HOW CAN EDUCATION SUPPORT PREPARE STUDENTS FOR A WORKFORCE FOCUSED ON INNOVATION? A QUALITATIVE PHENOMENOLOGICAL STUDY

by

Scott Allen Myers

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

The purpose of this hermeneutic phenomenological study was to understand how faculty members and administrators describe their experiences in preparing their students for an innovation-focused 21st century workforce. The guiding theories associated with this study were Kolb's experiential learning theory (ELT) as a gauge for modeling the learning process and Bloom's taxonomy to assess learning levels. The relationship between Kolb's ELT, Bloom's taxonomy, and this study were conceptualized as a gauge to assess learning skill effectiveness. The central research question associated with this study was: How do faculty members and administrators describe their experiences preparing their students for an innovation-focused 21st century workforce? The data collection methods included interviews, focus group meetings, and journal entry postings from college business professors, many with administration and industry experience. Data analysis employed the Heidegger hermeneutic circle, including reading, reflective writing, rewriting, and interpretation. This study revealed that industry wants education to better prepare students with innovation skills before the students enter the workforce; however, college faculty are focused primarily on developing student foundational skills. The college educators, with industry experience, indicated the importance of a curriculum focused on foundational skills such as good communication, teamwork, computer, and leadership skills, versus developing specific innovation skills for industry. It is recommended that educators focus on foundational skills, and develop industry partnerships to develop specific industry-education cooperative programs, to develop student skills based on specific industry organizational needs.

Keywords: education, business school, global economy, innovation, skill development.

Copyright Page

Dedication

Thank you to all the teachers in my life. Mom, thanks for inspiring my interest in learning and teaching. To my wife, thank you for your focus on Christian education and the desire to educate our son and other children on the importance of faith and learning. My late father and uncle, thank you for developing my interest in education and science. My nieces, nephews, and their families, thanks for your service to God and country and your interest in education. Thanks to all my family members and friends who have dedicated themselves to help others; we are all teachers and students; we learn and teach others every day. In order to teach others, you must first be a good student; however, teaching others is also a great way to learn.

"Instruct the wise, and they will be wiser still; teach the righteous, and they will add to their learning."

(King James Bible, 2017, Proverbs 9:9)

Acknowledgments

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"As each has received a gift, use it to serve one another, as good stewards of God's varied grace."

(King James Bible, 2017, 1 Peter 4:10)

Table of Contents

List of Tables

List of Figures

List of Abbreviations

Aviation Safety Officer (ASO)

Cognitive Theory of Multimedia Learning (CTML)

Experiential Learning Model (ELM)

Experiential Learning Theory (ELT)

North Atlantic Treaty Organization (NATO)

Return on Investment (ROI)

CHAPTER ONE: INTRODUCTION

Overview

The purpose of this hermeneutic phenomenology was to understand how faculty members and administrators describe their experiences preparing their students for an innovative, focused, 21st century workforce (Bynum & Varpio, 2017). The literature suggests that employers believe that high-level employee skills are essential for an organization's ability to innovate and be competitive in a highly competitive global workforce. The importance of 21st century-focused skills is that they enable individuals, corporations, and nations to compete economically and militarily on a global level. There is a need to develop 21st century employee skills in the workforce. There is a concern that any potential gaps in employee skills, primarily related to innovation, can negatively affect organizational, industrial, and national innovation efforts. A significant key variable associated with developing innovation skills for students is the educator; the educator's perspective regarding the phenomenon of preparing college students for innovation remains understudied and was the focus of this study. This chapter of the study includes the study's background, situation to self, problem statement, purpose statement, the significance of the study, and chapter summary. Background

In general, success for business and industry is a partnership, with the primary stakeholders being the employee and employer, with success for all stakeholders associated with employee skills translating into value for the organization. The best way that individual employees can build value for their organization was to apply the needed skills that translate directly into organizational value. The importance of 21st century-focused skills is that they enable individuals, corporations, and nations concerned about the ability to compete and innovate in the new global economy (Sutarno et al., 2019). Because of the globalization of the

world economy, there is increasing competition worldwide; this demands a highly competitive workforce (Erickson, 2018). The recent trend is that employers exist in a complex and competitive global economy, and innovation skills are therefore in high demand (Cappelli, 2015).

Consequently, employers are seeking employee skills associated with innovating (Lawson et al., 2019); the skills depend significantly on the type of innovation the organization has invested in, which demands particular skills. The need for innovation in a global economy is a dynamic situation. Education, a partnership between multiple stakeholders, the instructor, the student, and, indirectly, the students' present or future employer, was a balanced system. The complete focus and understanding of the various perspectives and motivations associated with this relationship are significant, as was the curriculum development for a particular educational program for learning success (Barron & Hulleman, 2015).

Kaufman (2013) explained that teaching college students higher-ordered thinking skills or system-thinking skills was vitally important because of the increasing complexity of processes and systems used in industry. The demand for innovation in the industrial economy was not a static phenomenon but an ever-changing dynamic situation. As demand for innovation increased, so did the need for innovation-related skills. Industry organizations competed for market share, and both industry and our government were always looking for competitive advantages. According to (Kaufman 2013), essential employee skills were needed for the 21st century, focusing on innovation. These skills were diverse and included critical thinking, ethics, adaptability, problem-solving, communicative skills, accountability, personal productivity, innovative capability, creativity, leadership skills, global awareness, social responsibility, and contextual learning skills (Ceulemans & Severijns, 2019). The trend in the 21st century has

changed concerning education and the needs of industry and the government. The key focus of the 20th century was reading, writing, and arithmetic; however, the focus for the 21st century, in addition to the skill sets mentioned above, was the new three Rs, which are rigor, relevance, and real-world skill sets (Daggett, 2008).

Historical Context

This situation and phenomenon have historical significance, following the end of the Cold War between the United States and NATO, the Soviet Union, and Warsaw Pact nations, which tended to peak in the 1950s to the 1990s. Following the end of the Cold War polarization, globalization began with an economic advantage as a primary goal. Because of increasing globalization, innovation has become a primary dynamic driver in the global economy. Governments, corporations, and individuals had a great deal of pressure on them to innovate. For nations, innovation affects their military-industrial complex and their ability to project power and influence. For corporations, innovation involves market share for the organization, being productive, and thriving globally. In extreme cases, the organization's economic survival in the business marketplace depends on innovation skills and abilities to innovate and grow as an organization (Chika, 2015). There was high demand for production, innovation, and organizational success for individuals, especially new graduates. Employees were expected to have the abilities required by their organizations and possess applicable skills needed for production and innovation (Osterman & Weaver, 2014).

Social Context

Like many other societal factors, the need to prevent or close employee skill gaps for innovation was driven by socioeconomic factors of many stakeholders, including students, employees, groups of individuals, industry, industry segments, and national interests (Coy,

2019). Skill gaps for innovation, sometimes called innovation gaps, originate from an industry perspective, as seen in business and trade journals. The description of skill gaps was often mentioned generally, emanating from comparisons between corporate or national market share growth or national gross domestic product (GDP) trends. Specific skills for different industries and potential skill gaps were much more specific and very specialized. A general discussion regarding general skill gaps in industry does not translate directly when discussing specific skill gaps per industry or corporate organization because of the considerable number of specific skills in question.

The potential benefits for education are stakeholder-specific and can potentially help fill skill gaps or prevent skill gaps in respect to individuals and organizations as these entities compete in individual markets and the global economy. There was potential for significant stakeholder benefits from developing knowledge and skills that focus on innovating (Daud et al., 2019), which could help college graduates be more effective in the global marketplace for innovation; however, an educator perspective was needed. Educators were the key stakeholder for the potential effectiveness of any academic program. For developing students' skills, education, particularly applied education, has a significant potential for increased return on investment (ROI) for all applicable stakeholders, including students, educators, employers, and our nation (Bradford, 2018). However, the current perspective of the educator was a requirement as it related to the ability to understand this phenomenon and apply validity to this perspective.

It is essential to understand active learning educational strategies and their respective effectiveness. Educational programs are dynamic; they evolve with time as stakeholder needs change (Erickson, 2018). In addition to the student, the educator is the key stakeholder in a very balanced educational needs and requirements-based system. It is critical to understand the

educators' perspective regarding educational system goals and their effectiveness for developing students' innovation skills.

Theoretical Context

According to Kaufman (2013), essential employee skills were required for the 21st century, focusing on innovation. As previously noted, the skill-focused design included critical thinking, ethics, adaptability, problem-solving, communicative skills, accountability, personal productivity, innovative capability, creativity, leadership skills, global awareness, social responsibility, and contextual learning skills. A recent trend among employers focuses on innovation in a complex and competitive global economy, and innovation skills are in high demand (McGuinness & Ortiz, 2016). Consequently, employers demand applied and innovative employee skills, which translate into high order individual and organizational skills, and innovation-oriented educational programs (Massy, 2019) to meet student and employer needs.

The skill sets needed by the 21st century workforce relate to the higher levels of learning in Bloom's taxonomy as a description of the different learning levels. Bloom's concept of learning was very general; knowledge acquired through direct experience, study, and natural, explicit teaching information transfer (Haber, 2020). Though the definition of learning is understood, there are many levels of education. The key idea is potential skill gaps in the workforce for innovation, which was more associated with higher learning levels. Bloom's taxonomy has historically been an effective way for the education community to gauge knowledge levels. Bloom's taxonomy levels of learning are defined as remembering, understanding, applying, analyzing, creating, and evaluating. Generally, the lower levels of education are remembering and understanding a topic or skill, and the higher levels are applying, analyzing, creating, and evaluating something learned (Haber, 2020). The 21st century skills are

needed for innovation; however, there might be different pathways to develop students' skills. According to Fosnot (2015), constructivism was a crucial paradigm relating to education and how humans learn. For example, if traditional lecture and test learning can be described as reading about a cookbook recipe, a constructivist approach would be preparing and cooking the recipe. Kolb's 2018 experiential learning theory (ELT) and experiential learning model (ELM) as approaches for active learning define learning as the process by which knowledge was constructed or created through the transformational experience.

However, other learning and teaching approaches might be useful in developing higher-level learning skills for students, such as the cognitive paradigm. The cognitive paradigm is focused on the internal workings of the human mind. This paradigm concentrates on how people view their own experiences and their respective interpretation of their experiences (Corby et al, 2018). Humans learn from how they view and interpret the effects of their experiences as they create schemas or mental models based on what they have experienced (Kolb et al., 2018). The cognitive paradigm's fundamental principles were that people, as in the constructivist paradigm, develop models; however, these models are referred to as schemata in the cognitive paradigm. The dynamic change in the schemata or mental models was of crucial importance for this paradigm. Individuals' schemata develop and grow through experiential learning. This process was like the way that individuals learn through a transformational experience in Kolb's ELT. It is believed that the student's schemata, or mental model, can be updated with the higher-level skills mentioned in Bloom's taxonomy and specifically focused on the critical skills needed for the 21st century workforce (Cooper et al., 2018).

Theories that follow the cognitive paradigm include the cognitive theory of multimedia learning (CTML), originated by Richard Mayer in 1947. The CTML focuses on the concept of

deep learning. The CTML multimedia principle states that people learn more thoroughly and deeply from more than one media type. For example, people learn more deeply from using words and pictures than only learning from words alone. The critical assumption with this cognitive learning theory was that separate channels were used for learning. For example, learning from words and pictures was based on auditory and visual input. The data coming in from the two channels were processed or dual coded in the case of two separate tracks. Another assumption was that each learning channel has a cognitive load or a limited capacity to learn. Finally, the last assumption was that learning was an active process, including filtering, organizing, and integrating the information (Mizokami, 2017). The key idea was that there might be more than one type of theoretical framework, paradigm, or approach to developing higher-level learning skills in students; for this reason, the phenomenon of educator challenges associated with developing 21st century skills in students should be considered from the educator's perspective, in order to gain a full understanding of the phenomenon. Problem Statement

According to Kaufman, essential employee skills were needed for the 21st century, focusing on innovation. The 20th-century trends have changed concerning education, industry, and government needs (Kaufman, 2013). The key focus of the 20th century was reading, writing, and arithmetic; however, the guide for the 21st century is the three Rs—rigor relevance and real-world skill sets (Daggett, 2008). The problem was that corporate America questions the effectiveness of college graduates' preparation for the 21st century workforce (Cappelli, 2015). Critical thinking and problem-solving skills should be incorporated into the college curriculum to help prepare students for the workforce (Collier et al., 2020). However, there are many literature gaps regarding college educators' perceptions of the skills needed for students to develop in a college environment and how they translate for success in the workforce.

The education community focused on providing their students with the relevant skills the students need in the workforce; however, from the industry perspective, there was a perception that recent graduates have gaps in knowledge and skills needed for the modern workforce and innovation (Cappelli, 2015). Education is a partnership between multiple stakeholders (Bastos, 2017). Various methods can be used to develop the global economy (Shakarishvili, 2019). The key to creating the right skills for the present workforce's needs was to relate the needs and demands of the modern-day workforce to the suitable learning model for student development to provide the correct academic experience (Detel, 2015). Several critical areas of interest are related to the concept of skills and the global economy. The current study's center of gravity (COG) was focused on gaining college educators' perspectives regarding the challenge of educating college students for the 21st century workforce.

Purpose Statement

The purpose of this hermeneutic phenomenological study was to understand how faculty members and administrators describe their experiences in preparing their students for an innovative, focused, 21st century workforce. The concept for preparing students for an innovation-focused 21st century workforce was generally defined as student skill development in the college-university environment. The primary theory guiding this study was Kolb's experiential learning theory (ELT). Kolb was focused on learning and how knowledge is developed through the continued construction of new knowledge and skills that combine with existing knowledge and skills and culminate in a transformational experience (Kolb et al., 2018). Combining existing knowledge and skills of college students with new knowledge and skills taught by university faculty was designed to build skills believed to be important, based on faculty perceptions and perspectives. Thus, depending on students' acquired skills, because of

their college-university experience, education can prepare students for the needs of the complex 21st century workplace.

Significance of the Study

After the end of the Cold War, the world became more globalized through the 1990s and into the 21st century; thus, increasing globalization and innovation have become primary dynamic drivers in the global economy. Nations, corporations, and therefore individual workers have a great deal of pressure on them to innovate. For countries, innovation affects their economy, military-industrial complex, and ability to project power and influence. For individual corporations, innovation affects market share for the organization and the ability to be productive in the global economy. In extreme cases, the organization's survival depends on its ability to innovate and grow.

Empirical

There is a high demand for production, innovation, and organizational success from individuals, especially new graduates. Concerning individual corporations or nations, employee skills are required to innovate; applicable skills are needed for production and innovation to be successful (Osterman & Weaver, 2014). This research contributes to existing literature regarding the development of essential innovation skills for college students. Furthermore, this research helps bridge the gap regarding college educators' perspectives on students' skill development, as these skills apply to modern workforce innovation needs.

How individual employees can succeed aligns with how their organizations build success, so personal skills and skillsets translate directly into organizational skills and corporate abilities. The importance of 21st century-focused skills is that they enable individuals, corporations, and nations to be ready for a competitive globalized economy (Sutarno et al., 2019). Globalization

has been a constant trend; because of the increasing globalization of the world economy, there is increasing competition worldwide. Due to the globalized, highly competitive workforce, innovation is becoming increasingly more important. The recent trend is that employers focus on planning for a complex and competitive global economy, and innovation skills are in high demand (Cappelli, 2015).

Consequently, employers seek employee skills associated with innovating (Masumba, 2019). The education community has always attempted to fill employers' skill needs to meet both student and employer needs. The demand for innovation in a global economy dynamically affects multiple stakeholders, including industry, education, and individuals. Education is a partnership between multiple stakeholders, the educator, the student, and, indirectly, the student's present or future employer. The entire focus and understanding of the various perspectives and motivations associated with this relationship are significant, just as critical as the curriculum development for a particular educational program for learning success (Baillie, 2020). The educator's ability to prepare students for the future demands of their occupation is important; strategies to fill skill gaps in innovation and student success must be implemented.

Theoretical

There are two primary theories associated with this study. The first theory is Bloom's taxonomy levels of learning. Bloom's taxonomy was developed by Benjamin Bloom in 1956 as a classification system for instructors (Swathi & Jain, 2020). The second theoretical framework for this study was Kolb's experiential learning theory (ELT). Kolb published his model for ELT in 1984 and focused on the process of learning, positing that knowledge was developed through a transformation of experience (Kolb et al., 2018). Two theoretical frameworks for this study were complementary, Kolb's ELT description of the learning process, a cyclic developmental process

for students to develop experience and skills, and Bloom's taxonomy, a metric to translate or relate learning success into discrete learning levels. Bloom's taxonomy describes several learning levels, including remembering, understanding, applying, analyzing, evaluating, and creating (Swathi & Jain, 2020). Each represents a low to a high-level metric of rigor and innovation. Bloom's taxonomy is eminently suited to defining the framework for individual and organization education goals and effectiveness, and Kolb's ELT describes a process for achieving these goals. The following describes Bloom's taxonomy, Kolb's Experiential Learning Theory, and related literature.

Practical

From the educator's critical perspective, this study provided valuable evidence of feedback regarding students' most essential skills to develop while in a college environment. These fundamental skills, which focus on employers' innovation in the workforce, provide valuable feedback for other educators and administrators who read this study. This study highlighted areas for educators and educational institutions to focus on helping students develop and practice critical skills while in the college environment, translating to value-added for industry organizations in an ever-increasingly globalized, highly competitive marketplace.

Research Questions

This study explored the phenomenon of college educator challenges associated with preparing students for the rigorous, innovation-focused 21st century workforce through the educator's perceptions. The goal was to use the research questions, which facilitated qualitative data acquisition concerning the phenomenon being studied based on perceptions of the study participants. This research project studied the phenomenon of college educator challenges associated with preparing students for the rigorous innovation-focused 21st century workforce

through the participant educator's perceptions. The research questions below were used to gain the professors' qualitative perspectives regarding the studied phenomenon.

Central Research Question

How do faculty members and administrators describe their experiences in preparing their students for an innovation-focused 21st century workforce?

The central research question framed this investigation and focused on determining how college educators and administrators help develop students from the educator's perspective. From a college educator's perspective, a distinct literature gap was associated with students' development for the modern workforce. The environment for employees is not static. Students' demands, employment organizations, markets, and national interests are not fixed; the situation is dynamic and demanding due to a highly competitive and innovation-focused workforce. The rapid dynamic demands on the workforce for innovation are a catalyst associated with increasing globalization and are evidenced by employers' concerns about skill gaps (Cappelli, 2015). There was a need to fill the literature gap associated with how teachers and college educators prepare students for the highly competitive workforce environment. The goal was to answer the fundamental central question; through conducting interviews and focus groups, collecting journal data, and conducting data analysis, triangulation (Moustakas, 1994) was able to be accomplished.

Sub-question One

What do faculty members and administrators understand are skills expectations of the workplace for graduate students?

The first sub-question was associated with understanding the nature of the skills needed. This study's participants were university business professors who have industry work experience. The participants' perceptions in the phenomenology were fundamental, as this was

the study's lens from the participants' perspectives (Creswell, 2018). This perception from the participants was critical to gaining their perspectives and using this lens to understand the phenomenon being studied.

Sub-question Two

How do skills expectations of the workforce development in college courses?

The second sub-question directly relates to the central research question and the first sub-question regarding how the educator participants reflected on the most critical workforce skills needed, based on their teaching and work experience. This question was a lens into how the participant educators used what they knew about the problem. In a sense, Sub-question One and Sub-question Two provided the cause and effect of the participants' perspectives associated with the phenomenon. These questions were a way to focus on the problem through the educator's view of the phenomenon (Moustakas, 1994).

Sub-question Three

How do faculty members develop their understanding of the needs of the field for student's skill development?

The situation associated with this phenomenon's study—the problem of employee skill gaps— was not static (Cappelli, 2015). Sub-question 1 and Sub-question 2 develop the cause and effect of each educator's precipitant understanding of the phenomenon and how they applied their level of knowledge and experience toward their own teaching goals and actions.

The two theories used together, or the duality of Bloom and Kolb, were the rationale for the current study. Kolb's ELT described the learning process as a cyclic process, in which students develop experience and skills based on a transformational educational experience (Kolb, 2018). In conjunction with Kolb's ELT is Bloom's taxonomy, used to gauge educational success

based on levels of learning. Bloom's taxonomy is a method to describe several learning levels, including remembering, understanding, applying, analyzing, creating, and evaluating (Swathi & Jain, 2020). The rigor of the levels ranges from low to high, with innovation representing the highest level. Bloom's taxonomy is ideal for defining the framework for individual and organization education goals and effectiveness, and Kolb's ELT describes a process for achieving these goals.

These research questions were foundational concerning the observation of the data based on the phenomenon being studied, which enabled the triangulation of participant perspectives into meaningful data outcomes.

Definitions

Several specific definitions are unique to this research proposal; these terms are defined as follows:

1. *Active learning* is an approach to learning that focuses on providing valuable experience for students regarding the applicable skill being studied (Mizokami, 2017).
2. *Bloom's taxonomy* is a vertical projection, a set of three hierarchical models used to classify educational learning objectives into complexity and specificity. There are three key learning domains. The three domains cover the cognitive, affective, and sensory learning objectives (Swathi & Jain, 2020).
3. *Critical thinking* is an intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and evaluating essential information gathered from observations, or generated by observations, to include necessary experience, such as reflection, reasoning, or communication, as a guide to belief and action. In its correct form, it is based on some critical universal intellectual values, which

transcend subject matter divisions: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness (Moon, 2007).

4. *Constructivist theory* is a synthesis of multiple methods diffused into one form. It is the assimilation of both behaviorist and cognitive ideals. The constructivist stance is associated with building knowledge, which maintains that learning is constructive; it constructs meaning and building knowledge; it is how people make sense of their environment and learn from their experience (Harasim, 2018).
5. *Experiential learning theory (ELT)* states that knowledge is transformational and is created through experiences, especially experiences of emotion and transformation \. New knowledge results from the combination of grasping and transforming experience (Kolb et al., 2018).

Summary

The best way that individual employees can succeed is to help build success for their respective organizations, so personal skills and skillsets translate directly into organizational skills and corporate abilities. The 21st century focused on skills to enable individuals, corporations, and nations to facilitate competition globally. The right skills are needed to develop 21st century employee success in the workforce (Harasim, 2018). Globalization is increasing at a rapid rate; there is increasing competition on a global level. Due to the globalized, highly competitive workforce, innovation is becoming more critical than ever. The recent trend is that employers focus on design in a complex and competitive global economy, and innovation skills are in high demand (Cappelli, 2015).

