College to Career Transitions: Understanding Experiential Learning Opportunities offered through Business incubators

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ABSTRACT

COLLEGE TO CAREER TRANSITIONS: UNDERSTANDING EXPERIENTIAL LEARNING OPPORTUNITIES OFFERED THROUGH BUSINESS INCUBATORS

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Northern Illinois University, 2019
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The transition from college to careers has remained relatively consistent for decades. This is no longer the case as numerous external factors, such as the Fourth Industrial Revolution, technological advancements, and changing workforce needs, are simultaneously at play. In addition, higher education institutions across the United States are facing numerous challenges, such as unprecedented access to a college education, funding allocations, and students simultaneously working while attending college. These are just a few of the items which are complicating this transition and are influential factors in this discussion.

A college degree has become an entry point for many professional careers, yet concerns have been raised about how quickly colleges and universities are able to respond to the rapidly changing workforce. Since learning is not merely relegated to the classroom, this dissertation focuses on experiential learning opportunities that can address these concerns and help students with career preparedness. Specifically, this qualitative multi-site case study focuses on experiential learning opportunities offered through university-affiliated business incubators to gain a better understanding of how they may assist undergraduate students prepare for the
workforce. The study is comprised of five business incubators located within a 50 mile radius in the Midwest portion of the United States.

The findings from this research are significant because it identifies opportunities for students from a variety of disciplines to develop the type of career-readiness skills that are needed in the workplace. In addition, it identifies ways to help strengthen ties between local economic development efforts, entrepreneurial ecosystems, and higher education institutions. The three key categories remained consistent throughout the study: essential skills, multidisciplinary opportunities, and applied learning.
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COLLEGE TO CAREER TRANSITIONS: UNDERSTANDING EXPERIENTIAL LEARNING OPPORTUNITIES OFFERED THROUGH BUSINESS INCUBATORS

BY
LUANNE K. MAYORGA
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A DISSERTATION SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE DOCTOR OF EDUCATION

DEPARTMENT OF COUNSELING AND HIGHER EDUCATION

Doctoral Director:
Carrie Kortegast
ACKNOWLEDGEMENTS

Reaching this point in my professional career has been a remarkable journey. Despite my parents’ best attempts, my early years were filled with naivety and acceptance of the status quo. It would have been unimaginable at that point to think I would eventually receive a doctoral degree. I believe in divine intervention and the need to fulfill what it is we are supposed to accomplish in our lives, even if we have detours along the way. First and foremost, I would like to thank God for never giving up on me, the writings of Saint Thomas Aquinas, and my parents. My faith grounded me, helped me maintain focus, and filled me with the necessary wisdom to complete this journey. For too long I tried to silence the sometimes nagging little voice that kept trying to alert me that I was on the wrong path in life. It took an abrupt wake up call to make me realize there is something more I am meant to accomplish.

I would like to thank my dissertation chair, Dr. Carrie Kortegast, who willingly took on someone from another discipline. Dr. Kortegast put in countless hours helping me hone my writing skills and adapt to the field of education. There is still a lot of work and polishing needed for my academic writing, but at least I am on my way! I would also like to thank Dr. Renique Kersh and Dr. Virginia Wilcox for sharing their expertise and continually challenging me. Additionally, I would like to thank all of the individuals who participated in this study. Each individual I interviewed welcomed me into their surroundings and allowed me to view daily interactions and the energies that encompass their incubators. The directors of business incubators were absolutely wonderful. Several professors shared their perceptions and insights.
during their busy summer months and students took the time from other commitments to participate in the study.

There are several individuals who have played instrumental roles in my journey. My husband, Miguel, has always been at my side and encouraged me throughout the process. It would have been difficult to complete this journey without him! A special thank you to Sue Jaeger Mitchell, who was instrumental in helping me realize that I needed to pursue a doctoral degree at a time when my career felt stagnant. Sue believed in me and encouraged me while others thought I was nuts. I owe so much to Sharon Scalise. She saw ‘the instructor’ hiding inside of me and provided me with an opportunity to teach college courses. The first time I stood in front of the classroom, I knew that I was on the right path and that working with college students was my destiny. David Gay and Rita Haake taught me important lessons about the vast world of entrepreneurship and economic development efforts. I am eternally grateful to Meryl Sussman who provided me with an incredible opportunity to spread my wings and fly. Finally, I would like to thank Jordan Ayan. He challenged me and constantly pushed me outside of my comfort zone. If it wasn’t for him, I may not embrace ambiguity as much as I do today.

This research is dedicated to my children and grandchildren. Hopefully this will reinforce the fact that you can accomplish anything you set your mind to. Don’t let anyone hold you down or make you feel that something is not attainable. You must believe in yourself. This dissertation is proof that the most important gift you can give yourself is believing in your abilities and persevering no matter what obstacles temporarily block your path. Always strive to be the best that you can be and listen to that inner voice trying to push you to do more. Don’t settle for second best. Set your sights towards your destination and let the winds guide your sails to help you complete your journey. But, most importantly, remember the lyrics in Tim McGraw’s song:
“When you get where you’re going don’t forget to turn back around and help the next one in line, always stay humble and kind.”

And finally, to my former student Tulla, wherever you may be … thank you. You helped open my eyes to so much. Every day I try my best to be thoughtful of others and what I can do to help lessen their burdens. I hope this research paves the way for thoughtful discussions surrounding students transitioning from post-secondary education and how higher education institutions can provide them with opportunities to develop the type of skills which will help them throughout their professional careers.
DEDICATION

This dissertation is dedicated to my family. Remember the importance of having enough courage to take that first step. Be curious and always persevere. Quitting is easy … persevering is the difficult part.
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CHAPTER 1
INTRODUCTION

Since World War II, the transition of young adults into the workforce has been relatively straightforward for most vocations or professional fields. Individuals typically remained in their chosen career, perhaps even with the same company, until retirement. However, career pathways\(^1\) are not as linear as they used to be due to the evolution of careers and requisite skills needed in the workforce. As the world intrepidly undertakes the Fourth Industrial Revolution (Leopold, Ratcheva, & Zahidi, 2016), transformational changes to the way individuals live and work is inevitable, as technological advances continue to cause mayhem and directly reduces the number of workers needed for various positions. Likewise, estimates indicate that roughly three-quarters of career-related positions available in the next two decades do not exist today (Leopold, Ratcheva, & Zahidi, 2016). As a result, the educational landscape will continue to be both influenced and shaped by these forces, as students need a solid balance of strong discipline-specific adeptness combined with advanced cognitive abilities (Kreber, 2007).

The discussion of transitions from college to careers has vital importance to national interests, especially since students view higher education as an entry point into professional careers. In fact, a few decades ago, high school diplomas were considered entry-level benchmarks for many workforce positions (Heikkila, 2016), but a college education is now

\(^{1}\) For the purpose of this dissertation, a career is defined as a series of industry related experiences typically resulting in compensation. Career pathways is defined as a course of action leading to a desired field, discipline, or industry.
viewed as a stepping stone. Scholars express concerns about student transitions from college to careers, especially since classroom content may have nominal relevancy to intended careers and, oftentimes, retention of the information is questionable (Terenzini, Springer, Pascarella, & Nora, 1993). In addition, research suggests some students settle when choosing a career pathway instead of determining an optimal fit (Gottfredson, 1996; Lent, Brown, & Hackett, 2002).

More than a decade ago, Bandura (2002) envisioned the need for college students to have conjoined skillsets consisting of multi-faceted competencies” (p. 5) and adaptability in order to be successful in the forthcoming evolution of careers. These shifts are already underway and career pathways are no longer linear, just as Bandura imagined. That being the case, the Fourth Industrial Revolution (Leopold, Ratcheva, & Zahidi, 2016) and the emerging knowledge-based economy are causing a bifurcated labor force in which middle skilled and automated or routine-based jobs are vanishing (Florida & Mellander, 2015). This is problematic for underprepared individuals as they may have difficulty maintaining economic independence. Bandura (2002) notes that “life in a knowledge-based society requires a highly educated citizenry capable of continual self-renewal through lifelong learning to manage the accelerated pace of informational and technological change” (p. 5). Consequently, individuals who find themselves displaced may look towards business ownership as an employment possibility. Yet the landscape surrounding entrepreneurship has also been influx as a myriad of external factors impact individuals’ decisions to start businesses thus resulting in a declination of entrepreneurial pursuits over the last few decades.

Even though colleges and universities have increased entrepreneurship courses and programs, these amplified efforts have produced minimal gains (Duval-Couetil, 2013; Fretschner & Weber, 2013). Research estimates that there are over 3,000 universities worldwide offering
entrepreneurial-based courses or programs (Turner & Gianiodis, 2018) but gaps still exist in the literature despite the growth in both program offerings and empirical research (Bae, Qian, Miao, & Fiet, 2014). Therefore, this dissertation focuses on the convergence of three key topical areas including entrepreneurship, (Wiklund, Davidsson, Audretsch, & Karlsson, 2011), higher education (Bass, 2012; Seifert, Gillig, Hanson, Pascarella, & Blaich, 2014; Stokes, 2015), and career-readiness (Arum & Roska, 2014). Pascarella and Terenzini (2005) caution researchers from having too narrow of a focus when framing their educational studies due to existing complexities on the academic and non-academic sides of a discussion. This study aims to broaden the entrepreneurial lens by looking at experiential learning opportunities at business incubators as opposed to students becoming an entrepreneur.

**Purpose of Study**

The purpose of this multisite case study (Merriam, 2002; Stake, 2006) was to explore experiential learning opportunities available to undergraduate students through business incubators. Specifically, this study sought to understand how business incubators may assist with defining career aspirations and the development of entrepreneurial skills (Hlady-Rispal & Jouison-Laffitte, 2014) for undergraduate college students. The overarching question of this three-essay dissertation is: How do business incubators provide experiential learning opportunities to promote the development of entrepreneurial skills?

This study expands the literature by investigating segues from graduation to career formation, which is a critical juncture in an undergraduate student’s life. It also provides examples of what is learned through a specific type of experiential learning. Additionally, most of the entrepreneurship literature is grounded in quantitative inquiry (Chandler & Lyon, 2001) despite increased usage of qualitative studies in other fields. As a result, emic views revealing
underlying influential aspects, complex factors (Yilmaz, 2013), or inhibitions affecting a student’s decision about pursuing various career choices may be overlooked. However, increased opportunities involving higher order cognitive learning and active involvement with career relevant tasks may aide the decisional process (Lent & Brown, 2013). A student discovery process such as this could produce a deeper understanding (Hill & McGowan, 1999) of career choices undergraduate students make, including perspectives or inhibitions deterring students from pursuing entrepreneurship as a career pathway (Low & MacMillan, 1988) and extend the existing literature.

Overview of Chapters

The complete dissertation consists of five chapters: 1) Introduction to the topic, overview of the research study, and a description of the essay format; 2) Essay One focuses on cognitive experiences gained through experiential learning opportunities offered by business incubators; 3) Essay Two focuses on how experiential learning opportunities aide in the process of student inquiry, exploration, and discovery; 4) Essay Three focuses on the knowledge, skills and competencies gained through participation with business incubators that help develop career-readiness attributes; and 5) Conclusion.

The first essay investigates students’ cognitive experiences and abilities gained by participating in experiential learning opportunities offered through business incubators. Co-curricular participation in business incubators may help aide students in acquiring requisite skills through a variety of experiences. The second essay concentrates on how the experiential learning opportunities offered through business incubators assist students with the process of inquiry, exploration, and discovery. In particular, research for this essay seeks to gain insight into higher-order learning, such as critical thinking, problem solving and other soft skills, which students
should be mastering throughout their undergraduate years. Since research suggests higher education institutions (Duval-Couetil, 2013; Fayolle & Gailly, 2015) influence students’ perceptions regarding entrepreneurship, the third essay focuses on the acquisition of knowledge, skills, and competencies gained through participation in business incubators. This exposure may contribute towards developing career-readiness attributes or instill thoughts of pursuing entrepreneurship as a career pathway.

**Business Incubators and Entrepreneurialism**

For the purpose of this dissertation, a business incubator is defined as an entity created specifically to provide a structure to support, nurture, and help individuals take a concept or idea towards something concrete with the specific intention of entering the marketplace (Davidsson, 2017). A marketplace is defined as an environment to sell goods or services. Business start-ups that have a brand new concept are considered the riskiest form of business entry because individuals typically starting these businesses do not necessarily have prior business experience but may have technical or industry expertise. In many circumstances, the individual forming the business has identified a product or service that fills consumers’ needs. Andersson and Henrekson (2015) consider entrepreneurship to be a crucial element for a successful economy because entrepreneurs are typically dominant factors for causing market disruption and challenging current economic forces. Specifically, they note “a lack of productive entrepreneurs cannot be fully offset by an ample supply of skilled labor or an extensive capital market” (p. 154). An entrepreneurial ecosystem is defined as a supporting network comprised of key stakeholders, or those individuals who have a committed interest, in the success of local start-up businesses.
In contemporary conversations, the terms “entrepreneur” and “business owner” are referred to synonymously, which is incorrect. These two terms do not have the same meaning. An entrepreneur is an individual who causes disruption in a stable marketplace as their innovations challenge the status quo, typically referred to as Schumpeterian entrepreneurship (Andersson & Henrekson, 2015). A small minority of individuals are able to reach this level of market disruption and innovativeness to rightfully have the designation of being an entrepreneur. The appropriate classification of the remaining “entrepreneurs” is that of a business owner or someone who is self-employed. This includes local or regional businesses who typically have positive impacts on their local economies, limited scalability, and may or may not have employees. The latter categorization of businesses constitutes over 90 percent of businesses in the United States and fills voids in the marketplace, but not the sheer magnitude of massive disruption that entrepreneurs cause.

**Constructivism Approach to Learning**

John Dewey was influential in the constructivism movement and many credit him with being the “father of experiential learning” (White, 2005, p. 31) because he conceptualized that a student benefits most from hands-on experiences. Piaget furthered the foundation insisting that knowledge acquisition must be constructed and acquired individually by students through a discovery process and cannot be obtained through passive measures (Drake, 2012). Kolb (1984) advanced constructivism by advocating for bifurcated approaches to learning allowing students to apply their newly acquired knowledge. Once the student receives initial information on a particular topic, the exploration process begins while they identify additional information or resources needed to gain a thorough understanding of the topic at hand.
Research confirms that learning takes place outside of the classroom (Kuh, Branch-Douglas, Lund, Ramin-Guynke, 1994; Terenzini, Springer, Pascarella, & Nora, 1993). Since it is suggested that intelligence, or one’s ability to navigate complex information, can be an important determinant of success on the job (Gottfredson, 1997), it is important for students to have ample opportunities to partake in co-curricular learning. Therefore, the creation of co-curricular models and learning experiences that have the capability of extending and expanding educational endeavors can provide students with the cognitive challenges necessary as they embark upon rapidly evolving industries when they enter the workforce (Seibert, Crant, & Kraimer, 1999). Bandura (2002) emphasizes that students’ need to become “agents of learning not just recipients of information” (p. 4) which aligns with the ancient Chinese proverb by the Confucian philosopher and teacher Xun Kuang (often referred to as Xunzi), “I hear and I forget. I see and I remember. I do and I understand.” (Hagen, 2011). In other words, the type of practical experience involving an individual solely performing a defined set of tasks and working through a scenario is difficult to replace. As such, business incubators offer a rich type of constructivism-based experiential learning opportunity worth of investigation.

**Conceptual Framework**

Two theories provide the grounding for this dissertation. The first one, Signaling Theory, can be thought of as an outward-facing indicator which helps companies identify potential candidates who are qualified for a position. Social Cognitive Career Theory (SCCT), on the other hand, is an internal-facing component based on efficacious career-related behaviors.

**Signaling Theory**

Signaling Theory is based on the notion that individuals entering the workforce can convey work related signals to potential employers about their abilities (Arcidiancono, Bayer, &
Hizmo, 2010). There are a variety of positive signals, including educational achievement and credible informal sources (Albrecht & van Ours, 2006). In essence, the sender conveys key information to the receiver who must then interpret or decipher the information (Connelly, Ireland, Certo, 2011).

According to Bartlett (2012), Signaling Theory is derived from neoclassical economics which focuses on the phenomenon surrounding human behavior and choices individuals make regarding their well-being. When looking through the lens of marginal costs and benefits, Signaling Theory has similar characteristics to Human Capital Theory with regards to an individual’s acquisition of education or training (Bartlett, 2012). However, there are distinct differences between the two theories concerning the premiums employers pay for education and the amount of education individuals feel is necessary (Hussey, 2012). Nevertheless, some researchers consider Signaling Theory to be an extension of Human Capital Theory (Tan, 2014).

Riley (2001) notes that earlier literature used terms such as “screening” and “signaling” interchangeably (p. 438). The term ‘signaling’ will be used in this dissertation because it better conveys the concept of a student communicating their career-readiness and abilities to potential employers.

**Social Cognitive Career Theory (SCCT)**

Bandura’s Social Cognitive Theory provides an understanding of phenomena in a variety of disciplines. Bandura (1991) discusses how most research on decision-making processes takes place in static environments. These environments are more routine-based with minimal interference compared to entrepreneurial environments which are often dynamic (Acs & Audretsch, 2010). For example, entrepreneurial environments typically require quick decisions, working through ambiguous situations, and encountering a variety of constraints (such as time or
money). Sometimes these decisions result in unintended consequences. Therefore, students working in dynamic environments, such as business incubators, are provided with exploratory experiences (Bandura, 1991) that can help develop career-related skills.

Efficacy, as it relates to an individual’s successful completion of a particular task, is another large component of the Social Cognitive Theory. However, gaining a true measure of one’s self-efficacy levels can be difficult because it typically fluctuates depending on a specific situation or context. As such, measuring efficacy levels across a continuum involving various tasks, assignments, and contexts can provide a more realistic view (Bandura, 1997). An individual who has confidence about successfully completing or mastering a specific task may have elevated levels of efficacy (Keh, Foo, & Lim, 2002). On the contrary, if an individual feels they cannot adequately perform a skill, then they will likely demonstrate lower levels of efficacy. The literature suggests that situational successes or failures can have influential impacts on overall efficacy levels (Dimov, 2007).

Social Cognitive Career Theory (SCCT) finds its origins in Bandura’s (1986) Social-Cognitive Theory concerning “human self-development, adaptation, and change” (Bandura & Locke, 2003, p. 97). SCCT primarily focuses on “contextual variables related to making (formulating) and implementing (pursuing) career choices” (Lent, Brown, & Hackett, 2002, p. 40) while incorporating “domain-specific theories of vocational interests, choice, performance and satisfaction” (Dahling, Melloy, & Thompson, 2013, p. 210). Self-efficacy, or one’s inner beliefs about their wherewithal, plays a dominant role in this theory (Lent & Brown, 2013). Bandura and Locke (2003) identified “four core features of human agency, which includes intentionality, forethought, self-reactiveness, and self-reflectiveness” (p. 97) which is helpful given self-efficacy’s situational specificity and fluctuatory nature. As such, learning experiences
may positively increase or decrease levels of self-efficacy and, in effect, impact career pathway selections (Fouad, Smith, & Zao, 2002). Lent, Brown, & Hackett (2002) posit that if individuals have low or inaccurate self-efficacy beliefs regarding a particular area, it may lead to prematurely eliminating a career pathway or vocational pursuit. In educational settings, students may experience “adaptive career behaviors” (Lent & Brown, 2013, p 559) which may cause them to make proactive or reactive adjustments when they encounter adversity or auspicious surroundings.

