aggregate and allow for analysis of student performance by competency over time.

These technology-related issues indicate and correspond to larger issues surrounding the growth and sustainability of higher education CBE, namely, its scalability and (inter)national standardization. Currently, a single, standard definition exists neither for competency-based education nor for direct assessment CBE. This is, in part, due to its novelty; for example, the U.S. Department of Education encourages experimentation with CBE programming and thus its *Competency-Based Education Experiment Reference Guide* (2015) intentionally resists providing a stringent definition. Moreover, one of the argued strengths of CBE is its embrace of aspects of differentiated instruction and adaptive learning to accommodate individuals of diverse backgrounds and learning styles. From this perspective, attempting to impose common standards upon CBE may impede its development or restrict its usefulness.

Nevertheless, as IMS Global suggests, allowing for interoperability across CBE programs would support not only edtech companies in building technology solutions for program implementation, but also the codifying of CBE as a reliable, replicable form of higher education. Indeed, this process is already in motion with the October 2016 release of the Competency-Based Education Network's first draft of *Quality Standards for Competency-Based Educational Programs*. Such effort is a critical outcome of what may be considered a burgeoning CBE community of practice (Wenger-Trayner and Wenger-Trayner, 2016). As Wenger-Trayner and Wenger-Trayner discuss, communities of practice consist of practitioners who "develop a shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems—in short a shared practice" (2015, p.2). Over 600 institutions are developing CBE programs, and C-BEN alone represents over 30 of them. These institutions represent all types of higher education

institution, each with various stakeholders seeking to influence CBE development. Accordingly, understanding the organizational factors at play within a given institution's adoption of direct assessment CBE may provide insights into how CBE may be adopted and developed at other institutions. Furthermore, it may provide perspective for interacting with other institutions, appreciating their contextual experiences, and looking even more broadly at the interactions, networks, and conveners of the community of practice as a whole.

5.2.3 Implications for Policy

Finally, this study has implications at the policy level as government and policymakers seek struggle with: 1) how to define CBE, 2) how to measure the effectiveness of CBE, and 3) how to standardize CBE, and 4) how to properly allocate funding and financial aid to CBE programs. Given the diversity of institutions that are exploring CBE, I appreciate and encourage the federal government's continued funding of experimental initiatives, particularly in concert with the think tanks, foundations, and professional associations currently investing in CBE throughout the nation. Direct assessment CBE's current iteration-enhanced with digital technology-does stand in stark contrast to the traditional, credit-hour educational model. While I thus acknowledge the difficulty inherent to situating direct assessment within the existing educational framework, I argue that these agencies and decision makers should perhaps not focus so much on making direct assessment "fit" this framework. One example of the debate over fit is the U.S. Department of Education's Office of Inspector General's critical assessment of the Higher Learning Commission (2015). The report asserted that the regional accreditor did not appropriately review direct assessment CBE programs, citing in particular a lack of evidence of substantive student-faculty interaction (p. 11). In the case of College for America, as with many

CBE programs—including but not limited to direct assessment—faculty roles are disaggregated across staff and other student resources. For these programs, being forced to conform to a certain notion of substantive student-faculty interaction (depending on how one defines this notion) would alter or arguably diminish the learning model they have created. I suggest that if the government is going to encourage innovation and experimentation, and if higher education institutions are likewise in search of innovations that have the potential to disrupt and grow their position in the industry, then they need to allow for the realization of initiatives and programs that do not fit traditional models. They should understand how organizational and other factors influence and engender the development and adoption of disruptive innovation. They should be open to their own engagement with and potential acceptance of these innovations. Moreover, such openness need not and should not be at the cost of quality performance expectations and accountability standards. C-BEN's draft of quality standards for CBE seems to me like a step in the right direction toward aligning CBE with the spirit and intent of standardization and accreditation frameworks without forcing compliance with a divergent educational model. I hope that this draft will bring about meaningful and productive engagement between policymakers, accreditors, and educators in the coming months.