Consequently, employers seek employee skills associated with innovating (Haour, 2016). To meet student and employer needs, the education community attempts to fill employers' skill

needs. The demand for innovation in a global economy is a dynamic situation, so multi-stakeholder conditions are considered. Education is a partnership between multiple stakeholders, the instructor, the student, and, indirectly, the students' present or future employer. The complete focus and understanding of the various perspectives and motivations associated with this relationship are significant, just as critical as the curriculum development for a particular educational program for learning success (Osterman & Weaver, 2014). The educators' ability to prepare students for the future demands of their occupation is determined by how they can fill skill gaps for innovation and student success.

The innovation skill gaps problem had a cause-and-effect relationship in this study, with the cause being educator perceptions of students' skills gaps for innovation. The effect was an increased focus on student skill development. Gilbert explained that teaching college students higher-ordered thinking skills, or system thinking skills, was vitally important because of the increasing complexity of systems in the industry (Gilbert, 2020). The demand for innovation in industry is not a static phenomenon, and as demand for innovation increases, so does the demand for innovation-related skills. Industry organizations compete for market share; industry and government are always looking for advantages concerning competing interests and organizations. The key focus of the 20th century was reading, writing, and arithmetic; however, the focus for the 21st century and the skill sets mentioned above are the three Rs: rigor, relevance, and real-world skill sets (Daggett, 2008). The college educator's perspective regarding this phenomenon was the goal of this study.

CHAPTER TWO: LITERATURE REVIEW

Overview

The goal associated with this literature review was to provide the reader with a comprehensive overview of the research related to this study. This study focused on college educators' perspectives on the challenges of educating a high innovation-focused 21st century workforce (Camasso & Jagannathan, 2021). Innovation is a primary concern of the 21st century workforce. The ability to innovate directly benefits the individual worker, organization, corporate or government organization, and nation. Innovation is crucial for each national workforce level that directly competes for employment, market share, and global relevance (Cappelli, 2015). This chapter includes an overview, theoretical framework, related literature, and a summary.

Theoretical Framework

According to Weber, innovation develops new or novel concepts, processes, and systems. Innovation is the process of development. The overarching paradigm associated with this study was the constructivist paradigm (Fosnot, 2015), and there were two primary theories related to this study. The direct approach was Kolb's experiential learning theory (ELT). Kolb published his model for ELT in 1984 and focused on learning, positing that knowledge was developed through practice (Kolb et al., 2018). The secondary theory is Bloom's taxonomy levels of learning. Bloom's taxonomy was developed by Benjamin Bloom in 1956 and was created as a classification system for teachers (Swathi & Jain, 2020).

Kolb's ELT describes the learning process, a cyclic process for students to develop experience and skills. Kolb's ELT was foundational, as it represents the developmental process of learning (Newell, 2016). This study focused on learning levels, as higher learning levels are

needed for employers' skills for innovation. It is essential to have a developmental process like Kolb's ELT; it is also helpful to have a metric to understand the learning process's success; this is Bloom's taxonomy's function. Bloom's taxonomy describes several learning levels, including remembering, understanding, applying, analyzing, evaluating, and creating (Swathi & Jain, 2020). Each represents a low to a high level of rigor, and innovation represents the highest level. Bloom's taxonomy defines the framework for individual and organization education goals and effectiveness, and Kolb's ELT describes a process for achieving these goals. The following describes Bloom's taxonomy, Kolb's Experiential Learning Theory, and related literature.

Bloom's Taxonomy Levels of Learning

The concept of learning is very general; education is acquiring knowledge and skills through direct experience, study, and direct teaching information transfer (Adesoji, 2018). Though the definition of learning is generally understood, there are many levels of education. The key idea of the current study was potential skill gaps for innovation in the workforce, which was more associated with higher learning levels. Bloom's taxonomy as a method to gauge knowledge levels has historically been adequate for the education community (Adesoji, 2018). Bloom's taxonomy levels of learning are defined as remember, understand, apply, analyze, create, and evaluate. The education level spans the spectrum of learning value, from the basic *remember*, to the top learning levels, *create* and *evaluate* (Adesoji, 2018).

Bloom's taxonomy levels of learning have the potential to describe educational levels and goals, as applied to student curriculum and plans for the teaching and learning of new concepts and skills (Swathi & Jain, 2020). For example, if teaching a student some new ideas about physics, constructing a bridge can be used. The concepts of what a bridge does, and generally, the types of bridges, would constitute the lower levels of learning of *remembering* and

understanding. The structure of bridges, including the mathematical descriptions of statics and dynamics, plus the strength of the bridge materials, would be in the range of the *creative* level of learning. Designing bridges and testing bridge designs would include higher learning levels such as creating and evaluating (Swathi & Jain, 2020). There is much variability regarding how to translate educational purposes into effective educational programs, and ultimately success for students, who become employees who need to apply the right skills, which translate into organizational capabilities, and innovation potential (Sopiani & Said, 2019), in a very competitive global economy.

Experiential Learning Theory

As an active learning approach, Kolb's experiential learning theory (ELT) defines learning as the process by which knowledge is constructed or created through the transformational experience. Usually, the learning process is associated with the initial understanding of the subject of study, and an application period is related to the issue as the transforming experience (Kolb et al., 2018). As knowledge and skills, active learning is built or constructed based on a transformational experience and reflection. This theory was focused on developing a transformational experience for students to develop skills in the subject being studied (Fosnot, 2015). ELT focuses on promoting the natural way in which humans learn. Humans learn by activity, building on existing expertise and skills (Bertoni, 2019). This approach can educate students at a higher level, as Bloom's taxonomy describes.

ELT's critical term for student development was a transformational experience and student reflection from the transformational experience. According to Cappelli, there are skill gaps that employers are motivated to prevent or close to maximize individuals' and their organizations' potential to innovate successfully. Employers believe that employees should have

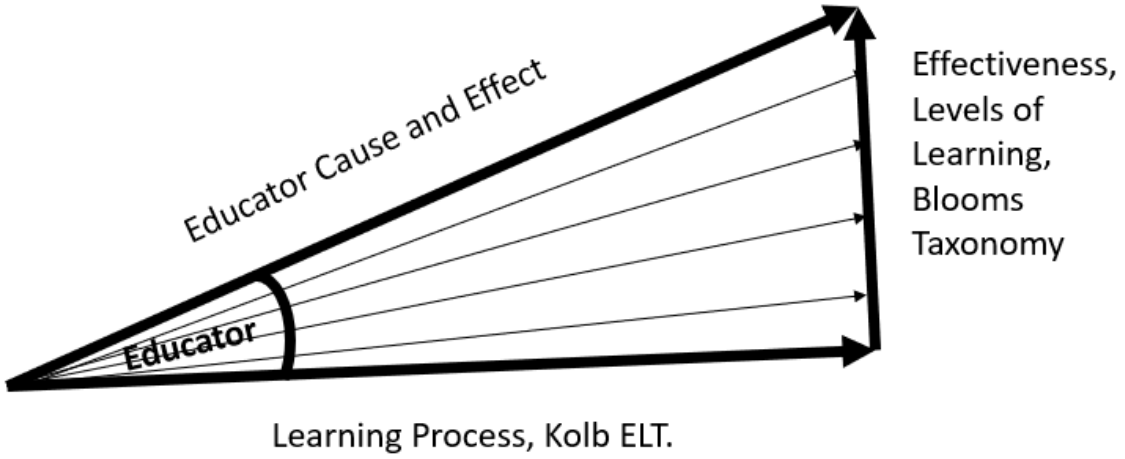
the required skill sets to accomplish critical mission tasks. Knowledge from college degrees does not always translate directly to skill-based abilities desired in the job market (Angelo, 2018), though college baseline skills are valuable.

The concept of transformational experience relates to the focus or goal of the learning to develop higher-level innovation skills relative to the workforce's needs (Imenda, 2018). The idea of creation, and invention, is the critical variable for future success for employees and the organizations that the employees work for (Cappelli, 2015). An active learning approach might provide student development because applied or practical knowledge can help build experience while in a college environment. Like Kolb's ELT, a perspective learning model and a metric or gauge for learning success, such as Bloom's taxonomy levels of learning, forms a process model in systems terms. This is needed to integrate the learning process with a metric of success to understand and gauge the success of the education process. Figure 1 describes this conceptual relationship, with Kolb's ELT representing a learning process, or engine, with its cyclic process of concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb et al., 2018). The success metric for the learning engine, facilitated by the educator, is Bloom's taxonomy, representing hierarchical *remembering, understanding, applying, analyzing, evaluating, and creating* associated with Bloom's taxonomy (Swathi & Jain, 2020). Notably, the educator is the key facilitator or enabler in this process, or integrating the educational construct, Kolb's ELT, with the metrics of success, Bloom's Taxonomy, as a method to gauge education success from the perspectives or actions of the educator. This constructivist approach has considerable potential to develop a model or gauge to measure education success (Bradford, 2018). The synthesis of these two learning theories provides an

effective tool for gauging educator success or perspectives for developing students for the modern innovation-focused workforce.

Figure 1

Conceptual Diagram of Kolb's ELT Cycle Related to Bloom's Taxonomy Levels of Learning



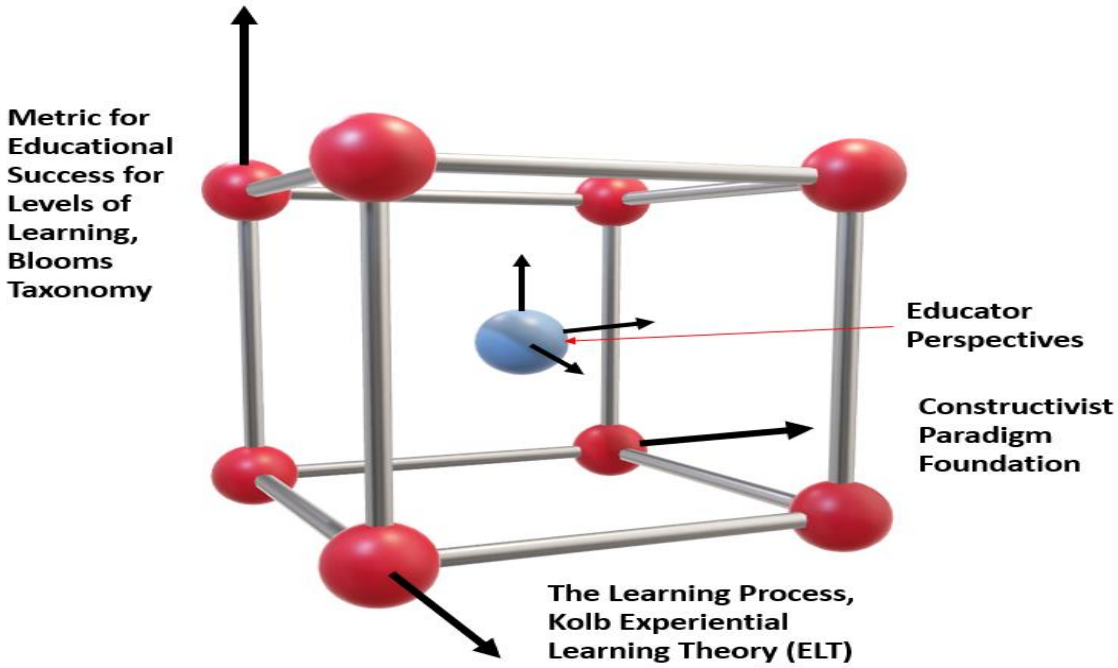
Note. Figure 1, an original image, depicts the synthesis of Kolb ELT and Bloom's Taxonomy.

The critical variable in this integration process is the educator. The educator facilitates the learning process and ties in the learning theory or strategy with the learning goals, defined as critical metrics for success, such as Bloom's Taxonomy. Therefore, the educator was the critical focus of this phenomenology study; the educator was the primary facilitator in this process. The educator needs to be actively engaged in this facilitation and integration process to maximize the potential for success. Figure 2 graphically describes the importance of the educator, as the educator is represented as a sphere and able to affect educational effectiveness actively. The education components are described by a three-dimensional cube, with one horizontal axis representing the constructivist paradigm, the other horizontal axis representing the learning

process, and Kolb ELT. The levels of effectiveness learning represent the vertical axis as Bloom's taxonomy. The educator facilitator is the primary metric for success in the education process. The educator can directly affect the ability to develop student skills, from basic foundational skills to high-level innovation skills, considered essential for innovation, and thus the educator's perspective is vitally important and the focus of this study.

Figure 2

Conceptual Diagram of the Educator Integration with the Learning Process and Metric for Success



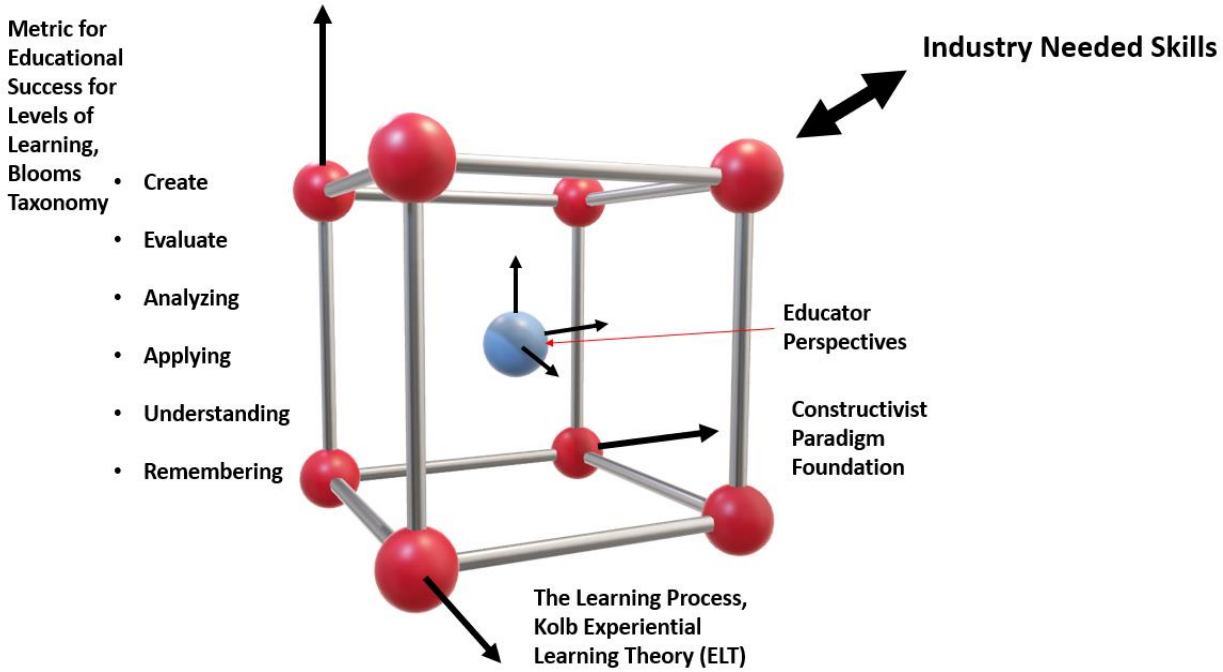
Note. Figure 2, an original image created by the author, depicts the value of educator perspectives.

Consequently, the constructivist paradigm can be thought of as the foundation for building skills or skills development. The relationship between skills and skill levels is a multidimensional relationship based on this constructivist paradigm foundation. Having an

engineering and aviation background, I tend to think visually. I like to think of this relationship between the constructivist paradigm, Kolb's experiential learning theory, and Bloom's taxonomy, as a 3D coordinate plane, relating the constructivist foundation of experiential learning theory horizontal axis as skills development to Bloom's taxonomy vertical axis levels of learning, and the 3D resultant vector being the college educator. Note, as depicted in Figure 3, a graphical representation of this concept. Figure 3, like Figure 2, represents the multidimensional relationship between the construction of knowledge and skills for the students, the learning process, and the metric for success in learning, as the levels of learning and Bloom's taxonomy. Note that this was figurative, and the goal of this study was to gain the educator's perspective regarding preparing students for innovation in the 21st century workforce. This model description does not represent any bias for Kolb, Bloom, or the constructivist paradigm, simply a conceptual model. The actual data feedback from professors focused on the essential perspectives of the educators. The educator represents the educational theory's integration efforts, model, or practice with the educational goals defined by the success metric, and the educators' perspectives define this effort. Therefore, the phenomenological study was critical, as the educators' perspectives were crucial in determining the step of developing students for the rigors of the modern work environment.

Figure 3

Conceptual Diagram of Kolb's ELT Cycle Affecting Bloom's Taxonomy Levels of Learning and Educator Cause/Effects



Note. This original image, created by the author, depicts a figurative relationship between the construction of student skills, the education process, and education levels of learning.

Related Literature

According to McGuinness & Ortiz (2016), evidence in the literature identifies potential skill gaps for innovation resulting from a lack of ability to practice critical thinking and higher-order thinking skills. There is evidence that educational strategies and theories can help develop students' necessary thinking skills (Teixeira & Shin, 2020). However, there are some educator challenges and concerns associated with functional and experiential teaching models. More information and feedback are needed from teachers, which leads to this study's purpose—exploring concerned educator perspectives on skill gaps for innovation and the potential for

education to close gaps, such as the gap in critical thinking. Cappelli stated that the significance of critical thinking in the 21st century was of the highest priority and a primary indicator of success for individuals and societies (Cappelli, 2015). This issue is international, and the belief is that the skill gap problem is global but was a teaching problem and a student problem. A key thing to note was that instructors also need to be students of learning to be good educators (Chika, 2015).

In today's increasingly global economy, a highly competitive workforce is essential for our national workforce (Collier et al., 2020). The importance of having a competitive workforce in today's increasingly global economy needs to be emphasized. Some critical skills are required for the 21st century workforce; these skills are related to Bloom's taxonomy higher-order thinking skills and skills necessary for practical critical thinking (Short & Keller-Bell, 2018). It is highly probable that education can directly benefit our national workforce's innovation efforts at every level; however, many variables are associated with developing education strategies to stimulate innovation. Some of these variables are known-known variables; some unknown variables are unknown new variables (Collier et al., 2020). Variables, such as known-known variables, are fully understood; the known-unknown variables are known as variables. However, the level of information and understanding has the potential to increase. The novel new variables are unknown but are potentially discoverable during this study or another similar study. This section aims to review the literature related to this study, including specific subjects, such as skills and innovation, development of skills for the workforce, and active learning skills. The educator is the critical variable for the development, integration, and facilitation of education's potential to develop the skills needed by all industry workforce stakeholders.

Skills and Innovation

Innovation and innovation-related skills are significant to successfully compete in a very competitive innovation-focused global economy (Skill Gaps, 2020). The increased focus on students' critical thinking abilities, especially college students, represents the higher education step before entering the workforce. Gilbert (2018) explained that the importance of teaching college students higher-ordered thinking skills, or system thinking skills, is vitally important because of the increasing complexity of systems. Critical thinking and problem-solving skills should be incorporated into the college curriculum to help prepare students for the workforce (Collier et al., 2020).

The need for critical thinking skills is widespread as the demand for innovation drives employers' motivations, industry, and government. Industry organizations compete for market share, and both industry and our government are always looking for competitive advantages. According to Kaufman, essential employee skills are needed for the 21st century, focusing on innovation. These necessary skills—critical thinking, ethics, adaptability, problem-solving, communicative skills, accountability, personal productivity, innovative capability, creativity, leadership skills, global awareness, social responsibility, and contextual learning skills, should be developed at a college level. The needs of the 20th century and 21st century employees have changed concerning education and employer needs. The key focus of the 20th century was reading, writing, and arithmetic; however, the focus for the 21st century skill sets mentioned above were the three R's, rigor relevance, and real-world skill sets (Daggett, 2008).

Applied learning might have the ability to prevent and bridge skill gaps. In several applied fields, and especially in the medical area, leadership is essential. There is a focus on developing medical students for 21st century healthcare by developing their leadership and

critical thinking through experiential learning (McGuinness & Ortiz, 2016). Recent studies have recommended applied learning in the classroom during fall and spring semesters to gain active academic experience, followed by summer immersion experiences. This combination provides a great variety of learning experiences for constructing knowledge applicable in the workforce (Lawson et al., 2019). These higher-order thinking skills directly link to the potential to close and prevent skill gaps for innovation (Conover, 2019). The importance of innovation skills is related to the global economy, skill needs in the workforce, and skills for the century.

Skills and the Global Economy

Innovation and the skills related to innovation are significant and directly drive success or failure for industry organizations (Haour, 2016). This need for innovation is growing, not only for markets or industries but on a national and international level and is now defining success for all stakeholders involved (Haber, 2020). The critical variable related to innovation and innovation for all stakeholders is innovation skills (Brooks-young, 2017). The skills needed for innovation are not as simple as developing a new course of study. However, all innovation-focused stakeholders must consider the importance of education for developing skills that have the potential for innovation-related advantages (Gregory, 2017). The education community is attempting to fill still gaps. Education is a partnership between multiple stakeholders (Bastos, 2017). Various methods can be used to develop the global economy (Shakarishvili, 2019). The key to creating the right skills for the present workforce's needs is to relate the needs and demands of the modern-day workforce to a suitable learning model for student development to provide the appropriate academic experience (Detel, 2015). Several critical areas of interest relate to the concept of skills and the global economy. These are the constructivism paradigm, workforce need for innovation, and gifts for the 21st century workforce.

Skills Needed in Industry

According to Fosnot (2015), constructivism is a fundamental paradigm relating to education. Applying this approach, teachers allow their students to think and generate their questions, consider the cause-and-effect relationship of the topics in question, develop a hypothesis, test for potential viability and learn from their success and failures (Fosnot, 2015). This educational approach is a student-centric process, where the educator supervises students through transformative experiences, which gives students valuable experience for future reference (Detel, 2015). The constructivist paradigm relates to the process of learning, as students learn by the application of curriculum-developed experience. Different learning theories, such as the experiential learning model (ELM) and cognitive learning theory, are associated with this approach. Still, all the models are focused on developing student learning through applied learning and giving the students a transformational experience. The model relates learning to a transformational experience, where the experience of using the skill or the experience of going through the learning process translates into understanding (Omeodu, 2020). This model is potentially an education model for developing knowledge and skill, which could be used with college students preparing to enter the modern workforce (Favaloro et al., 2019).