A few entrepreneurial-focused studies have used Social Cognitive Career Theory (SCCT) to ground their work. For example, one study viewed SCCT through the lens of classroom-related activities (Segal, Schoenfeld, & Borgia, 2007) and another to view non-business majors and their personal attributes (Turner & Gianiodis, 2018). However, some feel that entrepreneurship-focused studies incorporating SCCT should do so only if it involves the established core of organizational behavior, career-related decision-making, or individualistic elements (Kassean, Vanevenhoven, Liguori, & Winkel, 2015). This is interesting because the early scholars of SCCT note, “several areas are ripe for theory extension” (Lent and Brown, 2013, p 577). Contextual aspects of SCCT are represented in the literature, but remain secondary in nature possibly because the contributions are not as numerous as empirical evidence surrounding the primary domains of organizational behavior or individual-level career-related concerns (Lent, Brown, Brenner, Chopara, David, Talleyrand, & Suthakaran, 2001). As such, rich opportunities exist to ground entrepreneurial-focused studies in SCCT.

Research Design

A multisite case study format is utilized to gain an understanding (Hindle, 2004) of experiential learning opportunities available to undergraduate students through business
incubators. In particular, whether or not experiences such as these help students define career aspirations and/or develop entrepreneurial skills. This particular multisite study is structured with standardizations of data collection, such as semi-structured interviews, discussion guides, to ensure adequate representation of factual information is consistently captured and analyzed among each of the sites (Herriott & Firestone, 1983). Literature encompassing the field of entrepreneurship has been growing steadily over the last decade but underlying dynamics influencing a student’s decision to consider entrepreneurship as a career pathway may not be revealed due to the quantitative measures currently dominating the research (Creswell & Miller, 2000; Hill & McGowan, 1999; Hindle, 2004; Hlady-Rispal & Jouison-Laffitte, 2014; Merriam, 2002). When studying a multidimensional phenomenon, Kuh (1981) encourages researchers to incorporate both quantitative and qualitative inquiries in order to gain a holistic viewpoint. In the midst of a longitudinal study, Baxter Magolda (2004) found the most salient findings turned out to be qualitative in nature as opposed to the initial quantitative structure. Therefore, a qualitative inquiry viewed through the lens of entrepreneurship may provide an alternative perspective of undergraduate college students and their selection of career pathways.

**Epistemology and Theoretical Perspective**

A constructivist epistemology with an interpretivist theoretical perspective (Hindle, 2004; Steyaert, 1997) allows insight in gaining an understanding and contextualize mitigating factors encompassing student transitions to the workforce (Boblin, Ireland, Kirkpatrick, & Robertson, 2013). This form of epistemological perspective is under-utilized in entrepreneurship literature (Hlady-Rispal & Jouison-Laffitte, 2014) yet it can provide an awareness of various barriers or career-based decisions undergraduate students make (Steyaert, 1997). Since there are significant variances within the field of entrepreneurship, viewing the phenomena through a qualitative lens
has saliency (Low & MacMillan, 1988). Specifically, the constructivist lens may expand the knowledge and understanding surrounding students’ development of career-related skills.

The research design utilizes a multisite case study format with variations in site selections allowing for both heterogenic comparative analysis and the discussion of unique characteristics (Shofield, 2002). Constructivist perspectives focus on individual participants and their interpretations of realities taking place in their natural settings (Hill & McGowan, 1999). In essence, the researcher becomes a human instrument (Merriam, 2002) while gathering data, reconstructing key elements and contextualizing participants’ viewpoints of the environments around them (Hill & McGowan, 1999, p. 9). Herriott and Firestone (1983) discuss the benefits of one researcher, or human instrument, handling the investigation at all of the sites to standardize the data collection and descriptive components of the study.

**Methodology**

Case study research is a probe into contextualized settings in order to gain insight about a phenomenon (Yin, 1994). Low and MacMillan (1988) encouraged incorporating multi-level research designs into a study which can provide “richer” understandings as opposed to the traditional single level of analysis (p. 151). Indeed, this study looks at three components in the bridge from college to careers including business incubators, directors at higher education institutions who are involved with experiential learning, and students who have participated in experiential learning within the setting of a business incubator. Insights garnered through this study’s multiple levels of analysis will help extend the research on experiential learning while adding to the trustworthiness of the study (Lincoln & Guba, 1985).

Case studies uniquely capture environments as they currently exist. Schofield (2002) suggested that qualitative educational inquiry could aim towards three category generalizations
such as “what is,” “what may be,” and “what could be”. The first category, “what is” describes the current contextual nature of the sites. The other two categories, “what may be” or “what could be” is more of a forward-thinking perspective. This notion has saliency for this study because of entrepreneurial environments are constantly influx and rapidly evolving.

**Research Sites**

This study involves five business incubators in order to provide vast arrays of insights allowing for patterns of heterogeneity, contrasts, and diversities (Schofield, 2002). The incubators are located within a fifty-mile radius of a Midwestern urban area and all have college or university affiliations. Variances among the sites includes the amount of time the business incubator has been in existence, urban versus suburban locations, what type of personnel oversees the student involvement, connections to alumni, along with connections to the local entrepreneurial ecosystem. Several stages of data collection took place including direct observations in natural settings, collecting artifacts, focus groups, and interviews with both directors and students (Angrosino, 2007; Simons, 2009). Discussion guides were created for both the focus group and interview segments to ensure similar data was collected at each incubator. The data collection process ensured that key items were thoroughly explored (Meyer, Crane, & Lee, 2016; Yin, 1994).

**Significance**

This study is significant as disruptive technological advancements continue to shape the world around us, influence numerous career pathways, and embolden freelance opportunities, commonly referred to as the “gig” economy (Wang & Wanberg, 2017). Accordingly, employment projections indicate over half the workforce will require postsecondary credentials (Carnevale, Smith, Melton, & Price, 2015) but that may not be enough because technology
enabled-efficiencies cause entrepreneurial firms with high growth potential to require fewer workers (Mitra, 2012). This is problematic since high growth firms have historically been the largest producer of net new jobs (U.S. Small Business Administration, 2012) and this shift may have serious repercussions for traditional career pathways. These noteworthy catalysts and “revolutionary advances” (Bandura, 2002, p. 2) are likely to have fundamental impacts causing students to self-employment or freelance opportunities at some point during their professional careers despite the declination of business start rates in recent years (Krause, 2016). The combination of the constructs outlined in this dissertation is timely, especially since business ownership has been a staple of the American economy for centuries and innovation will continue to lead the way (Breschi, Malerba, & Mancusi, 2010).

**Summary**

This first chapter provides an overview of the study along with the epistemology and conceptual framework used throughout the study. The entire dissertation is grounded in constructivism, which emphasizes hands-on learning, and the theoretical underpinning is Social Cognitive Career Theory (SCCT). This chapter also discusses the significance of this dissertation, provides background information on the key constructs, along with an overview the research sites included in the study. Chapters 2–4 contain three separate essays that all topically discuss experiential learning opportunities available to undergraduate students through business incubators. Specifically, Chapter 2 includes the first essay that focuses on cognitive experiences and abilities students gain through their experiences that may help with career readiness attributes. The second essay, found in Chapter 3, explores how experiential learning opportunities may assist students with the processes of inquiry, exploration, and discovery. Chapter 4 contains the final essay that investigates how students develop entrepreneurial skills
and competencies. The final part of the study, Chapter 5, contains recommendations for practice and the study’s conclusion.
CHAPTER 2
BECOMING CAREER-READY THROUGH UNIVERSITY AND BUSINESS RELATIONSHIPS

The rapid evolution of technology and resulting disruption have prompted advertent discussions about college students’ career-readiness levels. Debates will likely continue as securing professional careers is a primary reason students are attending college (Levine & Dean, 2012; Pascarella & Terenzini, 2005). At the same time, there is an increase in positions requiring postsecondary credentials (Carnevale, Smith, Melton, & Price, 2015). Transitions from college to the workforce is a critical juncture for students. Student competitiveness for professional positions post-degree may be enhanced through active involvement in authentic career-related experiences. Authentic career-related experiences are genuine encounters with a student’s intended area of interest. Working at a business incubators may be a way for students to gain these experiences.

The purpose of this study is to explore how undergraduate students gain career-readiness attributes by participating in experiential learning opportunities offered through business incubators. Of particular interest is whether these experiences help solidify career aspirations and aide in career-readiness attributes. This has significance as studies involving entrepreneurial ecosystems primarily focus on elements relative to the start-up phenomenon whereas this study focuses on the skills students develop through this experience. Findings from this study will highlight how working at a business incubator provided students with resume differentiators, career-relevant experiences, and opportunities to explore various career paths. Based on these
findings, the recommendations are for higher education institutions to increase authentic applied learning opportunities which can help students develop career readiness attributes and increase levels of self-efficacy. In addition, many of the incubators offered paid internship-style work, which can be attractive for students finding it necessary to work while attending college. It is important to note that these insights are from students and directors of business incubators and do not include employers’ perceptions.

**Business Incubators**

Business incubators have significantly increased worldwide (Mitra, 2012) and are commonly part of a larger entrepreneurial ecosystem or start-up communities (Davidsson, 2017). Business incubators typically consist of business professionals with a shared purpose, vision, and commitment to help nurture individuals aiming to start a new business. Often, incubators accept entrepreneurs demonstrating the greatest promise for success and businesses who will likely positively contribute to the local economy (Henton & Oettinger, 2015). These environments are commonly complex, fast-paced environments (Davidsson, 2017).

There are two primary models of incubators that involve college students. In the first model, students conceptualized and launched their own business while simultaneously taking academic courses. In the second model, community members (many times alumni) or entrepreneurs hire students directly in an internship-like fashion to assist with research, marketing, strategies, and product development. The study focuses on the latter model. Experiences with business incubators can provide students with authentic learning experiences and help with career-preparedness. Both models involve co-curricular learning, in that this experience is often not part of a structured course in which a student does not receive academic credit.
Engaged Learning

Intellectual development is one of many benefits resulting from student involvement in co-curricular activities (Terenzini, Springer, Pascarella, & Nora, 1993). Through these involvements, students demonstrate higher level of confidence tackling challenges, overcoming obstacles, and integrating learning strategies (National Survey of Student Engagement, 2016), which are beneficial career-related attributes (Ambrose & Poklop, 2015). However, some students have minimal exposure to higher order learning activities (Arum, Roska, & Cook, 2016) making it difficult to solve problems quickly and efficiently. This happens because surface learning (meaning short-term memorization) is a common practice of students who minimalize their efforts when an activity is not considered to be valuable (Pascarella & Terenzini, 2005). Conversely, students respond positively when environments are structured to actively encourage and engage them (McCarthy & Kuh, 2006), such as engagement with business incubators.

High Impact Practices (HIPs) involve strengthening student learning, engagement, and retention (Kuh, 2008) through various forms of experiential learning, such as internships. Experiential learning centers around active learning environments (Bergsteiner, Avery, & Neumann, 2010) allowing students with opportunities to “touch all the bases … such as experiencing, reflecting, thinking, and acting” (Kolb & Kolb, 2005, p. 194). Sequential learning processes and applications aids in deeper learning and can help material resonate for the student (Abdulwahed & Nagy, 2009; Bergsteiner, Avery, & Neuman, 2010). Additionally, experiential learning can help students build the intellectual skills employers desire (Arum & Roska, 2014; Kuh, 1993) by collectively applying and contextualizing their accumulated knowledge to various situations, such as with a business incubator. Internships and other career-related experiences can be helpful when students seek post-graduation employment (Coco, 2000; Helyer & Lee, 2014).
The college years provides a base for student involvement and career preparation activities (Levine & Dean, 2012; Pascarella & Terenzini, 2005). By senior year, students should achieve career maturity, referencing an individual’s ability to confidently and effectively execute career-related tasks (Hackett, 1995). However, large numbers of students currently work while attending college (Carnevale, Smith, Melton, & Price, 2015) in jobs irrelevant to either their major or intended career. These students have difficulty participating in collegiate activities outside the classroom which may inadvertently affect career-related decisions (Saar, That, Roosalu, 2014).

**Signaling Theory**

Signaling Theory, which is rooted in neoclassical economics, provides the grounding for this study because it centers around human characteristics and choices (Bartlett, 2012) which is useful for interpreting transitions from college to the workforce. This theory has been used in the entrepreneurship literature to gain a better understanding of company founders in constructs such as management, external funding, and founders’ characteristics (Connelley, Ireland, & Certo, 2011). Research suggests that Signaling Theory is helpful when examining education through the lens of certifications and other forms of training because it is thought to convey information about unobservable personal attributes (Arcidiancono, Bayer, & Hizmo, 2010; Bartlett, 2012). Typically, individuals use various informational tactics, such as resumes, grades, and transcripts to help convey their personal accomplishments. These items can be thought of as an “index of skill” (Kerckhoff, Raudenbush, & Glennie, 2001) which helps signal career-readiness to perspective employers. However, these documents do not attest to individual productivity levels, which is an important aspect of the labor market (Arcidiancono, Bayer, & Hizmo, 2010).
Earning a college degree does not always align with the career preparedness and skills needed in the workforce (Arum & Roska, 2014). For instance, the term “ideational flexibility” (Kerkhoff, Raudenbush, & Glennie, 2001, p. 2) references an individual’s general problem solving capabilities in a variety of contexts. Coincidently, problem-solving is a personal attribute employers desire of recent college graduates (Arum & Roska, 2014), yet it is a skill many students have yet to master (Levine & Dean, 2012). Therefore, students need opportunities to demonstrate their abilities and successfully perform skills required by their intended career paths in order to adequately signal their career-readiness to employers (Tan, 2014). This sentiment is illustrated by Kerckhoff, Raudenbush, & Glennie (2001) who distinguish between the terms ‘educational attainment’ and ‘cognitive skills’. Both are considered “independent contributors” used to help explain labor force outcomes and relative human capital characteristics (p. 2). Interestingly, research indicates that signals become less of a necessity for experienced workers when compared to those initially entering the labor market (Fang, 2006).

Signals have varying levels of strength (Ramaswami, Dreher, Bretz, & Wiethoff, 2010), and formality (Tan, 2014). They also have particular saliency in work-related contexts, such as those involving mentors and proteges (Ramaswami, Dreher, Bretz, & Weithoff, 2010). However, questions have been raised surrounding Signaling Theory’s ability to disseminate the transmission and evaluation of information by employers (Rosenbaum, Kariya, Settersten, & Maier, 1990). Spence (2002) notes unobserved personal attributes coincide with an individual’s productivity and the signal thereby making this area “slightly more complicated” (p. 448).
Research Design, Methodology and Methods

A constructivist epistemology and an interpretivism theoretical perspective was used for this multisite case study to gain an understanding of the knowledge and skills undergraduate students perceive they are gaining by working at a business incubator (Hill & McGowan, 1999; Hindle, 2004). Constructivism is rooted in the understanding that individuals construct knowledge based on their experiences and perspectives (Boblin, Ireland, Kirkpatrick, & Robertson, 2013).

In interpretive studies, the researcher becomes a human instrument for the data collection process (Merriam, 2002) while participants’ perspectives are contextualized during the analysis to identify salient elements to describe the phenomenon (Hill & McGowan, 1999). The goal is to understand a particular phenomenon from a naturalistic approach in order to gain insights and perspectives from people with active involvement in the environment (Lincoln & Guba, 1988).

Methodology

Case study is a common form of empirical inquiry to investigate the intricacies of either a single or multiple cases (Stake, 1995). Multisite case studies allow an inquiry to be examined at several locations which have a commonality, such as university-affiliated business incubators. This is advantageous because additional insights and heterogenic components are obtained allowing for comparative analysis and the identification of distinct variances (Schofield, 2002) which leads to a more robust inquiry. For this study, components such as levels of student involvement and types of projects will be explored.

The research question and data collection processes are identically investigated at each site (Herriott & Firestone, 1983). In particular, this study utilized a discovery process in a natural setting to explore the intricacies and dynamics involving a “how” based inquiry (Boblin, Ireland,
Kirkpatrick, & Robertson, 2013; Eisenhardt, 1989) through the lens of constructivism approach to learning. The narration includes participants’ perceptions and environmental interpretations (Hindle, 2004, Hill & McGowan, 1999) as they relate to undergraduate students. It was essential to keep the purpose at the forefront of the study since an integration of numerous contexts were necessary at each site (LeCompte & Preissle Goetz, 1982; Merriam, 2002).

**Research Sites**

Business incubators within a 50-mile radius of a large urban area in the midwestern part of the United States were identified as potential research sites. This region has premier higher education institutions (U.S. News & World Reports, 2016) along with a strong portfolio of mid-market companies (Isenberg, 2016). An incubator can be described as an entity concentrating on nurturing individuals who are in the midst of forming or launching a business (Davidsson, 2017). A list of incubators meeting the following criterion were identified: already part of an established entrepreneurial ecosystem, had a university affiliation, and active involvement of university personnel. The final list contained eight incubators that fit the criteria and five agreed to participate in the study. These sites (see Table 1) offered a combination of variances and heterogeneity (Merriam, 2002; Stake, 2006) including: size, affiliations with higher education institutions, prominence, and connections to financial investors.
Table 1. University-Affiliated Business Incubators

<table>
<thead>
<tr>
<th>Site</th>
<th>University’s Carnegie Classification</th>
<th>Student Enrollment</th>
<th>Type</th>
<th>Business Incubator in Existence</th>
<th>Hours/Available Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Master’s Colleges &amp; Universities</td>
<td>3,000+</td>
<td>Private</td>
<td>2 years</td>
<td>8:30 am-5 pm</td>
</tr>
<tr>
<td>#2</td>
<td>Doctoral Universities</td>
<td>20,000+</td>
<td>Public</td>
<td>5 years</td>
<td>7 am – 10 pm</td>
</tr>
<tr>
<td>#3</td>
<td>Doctoral Universities</td>
<td>15,000+</td>
<td>Private</td>
<td>3 years</td>
<td>Anytime</td>
</tr>
<tr>
<td>#4</td>
<td>Doctoral Universities</td>
<td>20,000+</td>
<td>Private</td>
<td>7 years</td>
<td>Anytime</td>
</tr>
<tr>
<td>#5</td>
<td>Doctoral Universities</td>
<td>23,000+</td>
<td>Public</td>
<td>5 years</td>
<td>Anytime</td>
</tr>
</tbody>
</table>

The following overview provides brief descriptions of the sites’ aesthetics, along with noted similarities and differences (Eisenhardt, 1989; Schofield, 2002). Two incubators (#1 & #3) were relatively new and had been operational for a few years. Both sites were more informal in nature and had an inviting feel to them. Anyone could walk up to another person, make a quick introduction, and ask a question. The atmosphere seemed to put everyone at ease and it was evident that there were strong supporters at both incubators. Most of the people were comprised of community members who were at some level of preparing to launch a new business. More than three-quarters of the entrepreneurs were industry professionals that decided to leave the corporate life and start a business.

