Fall 12-8-2022

BARRIERS TO IMPLEMENTING A WORK-BASED LEARNING PROGRAM: A HEALTH SCIENCE EDUCATOR PERSPECTIVE

Daniel Harrison

BARRIERS TO IMPLEMENTING A WORK-BASED LEARNING PROGRAM: A HEALTH SCIENCE EDUCATOR PERSPECTIVE

by

Daniel Dean Harrison

A Dissertation
Submitted to the Graduate School,
the College of Business and Economic Development
and the School of Leadership
at The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

Approved by:

Dr. H. Quincy Brown, Committee Chair
Dr. Heather M. Annulis
Dr. Dale L. Lunsford
Dr. Jonathon Beedle

December 2022

Published by the Graduate School

THE UNIVERSITY OF SOUTHERN MISSISSIPPI®

ABSTRACT

Career and Technical Education programs' mission statement is to supply a skilled workforce for all industries (ACTE, 2021). The Health Science pathway lags behind other industry sectors in active work-based learning programs (Greenfield & Stevens, 2018). Therefore, this study examines the potential barriers to implementing work-based learning programs within the Health Science pathway. The qualitative descriptive investigation into the three types of work-based learning of visits to the workplace, work-like experiences, and employment discovered critical findings regarding healthcare requirements, scheduling conflicts, and access to facilities. Finding 1 details healthcare requirements as the most significant barrier to work-based learning programs. The researcher continued with Finding 2, depicting schedule restrictions as a secondary barrier. Then Finding 3 classified access to healthcare facilities as a tertiary barrier. The researcher proposed future research led by the school district's collaboration with students and the healthcare industry to resolve the identified barriers. These results will aid in future research, designing work-based learning programs, and establishing collaborations with the healthcare industry to implement successful programs, increasing the staffing pipelines for healthcare professionals.

ACKNOWLEDGMENTS

To my chair, Dr. H. Quincy Brown, thank you for the enduring support, guidance, feedback, and reality checks. My journey had multiple peaks and valleys, and you stayed true through them all. Even when I had a doubt, you provided the nudge to get me thru the next turnstile. I cannot express how much I appreciate you as my lighthouse during this journey. The University of Southern Mississippi, the School of Leadership, and our students are blessed to have you in our lives. Thank you

To my committee, Dr. Heather Annulis, Dr. Johnathon Beedle, and Dr. Dale Lunsford thank you for the support, guidance, and knowledge you shared with me. I only appreciate your kind words and feedback to make me a better scholar. Your feedback and emotional pushes allowed me to finish the impossible. The Human Capital Development program at the University of Southern Mississippi is second to none. Thank you.

To Dr. Cyndi Gaudet, thank you for the opportunity, mentorship, and guidance. Your faith was a guiding principle for me and numerous others in our program. Without the dissertation group sessions, this would not have come to fruition. Thank you, and enjoy your retirement journey around the U.S.

A special thank you to Deanna Dunnaway, Health Science Project Manager, and the Health Science educators who participated in my study. You are the epitome of answering a higher calling. Thank you for taking on the challenge of shaping our future by educating our children. Mississippi and the U.S. are better because of your efforts.

To my accountability buddy, Dr. Gizzatta Johnson, thank you for the support, late-night calls, venting sessions, and constant nudges to keep me focused on the prize. I

would not have done it without you. Congrats on your doctorate and on educating me on VUCA human resources. Thank you.

As a final point, my family, Stacy, Connor, Dylan, and Drew thank you for pushing me to be my best and reach my dreams. Your love and support are why I can be my best. Thank you, and I love you to the moon and back.

DEDICATION

To my wife, Stacy, and my sons, Connor, Dylan, and Drew, I dedicate this dissertation to you for all of your unconditional love, support, and sacrifices. I could not be the person I am today without you. Use this as a beacon of faith that you can overcome challenges, disabilities, and self-doubt to fulfill your dreams. Dream big!

Furthermore, I dedicate this dissertation to my late parents, Dan and Mary Harrison. Thank you for always believing in me and supporting all my endeavors. Without your love and encouragement, I would not have been able to accomplish any of my dreams. I love and miss you deeply every day.

Lastly, I dedicate this dissertation to the many friends and family members that refused to let me fail. Some required special appreciation for Sean Simpson, Ray Johnson, Chris Modlin, Toby Brown, Kim Hunt, Pam Mitchell, Hank Collins, and Cindy Skinner. Your love and undying support pushed me to higher accomplishments than I ever thought were possible. Thank you.