5.2.4 Limitations and Recommendations for Future Research

While this study provides valuable insight into how organizational factors affect the diffusion of an innovation such as CBE into higher education institutions, it has distinct limitations that offer opportunity for future research. First, because this study relies upon case study methodology, it is limited in scope in two significant ways:

- 1. Institutions of all types and sizes—small and large, single institutions and state systems, public and private, nonprofits and for-profits, two-year, four-year, and graduate schools—are developing CBE programs. While focusing on one institution—in this case, a private, nonprofit HEI—allows for a rich, in-depth case study, the findings from this study are limited to representing the context and situation of this one institution. Further research should be conducted that applies this study's research methods and model to other institutions of varying scope. Such continuation of and contribution to the discourse could eventually allow researchers to observe emergent patterns and themes at a larger level of analysis.
- 2. Similarly to the diverse scope of institutions, there are various forms of CBE programming. Some institutions, like SNHU, develop a CBE program that is set apart from the rest of the institution. Other institutions have created integrated, more hybrid CBE programs. In fact, it is arguably less common to find a CBE program as removed from other institutional programming as College for America has been. This is thus a study limitation, because many institutional leaders are working in situations where they must persuade existing employees (including full-time faculty within shared governance structures) to adopt CBE. College for America was able to circumvent this step in the process. For this reason, additional research should be undertaken across these various CBE models and how they are diffusing within different governance and organizational structures.

Another limitation of this study is that I purposefully limited my case study to one of the eight categories of influencing factors from my research model. Part of my rationale for doing so is that each category is of sufficient magnitude to constitute a significant research study in its

own right. Nevertheless, discourse around the diffusion of CBE in higher education would greatly benefit from additional research studies that incorporate these seven factor categories in addition to organizational factors: task complexity, individual, organic growth, perceived usefulness, perceived user friendliness, perceived voluntariness, and subject norms.

A final limitation of this research study is the scope of the interviewees. Of the 10 study participants, only 2 have leadership positions that cross all three major SNHU divisions. The remaining 8 employees are leaders and administrators within College for America. I made the decision to focus on leaders and administrators with this first study because I wanted to engage employees who had extensive knowledge of and at least some involvement in CfA's planning, development, oversight, and quality assurance. Such a focus, however, does limit the perspectives one can obtain from interviews. Thus, additional research of CfA should include interviews of part-time employees—such as the learning coaches, reviewers, and subject matter experts-as well as full-time employees who are not working in administrative or management positions. Additional research could also include interviews with more personnel from SNHU's COCE and UC divisions. I initially chose not to focus on these divisions, as CfA's development as a standalone division meant that COCE and UC employees did not need to accept or adopt CBE. However, these employees could still provide more comprehensive insight into the institutional diffusion of the CBE innovation, especially as SNHU's One University Initiative is now encouraging the other divisions to integrate aspects of CBE into their programming. Engaging with these additional employees would also help to mitigate any potential biases held by those who directly implement College for America. Future studies should thus include a broader, more systemic and longitudinal inquiry of College for America as it continues to evolve.

5.2.5 Concluding thoughts

This chapter has provided a summary of findings from this case study of the diffusion of direct assessment CBE in Southern New Hampshire University's College for America. Each of the eight organizational factors—strategic vision, processes of implementation, locus of control, structure, infrastructure, leadership support, culture, and social networks—were found to be present and influential in the adoption of direct assessment CBE at CfA. Such findings have implications for higher education practice as other educators and leaders may glean insights from CfA's experience as they choose whether and how to develop new CBE programs. This study also has implications for the higher education industry and for policymakers as they engage in questions of CBE's interoperability, scalability, sustainability, and standardization. There are many stakeholders whose perception of and engagement with the direct assessment CBE innovation will continue to influence and reshape how it takes form in contemporary learning models.

As I conclude this dissertation, I recall the words of Ralph Wolff, with which I introduced this study: "I think we're at a moment of time where the meaning and quality of a credential is in question...Therefore, the next five to ten years will be about defining what credentials [academic institutions] are best suited for and what we are most credible at certifying" (2013, p. 31). Conversations around direct assessment CBE are, at their essence, conversations about educational value: What is the value of a credential? What is the value of an educational experience? What is the value of the institution where one has that experience? What is the value of an educated person? And who decides? I posit that the organizational factors discussed throughout this study (as well as the other factors presented in the conceptual framework) all affect our perceptions and answers to these questions. Thus, as both an example

supporting this postulate and a final insight into how CfA might contribute to the value of education conversation, I conclude with the voice of one of CfA's employees:

R-04: We were just at a presentation with some of our students the other day, and [one student] said that he valued education, but he didn't think education valued him and what he valued and his perspective. That had always been a struggle for him. So he graduated high school and—as is the story for so many students—has been bouncing around from community college to here or there. And a lot of the struggle was *not feeling valued*. And so think about that from a fundamental perspective of: How can you be open to unknowing if you don't feel like the organization is really a safe space?...A lot of people attack new models because they feel disruptive, and they're maybe even called disruptive—but then I think part of this work is also establishing: What is the value? I see more clearly, actually, that there is tremendous need for schools of all kinds—higher ed, etc.— to have that safe space and that welcoming place [for students]...to be engaged in the learning process.