The other three sites (#2, #4, & #5) were more established and had noticeably higher levels of staff affiliated with their work. A receptionist immediately welcomed individuals to the space and it was apparent that this individual was the gatekeeper for the entire space. No one was allowed past the reception area unless they were a member, had a meeting with someone, or was
a student. These three incubators had strong networks of industry professionals, veteran entrepreneurs who were influential in helping get other businesses off the ground, and investors who were there to provide financial backing to promising ideas. The incubators offered events regularly to help support and connect everyone.

Interview participants included students, directors of each center, and faculty. A total of 32 individuals (five directors, three faculty members, and twenty-four students) participated in this study. An overview of participants is provided in Table 2.

**Table 2.** Participants in Study

<table>
<thead>
<tr>
<th>Site</th>
<th>Number of Participants</th>
<th>Role at Incubator</th>
<th>Student Majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>4</td>
<td>Director, Students</td>
<td>Business, Marketing, Sales</td>
</tr>
<tr>
<td>#2</td>
<td>6</td>
<td>Director, Students</td>
<td>Business, Communications, Marketing</td>
</tr>
<tr>
<td>#3</td>
<td>4</td>
<td>Director, Students</td>
<td>Business, Marketing</td>
</tr>
<tr>
<td>#4</td>
<td>8</td>
<td>Director, Students</td>
<td>Business, Economics, Marketing, Sociology, Visual Communications</td>
</tr>
<tr>
<td>#5</td>
<td>10</td>
<td>Director, Faculty, Students</td>
<td>Art, Business, Finance, Visual Communications, Psychology</td>
</tr>
</tbody>
</table>

Students who participated in the study represented a wide range of majors including: nine from business, six from marketing, four visual communications, two sales, one communications, one psychology, and one sociology. Roughly three-quarters of the students had an internship before starting at the incubator, four had part-time jobs (besides working at the incubator) and one had a full-time job.

**Data Collection and Analysis**

This study incorporated insights from a variety of participants, artifact analysis, and direct observations in multiple settings (Hindle, 2004; LeCompte & Preissle Goetz, 1982). An initial email seeking participation of the directors was sent to each incubator. Face-to-face
meetings were scheduled once confirmation was received. Student and faculty participation were recruited through a snowball sampling technique (Creswell & Miller, 2000). Overall, the study consisted of interviews with five directors, three faculty members, and twenty-four students. Discussion guides provided thorough explorations of the topic yet were structured to allow for additional probing (Meyer, Crane, & Lee, 2016). A total of seven focus groups, lasting approximately 90 minutes each, were held in private meeting spaces within each incubator and follow-up interviews lasted approximately one hour. The eight follow-up interviews were with directors and students. All focus groups and interviews were recorded and transcribed verbatim to ensure authenticity (Simons, 2009). Transcripts were mailed to each participant to verify the accuracy of the transcription process.

Observational data consisted of two-hour increments at each incubator for a total of thirty hours. There were three site visits in total. In addition, field notes were taken during each site visit at every location for further analysis (Stake, 2006). Artifacts were gathered and analyzed from a variety of websites and promotional materials. Archival data minimized the potential for retrospective bias, a concern when participants reflect upon their experiences (Mathias, Williams, & Smith, 2015). These additional steps build a strong foundation, aide in triangulation, and help add credibility to the study (Lincoln & Guba, 1988, Creswell & Miller, 2000).

Collecting artifacts from each of the incubators aided in triangulation and added credibility to the study (Lincoln & Guba, 1988; Creswell & Miller, 2000). Artifacts included an extensive review of each business incubator’s website along with brochures, flyers, and any other documentation categorized as marketing materials. Blog posts, newsletters, and social media platforms were also analyzed. Historical documentation was provided by directors at the
incubators. The collection of archival data a minimized the potential for retrospective bias, a concern when participants reflect upon their experiences (Mathias, Williams, & Smith, 2015).

**Data Analysis**

The data used in this essay was from larger study exploring: How do business incubators provide experiential learning opportunities to promote the development of entrepreneurial skills? For this essay, I focused on the following research question: How do undergraduate students gain career-readiness attributes by participating in experiential learning opportunities offered through business incubators? Thematic analysis helped categorize and standardize data collected from the research sites (Herriott & Firestone, 1983). Salient points were identified and coded through a cycled process (Miles & Huberman, 1994; Saldana, 2013).

Verbal Exchange Coding was used for the first cycle which allowed for an in-depth analysis of all transcripts thus resulting in the identification of key items from the focus groups and interviews. Verbal Exchange Coding focuses on a precise interpretation of dialogues and interpretations (Saldana, 2013). This cycle resulted in 295 codes. Key overarching themes were identified through Pattern Coding, a step which involved assigning key words and labels to smaller groups of data (Miles & Huberman, 1994). This process resulted in the identification of dominant categories and key constructs which fall under the thematic category of career-readiness attributes. The key constructs are: Resume Differentiators, Career-Relevant Experiences, and Exploring Potential Career Paths.

**Trustworthiness**

The term trustworthiness is used to attend to the goodness and rigor of qualitative research. As such, Lincoln and Guba (1988) identified four pillars that can be used to measure trustworthiness in qualitative studies including: credibility, transferability, dependability, and
confirmability (p. 5). These pillars build a strong foundation for qualitative research (Creswell & Miller, 2000) and were followed throughout this study (Guba & Lincoln, 1994). For instance, the participants reviewed their transcript which addresses the credibility of the study. Similarities existed at each of the incubators thereby aiding in the transferability of the findings. Dependability focuses on accurate data collection processes, while confirmability indicates that the findings align with the framework and literature.

Findings

Three primary findings related to the career-readiness attributes participants identified as students gained through their experiences working at a business incubators. Students believed that skills learned through their participation at the incubators would be beneficial for their post-graduate experiences. Participants discussed these benefits in three primary ways: resume differentiators, career-relevant experiences, and exploring career pathways. Their perceptions were echoed by the directors and faculty.

Resume Differentiators

Participants in this study perceived that the skills students learned while working at the business incubator were a resume differentiator, referencing an acquired skill or competency that differentiates individuals from one another. Erin, a director at a business incubator, emphasized the importance of students working on real projects for companies. She described this experience as an ideal complement to case studies, reading a textbook, or learning about a theory. She discussed that students were simultaneously building a number of soft skills while applying what they have learned in the classroom. Erin noted:

Students really have high expectations coming out of college. They think, “okay, I have invested all of this time and money so as soon as I graduate, I will be able to get that great job everyone promised me if I got a college degree.” It doesn’t always work out that
way because that student, along with every other recent graduate is vying for the same job. From their exposure with the incubator, they have a different experiential learning experience than someone who merely had an internship. Typically, the start-up businesses provide more concrete involvement than traditional internships.

These experiences were resume differentiators because they provide students with concrete experiences working directly with companies on actual projects. Participants, like Erin, believed these experiences were vastly different from traditional internship experiences because students were able to work on several projects simultaneously for one or more companies throughout the semester.

Participants discussed that gaining concrete, career-relevant experiences allowed students to gain confidence in applying their knowledge while building transferrable skills. One of the students, Jessie, discussed how she regularly had to be adaptable and think quickly on her feet to come up with solutions in her incubator experience. When Mark reflected upon his work at the incubator, he said:

It really helps you get ready for beyond college. It gives you a chance to get a taste of what your career might entail. It challenges you to work on things and really work hard at trying to solve a problem.

Mark’s statement indicates that it is helpful for students to have opportunities allowing them to experience various components of a career. In addition, Mark called attention to problem-solving aspects of the projects he worked on. He actively participated in helping the business solve a problem. Mark implied that this attribute of problem-solving coupled with real life examples of utilizing this skill would help his resume stand out.

Students discussed gaining direct knowledge of skillsets needed for particular careers, along with attributes employers valued, while working at the incubator. For example, Matt, a student, shared:
I have had at least 30 interviews for full-time positions during this last year of college and every company – no matter what type or their size – had an interest in what real-world type of work I have done. Opportunities allowing me to actually work on real projects was very relevant and helped me at least feel more comfortable during the interview.

Matt’s statement indicates that the incubator experiences helped him feel more comfortable during the interview because he had “real-world” experiences to draw from. Similarly, George discussed interviewing for post-graduation jobs and said “recruiters were impressed with the type of work I did at the incubator because it was similar to the job I applied for”. These examples demonstrate how students gained direct knowledge of skillsets needed for particular skills, along with the attributes employers are looking for, while working at the incubator.

Participants indicated that their experiences at the business incubators were more robust than traditional internships. Liam, a student, discussed the differences between traditional internships and an internship-like experience at business incubators. Liam shared:

I had two internships at different companies. Both were pretty similar experiences. One of the companies had me put together packets for upcoming presentations and sales calls every week. I also participated in some of the team meetings, but I was there to just “listen and learn.” At the incubator I was an actual member of the team. I’ll put it this way [pause] I had to actually prepare to attend meetings with the founder. My opinion was valued. It’s pretty funny to look back at my first meeting. We did a bunch of research about different industries to help the founder figure out where he should focus. At the meeting there were a couple of students, the founder, and others who had a lot of experience. I was called on and asked what I thought about one of the industries and if it would be a good move. Me, a student! I was totally unprepared. I stumbled but managed to say something. Now I know to be prepared for meetings. You might be asked something.

Liam’s statement highlights a couple of variances between some traditional forms of internships and other career-focused experiential learning opportunities. Both help students with career preparedness but, as Liam’s indicated, the incubator experience consisted of a deeper level of involvement than the traditional internships he participated in. Liam also noted “it was common
for me to work on several projects [for different companies] at the same time” which is another differentiating factor between the two.

Four participants discussed needing to work while attending college, even though their jobs did not align with their majors or career aspirations. Because they have to work, it was challenging for these students to participate in co-curricular opportunities including internship experiences. However, working at the business incubators provided them with the flexibility needed to participate in these experiences. For instance, Jessie said:

I work about 25 hours a week at a warehouse and take 5 classes a semester. My part-time job helps pay the bills - but it’s nothing I’m interested in full-time. It’s hard for me to get involved with some of the programs and activities [on campus] because there isn’t much flexibility. Seldom am I able to get involved with things outside of class. It’s different at the incubator because founders work at various times throughout the day - don't work 8-5. And there’s no set time or number of hours I have to work there per week. It’s flexible plus it’s something that can help me in the future.

The flexibility of the business incubators provided opportunities for students, like Jessie, to gain valuable professional experience. Another student, Olivia, also appreciated the incubator’s anytime access. She said “my hours at the incubator fluctuates pretty much each week. The people [director and founder] here know I have another part-time job. It doesn’t really matter if I work the same days every week as long as I get my work done. My other job helps pay my bills but this job [the incubator] will help me with my career”. Students work a variety of jobs which may not align with their career goals. Yet working at a business incubator provided them both with career-relevant experiences, which can also be viewed as resume differentiators.

**Career Relevant Experiences**

Career relevant experiences referred to learning opportunities for students to actively participate in authentic, realistic scenarios, which closely resembles a particular career.

Participants indicated that classes helped students learn a broad array of topics and theories.
They discussed having course assignments to demonstrate their understanding of a particular topic. However, students felt that these assignments did not provide them with enough experience to prepare for them for a career. Matt said:

> A founder knew I was a marketing major and asked if I had any experience with focus groups. We discussed it in a class and created a discussion guide for an assignment, but that was it. The founder first asked me to develop questions for the focus group and a discussion guide. Once we finished that up, he asked me if I wanted to get experience leading the focus groups. I definitely wanted to do that. There were five focus groups with new moms. I was nervous for the first one but had a lot of confidence by the last one. Then he asked me if I wanted to work on analyzing the data. I hadn’t done that before and it wound up being one of my favorite parts of the project. That was unexpected. I didn’t think I would like that type of work.

In this example, Matt had some familiarity with focus groups but no direct experience. In a class, he became knowledgeable about the process but was only able to actually work on one component in class. At the incubator, he was directly involved with the entire process from the initial stage of writing questions and creating a discussion guide, to leading the discussion of each focus group. On the back-end, Matt was able to analyze the data and examine the results. Matt perceived this experience as providing him an opportunity to apply concepts he learned in his coursework to a real situation.

> It is helpful for students to participate in authentic career-related experiences during their undergraduate years. A director, Erin, indicated that incubators provide “real, tangible experiences” for students which can make a dramatic difference in career preparation. Sophie, a student, explained her experience:

> My portfolio is growing with actual, real examples of work. This puts me in a much better position [for a job]. Before it was just filled with class projects. Basically, we work on an assignment and turn it in. At the incubator, I was part of the design team and was responsible for creating a company’s logo. It was intense and I had to do a lot of revisions. I probably had to make 20 versions of this logo before it was accepted. It was really cool the first time I saw the logo on the company’s website.
This type of career-related experience was helpful for students. As Sophie indicated, she was accustomed to working on a class project and submitting it. However, when she was working on the company’s logo, it required multiple revisions and adjustments before it was finalized.

Another student, Lauren, discussed being happy getting a chance to take what she learned in class and “use it in a real setting.” These are the types of tangible experiences Erin referred to.

Incubator-based work students participated was broad in its scope. As illustrated above, students worked on very specific needs, such as creating a logo. Other times, students had to navigate ambiguous or vague assignments. Rose, a student, shared:

One of the projects I worked on at the incubator was identifying potential sales markets. The founder had a lot of experience in one industry but wanted to look at totally different markets. We [the founder and team members] were all kind of learning and figuring things out together. In the beginning, I was responsible for gathering data from federal agencies, international organizations, and various industries. I pulled the information and our team would meet to discuss the findings to decide whether or not each market felt like a good opportunity. If so, I would investigate it further. We went back and forth for several weeks. In the end, we felt like three markets were a good fit. I felt myself grow. I started out being really, really nervous because this was totally new for me. I hadn’t done anything like this before – ever. There wasn’t much information to go on. Like I said, I had to figure it out. I would just start researching and see where it led. By the end, I knew what I was doing and I wasn’t nervous [anymore]. This project has already helped me in an interview. I used it as an example for one of the questions I was asked.

This type of exploratory work was unfamiliar to Rose. Throughout the research process, Rose had to utilize important skills such as critical thinking and problem solving to dig deeper into the necessary research. She collaborated with the team to understand the findings. She was then able to use this experience as an example of her skills during an interview with a potential employer.

The above outlined the type of career-relevant work students and administrators identified while working at business incubators. Students worked on projects aligned with their career interests allowing them to build workforce-related skills. Furthermore, students indicated
producing tangible items that could then be used to demonstrate various skills to potential employers.

**Exploring Potential Career Paths**

Participants identified the opportunity to explore potential career paths and options was a benefit to students who worked at the business incubator. Dave, a director at a business incubator stated:

> People are studying in various majors or coming out of school and they have no experience practicing in that particular field or have familiarity with what it’s like in the real world. You have to actually have tangible experience that you can use in a career or area you want to focus on as well as a strong understanding of what you like and don’t like doing. That should all be figured out before you graduate from college. I do hear employers say that students are not adequately prepared for a career and I see this as a dangerous trend.

As Dave indicated some students choose careers with little knowledge about the actual work involved in those positions. He believed students should have tangible career-relevant throughout college so they can be certain about their intended career path. This exposure would help students determine their preferences and may lead towards specialization or expertise in an offshoot of the main career path.

In some instances, college departments emphasized a particular area and offer heavier concentrations towards that career path. Unfortunately, some participants indicated that this let them to have less familiarity with other options. Lexie, a student, said:

> We work on projects for start-ups which allows us to try different things. It helps us figure out what we like and don’t like to do. My major is psychology and the only career path I knew about was working for a clinic. That I definitely didn’t want to do. A project I worked on at the incubator involved staffing and I really liked it. I helped determine what type of staffing was needed for the start-up and created position descriptions. I even got to help screen the candidates. I asked the director if she knew about different types of career options for staffing and she told me about human resource management. After talking with her, I checked into the classes and added a minor in HR management.
Lexie was only familiar with a traditional career pathway for psychology majors and had not been exposed to other options. She was certain that clinic-based employment was not a good fit for her. Working on various incubator-based projects allowed her to explore a variety of roles which helped her define an area she enjoyed. In essence, working at a business incubator provided students with opportunities to explore a variety of roles and tasks in order to help bring clarity towards their career interests and skill sets.

Participants discussed that learning experiences garnered at business incubators informed students about potential career paths, trajectories, and choices. Some participants discussed being unaware of other career paths not normally associated with their major. Patrick, an economics major, shared how working in a start-up community provided him with unique experiences to explore other career-related options. He said:

This is the first time I have done something [in college] that actually relates to a career. I’m not a business major like a lot of the students here. In my classes we do a lot of research, but we don’t take it to the next step and it’s usually just on a particular theory or topic. When I’m conducting research at the incubator, it’s expected that I take it to that next step and figure out how it relates to what I’m working on. What I really like is that the founder values my opinion. He asks me my thoughts, makes me walk through my reasoning, and I help him reach a conclusion. I feel this experience has really helped me grow. It has really helped me focus on what I want to do after graduation. Most of my friends are taking the more traditional routes either in policy or academics. That’s not for me. I still enjoy research but now see how to use it for business applications instead of the others.

This was a unique experience for Patrick. Prior to working at the incubator, he had not participated in any internships. He was familiar with two traditional career-pathways for his economics major, but not any alternatives. Patrick was able to apply his knowledge and connect theories to business applications. He noted that the entrepreneur he was working with had him take his research to the next step, referencing helping provide a solution to what they were
working on. The experience helped Patrick determine what he wanted to pursue after graduation.

Working at business incubators helped students prepare for careers and solidify their career interests. For example, a student, Rose, said “none of the careers I knew about were the right fit for me” but working on a variety of projects provided her with an opportunity to discover a position within her career field that she really enjoyed. Students participated in tangible learning experiences that provided them with an opportunity to explore realistic examples of various career paths outside of their major.

**Discussion**

The purpose of this study was to understand the career-readiness attributes along with the benefits participants identified through their experiences working at a business incubator. The findings revealed that students benefited through this type of exposure. Participants indicated that the hands-on learning experiences in business incubator environments provided them with opportunities to transfer formal education to practical settings. These skills complement classroom-based learning by challenging students to apply their knowledge to realistic scenarios and discuss their reasoning for reaching various conclusions (Symonds, Schwartz, & Ferguson, 2011). In addition, incubators provided unique opportunities for students to gain insight and familiarity with careers (Swanson & Fouad, 1999), and develop career-related attributes. These experiences will be helpful as students seek post-graduation employment and signal their career readiness to potential employers (Kerckhoff, Raudenbush, & Glennie, 2001).

The literature suggests that when students have positive career-related experiences, they are more likely to be successful in their intended vocational pursuits (Lent, Brown, & Hackett, 2002). In addition, these experiences can send important signals to potential employers about
their ability to adequately perform a job (Arcidiancono, Bayer, Hizmo, 2010). Students noted that working at the incubator helped them explore various career paths, determine their likes and dislikes, and gain experience that would help them in their careers. Students made choices about work-related likes and dislikes which aided their solidification of career interests (Bartlett, 2012). Furthermore, students believed that their experiences at the incubator would be a meaningful addition to their resume and help them stand out from other candidates when seeking employment after graduation. In other words, it would send a positive signal to employers (Tan, 2014). According to the students, they noticed personal growth, enjoyed working through the challenging scenarios, and increasing their levels of confidence.