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LIST OF ABBREVIATIONS

ACTE	Association for Career and Technical Education
ASAHP	Association of Schools Advancing Health Professions
CNA	Certified Nursing Assistant
CTE	Career and Technical Education
DOL	Department of Labor
HRSA	Health Resources and Services Administration
Perkins V	Carl D. Perkins Career and Technical Education Act of 2018

CHAPTER I - INTRODUCTION

The healthcare labor force is experiencing unparalleled shortages (Harpaz, 2022). By 2034, the demographics for the United States will change to mark a first in U.S. history for those reaching retirement age, 65 or older (Vespa & et al., 2020). Retirement-aged people will outnumber people under 18 by an estimated 500,000 (U.S. Cenus Bureau, 2018a). The U.S. Census predicts the gap to widen to an estimated 3.5% which calculates to 14 million people by 2060 (U.S. Census Bureau, 2018b). With the growth of an aging population, healthcare requirements will mirror the same trend line, which correlates to the required workforce growth projections. Nationally, especially in rural and underserved healthcare areas, staffing professionals for medical facilities do not meet the staffing requirements (Crofut, 2019). With the increased need for a qualified workforce in rural and underserved healthcare communities, additional programs to support staffing pipelines are required (Crofut, 2019).

Chapter 1 provides a background of work-based learning programs. Then, the researcher clarifies the current problem with a deficiency of healthcare work-based learning programs and the desire to discover the perceived barriers to work-based learning in rural and underserved healthcare communities. Next, the researcher provides a conceptual framework describing the research objectives and theoretical foundation with a pictorial depiction of the research. Furthermore, the researcher discusses limitations and delimitations within the study and a list of definitions for critical terms. But first, the background of the study.

Background of Study

For decades healthcare positions have remained steady with the most growth and requirements than any other industry (U.S. Life Expectancy 1950-2020, 2020; U.S. Census Bureau, 2018b). A longer expected life span increases healthcare requirements in the aging population (U.S. Cenus Bureau, 2018b). In addition, rural and underserved areas have increased healthcare needs due to the difficulty of staffing a skilled workforce pool and retaining residency healthcare professionals (Crofut, 2019).

According to the Bureau of Labor Statics, healthcare support professions are in the highest demand when adjusted for pandemic recovery (U.S. Bureau of Labor Statistics, 2021). U.S. Healthcare Labor Market whitepaper by Mercer LLC depicts the critical shortage by explaining the need for states to hire over 1 million nurses by 2026 (Bateman et al., 2021). Twenty-nine states will fall short of their recruitment goals (Bateman et al., 2021). Nevertheless, nurses are not the only career field critically understaffed. Currently, over 9 million people work in the allied healthcare professions (Bateman et al., 2021). The occupations covered by allied health include medical assistants, nursing assistants, home health aides, and phlebotomists (Bateman et al., 2021). With 6.5 million allied healthcare professionals choosing another career, these professions expect to grow by over 10% in the next five years, establishing roughly a 3.2 million staffing gap (Bateman et al., 2021). With burnt-out staff combined with employees in unfamiliar or new roles, this critical shortage leads to significant risks in the healthcare system of medical errors, workplace injuries, workplace violence, and lawsuits (Bateman et al., 2021). These risk factors can raise costs in branding and monetary loss (Bateman et al., 2021). Michaela McPadden (2021) quotes John Derse, Mercer L.L.C.,

stating that the impact affects all, no matter where residents reside. Businesses need to evaluate their recruitment and staffing pipelines to address critical shortages. Organizations and industry professionals use work-based learning to resolve staffing issues (Greenfield & Stevens, 2018).

Work-based learning is a tool that exposes youth and adults to career possibilities, knowledge, and skills required for a profession while preparing individuals for entry into the workforce (Greenfield & Stevens, 2018). Work-based learning programs can transform the culture, capture situational learning, and improve individual, team, and organizational performances (Manley et al., 2009). Definitions of work-based learning vary but maintain two key aspects of an academic curriculum and must have an industry workplace for the learning to occur (Hyndman, 2017). Current program designs suggest that work-based learning incorporates academics and real-world and hands-on learning, which positively influences student success and school completion (New Mexico Hospital Association, 2018). Strategies for work-based learning divide into three categories: (a) visits to the workplace, (b) work-like experiences, and (c) employment (Hamilton & Hamilton, 1997). Visits to the workplace include tours and job shadowing, while work-like experiences include volunteering and student organization memberships (Hamilton & Hamilton, 1997). The last category includes paid internships and apprenticeships leading to Employment (Hamilton & Hamilton, 1997). All work-based learning types and strategies focus on the employer's needs to develop the student with the skills required while creating a conduit for future employment (Keevy & Chakroun, 2015). For over a century, Career and Technical Education programs incorporated work-based learning (Zook, 2019).