APPENDIX A

INVITATION TO PARTICIPATE

[This correspondence was forwarded to potential interviewees through my administrative liaison at Southern New Hampshire University.]

Greetings,

You are invited to participate in a research project designed to study the organizational factors such as strategic vision, processes for implementation, leadership, and infrastructure—affecting the successful adoption of competency-based education within an institution of higher education. I am a doctoral candidate at the University of Pittsburgh engaging in research to complete my dissertation in higher education management. For this research project, I will be interviewing personnel at Southern New Hampshire University and College for America.

All participants must be 18 years of age or older. If you are willing to participate, the interview will ask questions about how College for America came to be, what strategies and challenges were involved, what best practices are in place to ensure quality learning and assessment, and what you believe are the critical factors of its success. There are no foreseeable risks associated with this project, nor are there any direct benefits to you.

Interviews will be conducted in person, at a location at your institution. Interviews will last approximately one hour. Each participant will receive a copy of all questions prior to the interview. I will take some handwritten notes during the interview and will digitally record the session. This is an anonymous interview, so your responses will not be identifiable in any way. In addition to the interview, I plan to request copies of artifacts documenting the process of adopting competency-based education. This may include planning documents, meeting minutes, reports, etc. These documents may be redacted.

All responses are confidential, and results will be kept under lock and key or in passwordprotected files. Your participation is voluntary, and you may stop the interview at any time. Data and documents collected will be destroyed upon your request.

If you agree to participate in this study, please sign the attached Informed Consent Form and return to me via email at <u>seh92@pitt.edu</u> or in person. Please email or call *[liaison's contact information will be included here]* to arrange an interview time. You are also welcome to contact me directly via email or phone at 717-439-6928 if you have any questions.

Thank you for your time. Sincerely, Sarah Hansen University of Pittsburgh

APPENDIX B

INFORMED CONSENT FORM

Study: Disrupting and Diffusing Innovation in U.S. Higher Education: A Case Study of Competency-Based Education

Voluntary Consent Acknowledgement:

I have read and understand the information in the invitation to participate in the study and consent to volunteer to be a subject in this study. I understand the interview may be audio recorded. I also understand my responses are completely confidential and I have the right to withdraw from the study at any time. If I withdraw from the study, the information I have provided will be destroyed. I have received a copy of this Informed Consent Form.

Name (please pr	int)	 	
Signature			
Date			

I certify I have explained to the above individual the nature, purpose, potential benefits, and possible risks associated with participation in this study. I have also answered any questions raised by the above individual.

Date_____ Investigator's Signature_____

APPENDIX C

INTERVIEW GUIDE FOR LEADERS AND ADMINISTRATORS

Introduction:

- A. Introduction/Greeting
- B. Do you have any questions for me about this research before we begin?
- C. Could you please review this consent form and sign and date at the bottom? I am providing a copy for your records as well.

Main Interview Questions:

- A. What is the mission & vision for College for America, and how did it evolve from concept to launch?
- B. Who were the key stakeholders/decision-makers involved in this process?
- C. What strategies and/or challenges were considered in planning and launching CfA? (e.g. university support, student learning, resources, technology, business planning) What was your role in planning and addressing them?
- D. Was there a structured process or plan to implement CfA? If so, how was this communicated to you and the SNHU community?
- E. How does CfA's direct assessment model fit with the mission of SNHU?
- F. What is the relationship between CfA and SNHU in terms of organizational structure, governance, communication, and finances? Why or how was this relationship developed?
- G. What resources have been made available to support CfA?
- H. To what extent were employers/industry experts engaged to inform and validate the program design? (Who are these employers? What are their positions (HR)? What is their role and oversight on an ongoing basis?)
- I. Please select one skill (competency) and walk me through the process of how curriculum is developed, how learning occurs, and how mastery is proven for that skill.
- J. What best practices are being carried out to ensure quality learning and demonstration of learning occurs, meeting the diverse needs of all students enrolled?
- K. How did you obtain approval from US Dept of Ed for CfA, and how do USDOE and your accreditation association continue to influence the direction and quality of CfA?
- L. What are the critical success factors affecting CfA?
- M. How do you evaluate success at the program-level and as a college overall?

- N. What are the plans for CfA's future beyond the initial launch?
- O. Are you able to share planning documents?
- P. Can I get back to you with further questions as my research continues?Q. Is there anything I should have asked you, but did not?

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