Employers were pleased with the duties students performed while working at the incubator. Since it can be difficult to ascertain unobservable abilities (Arcidiancono, Bayer, & Hizmo, 2010), these learning experiences provided students with numerous opportunities to demonstrate their skills. Indeed, students attributed these projects with helping them gain increased confidence in their abilities which can help them demonstrate unobservable attributes (Arcidiancono, Bayer, & Hizmo, 2010; Bartlett, 2012). Business incubator-based learning challenges students to encounter ideational flexibility by immersing them in authentic business problems (Kerkhoff, Raudenbush, & Glennie, 2001).

The findings add to the literature about the benefits of experiential learning in entrepreneurial contexts (Corbett, 2005). Experiential learning experiences, such as the examples from this study, enhanced students’ skillsets and aided their development of career-readiness signals which could be conveyed to employers (Bartlett, 2012). Students indicated they had positive experiences working at business incubators and provided examples of how this form of
experiential learning helped them solidify career paths and prepare for the workforce. Business incubators provided an appropriate environment for students to work on a variety of projects.

This research focused on university affiliations with business incubators. It included insights from undergraduate students, directors, and faculty who are actively involved in the entrepreneurial start-up community. As such, business owners and entrepreneurs were not included in this study. Therefore, a limitation of this study is that employers’ perceptions were not incorporated. A future study could focus on business owners, entrepreneurs, and employers involved with incubator communities to determine whether their insights align with perspectives from students, directors, and faculty.

**Recommendations for Practice**

Career-preparedness and the transitions from college to careers is a growing concern (Arum & Roska, 2014). Incubator-based work experiences help students develop an index of skills (Kerckhoff, Raudenbush, & Glennie, 2001) used to signal their demonstrated abilities to employers. It is recommended that higher education professionals in career services and other relevant departments develop an understanding about signaling because it can be instrumental in helping students understand the importance of outward-facing indicators within their career-preparedness toolkit. Ideally, local business professionals representing a variety of industries would be involved in discussions surrounding signals to ensure any efforts are relevant to the labor market (Arcidiancono, Bayer, & Hizmo, 2010).

Based on the findings of this study and participants’ insights, and the necessity of post-secondary credentials, there are two key recommendations for practice are proposed to help students with career readiness skills.
Increasing Applied Learning Opportunities

Higher education institutions are encouraged to increase the number and types of applied learning opportunities for undergraduate students. Specifically, active learning environments involving interdisciplinary experiences will familiarize students with elements outside of their major. This helps broaden their knowledge and allows them to explore alternative career paths. In addition, it is recommended to engage with existing entrepreneurial support networks, business incubators, and Small Business Development Centers and develop partnerships with localized efforts.

Increasing Student Work Opportunities

Some incubators pay students for their work but it is not guaranteed at all of them. At some schools, incubator-based work is categorized as an internship which may be paid or unpaid. Nonetheless, higher education institutions should ensure students receive pay. One option is to use federal work-study money to help students earn money while working at the incubator. Additionally, as entrepreneurs grow their businesses and hire staff, they will have direct connections to a local talent pool of recent college graduates.

Overall, it is recommended that higher education institutions provide students with authentic learning experiences specifically related towards helping them successfully develop career-readiness attributes. Incubator-based learning experiences may prove beneficial for students lacking a strong educational foundation or those unfamiliar with various career paths. In these instances, students may be able to build a variety of transferrable skills which will send a positive indicator, or signal, to potential employers. Increases in these types of opportunities will help students bolster their outward-facing indicators by participating in career relevant
experiences which help differentiate their resumes from other candidates being considered for jobs.

**Conclusion**

This essay explored how business incubators can help students gain career-readiness attributes. The findings of this essay appear to be indicative of discussions surrounding the career-readiness of recent college graduates. This has significance because it demonstrates active learning opportunities available for undergraduate students within entrepreneurial environments, such as business incubators. These learning experiences help students develop soft skills (such as problem-solving, critical thinking, and team collaboration) in addition to career-readiness attributes. Career-development support structures designed to aide students with mastering work-related competencies may increase a student’s ability to effectively signal to potential employers and help them achieve their goals (Lent & Brown, 2013). As such, engaged learning environments allowing students to utilize complex reasoning skills while working through specific scenarios could help with transitions from college to careers (Arum & Roska, 2014).
CHAPTER 3
UNDERGRADUATE EXPERIENTIAL LEARNING OPPORTUNITIES: HOW BUSINESS INCUBATORS ASSIST STUDENTS WITH THE PROCESS OF INQUIRY, EXPLORATION, AND DISCOVERY

The dawn of the 21st century brought a heightened awareness that the world is shifting from an industrial to knowledge-based economy (Carnevale & Smith, 2011; Chisholm, Harris, Northwood, & Johrendt, 2009). Technological advancements are dramatically altering industries, careers, and companies which is bringing the educational outcomes of postsecondary students to the forefront (Arum & Roska, 2014). The accelerated pace in which industries are evolving (Seibert, Crant, & Kraimer, 1999) will require the majority of the workforce to have postsecondary credentials and encourage individuals to become lifelong learners (Bandura, 2002) in order to stay relevant within their industry. Therefore, it is understandable students consider baccalaureate degrees stepping stones towards a successful career (Levine & Dean, 2012; Sanahuja Velez & Ribes Giner, 2015).

These dramatic shifts present higher education institutions with opportunities to actively engage with local economies (Fitzgerald, Bruns, Sonka, Furco, & Swanson, 2012). One synergistic opportunity involves business incubators and higher education institutions, which is the focus of this essay. Hence, the purpose of this study is to explore experiential learning opportunities available to undergraduate students through business incubators. This essay will explore how this type of experience may assist students with the process of inquiry, exploration, and discovery. It is significant because it provides a distinct interdisciplinary form of career-related experiences, which allowed students an opportunity to develop transferable skills. The
findings identified higher order thinking, soft skills, and individual traits and career readiness as salient skills participants indicated developing during their experience with the business incubator. It is recommended that educational institutions increase co-curricular learning opportunities for students to develop transferable skills (those which have applicability in most industries) and opportunities to apply their knowledge to realistic scenarios.

**Business Incubators**

Business incubators are typically the home to start-up communities comprised of individuals in the process of launching a business into the marketplace (Davidsson, 2017). They are commonly supported by a network of business professionals who have vested interests in the growth of new, innovative businesses. As such, these communities are instrumental components of entrepreneurial ecosystems and provide access to key resources within the local community. Because of an entrepreneur’s “newness”, there is no predicated set of rules in existence regarding the void in the marketplace they aim to capture or the type of business being formed. Therefore, entrepreneurial environments are commonly filled with ambiguity and complex investigations (Seibert, Crant, & Kraimer, 1999).

These environments may provide unstructured experiential learning opportunities for students to develop higher order learning skills, such as analyzing and reasoning or “prototypical manifestations of intelligence in action” (Gottfredson, 2002, p. 35). Incubators typically house entrepreneurs who are at the forefront of their industry. They are also often engaged with highly innovative products and services spanning across numerous industries (Andersson & Henrekson, 2015). Student exposure and active participation in this type of environment may bring awareness to a variety of vocational opportunities (Fretschner & Weber, 2013), along with increasing levels of efficacy and creativity (Bandura & Locke, 2003).
Cognition and Intellectual Growth

Students are key players in transforming education into learning. Research suggests that students engaged in active learning environments has a positive effect on their overall learning (Koedinger, McLaughlin, Kim, & Bier, 2015). As such, learning environments encouraging student development and growth, coupled with increasing their cognitive competencies and intellectual functioning, may aide in the learning process (Bandura, 2002; Pascarella & Terenzini, 2005).

The literature confirms higher order thinking occurs both inside and outside of the classroom (Beach, 2018). Baxter Magolda (2004) discusses cognitive development and identified three main categories for students’ knowledge. This research suggests the majority of college students begin as Absolute Knowers believing that “knowledge is certain” which is passed on from their professors (p. 34). This perception, which is common among college freshmen, emphasizes right or wrong answers and minimizes uncertainty. Transitional Knowers, or those focusing a deeper and thorough understandings, become more prevalent during the sophomore and junior years. This stage may lead towards meta-competency (Nurius, Coffey, Fong, Korr, & McRoy, 2017) or mastery levels of knowledge. Independent Knowers is the final level in which students confidently seek answers, think for themselves, are not reliant upon someone else providing them with information, and are comfortable sharing their views with others. The study suggests that very few college seniors reach the level of Independent Knowers (Baxter Magolda, 2004), which is necessary for many of today’s industries (Arum & Roska, 2014; Seibert, Crant, & Kraimer, 1999).

Students’ progress through various learning stages, referred to as “single-loop”, “double-loop”, and “triple-loop” learning (Chisholm, Harris, Northwood, & Johrendt, 2009, p. 328).
Single-loop references traditional classroom-based courses of which students may briefly encounter a topic. Double-loop takes on a more reflective process to encourage abstract considerations and innovative solutions. Triple-loop is the final step promotes contextualization of knowledge to develop an array of solutions, similar to what is encountered in the workforce (Gottfredson, 1997). It is important to develop ways aiding the progression towards independent knowledge or triple-loop learning in order to strengthen students’ transition from college to careers. One of the ways this may be achieved is through co-curricular opportunities as the literature suggests active learning environments help students develop critical thinking skills and overall intellectual growth (Terenzini, Springer, Pascarella, & Nora, 1993).

**High Impact Practices**

The literature notes positive correlations between High Impact Practices (HIPs), student learning, and engagement (Kuh, 2008). Several core practices constitute HIPs, but experiential learning and internships are two, which have direct relevancy to this study. Internships are commonly co-curricular opportunities allowing students to gain basic industry experience working part-time for a company within their field of study (Ash & Clayton, 2009; Stokes, 2015). Experiential learning consists of a variety of active learning environments in which students are immersed in an experience (Bergsteiner, Avery, & Neumann, 2010). These experiences should involve active experimentation allowing students to fully absorb a topic (Kolb, 1984). Most experiential learning takes place outside of structured classes and provides opportunities for students to reflect on their experience. Lent and Brown (2013) posit learning experiences should consist of four key elements: “personal performance accomplishments, observational learning (or modeling), social encouragement and persuasion, and physiological
and affective states and reactions” (p. 563). Others suggest these types of experiences should be transformational for students (Corbett, 2005).

Another benefit of experiential learning is that students are involved in higher-order learning, such as critical thinking, while solving authentic problems (Corbett, 2005; Donald, 2002; Michaelsen, Davidson, & Major, 2014). Higher order learning typically consists of the soft skills employers yearn for in recent college graduates (Arum & Roska, 2014; Kuh, 1993; Roberson & Franchini, 2014). However, many experiential learning opportunities consist of students working on one project over the course of a semester, which limits the exposure students have to a variety of scenarios. Furthermore, they seldom include the type of work-based scenarios leading to broader, multi-discipline learning. HIPs and other similar enrichment approaches may help nurture and develop the necessary skills to successfully transition from college to starting a career (Arum & Roska, 2014; Seifert, Gillig, Hanson, Pascarella, & Blaich, 2014), especially if students are contemplating the field of entrepreneurship.

**Theoretical Framework**

The Social Cognitive Career Theory (SCCT) was the theoretical framework used for this study. Bandura’s (1986) social cognitive theory laid the groundwork for analyzing student behaviors within the career development construct. He posits a person’s judgement about their abilities helps predict how obstacles and accomplishments are navigated (Lent, Brown, & Gore, 1997). Based on this theory, an efficacy-based model focused towards individual interests, choices and performance was developed (Lent, Brown, & Hackett, 1994). Individual levels of self-efficacy can be powerful, especially when encountering something unfamiliar (Bandura & Locke, 2003). It is suggested that achievements and recognitions help advance personal self-
efficacy beliefs while dual control systems (combinations of self-regulation, motivation, action, and reaction) are simultaneously at play (Bandura & Locke, 2003).

The Social Cognitive Career model emphasizes personal development, proactiveness, and career directionality (Lent et al., 2001). A key component of the model is self-efficacy, which can be viewed as a determinant of success (Lent, Brown, & Hackett, 2002). Some individuals experience “uncertainties about their capabilities” (Bandura, 1997, p. 422) so building opportunities to strengthen a student’s self-efficacy through new types of learning experiences may elevate their levels of confidence. As self-efficacy is heightened, ambiguous situations likely become less intimidating. It is important to note that self-efficacy levels are not stagnant and often vary depending on an individual’s level of confidence or perceived ability towards a task (Keh, Foo, & Lim, 2002). Students with lower efficacy levels may find unfamiliar or challenging environments not as daunting if they know supports are in place to help them along the way (Luzzo, et al., 1999; Radu Lefebvre & Redien-Collot, 2013). Hackett (1995) suggests “college students’ abilities to effectively process and integrate complex information enhance perceptions of efficacy for career decision making” (p. 244). In the contextual application of this study, student participation in business incubators may strengthen their efficacy levels in solving complex problems, working outside of their ‘comfort zone’, and perhaps even envisioning themselves as an entrepreneur in the future.

**Research Design, Methodology, and Methods**

This essay aims to provide a backdrop allowing for searching, understanding, and contextualizing mitigating factors surrounding college to career transitions directly from individuals (Boblin, Ireland, Kirkpatrick, & Robertson, 2013) which may shed new light into the entrepreneurship literature (Schofield, 2002). The entrepreneurship research appears to be
fragmented (Blundel, 2007) which may be attributed to the types of studies or the continuity of theory-driven research (Low & MacMillan, 1988). Therefore, a constructivist epistemology and interpretive ontology (Suddaby, Bruton, & Si, 2015) may provide the grounding necessary to gain an understanding of the entrepreneurial phenomenon occurring between higher education institutions and undergraduate students as they transition from college to the workforce (Donald, 2002). As such, the researcher becomes a human instrument (Merriam, 2002) in gathering data from natural settings, reconstructing key elements and contextualizing participants’ viewpoints of their environments (Hill & McGowan, 1999; Hindle, 2004; Steyaert, 1997). This inquiry expands the literature on entrepreneurship (Low & MacMillan, 1998) and undergraduate learning (Arum & Roska, 2014; Kuh, 1993).

**Methodology**

Case study investigations allow researchers to gather a variety of perspectives and contexts (Yin, 1994) which may identify underlying factors not revealed in other studies (Stake, 2006). Multi-site case studies are designed to study the same phenomenon at different locations. This is useful in providing a richer understanding (Hindle, 2004) of the phenomenon and is used to identify whether similarities exist between locations or are their situational-based distinctions associated solely with one particular location (Simons, 2009). Research question and data collection processes remain the same throughout multisite case studies (Herriott & Firestone, 1983) which provides an additional layer for ensuring consistency of the data (Merriam, 2002). Conducting research of a “how” based inquiry (Boblin, Ireland, Kirkpatrick, & Robertson, 2013; Eisenhardt, 1989) in natural settings enabled a discovery process for exploring the intricacies and dynamics surrounding experiential learning in an entrepreneurial environment.
Research Sites

The examination of business incubators located within a 50 mile radius of an urban setting was conducted through a multisite study (Simmons, 2009; Stake, 2006) to gain an understanding of the phenomena surrounding experiential learning opportunities available to undergraduate students. In this essay, a business incubator (Mitra, 2012) is considered a physical location housing an established network of mentors and resources to help entrepreneurs, or those hoping to start a business, successfully launch into the marketplace. The first step involved identifying incubators with existing higher education affiliations and were located within a 50 mile radius of each other. The selected area is in the Midwestern part of the United States and has experienced significant growth in mid-market companies (Isenberg, 2016) as well as impressive higher education institutions (U.S. News and World Reports, 2016).

Business incubators included in this study consisted of two types of co-curricular models. One type consisted of current undergraduate students who conceptualized and launched their own business in addition to their academic course load. The second model involved students working for local entrepreneurs who were in the process of launching a business. In both models, the students did not receive academic credit unless their institution recognized it as an internship.

Even though the business incubators all have established entrepreneurial ecosystems, there were several variances including size, affiliations with colleges or universities, prominence, student diversity, and the strength of their professional network. These attributes provided a variety of perspectives and environments to study (Stake, 2006) along with some heterogeneity allowing for comparative analysis (Angrosino, 2007; Schofield, 2002). A brief overview of the business incubators can be found in Table 1.
### Table 1. University-Affiliated Business Incubators

<table>
<thead>
<tr>
<th>Site</th>
<th>University’s Carnegie Classification</th>
<th>Student Enrollment</th>
<th>Type</th>
<th>Business Incubator in Existence</th>
<th>Hours/Available Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Master’s Colleges &amp; Universities</td>
<td>3,000+</td>
<td>Private</td>
<td>2 years</td>
<td>8:30 am-5 pm</td>
</tr>
<tr>
<td>#2</td>
<td>Doctoral Universities</td>
<td>20,000+</td>
<td>Public</td>
<td>5 years</td>
<td>7 am – 10 pm</td>
</tr>
<tr>
<td>#3</td>
<td>Doctoral Universities</td>
<td>15,000+</td>
<td>Private</td>
<td>3 years</td>
<td>Anytime</td>
</tr>
<tr>
<td>#4</td>
<td>Doctoral Universities</td>
<td>20,000+</td>
<td>Private</td>
<td>7 years</td>
<td>Anytime</td>
</tr>
<tr>
<td>#5</td>
<td>Doctoral Universities</td>
<td>23,000+</td>
<td>Public</td>
<td>5 years</td>
<td>Anytime</td>
</tr>
</tbody>
</table>

Even though business incubators have a homogeneous premise, there were distinct variances (Schofield, 2002). For example, Two of the incubators (#1, #3) were located on the outer rim of a college campus providing convenient access for students, whereas the other three (#2, #4, #5) were off campus. There were vast differences between the two campus-based incubators including the size of the institution, amenities offered, staff support, and established networks of external stakeholders. The more established incubator (#4) had a dominant presence, was solidly connected to the community both inside and outside of the institution, and had a steady flow of innovative businesses. Student involvement was minimal at the smaller incubator (#1) yet were well represented at the others. Additionally, there were several student stakeholders.

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2 A stakeholder can be viewed as an individual who has a vested interest in the success of the business incubator. It may be an individual, a representative from a large business, an industry representative, a private investor, or others with the intent to strengthen the start-up community.
teams working on launching their own businesses at one of the sites (#3). Table 2 highlights the variety of participants in the study.

**Table 2. Participants in Study**

<table>
<thead>
<tr>
<th>Site</th>
<th>Number of Participants</th>
<th>Role at Incubator</th>
<th>Student Majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>4</td>
<td>Director, Students</td>
<td>Business, Marketing, Sales</td>
</tr>
<tr>
<td>#2</td>
<td>6</td>
<td>Director, Students</td>
<td>Business, Communications, Marketing</td>
</tr>
<tr>
<td>#3</td>
<td>4</td>
<td>Director, Students</td>
<td>Business, Marketing</td>
</tr>
<tr>
<td>#4</td>
<td>8</td>
<td>Director, Students</td>
<td>Business, Economics, Marketing, Sociology, Visual Communications</td>
</tr>
<tr>
<td>#5</td>
<td>10</td>
<td>Director, Faculty, Students</td>
<td>Art, Business, Finance, Visual Communications, Psychology</td>
</tr>
</tbody>
</table>

Business majors had the strongest number of participants in the study, but other disciplines were well represented. Specifically, there were eleven business majors, six marketing, four visual communications, one communications, one psychology, and one sociology. All of the students were classified as either juniors or seniors by their higher education institution. Overall, seventeen students had participated in an internship prior to working at the incubator.