Workforce innovation needs are nothing new; innovation has been a driving force for individuals, organizations, and nations globally from the dawn of civilization (Kotey & Wark, 2020). The recent trend, up to the present, indicates that employers are focusing on design in a very complex and competitive global economy, and innovation skills are in high demand (Gilbert, 2020). Consequently, employers seek employee skills associated with innovating (Osterman & Weaver, 2014). The education community has been trying to fill the skill needs of employers. Education is a partnership between multiple stakeholders, the instructor, the student,

and indirectly, the students' present and future employer, the employee's organization, and even the employee's nation (Adeshola & Abubakar, 2020). The entire focus and understanding of the various perspectives and motivations associated with this relationship are significant, as critical as the curriculum development for a particular educational program for learning success (Osterman & Weaver, 2014). The educator's ability to prepare students for the future demands of their occupation is important; strategies to fill skill gaps in innovation and student success must be implemented (Angelo, 2018). The workforce skill sets needed for the global economy are inclusive and dynamic, including skills in the new economy, skills, and the workforce, and learning skills (Hedlund, 2020). These new economic demands for innovation are the direct driving force of skill needs for innovation, and the focus is transitioning from education credentials to practical experience-related skills (Blokdyk, 2020).

Skills for the 21st Century Workforce

The term 21st century focused skills are important because they enable individuals, corporations, and nations to compete globally (Jerman, 2021). There is a demand for 21st century skills in the workforce, and consequently, there is a need to develop the right skills in students as they prepare for a very competitive workforce (Conover, 2019). The skill needs are transitioning to practical experience-related skills from a theoretical experience for students (Bowen & Johnson, 2018). Employers are becoming more concerned with what employees can do and not just what they know (Bowen & Johnson, 2020). There are many educational options, such as using applied learning strategies, including but not limited to modeling and simulation-based education strategies. The overall goal is to provide students relative experience and develop skills similar to a natural operational environment (Sutarno et al., 2019). There are also cases where existing tools can stimulate critical thinking, initially designed for something else.

A recent study discussed the use of a software program called Scratch; this program was initially designed to teach children programming but is also helpful in teaching critical thinking. Many tools can be used more broadly in an educational context (Almomani et al., 2020). One type of educational system can be used for other areas of education, based on the flexibility of implementing the product (Blokdyk, 2018). Scratch is a good example, as this simple visual programming language initially designed for young students and teenagers can teach collaborative learning skills. Computer-based learning (CBL), or computer simulation-based learning, can effectively and efficiently develop practical skills. Software tools like Scratch are excellent for critical thinking development in the collaborative learning environment. Students can learn and develop essential thinking directly through curriculum instruction, and students can learn critical thinking by teaching their fellow students. Both approaches can support a constructivist approach to learning through understanding and participating in a transformational experience (Johnson, 2019). The ingenuity of an instructor, and the instructor's knowledge of experiential learning, critical thinking, and personal motivation, can devise an innovative use of a valuable tool to teach a concept desired by the students. There can be a remarkable shift from the general understanding of what is known to practical experience, leading to the ability to perform skills and tasks effectively (Johnson, 2019).

Development of Workforce Skills

The importance of applying skills and knowledge and having some experience with applying the applicable skills is very valuable. Thinking critically and applying knowledge and skills can add value and motivation to the curriculum (Kusaeri et al., 2019). It is essential to understand specific skills and subjects; however, innovation drives employees' practical experience and ability to perform directly (Groves, 2020). Because of the national and

international demand for innovation, there has been a focus on using applied teaching techniques to increase retention and motivation for learning and innovation (Chell, 2018). Knowledge or the general state of understanding a subject is always essential; however, the need for performance and practical experience is growing. This section's important considerations include applied student development, innovative education, and the criticality of thought.

Applied Student Development

Some authors claim that applied knowledge is an excellent approach to improving students' skills by providing students near real-world experience in a classroom environment. Examples of learning strategies include, but are not limited to, problem-based learning (PBL), scenario-based worldwide (SBL), and case-based learning (CBL) worldwide. However, these approaches are all described as applied learning. Applied knowledge is designed to increase student understanding of the subject, enhance critical thinking, and help students develop implementation strategies associated with higher learning (Kaushik., 2017). Higher-level applied thinking skills, especially critical thinking, and learned higher level used skills can be directly used to develop new systems or innovate concepts or ideas (Cappelli, 2015).

There are many potentials for skill gaps to be addressed by applying applied learning strategies (Ovenden-Hope & Blandford, 2017). The importance of practical experience is growing in direct proportion to growing innovation needs. Knowledge and theoretical understanding are essential, but performing practical skills is also becoming more critical (Oecd, 2016). The more practical the skills, the more useful the skills will be for the employer's direct application (McCall, 2019). The process needs to be deliberately based on real-world problem solving, such as case studies and student-centered projects (Daud et al., 2019). The global economy is very dynamic and complex, so an educational process is needed to align with this

situation. The concern is that skill gaps are associated with the modern workforce, as innovation is always in demand (Cappelli, 2015). Care should be taken not to initiate change for the sake of change. Still, innovative educational strategies must be grounded in legitimate need, just as innovation in the workforce (Osterman & Weaver, 2014). According to Cappelli (2015), there was a deficit of skills in our national workforce; college students must be learning the right skills and academic understanding to contribute effectively to the modern workforce (Cenere et al., 2015). The education community has prioritized preparing students for future goals and challenges, especially current socioeconomic demands. Employers are focusing on innovation in a very complex and competitive global economy (Cappelli, 2015).

Consequently, because of employer demand for applied design-related employee skills, there is a high demand for applied innovation-oriented employees (Osterman & Weaver, 2014). The education community is trying to fill that need. The development of students' full scope of knowledge and ability is significant, similar to the importance of building a solid foundation before building a large and complex structure. The theory is the foundation, and the structure can be built to a level of understanding up to the practical application. Teaching theory, constructionism, or foundationalism is critical as this is the foundation of knowledge and learning (Kusaeri et al., 2019).

Criticality of Thought

Applied learning strategies have demonstrated benefits concerning higher-order thinking skills in students. Higher-order thinking skills, also known as critical thinking, are vital for proactive and effective decisions. There is a need for improved critical thinking in the industry workforce, and developing critical thinking is essential. The ability to analyze, create and think critically is important, and apply this thinking to problem-solving, is vital in technology-based

industries like computer science and other applied sciences. However, this approach to developing critical thinking and problem-solving skills in technical education depends on the educator's action (Bourke, 2018). It takes an intentional and purposeful approach to develop essential innovation skills for students (Awoyemi, 2018). Just as the foundation of knowledge, in the form of theory, is essential, and the development of practical application of skills is significant, the development and practice of critical thinking skills are very valuable (Dhir, 2019). As with any other skill, to be proficient in critical thinking, the practice of these skills is necessary (Tietz, 2021). Teaching critical thinking skills is very important; the pedagogy of critical thinking skills is indeed itself a skill, and practice is necessary.

Critical thinking is a matter of survival in modern business, business schools should incorporate essential thinking training into their standard business curriculum to prepare students for future rigorous business careers, and applied skills are critical. These higher-order thinking skills are crucial for 21st century organizations, and organizations are looking for educational systems to help prepare students for these careers (Moon, 2007). Developing critical thinking is an explicit goal of experiential learning, as students learn through their participation in active learning projects and scenarios. Several correlational studies focus on the relationship between applied learning and its benefits for students' critical thinking improvement. One such study indicated a direct relationship with teacher-facilitated experiential learning, vicarious learning, and student critical thinking (Tietz, 2021). However, it is essential to consider the educator, as facilitating applied active learning is a skill that requires self-direction, motivation, confidence, and applied operational, functional knowledge (Coy, 2019).

Skills and the Workforce

Critical skill gaps impact the workforce; the same skills necessary for innovation are related to entrepreneurship and critical thinking (Chell, 2018). Necessary thinking skills are crucial and directly aligned with the benefits of applied learning. Torff (2018) explained the importance of critical thinking as applied to home, school, job, and life in his book *Teaching Critical Thinking: Content Integration, Domain Specificity, and Equity*. The importance of teaching critical thinking by integrating the skills into what was taught, with a significant focus on thought (Torff, 2018). Active constructivist learning as a foundation is focused on building knowledge and skill through experience; however, building experience in and out of the classroom is the primary focus of this type of learning theory, as is a focus on gaining as much practical experience as possible in the school (Alshehri, 2020). The intense classroom learning focus translates into the students' greater marketability when they graduate from college.

Consequently, in addition to active, experiential learning in the classrooms, the students are encouraged to practice outside in the constructivist approach. They are motivated to participate in volunteer projects and positions in areas that increase their knowledge, construct their knowledge and experience (Barron & Hulleman, 2015). The topics of interest in this section included developing expertise, motivation, and applicable skill development.

Experiential learning has many different interpretations and implementation strategies associated with active learning from the constructivist paradigm. This derivation of experiential learning, called adventure learning, focuses on critical thinking. If action-based activities that stimulate student critical thinking and higher-order thinking skills were implemented, a long-lasting mental model was developed, providing a valuable benchmark for future use. Active or action-based learning is very effective for developing critical thinking skills and the ability to react effectively (Barron & Hulleman, 2015). The need for functional education for academic

programs to help close skill gaps and the effort to do this is multifaceted. There is a need to develop a solid theoretical knowledge base and develop practical skills for employees. So, in addition to understanding this need, instructional pedagogy changes are essential. The new skills require new instructor strategies, new thinking amongst instructors to develop new thinking and practical thinking skills for students. An educator's perspective is needed to develop these pedagogy strategies.

Consequently, new educational programs are being implemented to fill the ever-increasing gap associated with the need for critical thinking (Bastos, 2017). The focus is the criticality of thought, the need for critical thinking, as well as the prevention and closure of skill gaps for innovation, which is a global challenge, and nations compete for innovative designs. Practical exercise-type education is much more helpful for teaching leadership skills than simply studying them in a classroom setting (Moraes et al., 2019). Studying leadership as an academic subject plus experiential learning exercises could be a perfect combination for learning and exercising this subject (Kaushik, 2017). Besides, professors and instructors facilitating active learning in their students need a high level of expertise or educator experiential learning. This context leads to a focus on leadership skills and another soft-skill development. Soft skill development is critical, especially for business students, as practice for their future organizations.

The concept of developing soft skills is important for students, especially those skills relating to communication and teamwork (Lehner, 2020). Active learning can help students develop soft skills or crucial thinking by giving them experience with decision-making and asking the right questions to solve problems. Employers are looking for soft skills, critical thinking, and active learning, which instructors can use to build these skills in students (Massy, 2019).

The question of how students are taught is also fundamental. It may yield insights regarding student motivation to complete an academic program or drop out of a program based on the quality of the instruction (Barron & Hulleman, 2015). Many students learn best from practical exercises and active learning, which were grounds for the constructivist philosophy of education and learning. Many students who might be motivated and confident regarding educational programs find enjoyment or challenge in learning new subjects with active learning methods (Cooper et al., 2018). In addition to active learning at the college level, active learning has proven very useful for employers to train their employees, and homeschooling advocates are attracted to this teaching approach. Active learning has proven to be very useful in developing experience with specific subjects and equally effective in developing critical thinking (Torff, 2018).

This perspective holds for a wide variety of different topics, such as the learning achievement of biology students, mathematics students, and natural science students, indicating that the constructivist active learning process has proved very useful; however, the effectiveness is grounded with how the instructor conducts the experiential process (Morrissey et al., 2015). The instructor's interactions with students are a vital component of experiential focus. The instructor's interaction regarding the group work projects for each student is significant for experiential learning success. Educator experience and effectiveness facilitate active learning are essential in science and technology education (Falloon, 2019).

Because the quality of the student's learning experience is directly linked to the educator's ability and expertise regarding active learning-focused education approaches, educator feedback regarding the subject is critical. In addition to students needing training to alleviate skill gaps for innovation, educator feedback is also necessary to understand what

college educators like, what they do not like, and what skill gaps for innovation teachers may have. The goal is to enable educators to facilitate better experiential education and critical thinking development for their students (Shakarishvili, 2019). Instructors who teach with applied active learning techniques are much more helpful than those who use the traditional teaching of critical thinking. The concern is that educational organizations may not be successful because many use traditional educational methods instead of active, experiential teaching techniques. A dynamic, experiential approach to teaching has the potential to build student experience with the subject studied in classes (Ichsan et al., 2019).

In any education discipline, and vital for higher education, experiential knowledge is important in developing critical thinking. A recent study indicated that applied learning was influential in developing students' critical thinking if the assignments reflected specific formats that stimulate students' thinking, remembering, understanding, using, analyzing, evaluating, and creating, directly related to critical thinking learning. Again, this approach was only helpful if constructed appropriately (Sutarno et al., 2019). This study's essential focus was that the educator was the critical variable regarding critical thinking focused instruction. Another study described a collaborative learning approach to stimulate English students to learn English and develop critical thinking (Sopiani & Said, 2019). Educators can effectively teach active learning and higher-order thinking skills if they have the needed skills and experience to close or prevent educator skill gaps for innovation concerning experiential learning. Teaching based on experiential theory needs to be developed specifically for the desired learning outcome (Kaufman, 2013).

The concern is that students are not always fully prepared for the modern workforce when they start working (Ichsan, 2019). It is common for students to need much training before

they can effectively contribute to organizational priorities. Students need specific skills relative to operations in the 21st century workforce. The situation was a global concern; applied skills needed innovation, and critical thinking is necessary for competitive development in the industry. Educators must help to develop the right skills in their students. There needs to be a feedback loop between industry and the education system to create relevant training programs for applicable student development. There is a need for improved problem-solving skills in the industry workforce, and critical thinking is essential. The ability for students to develop skills and experience with the skills is considered very important; the ability to think critically, and apply skills to problem-solving, is vital in such technology-based industries as computer science and other applied sciences (Awoyemi, 2018).

In a study by Barkley, the effectiveness of skill development was directly related to an instructor's ability to develop the most applicable learning systems. The challenges associated with active learning were linked to educator perspectives and educator implementation strategies (Barkley, 2017). The process was not static but an iterative learning process by the instructors, developing new learning processes and techniques and developing a new curriculum. There has been a continuous push to increase operational knowledge at colleges and universities to improve innovation and provide students' real-world experience. Communication is essential; there needs to be an interaction between industry and universities, so universities can adequately understand the scope of need for applied skills and theoretical academic curriculum.

In many cases, educator initiative is the primary key component in the learning and teaching cycle between the education community and industry (Apino & Retnawati, 2019). In business, no notable projects happen in isolation; large teams are needed for big projects, and these multi-functional teams are even more effective if they have external partners. The potential

for partnerships between universities and industry organizations cannot be overemphasized (Goodley, 2020). These types of partnerships can foster and grow capabilities much greater than the individual capabilities of either organization alone (Apino & Retnawati, 2019).

Many educational organizations try to develop critical work-related skills for students while in the college environment, such as active learning programs to educate students. For pre-service student teachers, experience developing curriculum, presenting lessons will help them grow, so after graduation, the new teachers can apply what they learned due to active learning. Many educational institutions promote active learning. Still, they do not develop a program to effectively implement active learning for college or university educators to create and present active learning. Thus, the ability to create and execute active learning strategies for the classroom falls on educators' motivations and experience (Omeodu, 2020).

Angelo (2018) stated that educator integration into an active learning curriculum is critical. The more motivated and integrated the educator is with the subject, the better the applied active learning can include perspectives and personal experience (Angelo, 2018). Student-focused active learning is constructed from understanding applied functional knowledge, reflecting the learning process, and educator perspectives and feedback (Azim & Shamim, 2019). The more involved the academic subject, the more critical it was for applied active learning, reflective learning, and educator feedback (Bentall, 2020). For active learning, feedback from the educator is essential in the form of a student debrief. For example, if a simulator for active learning is applied, formal feedback from the educator aligns with the functional learning need for applied and reflective learning (Bauchat & Seropian, 2019). These educator skills are not innate; educator support is critical for active learning success. The educator's feedback and reflection are part of active learning. Applied operational knowledge for students can be used in

many ways, from the case study to simulator training, to internships; however, the standard prerequisites for functional learning effectiveness are educator feedback and student reflection (Foster, 2017). The more the students can learn through applied active learning constructivist learning while in student status at a college or university, the better their performance after graduation. The more effectively the educator can teach concerning active learning, the better the student's experience level with the applicable skills (Daggett, 2008).

Skills and Active Learning

The critical concept is that our nation has potential skill gaps, which could be associated with a deficit in attaining higher learning levels, negatively affecting present or future global equity for innovation in the very competitive global market economy. The potential to develop student ability for higher learning levels, close equity gaps, and skill gaps for innovation can be directly linked with educational concepts, such as Bloom’s taxonomy. Bloom’s taxonomy levels of education tell us that not all learning about a topic, skill, or discipline is the same. Bloom’s taxonomy levels of learning. Blooms taxonomy levels of learning, which are generally given as *remembering, understanding, applying, analyzing, creating,* and *evaluating*, comprise levels that can be considered lower, or general levels of learning and higher levels of learning. In general, the lower levels of learning are *remembering and understanding*, and the higher levels of *apply*, *analyze, create* and *evaluate* focus on creation and innovation. Education's goal is to develop applied or active learning skills, which will enable students to learn innovation-related skills and approaches to learning these skills, such as entrepreneurship-related skills (Adeshola & Abubakar, 2020). The approach to this type of teaching could include developing thinking skills as much as practical skills.

According to stakeholder needs, higher-order thinking skills can be developed with education applications directly related to the applied subject's critical goals. Many stakeholders associated with our nation, industry, and sub-organizations strive to succeed in the global economy (Adeshola & Abubakar, 2020). There is a need to have adequate equipment; there is a desire to develop learning, with positive effects, focused on multiple stakeholders, including educational institutions, students, teachers, governments, and industry. Industry, government, and universities focus on innovation and closing skill gaps for innovation, both for competitive intellectual pursuits and national pride and status (Swathi & Jain, 2020). There is a potential correlation between higher levels of learning and education's ability to directly contribute to individuals and organizations in a very competitive global economy (Shakarishvili, 2019).

The importance of 21st century-focused skills aligns with this need for educational strategies that help prepare students by training them based on the skills and experience needed for academics and the workforce environment. As the world was globalized, there was more competition, and the demand for innovation at the international, national, corporate, and personal levels became higher as the competition broadened (Sutarno et al., 2019). Because of this increasing globalization, innovation has become a primary dynamic and driver in the global economy. Individual nations, corporations, and thus individuals have much pressure on them to innovate. For governments, innovation affects their military-industrial complex and a nation's ability to project power and influence. For individual corporations, innovation involves market share for the organization, the ability to be produced in the global economy, and even survival as a business organization. Individuals, especially new graduates of a college or university, are expected to have the skills required by their corporations or nations, innovate, have the 21st century skills needed for innovation, and be successful (Kusaeri et al., 2019).

The concept of transformational experience applied to learning focuses on developing higher-level innovation skills, which needs to be a vital goal of the educator and the educator's skills. However, if developed and implemented effectively, this approach might expand the higher-level skills needed for the workforce. The design of instruction was the critical variable for employees' future success and their organizations (Cappelli, 2015). Consequently, an applied learning or active learning approach might provide the desired focus on student development. Applied or practical knowledge can help build experience for students while in a college environment, which can later benefit the students and their employers in the workplace.

According to Weber, critical thinking skills were a key focus area for developing the desired skills for the 21st century employee. Consequently, there was a high demand for employees with essential traits of thinking because of employer needs. According to Kaufman, crucial employee skills are needed for 21st century skills, focusing on innovation. Necessary innovation skills include critical thinking, ethics, adaptability, problem-solving, communicative skills, accountability, personal productivity, innovative capability, creativity, leadership skills, global awareness, social responsibility, and contextual learning skills, with critical thinking representing the highest level of importance of the list of crucial 21st century workforce skills. Because ELT focuses on developing real-world professional skills (Kolb et al., 2018), ELT might be an excellent approach to developing 21st century workforce-focused employees.

As in other education approaches, multi-stakeholder conditions should be considered active learning concepts. Education is a partnership between multiple stakeholders—the instructor, the student, and, indirectly, the students' present/future employer. By building student experience with important skills, educators can better prepare their students for the workforce (Shakarishvili, 2019). This constructivist theme for education aims to construct knowledge and

skills by applying the knowledge and skills being acquired. Constructivism is the paradigm that defines, understands, uses, and learns how humans experience their respective environments through knowledge construction (Detel, 2015). According to Fosnot (2015), constructivism is a fundamental theory relating to education and how humans learn. Constructivism is very much a foundational theory for teaching and learning. Applying this approach, instructors allow their students to think and generate their questions, consider the cause-and-effect relationship of the topics in question, develop a hypothesis, and test potential viability (Fosnot, 2015). ELT is the educator's intentional development, which focuses on the transformative experience students use to learn and grow. The transformative experiences can develop different learning levels, from essential to the higher education levels described by Bloom's taxonomy. ELT is a student-centric process, where the educator produces students through transformative experiences; the benefit for industry would be focused on the higher-level student critical thinking (Kaufman, 2013).

The experiential learning model (ELM), like ELT, was developed by Kolb and served as a model for learning. The ELM focuses on the process of knowledge being created due to an experience associated with education. The model relates learning to a transformational experience, where the experience of applying the skill or the experience of going through the learning process translates into learning (Omeodu, 2020). A model in knowledge and skill can be developed in college students preparing to enter the modern workforce. Thus, the abstract conceptualization of the student experiences and the thoughtful observation serve the students' learning process. Practiced skills, along with productive reflection, through internship programs, or even volunteer experiences, provide opportunities for learning (Barton et al., 2017). This type of applied learning can help students build expertise in a safe, supervised academic environment (Bauchat & Seropian, 2019). The student can then potentially apply the experience learned, using

the ELM process, to a similar situation in a future application in an educational setting or work environment (Omeodu, 2020). It is important to note that learning style alone is not a good predictor of student performance because of many different learning styles (Omeodu, 2020).

The ELM approach to learning describes how experience can be developed with educational curriculums, focusing on creating an environment that is transformational and reflective, ideal for student growth. There are many different potential approaches to using ELM, and each educational process can be instructor-designed to meet the needs of their students (Dhir, 2019). This type of education model has much potential for developing experience in students to prepare them for future demands. However, there is potential variability due to different educational situations, academic styles, and the instructors' experience applying this method (Stone, 2016).

In a complex and competitive global economy, new applied educational concepts for innovative design are in high demand (Cappelli, 2015). Consequently, because of employer demand for applied/change-related employee skills, there is also a high demand for applied/innovation-oriented educational programs (Shakarishvili, 2019) to meet student and employer needs. With active learning concepts, as with other education approaches, multi-stakeholder conditions should be considered (Blankesteijn et al., 2020). The complete focus and understanding of the complex perspectives and motivations associated with this relationship are significant, just as critical as curriculum development for a particular educational program for learning success (Osterman & Weaver, 2014).

Experiential learning theory (ELT) and Experiential Learning Model (ELM) are descriptive regarding how humans develop skills and knowledge; however, other learning approaches should be considered to develop students for the 21st century workforce. The

cognitive paradigm focuses on the internal workings of the human mind. This paradigm concentrates on how people view their own experiences and their respective interpretation of their experiences. It is based on how people view and interpret the effects of their experiences and how humans learn, as they create schemas or mental models based on what they have previously learned (Cooper et al., 2018).

The cognitive paradigm's, refers to mental models as schemata, which are updated as learning takes place. Individuals' schemata develop and grow through learning experiences (Adesoji, 2018). The students' schemata can be developed based on the different learning levels mentioned in Bloom's taxonomy and specifically focusing on the higher-level learning skills, such as *analyzing*, *creating*, and *evaluating*, which are the critical skills needed for the 21st century workforce. The recommended skills for the 21st century include critical thinking, ethics, adaptability, problem-solving, communicative skills, accountability, personal productivity, innovative capability, creativity, leadership skills, global awareness, social responsibility, and contextual learning skills necessary for the needs of the respective educational program in question; this defines productive learning (Cooper et al., 2018).

According to Adesoji (2019), the cognitive paradigm application includes the cognitive theory of multimedia learning, originated by Richard Mayer in 1947. The focus of this learning theory was the concept of deep learning. The multimedia principle states that people learn more thoroughly and deeply from more than one media type. For example, people know more deeply from using words and pictures than \ learning from words alone. The critical assumption with this cognitive learning theory was that separate channels are used for learning. For example, if someone learns from words and pictures, it is based on auditory and visual input. The data coming in from the two channels are processed or dual coded in two separate tracks. Another

assumption was that each learning channel has a limited capacity to learn or a cognitive load. Finally, the last assumption was that learning is an active process, including filtering, organizing, and integrating information (Mizokami, 2017).

The critical idea in educating students with this cognitive multimedia theory was that students are affected by cognitive load, so educating students using one media channel may be more efficient. However, in many cases, if more media channels can be used, such as reading, video, or writing, the more meaningful the educational experience becomes (Mizokami, 2017). Potentially, the cognitive multimedia approach for learning can help prepare for the rigors and needs of the 21st century workforce if the theory could be translated into an educational curriculum focused on the higher Bloom's levels of learning. According to Kaufman (2013), essential employee skills are needed for the 21st century skills, focusing on innovation. Understanding the key industry needs is very important; the transition from the 20th century and into the 21st century has changed concerning education, industry, and government requirements. Relating to the ability to innovate, teamwork is very important; as a result, the ability for employees to communicate effectively, both in written and verbal forms, is very important, as well as mathematical computation, data analysis general computer skills (Daggett, 2008).

Experiential learning theory (ELT) and Experiential Learning Model (ELM) were descriptive regarding how humans develop skills and knowledge with experience; however, other learning approaches should be considered to develop students for the innovation-focused, 21st century workforce. The cognitive paradigm focused on the internal workings of the human mind. This paradigm concentrates on how people view their own experiences and their respective interpretation of their experiences (Daggett, 2008).

The cognitive paradigm's fundamental principles are that people, as in the constructivist paradigm, construct developmental models; however, these models are referred to as schemata with the cognitive paradigm. The dynamic change in the schemata or mental models was of crucial importance for this paradigm. Individuals' schemata develop and grow through experiential learning (Barton et al., 2017). This process was like the way that individuals learn through a transformational experience in Kolb's ELT. The student's schemata can be updated with the higher-level skills mentioned in Bloom's taxonomy and specifically focus on the critical skills needed for innovation, including critical thinking, ethics, adaptability, problem-solving, communicative skills, accountability, personal productivity, innovative capability, creativity, leadership skills, global awareness, social responsibility, and contextual learning skills. According to Cooper's perspectives on the productive learning process, these skills are ideal for the needs of the educational program in question (Cooper et al., 2018).

Active learning and the importance of developing experience with learning and the necessary higher-order thinking skills are essential for students, especially college students, before moving into the workforce. Teaching higher-ordered thinking or system thinking skills is important because of the increasing complexity of systems (Lemke, 2019). Our society and societal problems are becoming more complex along with our interactions with our social environment (Mueller & Anderson, 2014). High-ordered thinking skills need to develop at the college level to establish critical thinking so that these thinking skills can be applied in the workforce (Batat, 2019).

It is essential to note that teachers should focus on their students' specific needs for their future career success. The closure of skill gaps for innovation is directly tied to providing expertise and experience to students. Critical thinking is an essential primary concept in the 21st

century. The idea of teaching critical thinking and stimulating the self-directed learning of critical thinking. This research has indicated that motivating students to acquire increased critical thinking skills (Saputri, et al., 2019). This is a good indicator that experiential education models focused on critical thinking are helpful for specific subjects and various educational programs. This research indicates that constructivist experiential education can help a wide range of scholarly disciplines and positively affect critical thinking if done right. Enhancing education does not have a single solution; however, educator best practices can lead to operative solutions (Biggs, 2018).

Developing experience, which can be applied to future situations, is significant for students. Based on relevant experience, these applied skills can be developed in the safety of the university environment, illustrating the importance of experiential learning in developing critical thinking found in a recent study (Saputri et al., 2019). Students develop and use critical thinking in learning many subjects and directly apply the knowledge for education and workforce applications (Saputri et al., 2019). The constructivist approach to developing critical thinking for students is not limited to specific subjects or disciplines, such as STEM disciplines; all educators and professions can apply these teaching strategies. For example, English teachers can stimulate students' critical thinking and a standard English curriculum (Sopiani & Said, 2019). The need is to develop critical thinking based on communication between the instructor and the students. For example, some plans were very useful in developing necessary thinking skills through brainstorming and mind mapping (Brown et al., 2020). The potential for success was based on the educator's experience with the type of instruction used (Adeshola & Abubakar, 2020). These results also point out that the critical variable in educating students concerning critical thinking was the educator.

The current study aligns with the research trend that the critical variable is the educator. The educator's experience, perspectives, and beliefs are significant regarding the educator's education approach. Mathematics is an essential subject regarding 21st century skills, and it directly aligns with critical thinking. A recent study indicated that the research suggests that a compulsory thinking curriculum must prepare students for necessary thinking-focused tests. For example, a mathematics-focused critical thinking curriculum was needed before students could effectively test their critical thinking mathematical knowledge (Kusaeri et al., 2019).

It is imperative to focus on undergraduate students' development, as college is the primary skill development ground before transitioning to the workforce. Hence, systems thinking becomes an essential part of experiential learning. The integration of experiential systems thinking, such as constructing learning models, may help develop student skills. Systems thinking, such as the modeling and simulation of scenarios and collecting data, are good examples of experiential thinking and are very important for student development (Gilbert et al., 2018).

The educator is critical for active learning to be practical. The focus on active learning motivates students to complete educational programs at the college level. Participation in direct learning experiences can help students construct and build on previous knowledge and experience to benefit the overall learning process. Teamwork and collaboration add to the benefits of constructivist active learning processes (Moon, 2007). Most industry or governmental projects are team-based projects, so experience with working with teams translates to knowledge and skills to transition into the workforce. Active learning has the potential for an individual to provide specific students with specific skills and motivations to be successful. For example, collaborative writing can provide a level of understanding and potentially provide the

information in a transformational experience format that can directly affect students' constructed learning (Tietz., 2021).

Education is a crucial tool to help close and prevent skill gaps for innovation in students, as the goal is for students and future employees to apply knowledge in the classroom and the workforce. As previously noted, the educator was the critical variable concerning success or failure for active learning in a school (Kusumastuti et al., 2019). For active learning to succeed, teachers need to be innovative, have a good understanding of their students, and be a student of knowledge. The quality of the education depends on the instructor's innovations (Weber, 2018). Personal and professional perspectives on active learning, such as expectancy-value, intrinsic-value, and utility-value (Barron & Hulleman, 2015), are essential for understanding dynamic education relative to educators. For any educational program or philosophy, educator experience to develop an academic program is necessary (Torff, 2018).

Bell and Liu (2019) recommend that instructors develop students' critical thinking and creative thinking skills to promote active learning strategies. This study focused primarily on the personal and professional motivations of teachers. The educator was the primary indicator of the success or failure to develop critical thinking for their students (Weber, 2018). This learning approach is focused on experiential learning for students gaining practical experience while in the relative safety of the classroom environment. Such higher-order experiential learning focuses more on an analytical and problem-solving focus and is directly related to the ability and experience with problem-solving (Baillie, 2020). This approach focuses not only on learning material to the rote style of memorization and the evaluation of that memorization but also on applying the information, which is learned, to gain experience with the application of the learned knowledge (Kusaeri et al., 2019). The active, experiential learning approach requires a dynamic,

experiential teaching approach, so the educator's abilities are essential. Critical thinking and active learning can be directly linked to Bloom's taxonomy, and teachers must focus on teaching based on these higher levels of education (Swathi & Jain, 2020).

The educator's motivation and commitment are directly related to active learning (Short et al., 2018). In addition to the time needed and the responsibility for keeping up with technology, some potential ethical concerns associated with active learning include the students' being able to have a choice in the type of education they receive, problems with educator bias, and/or how to best present student feedback (Bradford, 2018).

This section's primary essential purpose was to provide a focused literature review regarding recent literature related to employee skill gaps for innovation and the study of educator challenges associated with preparing students for the innovation-intensive, 21st century workforce. Education's ability to intervene and close and bridge student skill gaps for innovation is directly related to the educators' experience of innovation-focused instruction based on this educational goal (Reddy, 2020). Teachers may have challenges applying academic concepts, such as learning paradigms or theories, as an intervention approach based on many factors (Spark et al., 2020). Some potential factors could include but are not limited to the level of educator experience, educator training regarding different teaching methods, educator experience, educator support for specific teaching strategies, and infrastructure needs (Jeroen., 2017).

The current study focused on gaining educator perspectives associated with preparing students for the 21st century workforce. This literature exploration helped develop the data collection question for the study. The literature review includes the global economy sections, skill gaps for innovation, constructivist learning, cognitive learning, the educator, workforce

skills, education and skills, importance of experience, and practical knowledge (Robertson, 1999).

The importance of 21st century focused skills indicates the need for educational strategies that help prepare students to gain the skills and experience required for academics and the workforce environment (Johnson, 2019). As the world has globalized, there is more competition, and the demand for innovation at the international, national, corporate, and personal levels becomes higher as the competition broadens. From the very dynamic end of the Cold War into the 1990s, the world became more globalized in the 21st century. Because of this increasing globalization, innovation has become a primary dynamic and driver in the global economy. Individual nations, corporations, and thus individuals have much pressure on them to innovate. For countries, innovation affects their military-industrial complex and ability to project power and influence globally, market share for individual companies, and employment security for individual workers (Kaufman, 2013).

Summary

Starting in the 1990s and into the 21st century, the world has become more globalized. Because of this increasing globalization, innovation has become a primary dynamic and driver in the global economy. Individual nations, corporations, and individuals have much pressure on innovating. For governments, innovation affects their military-industrial complex and a nations' ability to project power and influence.

Twenty-first century-focused skills enable individuals, corporations, and nations to become competitive for innovation on a global level. Globalization is a key driver of competition on a global level. Globalization and the global competition to innovate and the establishment of market share, not just at an industry or national level, but worldwide, driving the increasing need

for high-level employee skills (Dromgoole, 2020). The recent trend is that employers focus on design in a complex and competitive global economy, and innovation skills are in high demand (Cappelli, 2015).

Cappelli stated that skill gaps for innovation problems represent a significant opportunity for educators to help fill the very dynamic workforce's needs. The increased focus on students' critical thinking abilities, especially college students, represents the higher education step before entering the workforce (Gilbert et al., 2018). Teaching college students higher-ordered thinking skills or system thinking skills is important because of the increasing complexity of systems. Our society and societal problems are more complex because our methods to interact with our society and environment are becoming more complicated (Foster, 2017). As the demand for innovation drives employers' motivations, industry, and government, the need to fill skills gaps in the workplace is associated with the need for skilled workers for the 21st century. Industry organizations compete for market share, and both industry and our government are always looking for competitive advantages. According to Kaufman (2013), essential employee skills are needed for the 21st century, focusing on innovation. Necessary student innovation skills include critical thinking, ethics, adaptability, problem-solving, communicative skills, accountability, personal productivity, innovative capability, creativity, leadership skills, global awareness, social responsibility, and contextual learning skills.

CHAPTER THREE: METHODS

Overview

The purpose of this hermeneutic phenomenology was to understand how business professors describe their experiences in preparing their students for an innovation-focused 21st century workforce. The existing literature gap regarding this area of research and the relative importance of the educator's perspective motivated this study. This study's research indicated that employees are critical regarding innovation for individuals themselves, workforce organizations, and nations. Consequently, any potential gaps in employee skills can harm innovation and workforce stakeholder success. A significant key variable associated with developing innovation skills in students is the educator; there was a need for an educator's perspective regarding the phenomenon of preparing college students for innovation. The study chapter includes the study's design, historical background, study participants, procedures, data collection and analysis, trustworthiness, ethical considerations, and a chapter summary.

Research Design

This investigation explored college educators' best practices for preparing their students for an innovation-focused workforce through college educators' perceptions and lived experiences. A qualitative hermeneutic phenomenology was selected to understand the phenomenon being studied through personal reflection from participants' perspectives. A qualitative research design was ideal for understanding the meaning through the participants' perceptions in this study. The participants provided feedback on the phenomenon being studied because of each participant's affiliation and experience with the phenomenon. Qualitative research was the best method to learn the participants' perceptions.

According to Creswell & Poth (2017), the phenomenological approach is an interpretive filter or lens through which view the observed phenomenon. This interpretive lens approach was used to study how college educators prepare students for the innovation-focused 21st century workforce. A phenomenology study uses reflective human interpretation and perspectives to understand the phenomenon (Moustakas, 1994). A phenomenology framework was selected for this study because the research approach focuses on the systems and structures of one's consciousness as each person experiences the phenomenon (Moustakas, 1994). Because of the phenomenon being studied, educators' perceptions of how they prepare students for innovation have provided excellent data based on the instructors' point of view.

Regarding the choice of the hermeneutic phenomenology, the word hermeneutic comes from the Greek influence on the English language, relative to the Greek god Hermes, who, as described in Greek folklore, would interpret messages between the gods and man. The choice of selecting a hermeneutic phenomenology model for this study was that, unlike the transcendental phenomenology model, the hermeneutic phenomenology model allows for prior knowledge of the subject being studied. The belief is that prior knowledge of the matter is not detrimental to the study and consequently benefits the research by aiding the researcher with the research data's processing (Bynum & Varpio, 2017). This study's overall goal was to better understand the phenomenon by investigating the phenomenon through the study participants' perspectives.

Research Questions

This research project studies the phenomenon of college educator challenges associated with preparing students for the rigorous, innovation-focused 21st century workforce through the educator's perceptions. The research questions below were used to gain the educators' qualitative perspectives regarding the studied phenomenon.

Central Research Question

How do faculty members and administrators describe their experiences in preparing their students for an innovation-focused 21st century workforce?

Sub-question One

What do faculty members and administrators understand as skills expectations of the workplace for graduate students?

Sub-question Two

How are skills expectations of the workplace developed in college courses?

Sub-question Three

How do faculty members develop their understanding of the needs of the field for student's skill development?

Setting and Participants

The purpose of this section is to describe the setting for this study and to describe the participants for the study. The setting for this study was not one isolated geographical area but was focused on the types of participants who would be ideal for this study. Consequently, the perspectives from this study are from business professors from universities from around the nation, which I believe will maximize the value of this study.

Setting and Participants

The setting for this study was very participant-focused, vice geographically focused. My 10 participants were considered ideal, as they all were business professors and had industry experience. I believed that a specific type of research study participant was required to make this study as effective as possible. The business professors recruited for this study came from all over the United States. They included business professors with significant teaching experience, past

and current industry work, and leadership experience and were highly qualified to speak concerning the phenomenon studied. Many of the professors also have active affiliations with industry organizations, and some participants operate industry businesses, legal practices, and other business leadership positions, such as business chief financial officer positions (CFO).

It is recommended that qualitative data for a study collect data from fewer than 20 participants. Phenomenological researchers are recommended to use between 5-25 participants in their investigations (Creswell, 2007). The sampling procedures were very purposeful; I recruited business professor participants interested in the study with combined education and industry experience. The sample size was appropriate for the phenomenology because the participants, as business professors and industry professionals, share a collective experience concerning understanding what types of educational strategies help prepare their students for the global economic marketplace for innovation. This study collected data from educators who have experience in the workforce and work in the education field. The primary data collection process was interviews with the business professors, the interview being the mandatory qualitative data collection process (Creswell, 2007). Besides collecting interview data, focus group and journal data were collected to triangulate on focused themes of the study and gain the data needed to identify the critical themes of this study based on the participant perspectives.

This study's criteria included university business faculty with industry work and leadership experience. Combining education and workforce work experience and leadership experience provided an excellent source of information concerning how business educator perspectives focus on developing student innovation skills. For data collection, computer-based interviews were conducted to record all participants' verbal and non-verbal data points, and other data types include journal prompts and participant focus groups (Creswell, 2018). Participant

diversity was targeted in this study, including a wide range of gender and ethnic representation and a wide range of geographical representation from the participants (Patton & Schwandt, 2015).

Researcher Positionality

This research project was very significant to me, both personally and professionally. I very much have a Biblical worldview, and I have over 30 years of experience working in the Department of Defense (DoD) in combat arms, including artillery, infantry, aviation, engineering, operations, and aviation safety. I am a combat veteran of several national-level military conflicts, including Operation Desert Storm, Operation Restore Hope, counter-drug operations, and Operation Iraqi Freedom. Since retiring from active duty for DoD, my primary focus has been in the test and evaluation field, of which I have served as a test officer, engineer, mission pilot, and aviation safety officer (ASO). My duties as an ASO and as an accident investigator have taught me that almost all mishaps, 95% on average, are caused by human decision-making, which could have been prevented or mitigated by proactive risk management, and critical thinking skills. If it were possible to convey one essential thing to every human being on the planet, it would be that all individual characters, habits, and actions are grounded in their respective thoughts. We, as humans, become good at things based on practice; if it was possible to convince others to practice good effective thought patterns, all the time, when the time came for good decision making, to include risk mitigation, those practiced good habit patterns would be routine. This case works with everything, from safety, engineering, aviation, morality, and ethics to military success in a conflict situation. Overall, I believe we get good at what we practice; the same can be said for students in college and individuals in the workforce, but an educator perspective is needed to understand the phenomenon being studied.

My experience teaching as an adjunct science professor has taught me the importance of teaching students critical thinking skills, motivation, interest, and a never to give up attitude. I think humans need to develop skills by being introduced to new skills; however, just being introduced to a new skill does not directly relate to proficiency. Humans need to practice skills to be proficient, and higher-level skills like critical thinking, ethics, morality, dedication and interest, and others are no exception. Practiced or applied skills, including Bloom's high-level skills, should be practiced, thus building a solid foundation for current and future learning. It is crucial to start with Bloom's lower-level skills, such as understanding and remembering (Adesoji, 2018), and practice these skills before moving up to the higher-level skills like apply, analyze, evaluate, and create (Adesoji, 2018). I am interested in learning, teaching, and the benefits of developing knowledge and skills to empower individuals to contribute to organizations and society overall. Learning and teaching are very much related; a teacher much first be a good student before teaching, and teaching is also one of the best ways to learn. The following paragraphs, regarding my motivation for this study, include my motivation, research paradigm, and philosophical assumptions.

My primary motivation for this study was that employee skills have changed rapidly throughout human history. For example, the 18th and 19th centuries required many broad agricultural skills to support an agrarian economy, while the 20th century required industrial and progressively more technical skills. Rapid globalization evolved 21st century skills requirements, which are directly focused on innovation, effectiveness, and economy of scale. Teamwork, critical thinking, and problem-solving skills are all critical in the 21st century.

My research paradigm was a constructivist framework and was foundational for this study. Constructivism describes how humans construct knowledge and skills and is a type of

epistemological paradigm. Constructivism was an ideal paradigm for this study that focuses on building or developing knowledge and skills (Creswell, 2018). My inspiration for selecting a research paradigm was based on personal experience, how I learn, and how other people learn new subjects and skills is a topic of interest. I selected the constructivist paradigm, which describes how humans construct new knowledge and skills based on learned and skills added to existing knowledge. When concrete blocks are stacked, a solid footing or foundation is needed, then each successive row of blocks can be secured into position; if this sequence is not followed sequentially, gaps can form, the system could be weak or even fail. If the foundation is strong, and the building blocks or skills are vital, building or learning can continue without limit. This situation and condition have the potential to positively affect all skill development, even moral, ethical, and motivational skills.

The theory relating to this research paradigm was Kolb's experiential learning model, which states that humans construct new knowledge and skills based on a transformational experience (Kolb, 2018). The transformational experience must come from some source, and the most logical source of the transformational experience was the college educator, which was the focus of this study. I also noted that the critical issue in the literature was that there was a concern that employee skill gaps were associated with limitations to employers' innovation and global competition (Cappelli, 2015).

The primary philosophical assumption for this research study was epistemological, regarding how researchers know what they know. To gain a proper perspective, I got as close as possible to the research participants to understand the participants' views. Data are assembled and analyzed through the researcher's worldview perspectives (Creswell, 2018). There was a complete understanding that each participant has their own set of educational experiences, and

each has an individual set of views that benefited this study. In terms of ontological assumptions, the individual nature of reality is associated with everyone, and my worldview leans toward a positivist or evidence-based world. The axiological belief is that my worldviews influence the types of questions asked (Creswell, 2018) and this study due to my interest in the topic and potential biases. My bias and worldviews were mitigated by seeking counter-narratives to my positions, keeping an open mind while bracketing my biases, and encouraging participants to engage in a commentary based on their worldview and experience, providing their input on these perspectives.

Interpretive Framework

The paradigm which helped to guide this study was the constructivist paradigm and two associated learning theories. The overarching paradigm associated with this study was the constructivist paradigm, which relates to learning being foundational. As learning is accomplished, this facilitates continued learning potential (Fosnot, 2015). The associated learning theory was Kolb's experiential learning theory (ELT). Kolb published his model for ELT in 1984 and focused on learning in that knowledge was developed through practice (Kolb et al., 2018). The secondary theory is Bloom's taxonomy levels of learning. Bloom's taxonomy was developed by Benjamin Bloom in 1956 and was created as a classification system for teachers (Swathi & Jain, 2020). Kolb's ELT describes the learning process, a cyclic process for students to develop experience and skills. Kolb's ELT was foundational, as it represents the developmental process of learning (Newell, 2016). This study focused on learning levels, as higher learning levels are needed for employers' skills for innovation. It is essential to have a developmental process like Kolb's ELT; it is also helpful to have a metric to understand the learning process's success. There is a duality, a cause-and-effect relationship between Kolb and

Bloom, as ELT is descriptive of the learning process, and Bloom is descriptive of the levels of learning effectiveness.