The larger, more established incubators have impressive professional networks, alumni involvement, along with access to private investors. The directors at three of the incubators are well acquainted and attend several meetings together throughout the year. They appear to remain somewhat guarded among their counterparts to help protect the identity of entrepreneurs they are working with and the products being developed. Despite this, they all knew the others were merely a phone call away if they needed help with a resource or connection not readily available to them.
Data Collection

Insights from a variety of participants, collection of artifacts, and direct observations of each site were key components for the data collection process (Angrosino, 2007; Creswell & Miller, 2000; Simmons 2009). After criterion for business incubators was established, an email solicitation was sent to all the directors seeking participation in the study. A snowball technique was used to seek participation from everyone else in the study (Biernacki & Waldorf, 1981; Chaim, 2008). Participants included five directors, three faculty members, and twenty-four students (Creswell & Miller, 2000; Wolcott, 2008). An overview of the data collection process can be found in Table 2.

Discussion guides were created to ensure the exploration of prominent topics were discussed while allowing flexibility for additional probing (Meyer, Crane, & Lee, 2016; Yin, 1994). Interviews and focus groups were all semi-structured and consisted of pre-determined questions so the discussions would remain on point (Angrosino, 2007). A total of seven focus groups, lasting approximately 90 minutes, were held in private meeting spaces within each incubator. Eight follow-up interviews lasted approximately one hour. All focus groups and interviews were recorded and transcribed verbatim to ensure authenticity (Simons, 2009). Transcripts were emailed to each participant to verify the accuracy of the transcription process (Creswell & Miller, 2000). Reviewing archival data helped minimize retrospective bias concerns since participants on occasion were asked to recall or reflect upon past experiences (Mathias, Williams, & Smith, 2015).

Overall, approximately 30 hours of observational data was collected. A minimum of two hours was spent observing each incubator and field notes were taken during the three site visits at each location for further analysis (Stake, 2006). Artifacts were gathered and analyzed from a
variety of websites and promotional materials. Archival data minimized the potential for retrospective bias, a concern when participants reflect upon their experiences (Mathias, Williams, & Smith, 2015). All of these steps are necessary to achieve triangulation, which helps ensure the trustworthiness and credibility of qualitative studies (Angrosino, 2007).

Another common element of case study research is collecting a variety of artifacts which aides in both triangulation and the overall credibility of the study (Lincoln & Guba, 1988; Creswell & Miller, 2000). This step supports triangulation by providing documentation and verification of facts uncovered during interviews and focus groups (Boblin, Ireland, Kirkpatrick, & Robertson, 2013). The first artifacts reviewed were from each incubator’s website. An analysis was conducted of the entire site, including all links, blog posts, downloadable documents, newsletters, and social media platforms. The incubators provided historical documents, a variety of marketing materials and flyers, along with other printed materials. All of this documentation is helpful as it helps reduce concerns when individuals are asked to recall information (Mathias, Williams, & Smith, 2015).

**Data Analysis**

The data used in this essay was part of a larger study exploring the research question: How do students gain career readiness attributes by participating in experiential learning opportunities through business incubators? The research question specifically related to this study is: How do business incubators assist students with the process of inquiry, exploration, and discovery? Once the accuracy of the transcripts was verified by participants, thematic analysis began which was an instrumental process in standardizing and categorizing the data (Herriott & Firestone, 1983). Saldana’s (2013) coding processes were followed for the data analysis portion
of the study. The first step in the process was to review all of the transcript data from the focus groups and interviews. Verbal Exchange Coding helped guide the initial stage of analyzing the transcripts the identification of 295 codes.

Through Pattern Coding (Miles & Huberman, 1994), key themes were identified including: cognitive complexity, career-relevancy, individual traits, environmental conditions, and active learning. These themes were written on white boards and each of the 295 codes were written on colored-post-it notes by theme and put under relevant heading. With so many sets of data, Holistic Coding helped identify broader segments. Thirty codes remained after the data analysis was complete, which falls within the suggested range (Miles & Huberman, 1994). The coding process identified intellectual challenges and growth as the overarching theme and the key categories of: higher order thinking, soft skills, and individual traits and career-readiness.

Trustworthiness

Four pillars are used to measure trustworthiness in qualitative studies which include: credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1988). Used together, these pillars help build a strong foundation and adds credibility to qualitative inquiries (Creswell & Miller, 2000; Hlady-Rispal & Jouison-Laffitte, 2014). Various steps were taken to ensure both quality and goodness. All of the participants were asked to review their transcripts for accuracy. The data analysis began once this step was complete. In addition, a variety of business incubators were studied to examine the similarities and differences which can be helpful in determining transferability. Procedures were followed for the data collection and analysis segments to increase the study’s dependability. The framework provided the underpinnings to help confirm the findings. All of these elements attest to the quality and goodness.
Findings

This essay concentrates on learning processes including inquiry, exploration, and discovery. Experiential learning and other co-curricular opportunities allowed students to actively work with topics covered in their courses and apply that knowledge to realistic scenarios. This process was beneficial for students experiencing difficulty with their coursework. The findings revealed intellectual challenges and growth resonated most with the study’s participants. This has importance because it aligns with the skills employers are looking for (Arum & Roska, 2014).

Higher Order Thinking

For the context of this essay, higher order thinking involves aspects such as a student’s ability to analyze and apply theory towards a specific situation, sift through cumulative knowledge, and examine a variety of perspectives to determine possible solutions. Rose, a student, explained it this way:

In class, you concentrate on a particular subject. So, if you are working on a problem in class, it involves that subject. But in the incubator, you are looking at things from a much broader base and using various information from a bunch of classes. I’m a business major and one of the times I had to think back through a psychology course I took a couple of years ago! That in itself was challenging because it isn’t the focus of my major. I took the class because I had to. I was surprised how it applied to the project I was working on.

At the incubator, Rose used higher order thinking skills to analyze and determine what relevant information was needed to complete an assigned project. The process necessitated Rose to think deeply, relate information from a prior course, and contextualize its applicability. She indicates that she has to integrate a broad range of knowledge working at the incubator and found it to be challenging.
Participants discussed class assignments mostly being topical in nature and designed to reinforce concepts discussed throughout a course. Most of their assignments were structured to help maintain focus on the overall objectives of the course. However, the work at the incubator involved a much broader spectrum compared to the compartmentalization of courses. Thomas, a student, discussed class assignments and said:

We are used to having a problem outlined that relates to a topic we are talking about in class. It’s not anything like these real types of examples we work on here [at the incubator]. You may be pulling a bit from this class, and information from another class. Sometimes I had to ask other students who I knew had the same class to help me try to remember the information. It’s not right at your fingertips. That’s tricky. I remember working on an internet marketing campaign for a business. There was a way to measure customer engagement but I couldn’t remember much about it. I just remember we talked about it in a class. Someone at the incubator was a year younger than me so I knew they took the class this past year. I went over to see if they remembered more about it. They filled me in and I was able to take it from there.

As Thomas states, the business incubator experience requires applying knowledge from a wider range of courses compared to individual classes. The projects were not structured which was a different experience for students. In this instance, Thomas was able to connect with another student who were able to assist him. He was engaged in deep learning while trying to determine an appropriate solution for his project.

Many of the entrepreneurs were considered to be in exploratory stages when they are developing new products or services. During this stage it was often helpful to gain insights and opinions from others. Student discussed that someone may spark an idea or have additional thoughts which can strengthen the prototype. Entrepreneurs oftentimes would seek insights from students. Courtney said:

I was able to take knowledge that I had and actually help a local entrepreneur with something he was struggling with. I had to piece together a model based on several different theories which added another layer of complexity in trying to figure things out. It was a unique experience for me and was definitely intimidating. The entire discovery
process was initially difficult for me because I didn’t know where or how to actually start. Now I have more confidence and can handle something complex. I know how to start something and work through a process of figuring it out.

Initially, Courtney was apprehensive about the discovery or exploratory process because she did not know where to begin. Higher order thinking helped her create a model based on several different theories which helped solve the entrepreneur’s problem. Courtney had increased confidence in her abilities after successfully applying her knowledge to a realistic situation and achieving the desired result.

These examples demonstrate how individuals may not immediately have all of the answers but, by collectively working together, solutions could be achieved. Interestingly, every student who participated in this study used the word “challenge” on multiple occasions in reference to the deep thinking necessary to successfully accomplish the task at hand. Entrepreneurs were often working on innovations or prototypes of new products which engaged students in higher order levels of thinking and requires them to contextualize information from a broader knowledge base.

**Soft Skills**

In this study, the term soft skills references personal attributes allowing an individual to professionally interact with others. These skills are considered transferable (Arum, Roska, & Cook, 2016) and can involve an individual’s ability to solve problems, think critically, or work effectively with others. Sara, a director at an incubator, said “one of the greatest strengths of university-affiliated business incubators is a dedicated space where students can develop their soft skills.” Sara explained:

When we first meet with an undergraduate student, we can almost tell immediately whether or not they have the necessary soft skills. If they either don’t have them or have the potential to develop them, they’ll never make it in this type of environment. It is
absolutely vital for an incubator to have access to people with strong soft skills. The incubator is a fast-paced innovation environment. Everything is always influx so no two days are exactly the same. Students have to be able to intuitively think on their feet.

As Sara stated, soft skills were essential skills when working in an incubator. This was partly due to the fluid and constantly changing environment. She stated that the incubator environment was not for everyone and soft skills can be a key determinant as to whether or not someone was well-suited to be involved in incubator-based work.

Directors share that it could be somewhat difficult to initially assess students soft skills. Directors at the incubators emphasized the importance of soft skills, yet each had a slightly different approach in evaluating a student’s level of competency in this area. Erin, a director, said:

Soft skills are important for students to have. When we examine an incoming student’s potential, we view their past experiences and look for examples of soft skills directly from their track record. We don’t consider it a deal-breaker if they don’t have them coming in because we realize students often don’t have much exposure in this area. However, it’s immensely important that they are able to develop them.

Erin’s comment recognized that students do not always have soft skills when they first start at the incubator. This may be due to a lack of prior exposure or emphasis placed on developing this area. Erin noted that soft skills were not a pre-requisite for working at the incubator, but it was essential that students developed them while working there.

Directors at every incubator discussed the importance of soft skills. One director referred to soft skills as “big skills” and included an ability to learn and adapt quickly in this same category. Specifically, Connor said:

Soft skills will help students predict what might be coming in the next few decades and allows students to change course if need be. Everyone needs to understand the implications of the vast changes we will be undergoing, such as with artificial intelligence and rapid advancements in technology. Technology is going to have an impact on absolutely everything. Strong soft skills will help all of us be successful as we
have to remain flexible and be able to adapt to changing environments. We need students to understand that they will always need to have an eye looking towards the future.

Based on Connor’s insight, no matter what industry students work in, they will likely need both the adaptability and flexibility to be successful. He eluded to the massive disruption on the horizon and how it will impact numerous industries. The ‘big skills’ Connor refers to can help students recognize pending changes and better equip them to navigate the future.

Overall, the directors each had different ways of evaluating soft skills. Two felt that it was intuitive when they met with a student and three described it as an ‘evaluative process’ tackled during the initial screening process. The evaluative process included general interview questions and a scan of the students’ resumes to see what type of prior experience they listed. Soft skills were a dominant part of many discussions despite what process was used to evaluate students and all of the directors emphasized the importance for students to develop these skills.

**Individual Traits and Career Readiness**

Today it is common for students to work while attending college, which was the case for four student participants. The students realized almost immediately working for a business incubator was different than their other part-time jobs. For instance, Olivia, worked at a fast food restaurant about 20-25 hours per week, was a full-time student, and worked at the incubator.

Olivia shared this thought:

> I have grown to love the challenge this type of environment provides. Initially I thought this type of work would be relatively easy given the classes I have taken. I was wrong. It was much harder than I anticipated. It really opened my eyes towards other things I needed to think about or consider. I have grown to love how working with entrepreneurs challenges me. I think it is really going to help me in my career. At the incubator, I worked on developing marketing materials for a founder. I had to take my ideas and make them fit with what the company was all about. It’s different than assignments because you have to think about a lot of things. This is real-world. The entrepreneur is actually starting a business.
Olivia anticipated her coursework would be similar to working at the incubator. She was incorrect with her initial assessment and initially found the incubator to be challenging. Olivia’s insight emphasizes the importance for students to be involved with co-curricular activities involving High Impact Practices (HIPs) as it provides a different type of learning environment than the classroom. Olivia was able to take her knowledge about marketing and apply her skills to a realistic company. In addition, Olivia noted how this experience helped her prepare for her career. She said “at my other part-time job, I am a cashier so you work with people but it’s just a job to help me out. I don’t expect anything more from it.” In other words, she felt that the part-time job was not preparing her for a career in the same way that the incubator experience was.

Students valued being able to readily apply their knowledge to specific scenarios. It provided them with an opportunity to showcase their ideas and overall level of career-readiness. However, sometimes these situations turn into a humbling experience, such as with Efrain:

I want to talk about the first project I ever worked on at the incubator. I started out thinking I knew everything. I thought I was the smartest on the team and was going to impress everyone – especially the founder [entrepreneur]. Honestly, I was pretty darn arrogant at that point. But soon I realized that I had a very narrow perspective about one component of the project we were working on. Others on the team brought up information I hadn’t even thought about and they called me out on it. Talk about a reality check! Thankfully this happened here at the incubator instead of at my first job. I hope to never make a stupid mistake like that again. It taught me a lot about working together as a team towards a solution.

Efrain’s statement indicated both the individual traits and career-readiness attributes students learn working on projects at business incubators. It also demonstrates varying levels of self-efficacy. Initially Efrain had an elevated level of efficacy and confidence in his abilities. However, through team-based and hands-on learning, Efrain was able to realize that the opinion of others added significant value to their project. This was a valuable lesson to learn at college instead of in the workplace.
Working effectively within a team-based environment outside of class was a new experience for some students. Most students had familiarity with group projects from their courses, but team-based incubator experiences were different. For instance, George said:

You can be working on a section of a project by yourself and then you come together as a group or are paired up with someone else to work collaboratively on a portion of the project. Many times I was asked to work with someone from a totally different major. Internally I questioned the pairing because I was a business major and felt I should be put with other business majors. But working with someone totally different stretched my thinking into different areas than what I learned in my classes.

George described the fluidity on an incubator projects in which students work independently on some components and then work in groups for other portions. This was different than a classroom setting as a group project involved the same students from start to finish. In this situation, George demonstrated being adaptable and flexible to the tasks he was part of. Participants identified scenarios, such as these, that helped build the career-readiness attributes employers are looking for.

As students became integrated within the entrepreneurial environment, directors at the incubators noticed positive changes in their performances. Connor, a director, said “for some students, this is their first career-based experience and it’s great to see them grow professionally”. Yet Erin, a director at an incubator, cautions the shelf-life of career-related skillsets. She said:

As technology gets better and better, students have to be prepared to take a job and have the necessary skills that may only last a year or two, three at the most. After that, students will need skillsets that can take them into a different area or concentration.

Erin’s statement highlights the importance of students becoming independent knowers. In this regard, students develop an ability to accurately assess a variety of aspects within their operating
environment. However, developing the skillset and transitioning to independent knowledge requires practice and will likely not be achieved by working on a single project at an incubator.

The business incubators participating in this study are helping students develop the necessary career-readiness attributes. The findings can be summed up from one of the students, Amanda. She said at the incubator, “you’re always learning – always improving – always enhancing your skills.” That sentiment aligns with the literature on what employers are looking for in recent college graduates. This type of active learning environment helps students develop their career-readiness attributes.

**Discussion**

Co-curricular learning environments involving business incubators helped students solve problems, explore solutions, and build transferable skills. This was essential because many students considered career-preparedness as an important component of college. Students noted feeling ‘challenged’ and they were ‘learning’ while working at the incubator. Interestingly, those descriptions were not associated with their other part-time jobs. This may partly be attributed to the routinely influx nature of entrepreneurial environments as students indicated the necessity for them to think on their feet, demonstrate an ability to adequately conduct research, and be prepared to discuss potential solutions (Baxter Magolda, 2004). Students were engaged in higher order thinking during these types of scenarios (Beach, 2018) which helps them develop the type of career-readiness skills needed for the rapidly evolving workforce (Seibert, Crant, & Kraimer, 1999).

Directors at the various incubators all highlighted the importance of students developing soft skills. Incubator-based experiential learning opportunities, such as outlined in this essay, allowed students opportunities to develop their soft skills while engaging in higher order learning
activities (Corbett, 2005; Donald, 2002; Michaelsen, Davidson, & Major, 2014). Interestingly, students did not identify soft skills as a broader category but, instead, as separate components. Perhaps students are unfamiliar with the categorization of soft skills or it may be a relatively new topic for them which is not specifically addressed in their college courses. Nonetheless, it appears to currently be an under-developed area for students but is a necessity in the knowledge-based economy (Carnevale & Smith, 2011; Chisholm, Harris, Northwood, & Johrendt, 2019).

Participant insights solidified the importance of self-efficacy. For instance, the incubator directors noted that oftentimes students do not have opportunities to develop their soft skills. Since higher order thinking skills are a constant factor at incubators and other dynamic environments (Beach, 2018), students may initially be at a disadvantage until these skills are developed. Self-efficacy is powerful when something is new and unfamiliar (Bandura & Locke, 2003). Confidence levels were increased as students contextualized cumulative knowledge from their courses and successfully completed tasks assigned to them (Keh, Foo, & Lim, 2002). The incubator environment provided opportunities for students to independently assess their career-readiness level. In one particular instance, a student had an elevated efficacy level. While working on a project, the individual realized that his personal assessment was incorrect. Personal development is a key factor in SCCT (Lent et al., 2001) which helps students successfully navigate instances such as what this student, and other participants, encountered working at business incubators.

The students’ statements indicated classroom-based education constituted a large portion of their learning. The existing educational structure of course offerings may help explain why students feel challenged applying their cumulative knowledge to contemporary situations (Arum,
Roska, & Cook, 2016). Generally, the collegiate framework was not structured to emphasize students’ application of holistic or cumulative knowledge throughout their undergraduate years. In some situations, students may have a single course, such as with general education requirements, or take a few sequential courses. As such, it becomes easy for information to become distant or altogether forgotten when it is not actively being used (Pascarella & Terenzini, 2005). Yet in many industries, including business, jobs require employees to think holistically about situations which oftentimes is broader than their college major (Helyer & Lee, 2014). As the findings indicate, students participating in the business incubator environment were able to broaden their knowledge beyond their major and enhance their skillset (Binks, Starkey, & Mahon, 2006).