Philosophical Assumptions

The philosophical assumptions associated with this research study included epistemological, ontological, and axiological, which provided me a broadband perspective to understand and interpret the study situation, understand the problem, and develop the research questions for the study. Consequently, my general approach for developing the questions to ask the participants was to keep the questions open-ended and broad to ensure the collected data represented the true perspectives of the participants.

Ontological Assumption

The ontological assumptions associated with this study were based on the triangulated perspectives of the many different participants and the utilization of the three data types used in this study. This triangulation effect was the source of the key themes of the study and the sub-themes for this study. In this process, the triangulation effect of the key themes was the focus of this study; no personal opinions or bias from my perspectives were incorporated in this study, only the perspectives of the participants. My focus was the reporting of such findings.

Epistemological Assumption

My primary goal for this study was to be an unbiased interpreter for the participants of this study. My approach to this was to get to know the participants to understand and interpret the findings for this study yet remain unbiased (Creswell & Poth, 2018). In order to ensure my perspectives were not being included in this study, my reporting of the finding included direct quotations from the participants. By communicating to the participants, getting to know them

and their perspectives, and utilizing direct quotations, my focus on the triangulation of the data themes was accomplished.

Axiological Assumption

This study was a hermeneutic phenomenology. Based on my understanding of the phenomenon being studied, I was able to interpret the findings from the participants while maintaining my position as an unbiased researcher (Creswell & Poth, 2018). My background and understanding of business and education allowed me to understand the terminology and perspectives of the participants, report based on these findings, and triangulate the key themes of this study.

Researcher's Role

The researcher's primary role in this research study was the research plan developer; the researcher should operate as a human instrument, as a study facilitator, but not as a participant. I was the developer of the research plan, conducted the interviews, collected journal prompts, facilitated the focus groups, analyzed the data, documented the results, and wrote the final dissertation report (Creswell & Poth, 2017). Though I learned a great deal during this study, I did not have an opinion regarding the study findings. I functioned as a non-participating human instrument (Creswell & Poth, 2017) and did not include any potential personal bias or belief that could influence the study participants. I was actively involved with all aspects of the study; however, any potential personal opinions regarding the study's phenomenon were not included. I used the concept of bracketing to prevent any potential or perceived bias affecting the validity of the study; I set aside any possible personal preference and observed the phenomenon from a fresh, unbiased perspective (Creswell & Poth, 2017) to maximize the validity and effectiveness of the study. Moustakas also mentioned that this honest approach to conducting a

phenomenology, referred to as epoch, was the concept of understanding my perceptions, personal opinions, and potential bias and recording this information in my research journal. By understanding my perspectives, personal opinions, and potential biases, I could bracket and ensure this information does not affect the study.

Procedures

Before beginning the study, approval was requested and subsequently granted from Liberty University's Institutional Review Board (IRB). Following approval from the IRB, many university business departments across the U. S. were contacted to inform each business department about the research study and the type of participants I was looking for and requesting participation. The initial interaction between the university business departments included telephone calls and email communication. Each participant signed a participation agreement once university business departments and individual business professors expressed interest in the study. Following the signing of the participation agreement, the participant and I scheduled a date and time to complete the electronic video teleconference interview. In addition to the research interviews, journal prompts completed by the participants and focus groups with multiple study participants were conducted. I maintained a data journal to compare the data collected with the participants, and most importantly, to list any researcher perceptions or ideas related to the interaction with the participants. The primary goal of recording my thoughts during the study was to maintain a research journal, which was used to prevent any researcher potential bias from having the potential to have any biasing effect on the study. The data associated with the interview and focus group transcripts were collected and maintained for data analysis purposes and safekeeping.

A considerable amount of time was allocated to conducting the transcript analysis, as

needed (Pope & Mays, 2007). The focus group questions, the interview questions, and the journal prompts served to triangulate the focused themes of the study. The reflective journal was essential and was maintained throughout the study's length to maintain a personal record. The journal was used to record my own beliefs, including any potential biases, attitudes, thoughts, and perspectives. The journal was kept and maintained for the record and used to ensure no personal preference was incorporated into the study analysis or findings. The participants' real names were not used, and synonyms were used to represent the study participants (Moustakas, 1994). The data analysis goal triangulated the data based on the participants' thoughts and ideas and the different data types, and I recorded my thoughts and ideas in my study journal (Creswell & Poth, 2017). All my thoughts and concepts associated with the study and concepts related to the participants' perspectives were recorded in the journal and are part of the data for the study.

Sampling Procedures

The sampling procedures for this study involved actively contacting colleges of business at many different universities around the nation, providing a brief description, the IRB-approved contact document of the study, and asking for volunteers to participate in the study. If business professors were interested in participating, then the consent document was sent to each individual to be signed before the data collection plan started.

Data Collection Plan

The data collection methods to study the phenomenon included several different data sources and cyclic data analysis processes. This study described business professors' perceptions of preparing students for innovation in the 21st century workforce. This research study had three data sources: faculty interviews, focus groups, and data journals from each participant. The digital recordings, including the collected raw interviews, journal prompts, and focus group data

were collected and maintained in a secure encrypted computer external hard drive. The data were secured to ensure subjects' identities were protected. I documented and submitted the results (Creswell & Poth, 2017); however, no personally identifiable information (PII) or individual university names were utilized in this study. The interview process's primary focus involved asking each participant open-ended questions, being an active listener, and accurate data acquisition (Patton & Schwandt, 2015). Using the three different data types for triangulation was a comparative analysis process to help focus on the essential findings and trends associated with the qualitative data. The following includes the data collection plan, including interview data for college faculty and administrators, focus group data, and journals.

Interviews

Interviews were the primary data collection tool for this qualitative research project. Interviews gave the study participants a chance to discuss their perceptions, perspectives, and experiences associated with the studied phenomenon. The achieved goal produced qualitative data through the one-on-one interaction and dialog between the researcher and the study (Creswell & Poth, 2017). The open-ended interview questions were designed to get the participants interested in the study. The interview questions gained the participants' unbiased perceptions; the plan collected data from the reflected human perspective of the phenomenon being studied (Creswell & Poth, 2017).

Table 1

Interview Questions

Interview Questions	Research Questions
1. Describe your education work experience and any other work experience that you have.	
2. Elaborate on how vital do you think innovation is in the modern workforce?	CQ
3. To what extent should college students learn innovation-related skills while in the college classroom environment?	CQ
4. What are the primary skills that employers are expecting from new college graduates?	CQ, SQ1
5. Do employers expect new college graduates to be fully capable of doing job tasks initially following hiring?	SQ1
6. What types of experiences do you draw upon to help students prepare for the workforce?	SQ1, SQ2
7. Concerning the most important skills your students need in the modern workforce, how can education help prepare them?	SQ2
8. What teaching methods do you think are the most effective in preparing students for the workforce?	SQ2
9. Are there any particular resources that help students develop critical workforce skills in preparation for them joining the workforce?	SQ3
10. What recommendations would you suggest helping develop students' essential skills while still in the college environment?	SQ3
11. What kind of feedback between workforce employers and the university regarding needed workforce skills or opinions regarding skill development would help you in curriculum development?	SQ3

Regarding the interview questions, Question 1 was used to get to know the participants better, concerning what they studied in college, their teaching experience, and perspectives. Questions 2-4 focus on and align with the central research question of "How do faculty members and administrators describe their experiences preparing their students for innovation in the workforce"? Interview questions 4-6 align with Sub-research Question 1, which was "What do faculty members and administrators understand as skills expectations of the workplace for graduated students"? Interview questions 6-8 relate to the Sub-research Question 2, which was "For the skills believed by the faculty member, and administrator, as skills expectations of the workplace for graduated students, how can these skills be developed in their students before graduation"? Interview questions 9-12 relate to the Sub-research Question 3, "How do faculty members develop their understanding of the needs of the field for student's skill development"?

Focus Groups

The focus groups were group interviews involving the same participants who participated in the individual interviews in a virtual group setting. Two focus groups were conducted. My goal was to stimulate a group discussion regarding the discussion questions. This process did develop interesting conversations that echoed the participants' perspectives during the interviews and journal questions. Focus groups were a very effective way to stimulate meaningful interaction and conversation between participants, which provided valuable research data for the study. The study participants' interaction stimulated thoughts and ideas, expanded concepts and ideas presented during the interview process (Creswell & Poth, 2017). The focus group participants focused on the educator preparation of students for the global economy for innovation. The focus group process developed profound and rich experiences and perspectives (Moustakas, 1994). The focus group was an opportunity to expand on the interview questions

through the interaction of the participants in the focus group setting. The focus group questions are listed in Table 2; however, through the interaction of the participants, the conversation expanded due to participant interaction in comparison to the interview questions.

Table 2

Focus Group Questions

Focus Group Questions	Research Questions
1. What is the ideal background for a business school faculty member?	Ice Breaker
2. What workforce skills are employers expecting new hires to possess coming out of college?	CQ, SQ1
3. What are some of the best practices associated with developing innovation skills and other essential workforce skills for students while the students are in the college environment?	CQ, SQ1, SQ2
4. How do you refresh curriculum and course content to stay current with the needs of corporate America?	CQ, SQ2, SQ3
5. What would ideal faculty professional development look like to ensure faculty remain current with the field?	CQ, SQ2, SQ3
6. What kinds of interactions happen between industry and university faculty or staff?	CQ, SQ1, SQ2, SQ3
7. What are some best practices for faculty and industry interaction being accomplished?	CQ, SQ1, SQ2, SQ3
8. What are some innovative ways that university faculty and staff could interact with industry?	CQ, SQ1, SQ2, SQ3
9. What innovative ways can university faculty and staff strategically align with the industry's skill needs?	CQ, SQ1, SQ2, SQ3
10. How can faculty and staff strategic alignment with industry skills need to be integrated into the university curriculum?	CQ, SQ1, SQ2, SQ3

Journal Prompts

Journals recorded tangible lived experiences in written form and provided the flexibility for written or pictorial recorded data. This data type provided another additional data type to the study, offered a different method to contribute data and ideas, and increased validity. According to Creswell (2018), journal entries contribute deep meaning to a study because participants have more time to focus on the question or idea in a self-reflective way. I included nine journal entry questions. The individual interviews, focus group meetings, and journal entries provided the basis for this study's data. These data were collected, analyzed, and displayed in the findings section of this dissertation. The following table describes the journal entries that were used.

Table 3

Journal Prompts

1. Describe the most critical skills needed by college graduates entering the workforce today.
2. Describe the most critical single skill needed by college graduates entering the workforce today.
3. Describe the best ways for students to develop these vital work-related skills.
4. Describe how you develop essential skills in college students.
5. Describe the most effective method to develop vital skills in college students.
6. Describe some other potential ideas for developing vital skills in college students before they enter the workforce.
7. Describe any internal or external contributing factors that help you prepare vital skills in college students.
8. Describe any other internal or external contributing factors that would further assist in the skill development effort.
9. Describe any feedback you gain from students or employers regarding the effectiveness of the applied skills.

Data Synthesis

This section includes data analysis procedures, which were identified as a concise rationale for the analysis type. I used the Heidegger loop data analysis process. The concept of a Heidegger loop, or hermeneutical loop data analysis, was that the data parts have a circular relationship with the data parts' source. For example, a composer's music was tied to the composer, so the composer's music was analyzed, as was the composer. In this study, the individual interviews' data were linked to the individual from which the data is acquired, an iterative circular process (Harasim, 2017). The different data types, including interviews from faculty, discussions from administrators, and focus groups, supported data triangulation and focused or zoomed in on the study's critical data themes. The study's key goal was to triangulate the fundamental factors associated with the phenomenon being studied.

The whole of the data was used to understand the data's characteristics as they became available. This data analysis process was not linear but a circular flow process, known as the hermeneutical circle; data were analyzed based on the different participants, potentially yielding other data points (Harasim, 2017). The interpretation of the information was a continuous revision. The researcher revises their understanding of the whole of the data as the data were triangulated, and the complete understanding emerges as specific trends and themes (Creswell & Poth, 2017). Any potential personal biases were explicitly expressed in this study to ensure validity was maintained. I provided considerable detail to ensure that other researchers could replicate the research study process. This study utilized multiple data sources, including interview data from participants, focus groups, and journal prompt data, to achieve triangulation from the data synthesis (Creswell, 2013). I recorded all thoughts and perceptions of this study in a logbook to prevent any potential for personal bias affecting the study.

Trustworthiness

There was no preconceived bias or any notion of bias affecting the research project's validity. I was a non-participating human instrument (Creswell & Poth, 2017) of the study, who conducted interviews, facilitated focus groups, and collected the journal prompt answers once completed by the participants. To prevent any possible personal experience or perception bias affecting the validity of this study, as the researcher, I utilized the concept of bracketing. I set aside any potential personal preference for the phenomenon. I observed the phenomenon from a fresh, unbiased perspective through the participants' perceptions (Creswell & Poth, 2017) as a lens to study the phenomenon to maximize the validity and effectiveness of the study.

Credibility

Credibility was the process of ethically collecting and the analysis of the data for this study. The continuous cyclic process of member checking, data collection, and data triangulation contributed to this study's credibility. To prevent any personal experience or perception bias from affecting the study's validity, I utilized the idea of bracketing; the researcher sets aside any potential personal preference and observes the phenomenon from a fresh, unbiased perspective (Creswell, 2013) of the participants. In addition to interview data, focus group data, and journal data, a reflective journal was maintained to record the researcher's perceptions, observations, or potential bias during this study.

Transferability

Transferability allows for traceability of each component of data back to its source or collected data. A rich, highly detailed description of each piece of analyzed data and information involving the data sources was maintained (Creswell & Poth, 2017). I maintained all the information, including time, location, type of data, and participant information. All the data associated with face-to-face interviews or computer-based interviews were maintained and

documented to support peer reviews or follow-on research. The detailed data and a detailed description of the data were safeguarded and maintained in a secure database encrypted hard drive. A continuous narrative was maintained with a reflective journal (Patton & Schwandt, 2015) to ensure its traceability.

Dependability

Dependability is the process of indicating that the findings for the study are repeatable and can be duplicated by future researchers. Dependability can be accomplished by ensuring that the process of the study is documented by the incorporation of descriptions of the processes utilized for the study. This process supports qualitative reviews of the dissertation and qualitative audits and ultimately supports the dependability for future research (Pope & Mays, 2007).

Confirmability

The process of using multiple sources and the concept of triangulation ensures that this study views the phenomenon being studied from the perspectives, for scope, of the different participants and from different data collection courses. The process of triangulation adds strength and rigidity to the study, and the conformation to this process ensures that the process is repeatable, reliable, and can serve as a foundation for future research. For this study, 10 business professor participants were used in order to maximize the triangulation among participants, and three data collection processes were utilized. The data collection processes included interviews, focus groups, and journal prompts to ensure a high level of triangulation strength and rigidity.

Ethical Considerations

All ethical considerations were critical. This study's ethical considerations were very high, which involved ensuring Liberty University IRB approval was achieved before collecting any data. A letter of informed consent was used for all participants. A data log was maintained,

which refers to research participants by pseudonym names. Only I know the research participant's identities, and their confidentiality was strictly maintained. The research data were retained in a primary and backup encrypted database, and I maintained the data log for the record. A reflective journal was maintained, including all thoughts, decision-making, and ideas associated with the research study.

Summary

The focus on education needs for industry and educational focus is a cause-and-effect situation. The skill gaps for the innovation problem for this study represent the cause. The increased focus on students' skills and abilities, especially college students, represents the higher education step before entering the workforce. Gilbert (2018) explained that teaching college students higher-ordered thinking skills or system thinking skills was vitally important because of the industry's increasing complexity. The demand for innovation in the industry is not a static phenomenon, and as the demand for innovation increases, so makes the demand for innovation-related skills. As the demand for innovation design affects employees' motivations and the educational system, the need to understand the suitable approaches to develop the right educational programs increases (Darling-Hammond, 2020). Industry organizations compete for market share, and both industry and our government are always looking for competitive advantages.

According to Kaufman (2013), essential employee skills are needed for the 21st century, focusing on innovation. The 20th-century and the 21st century trends have changed concerning education, industry, and government needs. The key focus of the 20th century was reading, writing, and arithmetic; however, the guide for the 21st century and the skill sets mentioned above were the three Rs: rigor relevance and real-world skill sets (Daggett, 2008). The goal of

his study was to gain the college educators' perspective on developing students for the 21st century workforce.

This phenomenological study's data collection goal was to consider all the individual participant experiences and perspectives and then reduce personal views and expertise to a universal essence self-concept perspective (Creswell, 2007). This qualitative feedback from a human perspective can be easily interpreted and understood by other education professionals, who would be interested in learning from the results of this study, and their application possibilities. It was necessary to filter or bracket any potential bias or personal views concerning the phenomenon moving forward with this study (Moustakas, 1994). The study focuses on the phenomenon from a human perspective, from key college educator participants, and identifies the essence of the phenomenon's critical themes through data analysis (Moustakas, 1994) and publishing the findings.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this hermeneutic phenomenological study was to understand how faculty members and administrators describe their experiences in preparing their students for an innovation-focused 21st century workforce. The theoretical framework for this study included Kolb's experiential learning theory (ELT), describing the process of learning developing knowledge through the continued construction of knowledge culminates in a transformational learning experience (Kolb et al., 2018). The following chapter contains information about the participants in this study, the themes of the survey, outlier data and findings, research question responses, and a summary.

Participants

The participants for this study included 10 experienced college business educators who have extensive experience in the education field, education leadership experience, and leadership experience as managers in industry and government. These educators participated in qualitative data collection efforts, including individual interviews, focus groups, and journal prompts during the spring of 2021.

Table 4

Business Professor Participants

Educator Participant	Years Taught	Highest Degree Earned	Content Area	Grade Level
Beth	10	Masters	Business	College
Betty	12	Doctorate	Business	College
Dave	12	Doctorate	Business	College

Jenny	14	Doctorate	Business	College
Nick	18	Doctorate	Business	College
Sarah	15	Doctorate	Business	College
Ted	28	Doctorate	Business	College
Tom	10	Doctorate	Business	College
Tony	6	Masters	Business	College
Wayne	22	Masters	Business	College

Results

This section was used to present the results of the study. The analytical process of this qualitative study utilized the Heidegger loop, or hermeneutical loop data analysis because the data parts have a circular relationship with the data parts' source. In the example noted previously, a composer's music was tied to the composer, so the composer's music was analyzed, as was the composer. In this study, the individual interviews' data were connected to the individual from which the data was acquired, an iterative circular process (Harasim, 2017). This section aims to answer each research question for the study, which was the primary critical goal of this qualitative study. The data collected from the ten college-level business professors, administrators, each with extensive industry experience and teaching experience, included one-on-one interviews, journal prompts, and focus group data. The research answers received from the planned questions enabled me, as the researcher, to triangulate the key themes from this study. The data collected for this study were directly used to determine some critical themes

related to this study and answered the study research questions. Table 5, as follows, describes the key themes and sub-themes discovered through the data analysis process of this study.

Table 5

Study Themes

Theme		Sub-Themes
1.	Importance of Innovation	Innovation important for industry
		Innovation important for society
		Innovation important for systems of education
2.	Innovation and education	Educator student empathy and motivation
		Educator innovation focus
		Educator innovation experience
3.	Develop and Practice Student skills	Develop Foundational skills
		Develop Innovation skills
		Practice Student skills in college
4.	Develop Industry education relationship	Develop Education Industry Communication
		Develop Education Industry Partnerships

Importance of Innovation

Some key themes were determined from communicating with the participants in this study and following the phenomenological data reduction process. The primary overarching theme of the study was that educators generally stated that innovation was critical for industry, society, and education overall. The educators believed that innovation was essential for our nation to maintain a relevant position on our planet and have thriving careers within our society. One example of this general perspective that innovation is essential came from participant Jenny,

who stated in the interview, “I have grown up with innovation, and I am 55 years old and had a fascinating life in innovation. I have been part of it, and it was essential to note that technology continues to evolve at an increasingly rapid rate that we cannot rest on our laurels.” Implying that it is essential to focus and continue to learn. Jenny went on to state that “Not everyone was going to participate in innovation at a high level actively. Still, everyone has been affected by innovation at some level. Still, educators have been affected by innovation and were proponents of innovation to help develop our students.” Jenny believes that it is essential for educators to keep learning subjects related to innovation to equip themselves better to educate their students better.

However, not all participants agreed on the essential skills for students to master for innovation potential or innovation development. The key themes of this study, with sub-themes, indicate a difference in perspective regarding the importance of developing students for innovation and methods for doing so. Despite all the participants indicating that innovation was essential or critical, there was much variation regarding the types of skill development and recommended skill development approaches. Many participant educators also noted that the United States has a leadership position concerning education. The participants generally believe that our nation needs to maintain an education leadership position globally, and innovation was integral.

The relative importance of this theme can be summed up very well by one of the participants. Nick summed up the importance of innovation, based on empowering students, as he stated, “One of the primary priorities was to teach students not only how to learn, but how to take that learning and then do things better, or the constant improvement mindset and that involves innovation.” Professor Nick’s perspective on innovation was that innovation is a way of

thinking and a process that should be a continuous mindset. It is the importance of equipping students for a focused innovation environment that was significant. The sub-themes associated with the primary theme of innovation include innovation as necessary for the industry, innovation as important for society, and innovation as necessary for education systems.

Innovation Important for Industry

The second sub-theme related to the importance of innovation for society and education was that education needs to prepare students for our very innovation-focused workforce. All the participants echoed that innovation was critical for our community, and the fundamental responsibility for education was to prepare students for innovation to help serve our society. Many of the participants echo what Jenny stated, for example, that "Many people require innovation at every stage of their careers, and that was different from generations of the past, where we learned a primary skill set." This was a common point in that it was essential to understand how the paradigm was shifting so that individuals and organizations cannot just learn a skill or a set of skills and expect to be productive and prosper through their entire careers. Innovation itself was a skill, a way of thinking, that needs to be developed, practiced, and employed by individuals and organizations to prosper and even survive in a globalized, innovation-focused economy.

Innovation Important for Society

The consensus from the participants was that innovation is significant for our nation and society. Overall, innovation generally relates to improvements for the society for practice and processes. Professor Betty, a study participant, stated that innovation was so vital that "It was not a buzzword, what is very true in the industry if you are not innovative, there was a good chance you will not be around." Innovation was vital on a personal, organizational, national, and global

level. According to Professor Ted, “It was critical you have to stay up not only with current industry trends but looking at a more global picture as well.” Another way to state this situation was that was is not enough to understand the current state-of-the-art; for a particular situation or process in an industry, it is essential to scan for future needs and trends for a market or industry.

Innovation Important for Systems of Education

There was a consensus in this study that innovation is essential for education and education systems; however, different participants focused on different perspectives regarding the importance of innovation. Professor Betty emphasized the importance of education to adapt to student situational needs by indicating that “We see the innovation change concerning how we engage with students. We were predominantly 100% online for a flexible learning environment." Relating to the value, Professor Betty believes that such academic innovation factors are essential for educators to understand and utilize innovation to benefit students and educate students for their skill development. The other key theme for this study was that all the participants believe that educators, as a vital part of the education system, also need to be operators of innovation and proponents for practical educational innovation. To successfully do this, educators need to understand what types of innovation skills are needed and that there needs to be active interaction between industry and education. Educators, especially, need to understand what the industry workforce needs for education to be successful.

Advantageously, the research for this study identified college business educators, who all have past and present industry experience and can communicate to me, as a researcher, from industry and educational perspectives. As stated by participant Tony, regarding the importance of our education system, which is focused on innovation, but itself is also a direct recipient of innovation, “This was also why the world looks to United States education. The United States

educational system was looked at as the best in the world, and that was why people come here to get an education, and part of that was because they want to learn to innovate and do things and learn from us." Tony firmly believes that the United States has established a very high standard for education worldwide, and innovation within the education system is an essential part of that process. Tony further indicated, "It was important to note that a person with an education from the United States has particular views, knowledge, and information that would probably not be available elsewhere." Professor Tony believes that innovation, specifically the ability for education to develop and innovate, is significant in quality.

For this study, the perceptions regarding innovation and education were based on input from participants, who believe that innovation is very much coupled with education. Education is needed to develop the skills for innovation, and education was a direct beneficiary of innovation, which describes a circular cause and effect situation. This circular relationship between innovation and education seems to point to education as a facilitator or precursor for innovation in many cases; education helps students learn skills that can be used to develop or innovate. There were many themes and sub-themes based on participant feedback for this study. Some critical study sub-themes of this study included educator/student empathy, educator/student motivation, educator current issues, and educator experience for innovation.

This study feedback from participants has indicated that innovation and education are integrated very closely, as education is dynamic and acts as a catalyst for innovation, and education also directly benefits from innovation. Study participant Wayne, a long-time military engineer and college business professor, indicated, "Innovation in industry and education is accelerating," relating to the need for educators to continue to learn, be good students for innovation, and continue to learn to stay effective. Tony stated, "Our project development has

become more agile, using a spiral development model instead of the commercial waterfall, facilitating large groups working together for rapid innovation development." Professor Wayne was very focused on the speed, or acceleration, focus for innovation, as the ability to innovate and the pace of innovation is important for individuals and organizations.

What Professor Wayne described above, in business and engineering terms, relates to the growing trend of large group projects, in which many stakeholders work together on different parts of a project simultaneously, vice in the past, where one part would have to be completed before moving to the next part of a project. Rapid development and large teamwork-based projects were the new themes for development and innovation. Education can help prepare students for an innovation-focused career; teaching and motivating students to think in this context is fundamental. Professor Wayne believes that teaching innovation skills to students while in college is essential; however, surprisingly, his approach and recommendation focuses on developing a student foundation for innovation, not just teaching direct innovation skills such as a software package for tracking project development, for example.

Innovation and Education

Regarding innovation in education, Professor Wayne's focus on innovation is that "Students need to learn in the classroom and apply what they learn after they get to the workforce. Innovation skills are essential, but we also need to teach fundamental and foundational skills." Professor Wayne was very focused on time in the classroom being valuable for students, and from his perspective, it is essential to develop a foundation of skills for students. Professor Wayne went on to state that foundational skills include "Vital skills, such as reading, writing, and mathematics, and things like typing. We should not sacrifice teaching the basics to teach industry-focused innovation skills because the result is skill gaps." From

Professor Wayne's perspective, "Things like understanding and critical thinking are significant." The professor believed it was more important for students to learn these foundational skills than specific niche skills, which are only important for specific circumstances and organizations. The focus on specific skills could cause skills gaps for students and create potential gaps for future development and learning.

It would be impossible to precisely know where each student would transition following graduation and what location, market, or specific skills were required. In this regard, the common belief is it is much better to give all the students a good foundation of the commonly utilized business skills, which are more general and beneficial for the students than to focus a significant amount of time and resources on particular skills the students may or may not use in the future. As the researcher, these responses that foundational skills should be the recommended focus of effort for professors and students were somewhat of a revelation for me in this study.

Educator/Student Empathy and Motivation

Another unexpected key theme for this study was that the business professor participants recommend that educators empathize with their students and understand their learning interests and challenges associated with learning (Corby et al., 2018). By understanding students, professors can be more effective in training students. Professor Betty, a participant who had considerable industry experience, focused on innovation for education and inspiring students to learn innovation skills. She stated, "Faculty needs to be receptive and open to learning new ways to reach their students. One of the things that I do with my faculty was to remind them repeatedly that every time they start any term, it was new to the students, and it was incumbent upon them to step back and be mindful." Educators need to develop student interest and present students with information relating to their learning. She directly stated that educators need to approach

learning with excitement, intensity, and interest, which is contagious and amplifies their learning. Betty continued, “Educators may know the content they have taught a million times. They must sit back and take it from the students’ perspective and helps them to walk into the water. Educators need to be mindful and empathize with the students, look at the material from the students’ perspective.” The key focus is the importance of developing excitement and interest in students, helping the students learn more profoundly, and having the potential to learn more effectively.

The critical participant focus was that motivating students to learn and engage in what professors teach them is necessary. It is not enough for professors to present new information to students; professors need to inspire students. Students need to be motivated to learn—not just focus on the lower levels of learning on Bloom’s taxonomy, such as remembering and understanding, but on higher learning as well. Interest for higher level, innovation learning can be stimulated by the professor; however, for the student to achieve the highest levels of learning, such as creating and evaluating, there needs to be student motivation, and professor empathy helps develop student motivation.

Educator Innovation Focus

Based on feedback from the participants of this study, student motivation is fundamental because students need to be motivated to learn and achieve higher levels of learning to develop higher-level learning skills, which can be applied to innovative thinking and constructs. Several participants mentioned that educator knowledge and application of innovation-related skills and experience with innovation were essential. Professors need to have the right skills and applied experience, to link the skills to why the students need to learn them by teaching the application of the skills for students. It is essential to educate students based on examples and apply the

essential skills for them to know. Knowledge of innovation focus areas in industry or government can be based on direct experience, research, or both, but developing and maintaining an ongoing narrative with students regarding innovation initiatives is essential. One of the study participants, Jenny, mentioned the importance of making student academic projects relevant. Professor Jenny stated, “It is essential for students to understand some real-world scenarios they are likely to encounter and then analyze them and develop solutions.” Educators need to develop interest and provide their students with experience and skills that they can learn and carry forward as they transition from the university to industry. Jenny went on to state that “They were kind of on the cutting edge, their finger on the pulse of what was happening within that industry, the current issues were out there, but they have already had time to brainstorm some possible solutions, but then they can apply them to their natural world.”

Educator Innovation Experience

Based on feedback from the study participants, educator experience for innovation was very important. The consensus from the participants was that the more innovation experiences the educator has, both in industry and in teaching, the better the educator could bridge the gap for student understanding for the needed innovation skills. Several participants mentioned that it was beneficial to relate known or past industry experiences for the students to learn from. Several participants mentioned that industry case studies or simulated class development projects were helpful; however, Professor Nick had a different perspective. Nick recommended “Developing a perspective for students to stimulate students’ mindset or work ethic to take into the workforce by being an example, setting an example for students to base their perceptions and goals on.” Educators should set a good example for their students; if educators have an innovation focus, this perspective and focus can translate to their students.

According to Professor Wayne, “It is clear that students going to school to get a college degree demonstrate that they are capable of learning; they were not getting a terminal education to be finished with learning." The perspective from Professor Wayne was that learning should be a continuous process. Professor Wayne then said, "Even if the student was attending a university to earn a doctorate, they call it a terminal degree, which was not correct. I mean, you will be learning the rest of your life, and high-level learning was needed to be innovative; your learning does not terminate after finishing a program of study.” As professor Wayne stated, it is essential to have the right attitude for innovation, not merely focus on finishing a course of study but be interested in learning, as student interest in learning translates to learning higher-level skills. Suppose educators can perpetuate and themselves represent this attitude for an interest in learning and innovation. In that case, this will translate into the right attitude with and for students, and their motivation to learn and innovate will be practical learning on a personal and organizational level.

Develop and Practice Student Skills

One of the critical study findings was the theme of student skills. All the participants agreed that student skills were essential, both for success in college and for developing the innovation-related abilities that were very important for the students once they complete their college education experience. From the study, it was essential to note that students’ skills should be balanced to prevent skills gaps from forming, which could negatively affect the individual or the individual’s organization at a future time. Based on the participants’ feedback, the sub-themes associated with student skills include foundational skills, innovation skills, and student skills in college.

Develop Foundational Skills

For this study, there were many interviews and focus group discussions regarding the importance of developing skills for students. From much of the research conducted in preparation for this study, the primary consensus was that the student skills that need to be developed are higher-order learning skills, such as Bloom's Taxonomy creating and evaluating; however, many study participants mentioned the importance of developing foundational skills. There was also a consensus that the business professors who participated in this study considered foundational skills to be the primary focus of the college business degree program. Professor Jenny stated the need for foundational skills for students as, "I think NASA said, 'We can train anybody, with the hard skills, but we cannot train them on soft skills.'" Professor Jenny stated the importance of students having good foundational skills, such as good communication, teamwork, and leadership skills. Professor Jenny went on to state, "So, I think a person needs to show up on the first day of a job and have the right attitude to be ready to work, and not be afraid to ask questions." Jenny also emphasized that it is essential for students to be practiced and have experience with the foundational skills. As she stated, "They do not need to know all the hard skills because they learn on the job, but they need to be good communicators." The students need to have these critical foundational skills because most large organizations run on teamwork. The perspective was that foundational skills are the most important for students in the university environment, while the specific innovation skills can then be learned in the work environment following graduation.

Develop Innovation Skills

Based on the feedback from the study participants, foundational skills were seen as essential, especially communication skills and personal skills like attitude and motivation. These

skills are considered foundational for innovation, thus considered foundational innovation skills. In addition to the foundational skills, such as reading, writing, mathematics, typing, communication skills, and teamwork skills, the participants believe in exposing students to some of the tools they will use in industry. Such as computer-based hardware and software used to solve scenario-based project problems; such examples help develop student problem-solving skills, teamwork skills, and developing computer skills. However, some participants believe that the most important thing is to teach thinking skills, such as critical thinking and problem-solving, which can be done with computer-based tools, or non-computer-based tools, depending on the situation. Professor Wayne summed up the need to develop thinking skills for students by indicating, “Things like understanding and critical thinking are significant. We need to teach students to push buttons to get a result and understand the results they generate. It is not enough for students to generate a result. However, they must understand the process.” Professor Wayne used slide rules instead of modern calculators when he was in college and mentioned that "Using slide rules was great because it forced the operator to understand what they were looking at." Professor Wayne also mentioned that "Students had to understand what they were studying; now, there are many tools that all the students have to do is type in the numbers, and the computer algorithm produces the results." It is important for students to understand what the results mean, and not just memorize how to program numbers into a computer. According to Professor Wayne "The problem with all the modern computer-based tools, was that it is possible to get a result and not understand the result." We need to teach critical thinking and data analysis to make sure the students understand the meaning of the results they produce.

Practice Student Skills in College

Based on the feedback from the participants in this study and teaching foundational skills and innovation skills, there were different levels of skills for students. There was a basic understanding of the skills being studied and the application level of specific fundamental skills. Just as Bloom's taxonomy for education describes levels of learning, such as *remember, understand, apply, analyze, create,* and *evaluate,* students need to learn these innovation skills in a safe university environment, well beyond the *remember* and *understand* levels of proficiency. The skills needed to be applied and practiced in a realistic way to learn the skills well for relevant situations. Professor Wayne mentioned this regarding what he stated about "We need to teach critical thinking and data analysis so that people understand the results they get from the tools used."

Other participants, such as Tom, focused on developing critical thinking by letting students make mistakes during very rigorous supervised class projects and assignments; his perspective was that students need to learn what causes mistakes and recover from mistakes. Tom mentioned the importance of students learning from mistakes, as he mentioned during an interview, "I discovered that they taught procedures for accomplishing tasks when going through navigator school in the Air Force. However, we were never taught error recovery." Professor Tom focused on the importance of students learning how to recognize errors and mitigate risks associated with such errors. Professor Tom mentioned, "In other words, what do you do when you are halfway across the ocean, and you realize that three hours ago, you made a mistake. It is important to know how to recover." The participants were very focused on letting me know that the development of the foundational skills, such as good communication, teamwork, leadership,

and such skills as error recognition, risk mitigation, and critical thinking, were fundamental skills for students.

Based on the participant feedback for this study, learning is as much the responsibility of the individual students as was teaching is the responsibility of the individual professors or educational institution. Based on participant feedback, all skills were not created equal; as mentioned in Bloom's taxonomy, there are basic skills, such as remembering or understanding. Still, the skill levels needed by the practitioners of an occupation, a college educator, or a researcher were higher-order skills. It is essential to practice foundational innovation-related skills to become good at them. Professor Nick related that practicing student skills was like being a medical doctor; he stated, "It is called practicing medicine for a reason, you have to practice the skills to become good at them, and college is a great place to practice skills." The participants mentioned that the key focus areas for this topic included active student learning and computer skills, critical thinking and overcoming adversity, student error recognition and recovery skills, and soft student skills. As Professor Nick stated, there was a consensus from the study participants and research that any practiced skill was superior to non-practiced skills, as he stated, "The way education helps prepare students allows them to think in a situation, make decisions, and then evaluate those decisions where it was safe." Students need to develop and practice skills, in a safe university environment, before entering the workforce; as Professor Nick stated, "Operating in a safe environment, nobody went bankrupt, no individual or organization fails." Students need to practice these critical skills in a safe environment, learn from the experience, and learn from feedback. Professor Nick went on to state, "My son is a doctor, and he is practicing medicine. The key concept is practice; it is called practicing medicine for a

reason." It is essential to practice essential skills, learn from experience and feedback while still in a safe university environment.

The more realistic the tasks taught in class, the greater the learning; these practices were fundamental for the students to learn and apply. These experiential learning activities, assignments, and projects should include relevant duties, tools, and outcomes; as Professor Dave stated regarding developing good computer skills, "Student computer skills were variable; many students were very good at using computers for the projects we use computer tools for. However, some were not, but I would say that computer literacy on a higher level was not being taught well at the college level." Professor Dave focused on providing students with a great deal of experience with the essential computer hardware and software skills needed for their education and the future workforce. Professor Dave also mentioned the importance of developing student skills in a teamwork environment: "All the students in the business programs need to acquire a baseline competence with the foundational skills including applied computer skills. This was another reason why a teamwork environment was essential because, ultimately, some students were more skilled in some tasks than others; when they collaborate, they all learn together."

Based on participant feedback, the theme of developing student experiential skills was a critically important topic of error recognition and recovery skills. This is a primary reason why student assignments, projects, or team exercises should not be fully scripted. Students need to learn from mistakes, recognize mistakes, adjust, and move forward as individuals, teams, and organizations. Professor Wayne, as mentioned previously, stated this fact with an example based on his United States Airforce experience, in which he used the example of serving as a bomber aircraft navigator. On one occasion, "The aircraft was off course over the ocean." He mentioned the importance of knowing error recovery skills. Tom stated, "Making mistakes and learning

from mistakes are essential lessons for students to learn while in a college environment." Students can learn teamwork-related projects and skills, make mistakes, learn from mistakes, and recover from mistakes in a safe college environment. By participating in realistic training scenarios and projects and using the tools, students learn by practicing the critical high-level skills needed in an innovative environment.

Some feedback from the participants was the area of student soft skills. Student soft skills include but are not limited to learning interest, maturity, learning skills, following direction, understanding organizational alignment, teamwork, and leadership. Like the skills mentioned related to tools used for innovation, such as computer skills, it is essential to learn and practice these soft skills. Professor Jenny, one of the study participants, stated the importance of learning and practicing soft skills: "I communicate this a lot in my business classes, and I look at the latest research. I want to be sure I can do the best for my students to help them prepare for their careers. I am all about that, not just theory in my class, but focus on practical skills, especially the soft skills." Professor Jenny then mentioned, based on her perspective of the importance of the soft skills, that "Focusing on the soft skills, was straightforward, in my opinion, teaching and practicing things like being on time, communication skills, writing skills, interpersonal skills, and teamwork skills are very important."

The concept of practicing soft skills was very general. However, these types of skills should be practiced just like innovation-related skills like computer skills. For example, many skills need to be learned, developed, and practiced effectively in an innovation-focused environment to solve problems and develop innovation. Any large project involving innovation involves a team, so learning, developing, and practicing team-related soft skills are essential. An essential soft skill for students is teamwork. As Professor Tony stated, "It is essential to have the

skills but playing well with other people was also essential. Most big projects are group projects, so anything significant was accomplished as a team, so teamwork was essential." The essential foundational and soft skills should be incorporated into a teamwork environment to optimize the learning potential for students in the university environment.

Develop Industry Education Relationship

Based on this study, the relationship between the education community and industry is significant in several ways. Collaboration is essential, and there needs to be a mutual understanding and communication between the education community regarding experiences and skills that are important for students to develop. It is necessary to establish relationships between educational and industry organizations, key partnerships such as keeping communication activities, and education and industry benefits from such interaction. The critical focus themes from the participants emphasized professor experience and certifications, industry feedback and partnership programs, and industry education investment.

Develop Education Industry Communication

Based on feedback from the business professor participants in this study, the education community needs to understand the needs of the industrial workforce. There were several different ways educators could do this. In the case of this study, I was very fortunate to have a group of participants who had current or previous industry experience before becoming college educators, and some still work in the industry and teach as adjunct professors. Professor Betty, a full-time professor and administrator at a university, stated that she directly participates with and interacts with industry through scheduled events: "Communication and curriculum development, we have what was called an IAC Council. That was an Industry Advisory Council." Professor Betty then stated that "Some industry professionals meet with our program directors annually to

provide us with industry updates and standards of change that might be addressed in the classroom." Such interaction between industry and education provides valuable feedback, which can be applied to education policy and curriculum development.

Develop Education Industry Partnerships

There are many different types of education-industry partnerships, which have the potential to develop communication, as well as feedback between education and industry, all of which can align education curriculum for developing the right student skills needed for the modern workforce. Examples of industry and education interaction include organizations such as the "Industry Advisory Council (IAC), where industry and education can meet and discuss innovation-related topics," as Professor Betty mentioned. Professor Nick mentioned professional certifications such as Project Management Professional (PMP); however, there was a wide range of different industry-education partnerships possible, such as working on combined projects and internship programs for students and teaching opportunities for industry professionals. Professor Nick mentioned, "The most effective teaching methods were engaging since they allow them to have real-life experiences and connect the content with what was happening in the industry." Thus, it is essential to gain feedback from industry organizations so that educational institutions can ally with this information to develop a realistic curriculum and provide practical skills and experience for students.

Based on the participants' feedback, the more interaction between education and industry, the better the situation was for all stakeholders involved. Such interaction was very advantageous for industry and education, with the primary benefits focused on the students. All the participants in this study have education and industry experience, and many of the participants teach part-time at a university and work full-time in the industry and teach part-time.

One example of this combined industry-education role is Professor Nick, who has experience at different industry levels, including a recruiting role as a resource management manager. Professor Nick mentioned that he actively recruits for his organization at local universities to invest in internship programs. Professor Nick emphasized, “It was an investment we hope to find some of the best and brightest folks to add to our team and then actually train them; coinciding with their business degree helps them leave college with a job in hand.” It is essential to note that the relationships between education and industry can benefit all stakeholders, including the students. Professor Nick emphasized that internships have the potential to provide a student “A well-paying job in hand with excellent benefits and the opportunity to advance their career.” In addition, internship programs provide an investment opportunity in the student or students, which they can develop the student with the specific needed high-level skills needed by the organization, which is an investment in the organization’s future.

Outlier Data and Findings

There were a few unexpected outlier findings associated with this study. These unexpected findings have the potential to be essential learning points of this study. These primary outlier data findings include the potential for skill development focus to close skill gaps and the vital need for education-industry partnerships.

Potential for Skill Development Focus to Close Gaps

Based on participant feedback, the focus of education, specifically university business education for this study, is on developing foundational skills for all the students in the program. From the business professor study participant perspectives, it was essential for the educators to develop all the student skills to a specific level, based on the goals for the university program. The common term for this process in this study was to develop foundational skills, not specific

innovation skills, for the students. There is a very diverse number of technologies and markets defined by the general term industry. It is essential to understand that many different skills are needed in industry, which college and university programs cannot address. The possible result with education focusing on foundational skills and industry needing more advanced and specific skills is that skill gaps can be created. Figure 4, in Appendix H, provides a figurative description of this situation, depicting education focusing on developing student foundation skills and industry's continuous need for specific high-level innovation skills.

Need for Education-Industry Partnerships

As mentioned previously, the key findings of this study point to the potential for skill gaps to develop, with education focusing on student foundational skills and industry focusing on very specialized innovation skills. As also depicted by Figure 4 in Appendix H, the potential skills gaps can be bridged with education-industry partnerships. Partnerships between education and industry can allow industry organizations to develop student-specific innovation-related skills and the university to develop student foundation skills.

Research Question Responses

I found the subject of the study fascinating, and the participants provided much insightful information by providing feedback for this study based on their perspectives. Overall, the participants believe that innovation is significant for society, industry, education, and individual employees. The following central research question and sub-research question research results summary explain the study's results in detail.

Central Research Question

How do faculty members and administrators describe their experiences in preparing their students for an innovation-focused 21st century workforce? The participants agreed that

innovation was essential; however, there were some different perspectives regarding what they believe was the most important and their approaches toward helping prepare their students for an innovation-focused workforce.