Overall, student involvement in local start-up communities is a beneficial learning experience as they were challenged to apply their prior learning to specific scenarios. This type of active learning may stimulate transitions between the various classifications of knowers while helping students prepare for their careers. Future research could examine the transitions between the various stages of knowers (absolute, transitional, independent) to determine if a lack of advancing to independent knowers is related to coursework, a lack of available high impact practices (such as internships), or levels of student engagement (Baxter Magolda, 2004).

Recommendations for Practice
Students’ experiences with business incubators helped them build a strong foundation of career-related experiences that they will be able to utilize throughout their working life. The findings highlight the transferable skills students learn while working at the incubator. Based on this information, it is recommend that students have ample opportunities to explore, inquire, and
discover during their undergraduate years. Specifically, it would be advantageous for active learning experiences to include:

- **Higher Order Thinking.** Situations engaging students in higher order thinking can assist with single-loop, double-loop, and triple-loop learning (Chisholm, Harris, Northwood, & Johrendt, 2009) and help students become independent knowers (Baxter Magolda, 2004). Student experiences at business incubators allowed them to work through the learning process and develop an ability to apply their cumulative knowledge to situational experiences.

- **Soft Skills.** Since soft skills are transferrable or lateral skills, they have applicability in most industries. Overall, college students have minimal exposure or opportunities to develop their soft skills despite the emphasis employers place on these traits. Enriching existing student offerings by specifically targeting soft skills may help students gain further competency in this area. Increased levels of co-curricular learning opportunities may provide the platform to nourish and help students develop these skills.

- **Career-Readiness.** Experiential learning opportunities offer students a platform to actively participate in a variety of circumstances, which may be vastly different from anything the student has previously encountered. In essence, it can be viewed as an elevator-type of mechanism as it can reflect a student’s soft skills, interpersonal demeanor, and abilities more so than a college transcript. Incubator-based experiences help develop a broad range of career-readiness attributes while providing opportunities for students to apply their knowledge.
This involvement highlights a positive way higher education institutions can actively engage and help strengthen local start-up communities (Fitzgerald, Bruns, Sonka, Furco, & Swanson, 2012). Additionally, it may provide a scalable base to build career-related experiential learning opportunities (Kuh, 2008).

Ideally, students would begin participating in scalable experiential learning opportunities beginning their freshman year which continue throughout their senior year. Each year the learning experiences would grow in complexity and, in essence, become building blocks for developing career-readiness attributes which have broader applicability to the workforce.

Conclusion

This study suggested that start-up communities and business incubators offer important learning experiences (Lent & Brown, 2013), which may be considered transformational for some students (Corbett, 2005). No matter what career pathway a student chooses, higher-order thinking, the acquisition of soft skills, and an ability to demonstrate career-readiness attributes would likely be needed not merely for entry-level jobs, but throughout their careers (Arum & Roska, 2014). Students were able to process and contextualize learned knowledge while applying it to the situation at hand (Shane & Venkataraman, 2000). However, the overall learning process may be minimized if students are not able to actively transform their knowledge and progress towards independent knowledge.

Furthermore, students need complex opportunities to challenge and inspire them to reach their potential (Kuh, 1981). The findings from this study suggest that participating in active learning environments, such as business incubators, appears to have a positive relationship to overall learning (Koedinger, McLaughlin, Kim, Jia, & Bier, 2015). As such, undergraduate
students will likely continue to benefit from the learning process and active participation typically found in business incubators (Dimov, 2007).
CHAPTER 4
DEVELOPING ENTREPRENEURIAL SKILLS AND COMPETENCIES THROUGH CO-CURRICULAR LEARNING

The United States has been a global leader in both innovation and entrepreneurship for decades (Henton & Oettinger, 2015), yet the field is not for everyone. Entrepreneurship requires a high level of dedication, leadership, innovativeness, ambiguity, and a plethora of other skills (Bae, Qian, Miao, & Fiet, 2014). But developing entrepreneurial skills and competencies are no longer relegated solely for individuals starting a business but has applicability for other career pathways. The Fourth Industrial Revolution (Leopold, Ratcheva, & Zahidi, 2016) is causing companies to seek individuals with skillsets similar to entrepreneurs to help drive innovation and adaptability. Increasingly, industries are looking for recent graduate who have developed these skills to help innovate within their companies (Birdthistle, Costin, & Hynes, 2016). Therefore, it is advantageous for students to develop entrepreneurial skillsets regardless of whether or not the plan to start their own business after graduation.

Indeed, the career selection process can be daunting, especially for students with lower levels of confidence, self-efficacy or minimal skills. Additionally, perceived barriers or unfamiliarity of career fields prevent students from pursuing particular career pathways. Such may be the case for entrepreneurship. However, students may aspire to pursue entrepreneurship as a career pathway if they had exposure to the field coupled with opportunities to gain competency in entrepreneurial skillsets (Fouad, Smith, & Zao, 2002).
The purpose of this multi-site case study was to examine how undergraduate students developed entrepreneurial attributes and competencies through co-curricular opportunities with university-affiliated business incubators. The intent of this study is not to determine whether or not the students will pursue entrepreneurship as a career path. Instead, it is focused on the entrepreneurial skills students acquire by working at a business incubator. These skills are sought after by employers in numerous industries (Arum & Roska, 2014). Findings from this study indicate that skills acquired through business incubators can serve as building blocks for career aspirations and can be thought of as accelerated learning experiences. Students working at the business incubator were engaged directly with entrepreneurs, which may contribute towards the development of entrepreneurial mindsets. This is significant because it provides opportunities for students to develop the type of skills employers are looking for. Recommendations include developing best practices for connecting higher education institutions to business incubators as well as start-up communities and having ample authentic career-related activities for students to participate in.

**Literature Review**

The development of human capital and individual skillsets is important for students, businesses, and entrepreneurial ecosystems (Isenberg, 2011). Over the last three decades, there has been a steady increase in students seeking career-related development from postsecondary institutions (Levine & Dean, 2012; Sanahuja Velez & Ribes Giner, 2015) as a strong educational foundation can have long-term benefits (Fitzgerald, Bruns, Sonka, Furco, & Swanson, 2012; Manyika, Lund, Auguste, Ramaswamy, 2012). However, recent graduates with minimal career-related experiences or those solely having specialized knowledge typically have a tougher time finding a good job in competitive markets (Sanahuja Velez & Ribes Giner, 2015).
At the same time, increasingly students are partaking in superficial learning practices (Beach, 2018). These practices include more passive approaches to learning in which information is memorized for an upcoming test (Donald, 2002). This can be problematic as employers seek college graduates who have a combination of technical and soft skills. Employers are seeking recent graduates that can think on their feet, manage ambiguity, solve problems, and respond to rapidly changing markets (Arum & Roska, 2014; Seibert, Crant, & Kraimer, 1999). Institutions need to provide more robust learning experiences in order for students to gain the skills needed to meet the needs of the 21st century workforce (Arum & Roska, 2014).

Entrepreneurial ecosystems consist of a supportive base of stakeholders with vested interests in ensuring entrepreneurs are provided with the necessary support to launch and grow their businesses (Gonzalez-Pernia, Guerrero, & Pena-Legazkue, 2015). Preparing individuals to participate in the entrepreneurial ecosystem is becoming increasingly important as a growing number of businesses look to hire individuals with entrepreneurial mindsets (Birdthistle, Costin, & Hynes, 2016). Research has identified several traits, which are common among entrepreneurs such as demonstrating an ability to tolerate ambiguity and risk, can solve problems, and think critically (Heinonen & Poikkiilo, 2006; Mathias, Williams, & Smith, 2015). These skills are synonymous with skills necessary for the contemporary workforce (Carnevale, Smith, Melton, & Price, 2015) and not merely relegated to entrepreneurs. Higher education can play a key role in supporting both entrepreneurial ecosystems and their undergraduate students by actively engaging within their communities.

Undergraduate students’ perceptions about entrepreneurship are influenced by exposure to entrepreneurship in coursework, internship opportunities, and business plan or product
development competitions during college (Duval-Couetil, 2013; Fayolle & Gailly, 2015). This exposure can increase a student’s interest, desire, and confidence in pursuing entrepreneurial opportunities. In addition to coursework, hands-on applications involving entrepreneurial communities and the complexities (Balan & Metcalfe, 2012) can help students improve their skills, gain mastery (Sandercock, 2004) or develop an entrepreneurial mindset. However, these opportunities are often limited to business majors. This is a missed opportunity because of the increasing needs for interdisciplinary approaches towards solving problems (Pittaway & Cope, 2007).

In order to promote and expose students to the entrepreneurial ecosystem, some colleges and universities have either developed or partnered with business incubators (Stokes, 2015). Business incubators are organizations that help new businesses owners with the preliminary phases of starting and launching a business (Davidsson, 2017). The type of entrepreneurs typically targeted by business incubators are those who have a promising idea about a product or service which has high growth potential (Henton & Oettinger, 2015). As such, incubators may provide a rich, active learning environment for students. The literature suggests that student entrepreneurial attitudes increase when students have learning opportunities exposing them to entrepreneurial communities (Sandercock, 2004; Segal, Schoenfeld, & Borgia, 2007), such as university affiliated business incubators.

**Social Cognitive Career Theory (SCCT)**

Human behavior, self-regulation, and efficacy are internal forces affecting individual choices and personal judgements (Bandura, 1986). In particular, self-efficacy has vast influences and does not remain idle. It can fluctuate depending on current circumstances and past experiences (Fouad, Smith, & Zao, 2002) and inevitably alter one’s perceptions about a situation.
These factors can also influence the range of career options individuals feel are achievable or within their grasp (Betz & Hackett, 1986). Bandura’s (1986) Social Cognitive Theory laid the groundwork for the career-focused extension, referred to as The Social Cognitive Career Theory (SCCT). SCCT is an extension of Bandura’s (1986) Social Cognitive Theory and helps explain career choices and how various situations or contexts can alter an individual’s perception (Lent, Brown, & Hackett, 2000).

In SCCT, career development and choices can be understood through factors influencing a person’s behavior (Lent & Brown, 2013). Barriers, whether perceived or real, can negatively impact efficacy levels (Lent, Brown, & Hackett, 2000). If not minimalized, these barriers may ultimately hinder a student’s pursuit of a career pathway, despite having interest in that field (Dahling, Melloy, & Thompson, 2013). Contrarily, self-efficacy can be increased when a student is in an encouraging environment (Fouad, Smith, & Zao, 2002; Lent & Brown, 2013). Past experiences are powerful and become influential determinants when an individual is assessing their ability and confidence to adequately perform a task (Swanson & Fouad, 1999).

The entrepreneurship construct within SCCT can be viewed through a person’s ability to persevere and attain their goal despite challenging circumstances (Bandura & Locke, 2003). Challenging times are synonymous with entrepreneurship, along with having an ability to navigate setbacks, which often requires higher levels of self-efficacy (Markman, Balkin, & Baron, 2002). As such, individuals with entrepreneurial mindset commonly have abilities tend to set far-reaching or difficult goals and persevere despite setbacks.

Participation in exploratory activities can aide students in identifying career interests (Lent & Brown, 2013). Individuals, including undergraduate students, may become hasty during the career selection process and prematurely exclude pathways with potentially rewarding
outcomes (Lent, Brown, & Hackett, 2002). For instance, someone with a history of struggling in intermediate-level math courses may demonstrate initial angst towards any career pathways involving math without considering it further. This is unfortunate given the technological advancements which may support or strengthen any personal deficiencies.

Students participating in experiential learning opportunities, specifically at business incubators or start-up communities, would likely face challenges requiring them to engage in deep learning. Indeed, these experiences prompt students to incorporate prior knowledge or aspects from various courses in order to address a current task. In instances like these, strong self-efficacy levels could aide students as they work through challenging circumstances and become resilient despite setbacks, even if they have previously experienced failure in a similar situation (Bandura & Locke, 2003; Morris, Shirokova, & Tsukanova, 2017). Bandura (2002) suggests that people with higher levels of efficacy view broader ranges of career options and pursue the educational credentials needed for those vocations. SSCT is a good fit for this particular study because entrepreneurship may be an unfamiliar career to students, and they may initially view it as perhaps a future consideration. Additionally, SCCT allows for an exploration of how students gain entrepreneurial skills and competencies through co-curricular learning.

**Research Design, Methodology and Methods**

A constructivist epistemology with an interpretivist theoretical perspective was used for this study (Hindle, 2004; Hlady-Rispal & Jouison-Laffitte, 2014; Stevaert, 1997; Suddaby, Bruton, & Si, 2015). The constructivist epistemology recognizes individuals draw meaning from their unique experiences in and through interactions with others (Crotty, 1998). As such, individuals participating in the study provided insights (Boblin, Ireland, Kirkpatrick, & Robertson, 2013) and aspects pertaining to the phenomenon that positivist-based studies may not
reveal (Schofield, 2002). Indeed, viewing entrepreneurial ecosystems through an interpretive and constructivist lens highlights both the complexities and intricacies involving undergraduate students and entrepreneurial ecosystems (Hlady-Rispal and Jouison-Lafitte, 2014).

Qualitative research methods incorporate participants’ perceptions and experiences relative to their natural setting (Hindle; 2004; Lent, Brown, & Hackett, 2000). In interpretive studies, such as this, the researcher is the human instrument for the data collection process (Merriam, 2002). This may be helpful in providing additional understanding of complexities and meanings individuals ascribe to their experiences, since entrepreneurial studies are commonly positivist-based (Hlady-Rispal & Jouison-Laffitte, 2014).

Case studies are used to “understand the dynamics” within a setting (Eisenhardt, 1989, p. 534) and can consist of either singular or multiple views of the phenomenon. In multisite case studies, research is conducted at multiple locations in which a distinct commonality or aspect “binds” the study together (Stake, 2006, p. 23). Indeed, a multisite case study is an advantageous form of inquiry to understand complexities (Kuh, 1981) because it allows the same research to be conducted at several locations (Herriott & Firestone, 1983) while gaining a various insights and perspectives of a phenomenon. Another benefit of multisite case studies are having an ability to highlight heterogenic components or distinctions within the various sites (Schofield, 2002).

**Research Sites**

The Midwestern portion of the United States was selected because of significant growth witnessed in mid-market companies (Isenberg, 2016) coupled with a strong base of renowned higher education institutions (U.S. News and World Reports, 2016). This study focused on university-affiliated business incubators located within a 50-mile radius of one another. For this instance, a business incubator were described as an entity concentrating on nurturing individuals
in the midst of forming or launching a business in the marketplace (Davidsson, 2017). After the initial list was compiled, it was further condensed to ensure that the incubators were part of an existing entrepreneurial ecosystems and university personnel were actively involved with the incubator. There were eight incubators that met the selection criteria and five agreed to participate in the study. The incubators (see Table 1) offered distinct variances (Merriam, 2002; Stake, 2006) including: size, affiliations with higher education institutions, prominence, and connections to financial investors.

**Table 1.** University-Affiliated Business Incubators

<table>
<thead>
<tr>
<th>Site</th>
<th>University’s Carnegie Classification</th>
<th>Student Enrollment</th>
<th>Type</th>
<th>Business Incubator in Existence</th>
<th>Hours/Available Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Master’s Colleges &amp; Universities</td>
<td>3,000+</td>
<td>Private</td>
<td>2 years</td>
<td>8:30 am-5 pm</td>
</tr>
<tr>
<td>#2</td>
<td>Doctoral Universities</td>
<td>20,000+</td>
<td>Public</td>
<td>5 years</td>
<td>7 am – 10 pm</td>
</tr>
<tr>
<td>#3</td>
<td>Doctoral Universities</td>
<td>15,000+</td>
<td>Private</td>
<td>3 years</td>
<td>Anytime</td>
</tr>
<tr>
<td>#4</td>
<td>Doctoral Universities</td>
<td>20,000+</td>
<td>Private</td>
<td>7 years</td>
<td>Anytime</td>
</tr>
<tr>
<td>#5</td>
<td>Doctoral Universities</td>
<td>23,000+</td>
<td>Public</td>
<td>5 years</td>
<td>Anytime</td>
</tr>
</tbody>
</table>

Between the five sites, there were noticeable similarities and differences among the incubators (Schofield, 2002). One site (#3) focused more towards supporting student teams who were in the process of launching a business. Another site (#5) aligned their efforts towards alumni and current students, although anyone in the community could seek membership. The other three sites (#1, #2, #4) focused primarily on the community, although students looking to start a business were welcomed. Four incubators (#2, #3, #4, #5) had a heavy presence of
undergraduate students working there, whether they were developing their own business or had an internship-type of role. A variety of participants (see Table 2) provided insights into the phenomenon.

**Table 2.** Participants in Study

<table>
<thead>
<tr>
<th>Site</th>
<th>Number of Participants</th>
<th>Role at Incubator</th>
<th>Student Majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>4</td>
<td>Director, Students</td>
<td>Business, Marketing, Sales</td>
</tr>
<tr>
<td>#2</td>
<td>6</td>
<td>Director, Students</td>
<td>Business, Communications, Marketing</td>
</tr>
<tr>
<td>#3</td>
<td>4</td>
<td>Director, Students</td>
<td>Business, Marketing</td>
</tr>
<tr>
<td>#4</td>
<td>8</td>
<td>Director, Students</td>
<td>Business, Economics, Marketing, Sociology, Visual Communications</td>
</tr>
<tr>
<td>#5</td>
<td>10</td>
<td>Director, Faculty, Students</td>
<td>Art, Business, Finance, Visual Communications, Psychology</td>
</tr>
</tbody>
</table>

Each of the incubators had a similar process for engaging with students. Interested students submitted an application which included background information, interests, courses they had taken, and references. Directors at each incubator were responsible for conducting interviews of potential candidates. At four of the sites (#1, #2, #4, #5), entrepreneurs housed at the incubator participated in the interviews if they had a project that needed a specific skillset. For the most part, directors and entrepreneurs were flexible with students’ backgrounds. Site #3 used an interview process but had a different approach since their focus is providing support to student entrepreneurs. It was required that students looking to launch a business formed a team. Once the team was assembled, they submitted a joint application and participated in a group interview.

There was no formal training or pre-requisites for students. The directors and entrepreneurs were open to working with students from a variety of majors and encouraged the interdisciplinary perspectives. Students were assigned to various projects based on their
backgrounds and the entrepreneur’s needs. In some instances, students worked independently on portions of a project and then worked on a team for other components.

Another similarity of the incubator sites is that members had swipe cards which allowed access to the space anytime it was convenient for them. Additionally, there was a thorough understanding regarding the benefit of mentors affiliated with the incubators and the wealth of knowledge, experience, and connections they personally had. It was a requirement in all three incubators that the entrepreneurs regularly meet with their assigned mentors.

Data Collection and Analysis

Several methods of data collection were used including focus groups, interviews, artifacts, and site observations. Interviews of incubator directors, faculty members, and undergraduate students, along with the focus groups and site observations, all took place within the natural settings (Hindle, 2004; LeCompte & Preissle Goetz, 1982). The site observation lasted an average of two hours at each business incubator for a total of 30 hours of observational data collection. Field notes were taken during each site visit at every location for further analysis (Stake, 2006). Gathering data from multiple sources helps achieve triangulation in the study (Stake, 2010) while aiding its robustness. Initially, an email was sent to directors at each of the incubators seeking their participation. After confirmation was received, the first face-to-face meeting was scheduled. A snowball sampling technique (Creswell & Miller, 2000) was used to seek faculty and student participation. The study consisted of interviews with five directors, three faculty members, and twenty-four students.