The participants agreed that the preparation of students for an innovation-focused 21st century workforce was essential. The participants further expanded on the fact that industry-focused innovation and education-related innovation were critical. However, many educators who participated in this study focused on foundational innovation-related skills; for example, students were not designing new computers, although innovation-focused skills like computer skills and data analysis were targeted in projects and as areas for problem-solving. At the same time, other participants were more focused on helping students develop a good foundation of skills to learn their specific work-related skills when they join the workforce. Generally, all the participants agreed that teamwork and other related soft skills were essential in today's modern innovation-focused workforce—working with others, having good communication skills, and being self-motivated were very important. The following sub-questions further expand on answering this question, and other specific questions, including what do faculty members and administrators understand were skills expectations of the workplace? How were skills expectations of the workplace developed in college courses? How do faculty members develop their understanding of the needs of the field for student's skill development?

Sub-question One

What do faculty members and administrators understand were skill expectations of the workplace for graduated students? The participants agreed that innovation skills were fundamental and very critical at different levels. All the participants agreed that innovation was critical for students for their success in the industry. However, there was a specific focus on

students' developing technical skills which the students were expected to know when they join the workforce in college, including technical computers skills, problem-solving skills, and critical thinking; however, Tony, Betty, Beth, Wayne, Nick, and Jenny focused very heavily on the importance of students having excellent soft skills when they get to the workforce. These soft skills included good communication skills, such as verbal communication and written communication; self-motivation; leadership skills; emotional intelligence; and learning skills. These soft skills or interpersonal skills were considered very important because if the college graduates cannot communicate with others, ask questions, and learn the specific dynamics of their new environment, there will be challenges in adjusting to their new organization.

Professor Nick, a full-time human resource professional and an adjunct business professor, summed up this situation very well as he stated, regarding new college graduate hires, "We are going to tailor skills to what our company needs, and we expect new hires to grasp that and excel. We expect them to get along with people in my company, or they will have challenges with understanding our corporate values." Nick also mentioned the importance of new hires being "Service-minded, as they serve each other and their teams as internal customers of their work, and ultimately serve their external corporate customers, as they strive to be a blessing for others." All the participants believed that excellent teamwork skills should be developed and practiced while in the college classroom environment, including soft skills such as communication, emotional intelligence, learning skills, and being service-minded, as these skills define the person's value in the eyes of the organization.

Sub-question Two

How were skills expectations of the workplace developed in college courses? Based on the feedback from the participants, how college courses are designed for developing the needed skills for innovation needs to be grounded in realism. There was more than one way for professors and administrators to gain the knowledge necessary for developing a realistic curriculum for students. Some methods of developing realism in course work included professor experience in industry, professor industry professional certifications, and professors attending conferences. Professor Betty summed up this university and industry interaction by describing her work with industry advisory councils. Other feedback from industry organizations, such as partnerships with industry organizations, includes universities working on research projects and student internships. The feedback between industry organizations and universities can then be used to develop a realistic curriculum and course structure to help develop relevant student skills and practice the relevant technical and soft skills needed for innovation-focused industry organizations. Some examples included experiential scenario-based training, such as team-based projects in the curriculum, for example, technical and teamwork-related soft skills. As Professor Ted mentioned, “Create great opportunities to solve problems. Very beneficial to gain real-world experience, so combining those requires a facilitator to present the material covered from texts.” Professor Ted added, “To accomplish the requirements for the university or whatever another accreditation agency has outlined for that course, and to get in some outside industry perspectives.”

Some examples of some key curricula focus areas, based on the experience of Nick, Jenny, Ted, Tom, and Wayne, targeted the importance of integrating critical thinking skills into the curriculum to help students develop these skills. Professor Tom specifically focused on the

importance of developing recovery skills with business students. Based on Tom's experience in the industry and as a military officer, Tom and I had an interesting conversation regarding the need to design critical thinking and recovery skills into the business student curriculum. Tom's remarks are summarized as follows:

One of the critical factors of importance for the industry was detection and recovery skills when situations are not ideal. Understanding how mistakes occur, detecting errors, and recovering from errors were the critical skills desired. It is important to note, regarding experience, that several of the participants had extensive military leadership experience as well as industry and educator experience. Professor Tom summed up this critical point as "You need to know how to recover." It was believed essential to teach students basic skills, where goals are understood and outcomes *predictable*, considering that life is not predictable, nor is innovation. It was essential to teach students application skills but also recovery skills. Tom summed this perspective up nicely with a story he explained to me regarding his time serving in the USAF as a bomber navigator during the United States-Soviet Cold War: "When the aircraft was off course by hundreds of miles, in the middle of the ocean, you have to know how to recover!" These critical thinking skills should be developed and practiced in a safe college environment, so students do not make mistakes or mitigate situational risk while on the job in the future.

Sub-question Three

How do faculty members develop their understanding of the needs of the field for student's skill development? This question was like the previous question of how skills expectations of the workplace were developed in college courses; however, it was more specific. Professors and administrators need to have continued interaction with the industry organizations, accreditation agencies, industry advisory councils (IAC), and university-industry partnerships.

Based on the feedback from the participants in this study, this university-industry interaction was a two-way avenue of interaction. Universities can approach industry to develop interactions, industry organizations can approach universities to establish interaction, or both cases can occur. The greater the interaction between universities, university professors and administrators, and industry professionals, the better the results. The greater the interaction, the more the industry feedback can be translated into realistic and relevant university curriculum programs and courses.

Based on their recent and past education and industry experience, the participants provided some very insightful feedback for this study. One professor, Ted, explained that he had tried to retire several times but keeps getting called back to service by industry and academia due to his broadband experience. Based on his experience in industry and as a professor regarding how to develop an excellent university-industry relationship by starting an interaction, Ted said: "What we have done with our operations is to be proactive, to reach out to the local university there for interns." This initial establishment of a conversation, and the relationship between the university and industry, like any relationship, can be nurtured, grow with time, and expanded as needed, but starting the relationship can lead to mutually beneficial relationships for industry and education.

Summary

The critical theme developed in the execution of this study is that the participants generally agreed that innovation significantly affects industry and society overall. The second key theme for this study was that all the participants believe that for education, in general, to develop productive innovators and understand what types of innovation skills are needed, there needs to be active interaction between industry and education. The participants believe that

innovation critically affects the nation's ability to maintain its geopolitical status and national defense posture. The participants further believe that educators need to adapt to innovation and have innovation-related skills to help develop students for innovation. Educators need to understand the innovation skills that need to be developed in students and not sacrifice foundational skills, such as teamwork skills, communication skills, people skills, reading, writing, mathematics, and typing skills, as these skills provide a foundation for further learning. The participants emphasized that applied skills were critical, and foundational skills should prioritize building more advanced innovation skills. Still, students need to exercise error detection and recovery skills by making mistakes and learning from mistakes.

CHAPTER FIVE: CONCLUSION

Overview

The purpose of this hermeneutic phenomenology study was to understand how faculty members and administrators describe their experiences of preparing their students for the innovation-focused 21st century workforce. The theoretical framework focused on Kolb's experiential learning theory (ELT), which describes the process of learning as developing knowledge through continued construction culminating in a transformational learning experience (Kolb et al., 2018). The theoretical foundation for this study also includes Bloom's taxonomy as a method to gauge success for learning significance or levels of learning (Swathi & Jain, 2020). The theoretical foundation of this study gave me an excellent platform for understanding and interpretation of the data acquired during this qualitative study. The following chapter contains the interpretation of findings, implications for policy and practice, theoretical and methodological implications, limitations and delimitations, and recommendations for future research.

Discussion

The purpose of this section was to discuss of the findings of the study, through which themes were developed from the study's theoretical and empirical foundation. I used the Heidegger loop, or hermeneutical loop data analysis approach because the data parts have a circular relationship with the data parts' source. For example, the interview, journal prompts and focus group feedback links to the participants; data analysis is an analysis of the participant's perspectives as well as the participants to gain an overall understanding of the participants and their work. In this study, the individual's interview data were connected to the individual from which the data was acquired, an iterative circular process (Haber, 2017). The theoretical

framework included industry feedback data from pre-study research to understand better the overall situation and best practices moving forward.

The data collection and analysis process utilized for this study included different types of data, including qualitative interviews, journal prompts, and focus groups, to triangulate and converge on critical focus areas for the study; this triangulated perspective served to maximize learning from this study, ensure validity, and motivate future related applications and research. This chapter has five major subsections, including interpretation of findings, implications for policy or practice, theoretical and empirical implications, limitations and delimitations, and recommendations for future research.

Interpretation of Findings

The analysis of the data collected for this qualitative study included one-on-one interviews, journal prompts, and focus groups. This section consists of a summary of the findings and an interpretation of each of the results. This study yielded surprising results, as the theoretical review was comprehensive in scope; the findings illuminated vital focus areas of interest. The study findings provided me, as the researcher, with valuable data based on the experiences and perspectives of the participants. The following summarizes the study's thematic findings, followed by a series of interpretations of the study's significant findings.

Summary of Thematic Findings

This qualitative study produced a significant amount of data from the business professor study participants. I grouped the data into distinct category groups based on the logical alignment of the qualitative data. The results were surprising but aligned well with the theoretical study, such as the concept of constructing knowledge based on experience (Kolb et al., 2018) and gauging learning success with levels of learning (Swathi & Jain, 2020). Combining broadband

theoretical perspectives and focused, practical perspectives yields some interesting results, which can be insightful and applicable. The key themes of the study are placed into logical groups. These groups include importance for innovation, development of students' skills, industry-education relationship, and implications for policy and practice.

Importance for Innovation. The value and focus of innovation for the many stakeholders affected by innovation were significant. The theoretical framework of this study indicates that innovation significantly affects nations, industries, private enterprises, and individual employees. The power of innovation to benefit society was considered extraordinarily vital and has been described as directly related to the ability of individual business organizations to maintain market share and survive in a very competitive globalized market economy (Cappelli, 2015). Consequently, if individual business organizations depend on innovation to prosper and survive, and nations, like the United States, need innovation for economic success and national security, innovation importance relates directly to all stakeholders. Some organizations and individuals are more directly affected by innovation than others, but all organizations and individuals are touched by innovation at some level.

The participants in this study agreed that innovation is significant for the national economy and security, vital for businesses, and significant for education. The participants agreed that education has a direct linkage to innovation, as there are innovative ideas, processes, and equipment being continuously developed for education; in addition, education, through the process of developing student knowledge, thought processes, and skills, directly contribute to innovation utilization and development. However, some surprising qualitative outcomes from this study were that most individuals, even business leaders, business professionals, and professors, were not the ones who were innovating new processes and systems. In most cases,

even the most accomplished professional individuals and organizations are the recipients or utilizers of innovation. In most cases, the perspective is how innovation affects individual utilizers, not how the individual utilizers affect innovation.

As the researcher in this study, I found this outcome exciting and somewhat of a revelation, as education alone cannot be considered a panacea for developing innovations and innovators. Knowledge and ideas can be constructed through education (Kolb et al., 2018), and learning can be assessed and measured through education (Swathi & Jain, 2020); however, innovation lacks quantification to indicate that it directly results from education alone.

An exciting realization from this study was that education's value for individuals and organizations is that it continuously provides a vast array of tools that are needed; there needs to be an incentive, motivation, or inspiration to want to innovate. Education can be considered a contributing factor or facilitator for innovation. Education contributes to innovation-related thinking by developing students' skills and tools, contributing to motivation and inspiration to innovate, though there is no guarantee. There is a gap for innovation, as the initial research for this study has alluded to; however, the complexity of the situation was much broader than an assumption that education alone can fill an innovation gap or gaps. This chapter's conclusion included the cause and effect of this complex situation and a recommended approach to remedy this situation.

Development of Students' Skills. As mentioned previously, education can facilitate innovative thinking, ideas, and inspiration. Based on participant feedback, innovation and developing skills that could lead to innovation are fundamental and should be a considerable part of the college experience for the students. It is very important to note that the college business environment focused on a specific degree program of study. The graduates from the program all

have a foundational level of competency at graduation; however, the goals for college programs are much more foundationally focused on student skills. For specific cases, it might be essential to teach students about state-of-the-art innovation or innovation skills. Such state-of-the-art innovation skills can be described as teaching students about a new widget or system being used in industry, possibly one in high demand. However, most of the feedback from the participants, who are educators who also have industry background, reflected on the need to develop foundational type skills for students for several reasons.

My theoretical and research work for this study primarily focused on an industry perspective, needing state-of-the-art innovation skills to be competitive. The concept the participants were triangulating on for the study, involving the importance of student foundational skills, seemed initially juxtaposed to what the research was indicating, but after having the importance of student foundational skills communicated to me by the participants, the justification became very clear.

A problem arises if a new skill or process is taught in isolation; without a theoretical or constructive foundation, a student might understand how to reproduce the skill or process in the context it was taught, without a complete understanding of the system-on-system context. Does another problem arise regarding what state-of-the-art skills or processes a college business program would select to meet a specific industry need? There are many state-of-the-art systems and skills available, which may only apply to specific situations or students. Considering the possibility of teaching a very high-level skill when there is a low level of understanding, professors' time and time for foundational skills need consideration. Directly relating to Kolb's theory on creating or building knowledge (Kolb et al., 2018) and assessing the level of student

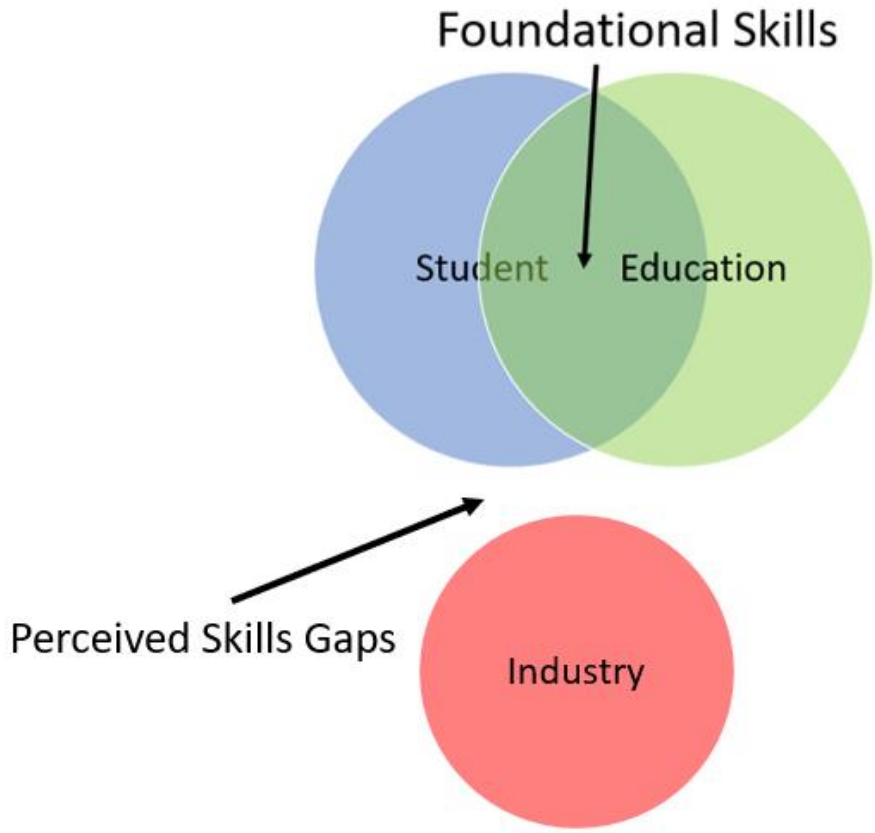
understanding (Swathi & Jain, 2020), even the highest-level skills, at low levels of learning, such as *remember* or *understand,* does not relate well for innovation in the future.

The general recommendation of the participants in this qualitative study was that the time and experiences that students have in the college environment are finite and should be used wisely. Students need to graduate from the college environment with good foundational skills, such as working in a team environment, thinking critically, having good communication skills, good computer skills, sound ethical and moral compass, and a good work ethic. These were the skills that the industry workforce organizations were looking for when they hired new college graduates. Based on participant feedback, these foundational skills were considered much more valuable and value-added to an organization than any specific state-of-the-art skill, which could also be considered significant by a small group of stakeholders. The consensus was that specific needed skills could be taught to new hires once incorporated into the organization. However, good foundational skills, especially teamwork, communication, and computer skills, were deemed essential, not easily taught in the workforce, but needed to start employment. These foundational skills can be considered tools needed for future learning and growth. Thus, students with high levels of learning in the foundational skills are preferred to those with a lower level understanding of high technology state-of-the-art skills. This fact would not have been intuitive for me at the beginning of this study; however, the participants' perspective revealed this perspective through the data acquisition process. Figure 4 bellow describes this situation figuratively, the participants of this study, which are educators with industry experience, recommend that education focus on foundational skills for their students. The foundational skills are considered very important general skills, which apply to all potential future employment opportunities for the students. The Figure 4 depicted 'perceived skills gaps' between students-

education and industry represents, the very specific industry related skills, which is in demand by individual industry organizations.

Figure 4

Conceptual Diagram of the recommended bridge for building foundational skills



Note. The author created this original image and described the recommended foundational skills which should be developed for students.

Innovation-Education Relationship. Systems, all systems, can be characterized as an open-loop system or a close loop system. An open-loop system accomplishes a task without feedback from the goal or tasks the open-loop system was designed to accomplish. An example of an open-loop system, consider a windmill with a fixed-pitch propeller attached to a generator on a tower. When the wind blows, the open-loop windmill propeller spins, and electricity gets

produced. The problem with the open-loop system concept is that there is no direct feedback control regarding how fast the windmill propeller can spin. The open-loop windmill can spin at zero speed up to the speed the propeller disintegrates because it spins too fast for the system's structure. On the other hand, a closed-loop windmill has a controllable hub, receives feedback control regarding how fast the wind velocity, how fast the propeller spins, and how much power is generated. The controllable hub can change the propeller's pitch based on how fast the wind velocity is, so the windmill operates at a constant or safe operating speed and accomplishes its goal effectively and safely.

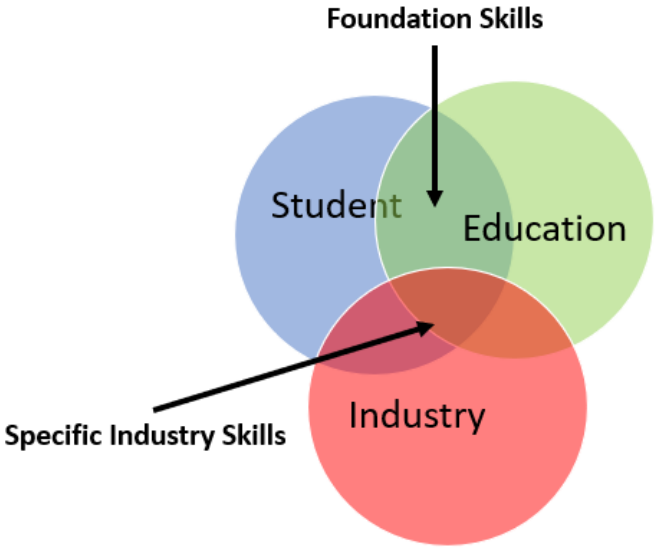
Educational systems, such as those at colleges and universities, can also be open or closed-loop systems. For large educational systems, there are usually many levels of feedback regarding the system's effectiveness and how well the education prepares students for future careers. These feedback systems can be internal or external, and serve multiple functions, regarding educator preparedness, curriculum development, and educator effectiveness. Based on the participants of this study, it is recommended that a good healthy relationship between colleges, universities, and industry organizations be developed and nurtured. Such partnerships include internships for students with industry organizations, research partnerships, and industry advisory councils (IACs) which provide curriculum recommendations. All these types of education industry partnerships and others were highly recommended, as a closed-loop feedback system, with the potential to maximize educators' ability to help students develop and practice the suitable types of skills that are valuable for the students and their future stakeholder employers.

This recommended closed loop feedback system between education and industry is figuratively depicted bellow in Figure 5. As mentioned in the previous section, it is

recommended that the educational curriculum focus on developing foundational skills for the students, as these skills will help prepare the student for a very large array of future occupational opportunities. It is future recommended that partnerships between education and industry be developed for students, based on industry need and student interest. These education-industry partnerships, like closed-loop feedback systems, will provide information to educators in order to focus curriculum goals, and provide education training opportunities for students, such as internships, work-study programs, research partnerships and industry-education investment, which could directly develop specific students with the specific specialized skills which industry organizations need.

Figure 5

Conceptual Diagram of the recommended bridges for building foundational and innovation skills



Note. The author created this original image and described the recommended bridges to develop student foundational skills and specific innovation skills.

Implications for Policy or Practice

There were many comments and recommendations from participants during the data collection phase of this study, which I summarized here. The participants' key feedback categories were that innovation significantly affects all stakeholders, especially the university and industry organizations. The secondary primary key point from the participants focused on innovation as essential; however, considering limited time and resources at the college or university environment, the recommendation from the field was that most of the focus for educators should relate to teaching foundational skills to students. Such foundational skills include teamwork, communication, and computer skills, with an appreciation for a good work ethic. The third primary focus area of the participants' recommendations is that education and industry should develop good solid partnerships as a foundation to exchange ideas, work together on projects, and conduct student-focused projects like internship programs. The following recommendations are for industry, education, and student stakeholders regarding policy and practice recommendations.

Implications for Policy

Several key stakeholder groups were considered to include industry, education, and student stakeholders regarding policy implications. Based on study participant feedback, some specific recommendations can assist in building and maintaining a solid partnership between industry and education, with the potential to provide value-added for all stakeholders involved, especially the students.

Industry. I recommend that industry organizations reach out to colleges and universities and establish relationships at the policy level regarding industry organizational policy. Industry organizations have the potential to align with colleges and universities and develop educational

goals and policies. In that case, the benefits develop into improved student skill development by providing the goal-focused feedback loop that can be mutually beneficial based on education and the industry's everyday needs and goals.

Education. I recommend that colleges and universities reach out to industry organizations and establish high-level education partnerships to develop a high-level policy regarding colleges and universities policy development. These high-level partnerships at the policy level provide valuable information for education to develop effective policy and translate into mutually beneficial feedback for education and industry stakeholders.

Students. The students are the ultimate beneficiaries of policy partnerships between industry and education. Such high-level partnerships allow students to participate in partnership programs, and the students benefit from earning an education that has value-added due to the high-level policy partnerships between industry and education.

Implications for Practice

The implications for practice are those recommendations from the participants of this study, that have the potential to improve the state of the art for the education field. Based on the participant perspectives associated with the study of this phenomenon, education is not just a self-contain system, but a partnership between educational institutions, educators, students, and workforce institutions. The following paragraphs will describe these concepts from the industry, education and student perspectives.

Industry. For implications for practice, based on recommendations from the participants in this study, internship programs can help students can gain course credit and industry experience. Industry organizations can reach out to colleges and universities to assist in research programs and develop needed innovations, benefiting both industry and education. Industry

organizations can host education conferences, such as industry advisory councils (IACs), where industry professionals and educators can discuss critical topics and provide valuable feedback to industry and education.

Education. Regarding implications for practice for colleges and universities, these educational institutions should reach out to industry organizations to develop meaningful partnerships, as mentioned previously, with the added recommendation to consistently apply feedback from industry organizations to skill-focused curriculums for the benefit of students.

Students. Students should be encouraged to participate in industry education partnership programs and provide valuable feedback to their college or university regarding their perspectives on the skills acquired and desired. Students should provide feedback to their respective college or university regarding their perceptions of skills and experience desired while in the college environment.

Theoretical and Empirical Implications

The purpose of this section was to address the theoretical and empirical implications of the study. This qualitative study was developed to research the phenomenon of developing university undergraduate students for our very innovation-focused, globalized workforce. The 10 participants were all university business professors who also have industry work experience. The findings were very interesting because the participants' findings were not anticipated going into this study. The following paragraphs cover how this study confirms or corroborates the research, how the study diverges from the research for this study, and novel contributions added to the field.

Study Confirmation and Corroboration with the Research

The overarching paradigm associated with this study was the constructivist paradigm, and there were two primary theories related to this study. The primary theory, Kolb's experiential learning theory (ELT), was published in 1984 and focused on learning in that knowledge develops or is constructed (Kolb et al., 2018); the secondary theory was Bloom's taxonomy levels of learning. Bloom's taxonomy was developed by Benjamin Bloom in 1956 and created as a classification system for teachers (Swathi & Jain, 2020). The critical relationship between the elements of this dynamic theoretical framework was based on student performance. Kolb's ELT focuses on building knowledge and experience, and Bloom's taxonomy concentrates on learning and levels of success of the learning or knowledge acquisition process (Lehrer, 2018).

The study aligned with the theoretical framework regarding providing an appropriate foundation of research for my study, Kolb's ELT is an excellent foundational description for how individuals construct or add knowledge and skills to what they know through a transformational experience (Kolb et al., 2018). Bloom's taxonomy is an excellent method to assess learning success, especially important concerning helping students develop skills for innovation, as Bloom's higher-level skills, such as creating and evaluating (Swathi & Jain, 2020), are related to the individual and organizational ability for innovation. The study participants agreed that innovation, considered essential for developing the right skills for students, and based on the application of feedback between industry and education, significantly improved the quality of the educational content. Such a feedback loop between industry and education is an effective tool for developing and improving educational programs and policies.

How the Study Diverges from the Research

There was good alignment between the study and the theoretical framework for the study, the theoretical framework focused on constructing knowledge and skills with Kolb's ELT, and on assessing the levels of skills and knowledge through Bloom's taxonomy. However, because there is such a wide dynamic range of high-level innovation-related skills that are used in industry, based on participant feedback, the college curriculum and educator time should focus primarily on student foundational skills, as the foundational skills are essential for workforce effectiveness and future learning capability. The study participants agreed that innovation was essential; however, they generally believe that developing student skills while in the college environment should be focused on foundational skills, such as teamwork skills, communication skills, critical thinking, computer skills, and a sound work ethic. In this regard, Kolb's ELT for building skills and knowledge applies, as does Bloom's taxonomy; however, foundational skill development focuses more on Bloom's taxonomy's lower and median levels of learning. Such foundational levels are *remembering, understanding,* and *applying* (Swathi & Jain, 2020) instead of the higher levels of learning for specific innovation skills, such as *analyzing, evaluating, and creating* (Blooms, 1956). Though this study outcome was a surprise, I understand the reasoning and logic with this approach; as the college experience is finite, there is a finite amount of time for learning in the college environment. Experience with these foundational skills provides a solid foundation for future growth and learning once the students arrive at their career level positions in industry, government, and private enterprise.

The specific innovation skills are very dynamic; a dynamic and wide variety of high-level innovation skills is available, which can be explicitly incorporated into student training; however, a recommended approach is to focus on the foundation of skills that are guaranteed to

be useful for all students, both while they are in the college environment and following graduation. Once the students graduate and moves on, they receive the specific innovation-focused, high-level training they need at their career organization.

Novel Contributions Added to the Field

This study emphasizes several vital points which were valuable to the field. Innovation is significant for the nation, industry, education, and individuals; however, innovation is dynamic. It would be counter-productive to focus on specific state-of-the-art innovation skills for the finite amount of time for developing students' skills during university undergraduate business programs. Based on the feedback from this study, it was much better to focus on the broad-band general foundational skills which all students are going through the program need. Any specific state-of-the-art skills which individuals need will be acquired from specific field training once they start employment at their career organization or through an internship program or certification course if the student or employers determines a need for the specific high-level skill. It is imperative to develop and perpetuate education industry partnerships and develop internships for students and research programs. Conferences, such as industry advisory conferences (IACs), were a valuable tool to increase the communication between industry and education regarding research and student skill development topics.

Limitations and Delimitations

This study provided some excellent study participant perspectives associated with the development of students for innovation. The scope of this study was particular; it focused on university business programs. Due to the focused scope of this study, some specific limitations and delimitations associated with this study were described as follows.

Limitations

The potential limitation of this study was that the research quality was very heavily dependent on my research skills for a qualitative study. Qualitative research studies also have a higher probability of influence by researcher bias (Patton & Schwandt, 2015). To ensure the validity of this study, I bracketed, by understanding my perceptions and potential biases, to ensure that only the participant perspectives were included as study data. As I, as the researcher, was surprised entirely by the data results, further evidence that this study was a proper, unbiased perspective from the field of college professors who participated.

Delimitations

Delimitations associated with this study included the intentional decision, due to the extensive time it took to gain participants, to stop the number of participants at 10 instead of the maximum number of research participants of 15. I also decided to conduct a hermeneutic phenomenology study instead of a transcendental phenomenology. The hermeneutic phenomenology was a better fit for this study because of my business education, industry experience, and collegiate teaching experience. I selected the hermeneutic phenomenology because experience and education allow me to understand the participants and the data the participants provide (Spence, 2016) and support effective reporting and analysis of data provided by the participants.

Recommendations for Future Research

Based on the mentioned study findings, limitations, and delimitations listed above, though this study successfully gained the perspective goals for the task, some researchers have ideas that continued studies would be beneficial. Future studies might have a broader scope, involving other academic disciplines such as science, math, and engineering disciplines.

Widening the scope of this type of study has the potential to highlight whether the trends discovered in the current study translate into other academic disciplines. The recommended goal for this type of study would be focused on innovation, including perspectives on curriculum program development.

Conclusion

The purpose of this hermeneutic phenomenology was to understand how faculty members and administrators describe their experiences (Bynum & Varpiol, 2017) in preparing their students for an innovation-focused 21st century workforce. The literature suggests that employers believe that high-level employee skills are essential for an organizations' ability to innovate and be competitive in a highly competitive global force. The 21st century-focused skills enable individuals, corporations, and nations to compete globally (Tietz, 2021). There is a need to develop 21st century employee skills in the workforce. The critical focus areas designed in the execution of this study yielded the fact that participants consider innovation as essential for industry and society overall. The second key focus area for this study was that all the participants acknowledged that for education, in general, to develop productive innovators and understand what types of innovation skills are needed, there needs to be active interaction between industry and education.

The participants believe that innovation significantly affects our nation's ability to maintain a relevant position on our planet and offer thriving careers within our society. The participants further believe that educators need to be adaptors of innovation to develop students for innovation successfully. Educators need to understand the innovation skills that students need to develop without sacrificing foundational skills, such as teamwork, communication, people skills, reading, writing, mathematics, computer, and typing skills. The participants emphasized

that applied skills are critical; basic skills cannot prepare students for innovation. Still, students need to exercise tempered skills by making mistakes, learning from mistakes, emphasizing learning to detect errors, and recovering from mistakes before mistakes can damage a project or the organization.

It is essential to consider that a massive diversity of specialty innovation skills is needed in industry and how quickly these skills are changing as industry dynamics change. Incorporating all specialized innovation skills in a college or university curriculum would be prohibitive in terms of time and finances. For example, microlithography is an essential industry skill; however, only a tiny percentage of college graduates will need this skill following graduation; consequently, foundational skills are the primary focus of colleges and universities.

However, industry can serve as a partner, with universities, for developing specific skills needed for industry. Figure 6, in Appendix J, represents a graphical representation of a recommended college industry structure for a collaborative innovation-focused learning environment. The figure graphically describes the foundational experiential learning which occurs in college-university business programs. There exists a perceived skills gap in college-university foundational skills, based on the literature review conducted for this study. However, based on the feedback from the study participants, the college-university business curriculum focus needs to be oriented on the development of foundational skills, as there are a vast number of very specialized innovation skills needed in industry. The industry can develop partnerships with education, build upon the foundational skills provided by education for students, and proactively develop their future workforce by recruiting and providing the unique, specialized skills needed for innovation concerning each industry organization.

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APPENDIX

APPENDIX A: IRB APPROVAL

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

March 31, 2021

Scott Myers
David Vacchi

Re: IRB Exemption - IRB-FY20-21-576 HOW CAN EDUCATION SUPPORT PREPARING STUDENTS FOR A WORKFORCE FOCUSED ON INNOVATION: A QUALITATIVE PHENOMENOLOGICAL STUDY

Dear Scott Myers, David Vacchi:

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under the following exemption category, which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:101(b):

Category 2.(iii). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:
The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by §46.111(a)(7).

Your stamped consent form(s) and final versions of your study documents can be found under the Attachments tab within the Submission Details section of your study on Cayuse IRB. Your stamped consent form(s) should be copied and used to gain the consent of your research participants. If you plan to provide your consent information electronically, the contents of the attached consent document(s) should be made available without alteration.

Please note that this exemption only applies to your current research application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued exemption status. You may report these changes by completing a modification submission through your Cayuse IRB account.

If you have any questions about this exemption or need assistance in determining whether possible modifications to your protocol would change your exemption status, please email us at irb@liberty.edu.

Sincerely,
G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
Research Ethics Office

APPENDIX B: CONSENT FORM FOR PARTICIPANTS

Study Consent Form

Title of the Confidential Project: How Can Education Support Preparing Students for a Workforce Focused on Innovation: A Qualitative Phenomenological Study
Principal Investigator: Scott Myers, Doctoral Candidate, EdS, MBA
Academic Institution: Liberty University

Invitation to be Part of a Research Study

You are invited to participate in this confidential research study. In order to participate, you must currently work as a college educator, or administrator, in the business discipline. Taking part in this confidential research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research project.

What is the study about and why is it being done?

The purpose of the study is to gauge the perspectives of college educators and administrators regarding current applied strategies and best practices for preparing students for the highly innovative, focused, 21st Century workforce. The focus of the study is to view the phenomenon of preparing students for the current, innovation-focused workforce, from the perspective of college educators and administrators. The results of this study will be published in dissertation form, with the goal of informing other educators of education best practices for preparing students for a very rigorous modern-day workforce.

What will happen if you take part in this study?

If you agree to be in this study, I will ask you to do the following things:

1. Participate in an in-person or remote, audio- and video-recorded interview. The estimation of time for the interview questions is approximately 45 minutes.
2. Participate in answering journal prompts provided by the researcher during the study. The estimated total time to complete all the journal prompts at the beginning, middle and end of the study is 30 minutes.
3. Participate in a focus group with other participants to discuss the findings of the study and explore some topics a bit deeper. The focus group participation is planned to be an in-person or remote, audio- and video-recorded meeting. The total time for the focus group is estimated to be 45-60 minutes.
4. Member-check your interview and focus group transcripts for accuracy and return them to me via email (15 minutes).

How could you or others benefit from this study?

Participants should not expect to receive a direct benefit from participating in this study.

Benefits to society include a better understanding of the phenomenon of preparing students for an innovation-focused workforce from the perspectives of the college educator and administrator. The findings from this qualitative study will be informative to educators who are interested in learning based on feedback from other education professionals. The information

from this study has the potential to be applied to develop or validate learning and teaching strategies.

What risks might you experience from being in this study?

The risks involved in this study are minimal, which means they are equivalent to risks encountered in everyday life.

How will personal information be protected?

The records of this study will be kept confidential. Published reports will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records. Data collected from you may be shared for use in future research studies or with other researchers. If data collected from you is shared, any information that could identify you, if applicable, will be removed before the data is shared.

- Participant responses will be kept confidential through the use of pseudonyms for individual participants and educational organizations. Recorded digital media will be stored on an encrypted external hard drive. Interviews will be conducted in a location where others will not easily overhear the conversation or conducted by secure online audio/video environment, such as MS-Teams, Zoom, Google Meet, etc.
- Data will be stored on a password-locked, encrypted hard drive, which will be backed up on another password-locked, encrypted hard drive, which will be securely locked in different secured locations, which will be maintained by the researcher for three years following the research study.
- Interviews/focus groups will be recorded and transcribed. Recordings will be stored on a password locked encrypted external hard drive for a period of three years and then erased. Only the researcher will have access to these recordings.
- Confidentiality cannot be guaranteed in focus group settings. Focus group members will be asked to maintain what is discussed as confidential while communicating outside of the focus group; however, there is no limitation to what focus group members can share with each other or with others outside the focus group.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please inform the researcher that you wish to discontinue your participation, and do not submit your study materials. Your responses will not be recorded or included in the study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study, Scott Myers, is the primary point of contact (POC) concerning this study. You may ask any questions you have now. If you have questions later,

you are encouraged to contact the researcher at [redacted] You may also contact the researcher's faculty sponsor, Dr. David Vacchi, at [redacted]

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or email at [redacted]

Your Consent

By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

☐ The researcher has my permission to audio and video record me as part of my participation in this study.

Printed Subject Name _____ Signature & Date _____

APPENDIX C: RECRUITMENT EMAIL FOR PARTICIPANTS

Dear colleague,

Hello, my name is Scott Myers. I am conducting research for my Doctor of Education dissertation with Liberty University and would love to invite you to participate. My qualitative study describes how education, from the college educator's perspective, can help prepare students for the very innovation focused, 21st century workforce. In my research I have found a lot of information regarding the skill needs of the 21st century workforce; however, I think there is a need to learn about how education can help prepare students for innovation from the perspective of the college educator. I think there is a distinct gap in the literature in this area, and I would like to explore this very important perspective with my study.

Participants must be college faculty or faculty administrators at a business department at a college or at a college of business at a university. Participants, if willing are asked to participate in an in-person or audio, or audio visual virtual recorded interview (45 minutes), in-person or virtual recorded focus group (60 minutes), and complete three journal questions, at the start, middle and end of the study (30 minutes). Participants have the opportunity to review their transcripts for accuracy (15 minutes). Names and other identifying information are requested as part of this study, but the information remains confidential; only pseudonyms are used in the final draft for faculty participants and college/university names.

In order to participate, please contact me at [redacted]. A consent document is attached to this email. The consent document contains additional information about my research. If you choose to participate, a consent document is required to be signed, and return to me via email prior to the start of the interview. Your participation can provide a better

understanding of educator perspectives associated with current best practices for preparing students for the innovation-focused 21st century workforce.

Sincerely,

Scott A. Myers

APPENDIX D: INTERVIEW QUESTIONS FOR PARTICIPANTS

INTERVIEW QUESTIONS

Interview Questions	Research Questions
1. Describe your education work experience and any other work experience that you have.	
2. Elaborate on how vital do you think innovation is in the modern workforce?	CQ
3. To what extent should college students learn innovation-related skills while in the college classroom environment?	CQ
4. What are the primary skills that employers are expecting from new college graduates?	CQ, SQ1
5. Do employers expect new college graduates to be fully capable of doing job tasks initially following hiring?	SQ1
6. What types of experiences do you draw upon to help students prepare for the workforce?	SQ1, SQ2
7. Concerning the most important skills, your students need in the modern workforce, what are some ways education can help prepare them?	SQ2
8. What teaching methods do you think are the most effective in preparing students for the workforce?	SQ2
9. Are there any particular resources that help students develop critical workforce skills in preparation for them joining the workforce?	SQ3
10. What recommendations would you suggest helping develop students' essential skills while still in the college environment?	SQ3
11. What kind of feedback between workforce employers and the university regarding needed workforce skills or opinions regarding skill development would help you in curriculum development?	SQ3

APPENDIX E: FOCUS GROUP QUESTIONS FOR PARTICIPANTS

Focus Group Questions	Research Questions
1. What is the ideal background for a business school faculty member?	Ice Breaker
2. What workforce skills are employers expecting new hires to possess coming out of college?	CQ, SQ1
3. What are some of the best practices associated with developing innovation skills and other essential workforce skills for students while the students are in the college environment?	CQ, SQ1, SQ2
4. How do you refresh curriculum and course content to stay current with the needs of corporate America?	CQ, SQ2, SQ3
5. What would ideal faculty professional development look like to ensure faculty remain current with the field?	CQ, SQ2, SQ3
6. What kinds of interactions happen between industry and university faculty or staff?	CQ, SQ1, SQ2, SQ3
7. What are some best practices for faculty and industry interaction being accomplished?	CQ, SQ1, SQ2, SQ3
8. What are some innovative ways that university faculty and staff could interact with industry?	CQ, SQ1, SQ2, SQ3
9. What innovative ways can university faculty and staff strategically align with the industry's skill needs?	CQ, SQ1, SQ2, SQ3
10. How can faculty and staff strategic alignment with industry skill need to be integrated into the university curriculum?	CQ, SQ1, SQ2, SQ3

APPENDIX F: JOURNAL PROMPT QUESTIONS FOR PARTICIPANTS

1. Describe the most critical skills needed by college graduates entering the workforce today?

2. Describe the most critical single skill needed by college graduates entering the workforce today?

3. Describe the best ways for students to develop these vital work-related skills.

4. Describe how you develop essential skills in college students?

5. Describe the most effective method to develop vital skills in college students?

6. Describe some other potential ideas for developing vital skills in college students before they enter the workforce?

7. Describe any internal or external contributing factors that help you prepare vital skills in college students?

8. Describe any other internal or external contributing factors that would further assist in the skill development effort?

9. Describe any feedback you gain from students or employers regarding the effectiveness of the applied skills?

APPENDIX G: PARTICIPANT BACKGROUND INFORMATION

Table 4

Business Professor Participants

Educator Participant	Years Taught	Highest Degree Earned	Content Area	Grade Level
Beth	10	Masters	Business	College
Betty	12	Doctorate	Business	College
Dave	12	Doctorate	Business	College
Jenny	14	Doctorate	Business	College
Nick	18	Doctorate	Business	College
Sarah	15	Doctorate	Business	College
Ted	28	Doctorate	Business	College
Tom	10	Doctorate	Business	College
Tony	6	Masters	Business	College
Wayne	22	Masters	Business	College

APPENDIX H: THEME DEVELOPMENT

Study Themes

Theme		Sub-Themes
1.	Importance of Innovation	Innovation important for industry
		Innovation important for society
		Innovation important for systems of education
2.	Innovation and education	Educator student empathy and motivation
		Educator innovation focus
		Educator innovation experience
3.	Develop and Practice Student skills	Develop Foundational skills
		Develop Innovation skills
		Practice Student skills in college
4.	Develop Industry education relationship	Develop Education Industry Communication
		Develop Education Industry Partnerships

APPENDIX I: THEME CODING FREQUENCY

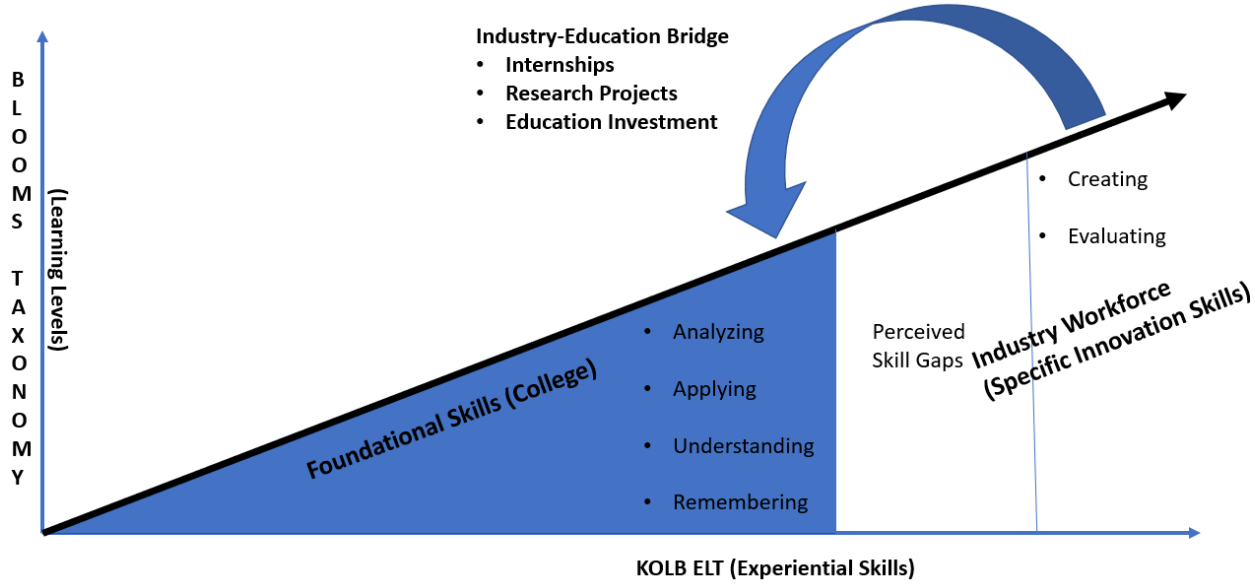
Coding Frequency of Cited Concepts

Themes	Frequency
Innovation important	**104**
Innovation important for systems of education.	40
Innovation important for industry.	33
Innovation important for society.	31
Innovation and education	**159**
Educator student empathy.	9
Educator student motivation.	2
Educator current issues.	5
Educator experience-innovation	143
Student skills	**134**
Foundational skills	44
Innovation skills	46
Student skills in college	44
Industry education relationship	**358**
Professor experience-Certifications	23
Industry feedback	85
Partnership programs	203
Industry education investment	47
Student experiential skills	**454**
Student active learning	113
Student computer skills.	42
Student Critical Thinking	57
Student overcoming adversity.	36
Student error recognition skills	72
Students error recovery skills	134
Theme: Student soft skills	**430**
Student learning interest	16
Student learning skills	56
Student Maturity	50
Students follow directions.	52
Students organizational alignment	61
Student teamwork	131
Student leadership	64

APPENDIX J: INDUSTRY FEEDBACK LOOP FOR SPECIFIC NEEDED INNOVATION SKILLS

Figure 6

Conceptual Diagram of the recommended bridge between industry and education



Note. The author created this original image and described the recommended industry bridge to education to help develop specific innovation skills.