Discussion guides were used to guide conversations with participants, yet designed to allow follow-up questions (Meyer, Crane, & Lee, 2016). The discussion guide used for interviews with directors of the incubators and faculty consisted of 42 open-ended questions. The
discussion guide used for focus groups with the undergraduate students consisted of 32 open-ended questions. A total of seven focus groups, lasting approximately 90 minutes, were held in private meeting spaces within each incubator and follow-up interviews with directors and students lasted approximately one hour. All focus groups and interviews were recorded and transcribed verbatim to ensure authenticity (Simons, 2009). Transcripts were mailed to each participant to verify the accuracy of the transcription process.

Artifacts provide another layer of data used to triangulate a study and enhance credibility (Lincoln & Guba, 1988; Creswell & Miller, 2000). For this study, artifacts collected included brochures, flyers for both students and entrepreneurs, website analysis, newsletters, and historical documents. The website analysis included reviewing all of the tabs, links, downloading documents, blog posts, and social media platforms. This additional step in gathering data from multiple sources provided additional clarity and provided further confirmation of the findings (Boblin, Ireland, Kirkpatrick, & Robertson, 2013). The multiple data sources helped substantiate the study (Eisenhardt, 1989).

**Data Analysis**

This data was part of a larger study relating to the research question: How do students gain career readiness attributes by participating in experiential learning opportunities through business incubators? This paper specifically focused on the research question: How do students develop entrepreneurial skills and competencies through co-curricular learning? The data analysis began with a variety of coding processes to ensure salient points and key themes were identified (Saldana, 2013). The first cycle, referred to as Verbal Exchange Coding, consisted of multiple reviews of all transcripts from the various focus groups and interviews. This first step standardized the data collected from each of the business incubators in order to view broadly and
holistically (Herriott & Firestone, 1983). This initial process resulted in 295 codes which were analyzed and categorized into thematic categories. Pattern Coding (Miles & Huberman, 1994) and Holistic Coding (Saldana, 2013) helped guide the next coding cycles which reduced the codes down to 82 and finally 30. The categories identified included: cognitive complexity, career-relevancy, individual traits, environmental conditions, and active learning. After coding and analyzing all of the data, 30 codes remained (Miles & Huberman, 1994). The overall thematic heading for this study is engaged learning with the key constructs of: tangible, career-relevant experiences, accelerated work experiences, and intellectual challenges and growth.

**Trustworthiness**

Trustworthiness is an important element for qualitative research to help ensure credibility and provide authentication (Creswell & Miller, 2000). They are: credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1988). Multiple types of data were collected for this study to negate concerns about retrospective bias (Mathias, Williams, & Smith, 2015) and to enhance the credibility and dependability of the study. A variety of incubator sites were analyzed to aide in transferability, along with a structured framework to guide the overall process. The four pillars provided guidance to ensure the goodness of the work and trustworthiness of the study.

**Findings**

Information gained through interviews with students, faculty, and administrators discussed three primary ways in which participation in experiential learning opportunities through a business incubator contributed to students’ career development. These findings included: 1) tangible integrated learning experiences, which serve as building blocks for careers; 2) accelerated work experiences allowing for career exploration and the development of soft
skills; and 3) intellectual challenges and growth leading to higher order thinking, contextualization, and formative ideation. Cumulatively, students gained more familiarity with entrepreneurship regardless of students’ home discipline or background.

**Tangible Integrated Learning Experiences**

Overall, student participants in this study felt career-relevant experiences are vital to their ability to secure a job post-graduation. Additionally, they believed working at the various business incubators would provide them with the type of tangible experiences necessary for post-graduation employment. George, a student, said this about his experience:

> Working for start-ups has given me an enormous amount of confidence that I haven’t felt with other college-related activities. I have participated in a couple of internships, but I was never actually responsible for anything. Sure, I sat in on meetings at the internship, but I wasn’t part of the decision process. It’s a totally different experience with start-ups. You are responsible and held accountable for tasks in which you are assigned. You are part of an actual team and I feel this experience represents what an actual career will be like. These experiences allowed me to create something and really pull knowledge together from various areas. You don’t get a lot of opportunity to do this in college.

George’s statement was indicative of students’ experiences with the business incubators. Participants believed that this type of work provided them with experiences unlike other college activities. They identified being able to gain skills that could be used in their post-college jobs and, perhaps, throughout their lifetime.

Students felt that working at businesses incubators provided them with suitable career-related building blocks and engaged them in unprecedented ways. For instance, sometimes it is difficult for students to apply their information to a realistic scenario or they may need additional time with a topic before it resonates. As Gwen, a business major, explains:

> I love the challenge. I thought it would be easy working on the various projects because of the classes I have taken. But it’s much harder. You try and think back through all of your classes to find answers and that’s not always the case. I was surprised how hard it would be. I do feel better prepared for a job after I graduate because of working with
start-up businesses. Everything I have worked on here gives me that “aha’ type of moment when the courses come together and you see how it relates to a job or career.

Gwen felt that her classes were adequate preparation for working at the incubator but did not realize the challenges involved with contextualizing and applying knowledge. This example highlights that co-curricular learning can reinforce what students are learning in credit-based courses. The material may make sense in a class, but its application can be tricky in unscripted situations.

Sometimes students were involved in aspects of projects that are not directly related to their major. This type of exposure helped students develop additional skillsets that are considered transferable to most careers. For example, a finance major named Jacqueline, reflected on the extensive writing she did for a specific company at the incubator. She said:

Writing is not a focus for my major and, obviously, we do some writing in classes. I was asked to help write a newsletter for a start-up company. The experience has improved my overall style. I know that may sound kind of weird, but my writing is tighter and more concise. When the company first asked me to help them, I was simultaneously excited to do something new and frightened because I have never written a newsletter before. Now it’s pretty easy and has become part of my routine. It’s definitely something beneficial I can add to my resume.

Despite having trepidations, Jacqueline embraced the opportunity to expand her skills and tackle new challenges. This also demonstrates the multifaceted competencies students need when working in an entrepreneurial environment. In addition, students are able to acquire the lateral skills employers are looking for by working at business incubators.

**Accelerated Work Experiences**

Student participants discussed having an accelerated work experience, meaning an intensive or condensed immersion experience, while working at the business incubator. Some of the projects students work on at the incubator were only a few weeks in duration. This meant that
throughout a semester, students worked on multiple projects, sometimes even simultaneously, for more than one entrepreneur. This type of experience seemingly helped students with minimal career-related experience gain exposure to juggling multiple priorities along with opportunities to develop their skills. For example, Whitley, a student said:

I had applied to so many internships during my junior and senior year. Honestly, I have lost track of how many. It was one rejection after another. At the beginning of my senior year I was so nervous, anxious, and somewhat humiliated. I didn’t know what I was going to do, but I did know that I was going to have a really hard time finding a job after graduation without any work experience related to my major. Everything changed when I started working at the incubator. Now I have worked on so many projects throughout the year that I now have more experience related to my career interests than other students in my classes. This experience has made an enormous difference in my life.

Whitley experienced difficulty securing an internship. She was nervous because she did not have an experience related to her career and became concerned about opportunities for post-graduation employment. However, the incubator provided an internship-like experience and she was able to work on several different projects throughout the semester. These accelerated work experiences gave Whitley confidence in her abilities which she believed would make a difference in her post-college job opportunities.

One identified benefit of the short-term, accelerated projects for students was it provided students the opportunity to experience what it is like to work at a start-up and with entrepreneurs. As one director, Erin, said:

It’s a huge learning experience whether it [the business] succeeds or fails because students see you work more hours than you do in a 9-5 job. You run into more situations – good, bad, and messy. Students may be involved in short-term assignments with incredibly tight deadlines or longer projects that are more routine. Nevertheless, students may work really hard on a project with a founder [owner] and it fails. That’s great exposure for them because that’s the nature of business. There are tremendous ups and downs. There are so many forces simultaneously at play that everything isn’t always predictable or turns out as one hopes it will.
As Erin stated, students had opportunities to witness first-hand the ebbs and flow of a start-up. Students encountered projects with tight deadlines and other tasks which are more routine. They also witness that sometimes projects do not work out as planned, despite the hard work and effort that went put into them.

Students were able to experience the fast-paced environment of working at a start-up during their time at the business incubator. This environment having tighter turn-around times and deadlines, which was often a new experience for students. Lexie, a student majoring in visual communications, said:

"Working at the business incubator brings everything to life. I had worked at two internships before working here. The internships were a much slower pace and had more routine work. It wasn’t anything really exciting. But here you have really tight deadlines which is something I had never experienced. A task on one of my first projects needed a one-week turnaround. At first I thought the founder was joking. After I realized he wasn’t, I got serious about what I had to do. The first time it was definitely a struggle, but now I’m used to it. I don’t procrastinate like I used to."

Lexie noted that there was a much faster pace involved in working at the business incubator with tight deadlines she had to meet. As she describes her experience, she indicated it was a different experience compared to her traditional-style internship. In one instance, she had a one week turn-around. Exposure to this type of learning environment has positively affected her in other ways as she found herself not procrastinating like she did previously.

**Intellectual Challenges and Growth**

Students working at business incubators were involved with multiple individuals, such as entrepreneurs, directors, other students, and sometimes faculty. For instance, Mark, a student, described his involvement made him “work harder” and “think differently about everything.” Specifically, he said:
I never knew how to even start solving a problem. Through the incubator, I learned how to map out a problem by identifying relevant pieces, conducting research, analyzing the information, and determining what else was needed to provide a solution to the problem. Now I am a lot more comfortable with things that are unknown to me. Ambiguity – I surprisingly find it both stimulating and exciting.

Mark was involved with a project and he initially struggled trying where to figure out where to begin. This is an example of an intellectual challenges because it was a new experience which required effort and determination to figure out an adequate solution to the problem. Mark indicated personal growth as this experience helped him gain confidence and feel more comfortable working through ambiguous situations. Indeed, students identified gaining valuable experience through this type of active learning.

By working at business incubators, students learned key concepts from other students and disciplines which were unfamiliar to them. This seemingly helped develop lateral thinking. For example, Jake said:

This type of [start-up] work is tough. In our classes, we talk about something new every couple of weeks. Classes follow a path. Here, you have to figure a lot out on your own. The solution is not right at your fingertips. There’s some guidance from the founder about what they’re looking for, but a lot of times I had to research stuff before we started figuring out a direction. Sometimes you are working by yourself and sometimes you are working on a team with students from other majors. Their views [other majors] and information they learned in their classes help you see things a bit differently. Something may not make a lot of sense to you until you talk about it with other majors. They add their thoughts or reasons as to why something may be happening and it makes you think differently. One time we were talking about consumer behavior and a psychology major explained more about characteristics of individual people. It was related to common behaviors. The patterns we noted in our research made perfect sense. You have a different perspective. The more I worked on projects like this, the easier everything was. I felt confident in my work and sharing my findings with everyone.

Jake noted that sometimes he had to conduct exploratory research and was not always given a lot of direction. This was a different experience than courses which are structured and linear. Some of the tasks Jake worked on did not have an immediate or apparent solution. But he was able to
gain a broader perspective when he worked on an interdisciplinary team compared to his individual work. In essence, the team-based experience helped Jake develop lateral-thinking skills because it helped him view situations differently and gain an understanding or explanation about why something was happening. Lateral thinking aligns with the type of transferable skills employers are looking for in college graduates.

Some students discussed not fully apply themselves to their coursework. For example, Thomas admitted that ever since middle school, he developed techniques to skim material in courses and studied for tests at the last minute. Somehow he managed to be a successful student and achieve good grades. He shared he has been a successful student despite skimming information and study last minute for tests. However, he found that these educational practices did not work when working for the incubator. He said:

Skimming information all those years did nothing but hurt me. I didn’t realize it until working for an entrepreneur. He was impressed with the courses I had taken and felt I was perfect for a project. However, I had no idea how to handle the first few tasks assigned to me. I had difficulty remembering content from my classes because I never truly learned it. I was humiliated at that point but didn’t give up. I took it upon myself to dig back into the relevant coursework and promised myself I would never do this again. Working on authentic and realistic projects made me realize that I could not bluff my way any longer. Thank goodness I was given a second chance to prove myself. An actual employer may not have been as gracious.

Thomas tried to just ‘get by’ in his courses by doing the bare minimum. When it came time to apply his knowledge to a specific task, he had difficulty remembering information from his courses and realized he had a problem. It appears Thomas initially had an elevated level of efficacy which diminished to a lower level when discovering that he experienced difficulty completing assigned tasks. The incubator environment really challenged Thomas to think through things by digging deeper and learning how to apply his knowledge. This demonstrates the importance of efficacy as students need confidence in themselves to continue persevering,
despite setbacks. This experience provided Thomas with an opportunity to be intellectually challenged and grow from the experience.

Students supported entrepreneurs by conducting research and exploring various areas to help identify appropriate solutions to a problem or situation they were working on. The discovery process encouraged intellectual growth in students because higher order thinking skills were needed to determine appropriate approaches while working through ambiguity. These learning experiences instilled entrepreneurial mindsets because the thought processes emulated what entrepreneurs regularly endure. Once a problem or situation is identified, the entrepreneur works through the unknown to determine a solution which adds value for the intended audience.

**Discussion**

The purpose of this essay was to explore how co-curricular opportunities, such as working at business incubators, helps students develop entrepreneurial attributes and competencies. These skills are beneficial whether students decide to start their own business or work for another company (Arum & Roska, 2014). Based on the findings, incubator-based learning experiences helped students develop entrepreneurial mindsets through discovery and exploration processes (Fouad, Smith, & Zao, 2002). Students helped solve problems, worked through ambiguous scenarios, collaborated with others on a team, and faced intellectual challenges. These skills not only demonstrate parallels with common entrepreneurial traits (Birdthistle, Costin, & Hynes, 2016), but they also are applicable to other career paths (Arum & Roska, 2014). Students noted increased levels of confidence in their abilities which likely had a positive effect on their self-efficacy (Lent, Brown, & Hackett, 2000).

Students felt that their experience with the start-up communities and business incubators was different than their courses. One student initially thought the experience would be easy but,
instead, found it to be more challenging. Another student explained that classes are more linear and follow a path. Incubators, on the other hand, were filled with ambiguity which made it difficult to pre-determine a set path. This ambiguity is partly why entrepreneurial environments are described as dynamic and constantly influx (Seibert, Crant, & Kraimer, 1999). One student indicated that he initially struggled with figuring out how to start a problem. During his incubator project, he learned how to map a problem, identified the relevant pieces, researched information, and analyzed the results. This finding suggests that students were productive in realistic, work-based setting which lacked the type of structured environments students are accustomed to in college courses. In addition, students had opportunities to work with students from other majors. Interdisciplinary teamwork allowed students to broaden their knowledge base and their perspectives. Students indicated that they were constantly learning and thinking through a variety of intellectual challenges which provided additional growth opportunities (Carnevale, Smith, Melton, & Price, 2015; Seibert, Crant, & Kraimer, 1999; Stokes, 2015).

Students noted differences between their incubator-based work and previous internships. It was common for students to work an entire semester for one particular company during an internship so this unfamiliarity likely resulted in fluctuating levels of efficacy (Fouad, Smith, & Zao, 2002). However, students said they worked on multiple projects, and even multiple entrepreneurs, during the course of a semester. In essence, students were participating in accelerated work experiences because they were much shorter in duration than a semester-long internship. A student described the internship as being slower-paced compared to working at an incubator, which oftentimes involved tight deadlines. Students felt that they were held accountable for completing components of a project at the incubator as opposed to more routine work at an internship. In addition, students felt that the incubator-based experience was
representative of their pending career, which helped them gain confidence in their abilities and career preparation thus increasing their self-efficacy levels (Lent, Brown, & Hackett, 2000).

A significant aspect of this study highlighted the importance of career-related experiences. Co-curricular experiences, such as those offered through business incubators, helped students gain competency and mastery of applying knowledge to realistic scenarios. It is recommended that students participate in a minimum of two HIPs prior to graduating (Kuh, 2009; Kuh, 1993), but this baseline may no longer prove adequate for college students given the complexity and the relentless speed of the Industrial Revolution 4.0. In the findings, several students noted that they initially struggled contextualizing and applying their knowledge (Corbett, 2005), partly because the solutions were not readily available. One student felt that working on realistic scenarios brought their coursework to life and they saw first-hand how it related to their intended career.

The findings indicate that students noted their own personal growth and felt better prepared for a career. Prior to her experience at the business incubator, one student indicated not being successful in securing an internship despite her numerous attempts. After being accepted into the incubator-program, she began working on several projects and indicated feeling as though she was ahead of her peers with the career-relevant experiences she could include on her resume. This increase could be contributed to personal achievements and encouraging environments thereby contributing to an increased self-efficacy (Fouad, Smith, & Zao, 2002; Lent & Brown, 2013). Another student had the exact opposite level of efficacy when he first started out. He had a high level of efficacy and was overly confident in his abilities. By working with other students, he was able to realize that his skills were in alignment with others. This
realization appeared to help his efficacy reach an appropriate level. It appears as though active learning experiences such as these helped increase students self-efficacy.

**Recommendations for Practice**

Given the accelerated pace in which Industrial Revolution 4.0 is progressing, students need ample opportunities to think, learn, and discover (Stokes, 2015). Co-curricular experiential learning opportunities, such as those available at business incubators, may prove beneficial in providing students with broad, ambiguous information and asking them to figure out a solution for the task at hand (Kuh, 2009). In this study, students discussed their increased ability to work through realistic and problem-based scenarios which will be advantageous upon entering the workforce (Arum & Roska, 2016). Below are three recommendations for practice based on the findings of this study.

In the coming years, workplace scenarios will likely be consistently filled with uncertainty and ambiguity (Carnevale, Smith, Melton, & Price, 2015; Stokes, 2015). Perhaps students may find themselves contemplating self-employment due to shifts within career paths (Duvall-Couetil, 2013). Being able to think and having an ability to navigate unprecedented times will be paramount. In addition, this study suggests that co-curricular learning positively complements coursework and helps students increase their efficacy levels (Bandura & Locke, 2003). Overall, these learning experiences appear to be transformational for students.

**Continuum of Engaged Learning**

Creating a Continuum of Engaged Learning throughout the undergraduate years in essence can become building blocks to help students with career preparedness. The continuum can vary in intensity or levels of challenges depending on a student’s needs. Ideally, it would begin during the freshman year and continue growing in complexity through their senior year.
The continuum would likely need reinforcement from higher education institutions. For instance, freshmen level students may need more structured support to strengthen efficacy levels and build confidence. Seniors, on the other hand, would be participating in activities requiring higher-order thinking or more advanced thought. A Continuum of Engaged Learning could be viewed as stepping stones and provide students with tangible, career-related experiences to help them transition from college to the workforce.

**Best Practices**

Higher education does not have a streamlined best practices in place for connecting colleges to business incubators and start-up communities. This missing element may be a critical factor in helping students gain essential career-relevant skills, especially since students need vast experiences to be adequately prepared for the workforce. Connecting colleges and universities with business incubators provides an ideal base to cultivate local entrepreneurship efforts while aiding in the development of human capital required by an innovative, knowledge-focused economy (Levine & Dean, 2012). It also provides a strong platform for entrepreneurial endeavors to flourish. These efforts are easily scalable to suit a start-up community’s needs.

**Support for Local Small Businesses**

Although it is important to provide resources for potentially high-growth start-ups, it is also essential to incorporate support mechanisms for the everyday business person who has a stable, albeit much slower growth trajectory than the technological businesses which typically capture the limelight. Therefore, it is important to be mindful of the contributions main street businesses make to their local communities and include them in economic development efforts. Both directors and students discussed the benefits of projects and the accelerated work experiences. Small businesses projects would be very similar to those described in this study.
Small businesses projects would be similar to the accelerated work experiences described in this study. As such, it is recommended that higher education institutions look towards local economic development efforts to engage directly with their small business community to help students become ready for careers.

Student participants in this study noticed how realistic working at business incubators was compared to their other college-related experiences. They enjoyed and appreciated the challenging atmosphere, career-relevant opportunities, and tangible experiences they could put on their resumes. Every student noted that they hoped to continue working at the incubator until graduation.

**Conclusion**

The experiences outlined in this multi-site case study demonstrate how constructivism-based hands-on experiences aide learning. The findings suggested that the skills students acquire can be viewed as building blocks for a variety of careers and disciplines. As illustrated, this is especially beneficial for students who may be experiencing difficulty contextualizing information or applying their knowledge to realistic scenarios. Students expressed strong interest in participating in authentic career-related experiences while in college. They value tangible experiences that help them become ready for careers and make successful transitions into the workforce. In addition, the levels of engagement outlined in this study may become determinants in helping students solidify or modify their career interests, along with increasing levels of self-efficacy. The findings indicated that many of the skills acquired are parallel to the entrepreneurial traits. Therefore, an added benefit of working for business incubators may be the development of entrepreneurial mindsets which is desired by many employers to remain competitive in the Fourth Industrial Revolution.
CHAPTER 5

CONCLUSION

This study was structured as a three-essay dissertation exploring how student participation in business incubators provided co-curricular applied learning opportunities for students to explore career paths and enhance their career-related skills. Chapter 1 contained an introduction to the nexuses investigated and background information on the key constructs. Chapter 2 contained Essay #1 which investigated experiential components available to undergraduate students at business incubators and how it helped them develop career-ready attributes. Chapter 3 contained Essay #2 which examined how business incubators provide students with active learning experiences which provided students with intellectual challenges. Chapter 4 contained Essay #3 which explored how business incubators helped students develop entrepreneurial skills and competencies. Chapter 5 focuses on primary conclusions across the essays, recommendations for future research, and reflection for future practice.

The findings in this dissertation are significant because it identifies career-preparedness opportunities for students from a variety of disciplines to develop the necessary skillsets needed to address current trends in the workforce. In addition, it helps strengthen ties between local economic development efforts, entrepreneurial ecosystems, and higher education institutions. Three key categories were consistently present throughout the entire study. They are: essential skills, multidisciplinary opportunities, and applied learning.
Essential Skills

Both the literature and industry professionals use the terms ‘soft skills’ and ‘essential skills’ to describe the type of transferable skills which have relevancy in most industries or professions (Arum, Roska, & Cook, 2016). These skills commonly include critical thinking, problem solving, team collaboration, and communications. They are personal attributes which can be developed or strengthened. While working at the incubator, students were assigned a variety of tasks or projects to help support an entrepreneur who was in the process of launching a business or product into the marketplace. Oftentimes the students were provided with limited directions and often encountered ambiguous circumstances due to the ‘newness’ of what the entrepreneur was aiming to accomplish. In order to successfully accomplish their assigned tasks, students engaged in higher order thinking and utilized other soft skills.

Indeed, this study demonstrated that business incubators provide ideal platforms to help students develop these essential skills. These unique and dynamic environments allowed students opportunities to apply their classroom-based knowledge to a broad range of practical applications. Directors noted that it is common for students to initially lack soft skills because there are not ample environments conducive for strengthening these skills. However, they stressed the importance of students developing these types of skills if they planned to continue working at the incubator.

Employers and industry professionals have a heightened awareness concerning the importance of college students acquiring soft skills prior to entering the workforce. Yet it was interesting that students who participated in this study lacked awareness of the overall categorization of either ‘soft skills’ or ‘essential skills’. Despite this unfamiliarity, students eluded to the various terms, such as problem solving, and provided numerous examples of how
they developed these skills. Students instead viewed these items individually as opposed to a broad set of skills.

The term ‘soft skills’ was consistently used throughout this essay because it was common language used by directors at the various business incubators. The term is also used in many industry reports. However, the literature uses both the terms ‘essential skills’ and ‘soft skills’. Overall, ‘essential skills’ has an edge with the number of references associated with it. Moving forward, it is recommended that one term be used to help avoid any confusion. It is recommended that the term ‘essential skills’ be used since it provides a sound, overarching umbrella which references the non-technical skills needed in numerous industries and professions.

**Multidisciplinary Opportunities**

Students enjoyed working with other majors on projects at the incubators. Overall, students felt their colleges provided limited career-related opportunities for them to engage with majors from other disciplines. One student noted that his business college emphasized the importance of cross-functionality teams, yet the opportunities provided remained within the same college. Students felt they benefited from multidisciplinary work because they were able to provide insight from their respective discipline to the task at hand while listening to other majors add their thoughts about other considerations. In essence, the lens used to initially view the situation was widened by the various perspectives which allowed a plethora of information to be evaluated. The various majors participating on a particular team are enriched because they have exposure to topics or relevant items that may not be a pertinent consideration within their discipline. This form of multidisciplinary teamwork provided the entrepreneur with a holistic
view of the entire situation as opposed to the findings from one major (Binks, Starkey, & Mahon, 2006).

Numerous companies in the United States are considered multi-national and have a global footprint. As these companies continue to expand their products and presence, there is increasing importance for workers to be adept working effectively in cross-functional teams and changing environments (Gottfredson, 1997). Therefore, it is important for students to be able to work and communicate effectively with diverse groups of individuals. This will continue to grow in importance. The multidisciplinary opportunities offered at incubators helped students integrate their skills through team collaborations (Donald, 2002). Despite this, higher education remains siloed and operates within discipline-specific boundaries with regards to career-related experiential learning.

**Active and Applied Learning Opportunities**

The data revealed that active learning experiences, such as business incubators, provided students with opportunities to explore potential career paths and solidify their career interests. These types of environments are prime illustrations for incorporating critical thinking and problem-solving exercises to complement course-based learning (Arum & Roska, 2014). In addition, the business incubators provided opportunities for students to apply their cumulative knowledge to specific tasks. Ultimately, these opportunities helped students build the types of skillsets necessary for the workforce (Kuh, Branch-Douglas, Lund, Ramin-Gyrunek, 1994).

Students felt that tangible, integrated learning experiences, such as incubator-based environments, are important career-preparation opportunities because they were able to take knowledge gained in the classroom and applied it to realistic scenarios. Incubator-based learning experiences helped students strengthen their confidence and efficacy levels by working through
challenging situations. Students noted being apprehensive the first time they were involved in a complex project because it was vastly different than other experiences. However, as they successfully completed assigned tasks, students felt more comfortable tackling other aspects of a project.

As noted in this study, today’s rapidly evolving industries are impacting career paths (Seibert, Crant, & Kraimer, 1999) so it is important that students are well-prepared for careers which may be influx. Business incubators are dynamic environments so it was common for student-based work experiences to be accelerated, intense, and condensed compared to students’ other forms of learning. Students were able to connect concepts and theories to realistic scenarios (Bloom, Hutson, He, & Konkle, 2013) which helped solidify their coursework. This type of environment helped students with career-preparedness by having set deadlines and holding them accountable for completing assigned tasks. Furthermore, students were able to develop transferable skills which have relevancy in a variety of professions. As noted in this study, ambiguity and uncertainty are prominent factors among today’s rapidly evolving industries and the career paths within them (Seibert, Crant, & Kraimer, 1999). The findings in this study suggest that students are initially hesitant working on ambiguous projects. Co-curricular or experiential learning opportunities encompassing ambiguous can help students gain experience working through realistic scenarios and bridge a gap to aide career-preparedness efforts.

Robust opportunities exist for colleges and universities to concretely define accelerated work experiences and determine ways to effectively engage with local entrepreneurial ecosystems. Connections, such as these, enable students to have exposure towards a variety of experiences involving fast-paced environments. It also allows students an opportunity to work on cross-functional teams which are representative of various industries. These types of career-
related skills are not merely for entry-level positions, but entail the type of cognitive
development for post-entry level work.

**Recommendations for Future Research**

This dissertation brings awareness to a multidisciplinary form of career-related
experiential learning. A key finding from this study identified business incubators as accelerated
work experiences. As the Fourth Industrial Revolution gains traction, it would be beneficial to
dig deeper into accelerated work experiences and determine an optimal number or specific type
of short-term projects that has the strongest effect on helping students prepare for a various
career paths.

The following categories have numerous opportunities for future research. Each topic can
be unpacked into a variety of either qualitative or quantitative studies.

**Soft Skills**

Future research could expand literature on soft skills and investigate the phenomenon
occurring at business incubators. Specifically, a study could explore whether students who have
limited or minimal soft skills when they start working at an incubator demonstrate a significant
increase by the completion of their work. Another opportunity would be to compare and contrast
soft skills development between undergraduate students working at a business incubator to those
working at an internship. Studies could examine the collaboration between various students to
gain an understanding about the dynamics of the team and how they become productive. In
addition, an exploration into how self-efficacy levels fluctuate during a student’s time working at
the incubator and are their underlying factors that lead to higher levels of confidence, goal
attainment, or breaking down perceived barriers.
Another aspect would be to delve deeper into the usage of terms identifying this skillset. As mentioned previously, the terms soft skills, essential skills, and generic skills are commonly used in the literature and industry reports. Ideally, research could delve deeper into the topic and recommend one all-encompassing term that reflects skills needed in various career paths and their underlying importance in the workforce of the future.

**Multidisciplinary Opportunities**

There are vast opportunities to study multidisciplinary opportunities involving co-curricular learning at business incubators. Future studies could seek to gain a better understanding surrounding various college majors to determine an optimal mix of disciplines (or students) involved in an entrepreneurial team. Another investigation could focus on the transfer of knowledge between students and the entrepreneur. Network analysis could be used to reflect both the types and levels of connections within the multidisciplinary team of students, their college, the entrepreneur, and mentors at the business incubator. Perhaps there are college majors that are more compatible and productive when working on multidisciplinary teams. Additionally, an investigation into how multidisciplinary opportunities help undecided majors explore and select a career pathway could be a helpful study.

**Active and Applied Learning Opportunities**

The areas of active and applied learning opportunities could expand the literature by investigating various types of activities to determine if there is a difference in learning or growth of the student. Measuring a student’s self-efficacy before and after participation in a business incubator could provide insight into whether it has an effect on perceived barriers or alters a student’s pre-determined career pathway. Another option would be studying first-generation college students to capture whether working in career-related active and applied learning
opportunities provides tangible experiences that helps them gain a better understanding about unfamiliar career paths. Additionally, a study could focus on whether or not active and applied learning has any effect on classroom learning.

**Additional Perspectives**

A limitation of this study is that it lacked perspectives or insights from entrepreneurs and employers. Future research could look at the key terms identified in this dissertation. A study could focus on hiring professionals, entrepreneurs, or mentors involved with business incubators. This insight would be instrumental in determining how business incubator experiences align with other workforce needs. Additionally, it would be interesting to conduct a longitudinal study involving students who worked at business incubators to determine whether or not they start their own business in the future. If so, are there any noted advantages or disadvantages compared to other individuals who do not have a predisposition to entrepreneurial ecosystems.

**Reflections for Applied Practice**

The landscape of higher education has undergone dramatic changes (Nelles & Vorley, 2010) as increasing numbers of college students have unprecedented access to postsecondary education (Carnevale, Smith, Melton, & Price, 2015; Manyika, Lund, Auguste, & Ramaswamy, 2012, Renn & Reason, 2013). However, first generation college students may be unfamiliar with various career paths or have a solid grasp of their personal capabilities (Bandura, 1997). Research suggests that students who feel confident about their abilities are able to persevere through challenging circumstances (Bandura, 2002). Therefore, it is important to have the necessary college supports in place to help students succeed and strengthen their levels of self-efficacy and signaling capabilities. This is especially important during the skills acquisition
phase when learning and performance are effectuated through efficacy (Bandura & Locke, 2003).

This study has informed my professional practice in multiple ways. The primary influence is a heightened awareness for designing co-curricular learning experiences involving complexity and ambiguity (Knight & Yorke, 2003). Students will require a vat of knowledge to pull from throughout their working years. Experiential learning focused towards multidisciplinary learning can help students expand their knowledge base and perspective. The literature anticipates workers will require adaptable, integrated skills to successfully navigate the turbulent times they will likely face in the coming decades. Therefore it is important that students are capable of signaling and being able to effectively communicate their skills with potential employers.

Another important aspect of this study with personal saliency is that students have incredibly busy lives and many juggle multiple priorities. Therefore, access to practical career-related experiential learning is important. When higher education institutions develop new forms of co-curricular learning, it is essential that thoughtful consideration be given to ensuring that the offerings have flexible options and are accessible to all students. This becomes a bit challenging when considering that it is common for students to study full-time, part-time, online, and at regional campuses.

Some students need additional time to comprehend and process information before it resonates with them (Bergsteiner, Avery, & Neumann, 2010). Designing career-focused experiential learning that is filled with ambiguous situations and self-efficacy supports, can help students successfully prepare for transitions to the rapidly evolving workforce (Seibert, Crant, & Kraimer, 1999) and send appropriate signals to perspective employers. This study demonstrated
that challenging environments can inspire students to reach their potential (Kuh, 1981) by actively experimenting with various solutions until the correct one was identified (Dimov, 2007). Additionally, intervention-based aspects (Fouad, Smith, & Zao, 2002) can be implemented to help students who may be struggling or under-estimate their abilities (Lent, Brown, & Hackett, 2002). Indeed, imparting proper efficacy levels in students is important. Skills development requires multiple attempts (Pascarella & Terenzini, 2005) so it is critical that students are provided with opportunities to explore and work through various options to determine an acceptable solution.

In this particular study, business incubators appeared to provide an impartial non-collegiate setting to determine a student’s capability or their ability to tackle challenges. If college students are provided with a specific scenario, they should be able to extrapolate relevant information, contextualize the situation, and ultimately arrive at a reasonable solution (Bandura, 1997). Students may be more accustomed to the familiarity of academic settings. However, academic settings can be drastically different than the workplace (Bergsteiner, Avery, & Neumann, 2010) or other realistic settings. Therefore, it will be helpful to encourage students to work outside of what they are accustomed to in order to expand their horizon and embrace different surroundings. This is also helpful as students transition towards becoming Independent Knowers (Baxter Magolda, 2004). Students with lower self-efficacy may initially be apprehensive about working at a business incubator due to perceived barriers. A pre-conceived notion may prohibit students from reaching their full potential or feeling that a career path is unattainable. By helping students increase their confidence and self-efficacy, their initial perceptions may be positively altered allowing for career paths to be revisited and explored.
Now that the world is embarking upon the third decade in the 21st century, it is time to begin transitioning away from the term ‘21st century skills’ to a term incorporating the professional skills and competencies that have the type of marketplace value desired by employers. Traditional styles of learning are still viable to provide students with intellectual grounding, but it is helpful to couple that with direct knowledge gained through career-related experience. Since jobs will likely be influx in the coming decades (Bandura, 2002), it is important to impress upon students the need for lifelong learning.

Reflections for the Future

Two items stuck out that were not included in this dissertation. Each was revealed at different incubators and can be considered unmet expectations. Neither had enough data to be included in this current study but warrants further exploration.

College Students as Entrepreneurs

The first unmet expectation surrounds students starting their own businesses after college. One of the incubators placed emphasis on assisting current undergraduate students with starting their own business. There are a dedicated number of spots available each year for current students and they must submit an application to the incubator. Along with the application, students must define their business idea and have a team comprised of at least four individuals. The student with the original idea for the business can be the CEO and designate which positions of the company other members will hold. However, one student cannot apply to the incubator with the expectation that they will solely handle all of the work involved in taking their idea from ideation to the marketplace. This institution had an incredible ecosystem comprised of mentors from the community, industry professionals, external capital, and an impressive network. The incubator has kept in contact with students after graduation and, to date, only a few
wound up pursuing their business after graduation. Ironically, several students developed successful business models and were actually profitable. However, they decided to take a job working for a company instead of pursuing entrepreneurship. Students were excited about the opportunity to work for someone and have both steady income and benefits. They considered entrepreneurship to be too risky at this stage in their life. It is really interesting to think that in approximately 3-5 instances, students had profitable businesses with impressive growth and decided not to pursue them further after graduation.

**Projects versus Businesses**

Another interesting aspect is that one of the incubators focuses on projects as opposed to businesses. The terminology’s usage does not waiver whether it is a community member starting a business or a student. Almost everyone involved in the incubator is working on a project. An entrepreneur may have ten or twelve projects that they work on before an idea has enough merit or wherewithal to become a concept. After a successful concept is framed out and tested in the market, an advanced prototype is developed and it is tested in the market. After successfully completing the various phases, the entrepreneur then starts working on the actual components of the business. This approach is vastly different than other incubators. Other incubators consider an entrepreneur to be someone who is working on their business as opposed to projects. This ideation embraces a ‘fail fast’ culture, meaning that the majority of ideas or projects will not be successful in the marketplace. There may be numerous attempts at developing a prototype before something is strong enough for the marketplace.

**Closing Remarks**

The framework used in this dissertation brings to the forefront aspects higher education institutions may want to consider when designing learning experiences for undergraduate
students. In addition, it highlights salient aspects to strengthen and nurture partnerships between higher education, business incubators, and entrepreneurial ecosystems (Carnevale, Smith, Melton, & Price, 2015; Manyika, Lund, Auguste, & Ramaswamy, 2012). Many High Impact Practices (HIPs) currently complement courses. Those which are co-curricular are not always recognized as being a component of the curriculum (Bass, 2012). Hopefully the findings from this study will initiate new conversations surrounding the importance of co-curricular learning and identify new ways for students to be engaged in multidisciplinary career-focused experiences. Even though employers’ perspectives were not included in this dissertation, the findings are in line with data from industry reports (Carnevale, Smith, Melton, & Price, 2015; Manyika, Lund, Auguste, & Ramaswamy, 2012).

Disruption is abundant and will likely transform numerous industries, careers, and cause displacement of numerous workers in the years ahead. As a result, students will need an arsenal of skills (Kuh, Branch-Douglas, Lund, & Ramin-Gyurnek, 1994) that can help them navigate ambiguous and uncertain work environments (Seibert, Crant, & Kraimer, 1999). The intersections of higher education, career preparedness, and start-up communities are important considerations filled with opportunities for future research. Hopefully this study will begin the momentum towards gaining a thorough understanding of this phenomenon.
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