CTE programs have a long history of providing skilled high school and community college graduates for the workforce in high-demand industries within the United States (SCTEA, 2018). These graduates fill positions from entry-level to apprenticeships providing a steady skilled workforce to meet industry needs (Stauffer, 2020). Dating back to 1917, with the first legislation supporting CTE, the Smith Hughes National Vocational Act established an investment to prepare workers with the required skills (Association for Career & Technical Education, 2019). Most recently, the 2018 Strengthening Career and Technical Education for the 21st Century Act, Perkins V, allocated $1.3 billion to expand student industry exploration while earning certifications with work-based learning programs (SCTEA, 2018). In addition, the Workforce Innovation and Opportunity Act (WIOA) focuses on improving the workforce by providing funding for employers to hire and retain skilled employees while assisting job seekers with significant barriers to transition into quality careers (U.S. Department of Labor, n.d.) Elected officials continue to support CTE by passing multiple bills focused on the financial and oversight of CTE programs, evolving into 16 industry pathways (ACTE, 2019). The pathways address the needs of each industry and provide workforce pathways through a detailed curriculum (Advance CTE, 2021c). But in the United States, fewer CTE Health Science pathway work-based learning programs exist than other industry pathways (Greenfield & Stevens, 2018).

Successful work-based learning programs require verbalizing solutions while supporting the healthcare industry (New Mexico Hospital Association, 2018). Employer engagement remains critical to achieving program success (Hyndman, 2017). Some work-based programs experience implementation success, while others fail to get past the

start-up (New Mexico Hospital Association, 2018). Workforce development programs are difficult to establish or maintain due to the healthcare industry's complexity and dynamic regulations (New Mexico Hospital Association, 2018). Identifying the barriers could assist in duplicating the success and coordination required to establish and maintain a quality work-based learning program.

Statement of the Problem

Work-based learning programs supporting the healthcare industry operate considerably lower than in other industries (New Mexico Hospital Association, 2018). According to the Mississippi Research and Curriculum Unit's evaluations department, the ideal scenario includes every school district establishing and maintaining a work-based learning program fostering the three types of work-based learning visits to the workplace, work-like experiences, and employment with a local healthcare industry provider (C. Thames, Program Evaluator, Personal Conversation, December 15, 2021). The academic and industry partnership allows students to experience working in a career field that simulates the work environment or immerses students in the workplace (Greenfield & Stevens, 2018). The shortage of quality work-based programs produces students lacking the knowledge to make an informed decision about a future career in the healthcare workforce (Manley et al., 2009). In addition, the lack of quality work-based programs influences a more significant skills gap, with staffing pipelines unable to fill industry vacancies (Bateman et al., 2021). According to the Bureau of Labor Statistics, the healthcare workforce projects growth at a higher rate than other industries (U.S. Bureau of Labor Statistics, 2021). The projected growth, combined with the diminishing skilled workforce, enhances the skilled workforce shortage in Allied Healthcare and healthcare

support positions, leaving the community underserved in healthcare services (HRSA, 2019a). Thus, the areas designated as underserved or healthcare professional shortages will continue to rise (HRSA, 2019). These designated areas represent a population, a geographic area not receiving the required healthcare, or operational facilities not providing the necessary healthcare, thus leaving the community at risk for a diminished quality of life or worsening health conditions (HRSA, 2021b). Increasing work-based learning programs directly impacts the number of skilled job applicants employers can access (Crofut, 2019). Barriers to such work-based learning programs remain undocumented due to minimal formal research capturing the data for such programs (C. Thames, Program Evaluator, Personal Communication, December 15, 2021). The Mississippi Research and Curriculum Unit's evaluations department desires the data from formal research to begin documenting the barriers to enhance future research of potential resolutions.

Purpose of the Study

This study explores secondary educators' perceptions of work-based learning program barriers to success in the Health Science pathway. Secondary educators have a unique role where collaborations with students, academia, and industry are within the duties of their positions. These perceptions will assist in determining the framework for a Health Science pathway work-based program to prepare students for the workforce. This preparation provides the student with critical knowledge to make informed career decisions about their future (ACTE, 2018a). Research objectives guide the study.

Research Objectives

This study explores current CTE instructors' perceived work-based learning program barriers for the Health Science pathway. The research objectives align with the purpose of the study and exploration of work-based learning barriers in secondary school districts. Furthermore, each research objective provides a data collection and analysis structure. The researcher defines the research objectives as follows:

RO1 - Describe the participants' demographics regarding gender, age, race, years of experience, geographic location, and the current number of students in a Health Science Program.

RO2 - Explore the perceived barriers to “Visits to the Workplace" in healthcare work-based learning programs.

RO3 - Explore the perceived barriers to “Work-Like Experiences” in healthcare work-based learning programs.

RO4 - Explore the perceived barriers to “Employment” in healthcare work-based learning programs.

Conceptual Framework

The conceptual framework provides a graphic image of the study with primary constructs, variables, and associations (Miles & Huberman, 1994). The conceptual framework, Figure 1, depicts the barriers to implementing a work-based program in terms of students, academia, and industry and continuing with potential barriers for each work-based learning category: visits to the workplace, work-like experiences, and employment. The far-right block of informed career decision (not included in the study) result from the

work-based learning program. Three learning theories provide the study's foundation: (a) human capital theory, (b) sociocultural theory, and (c) situated learning theory.

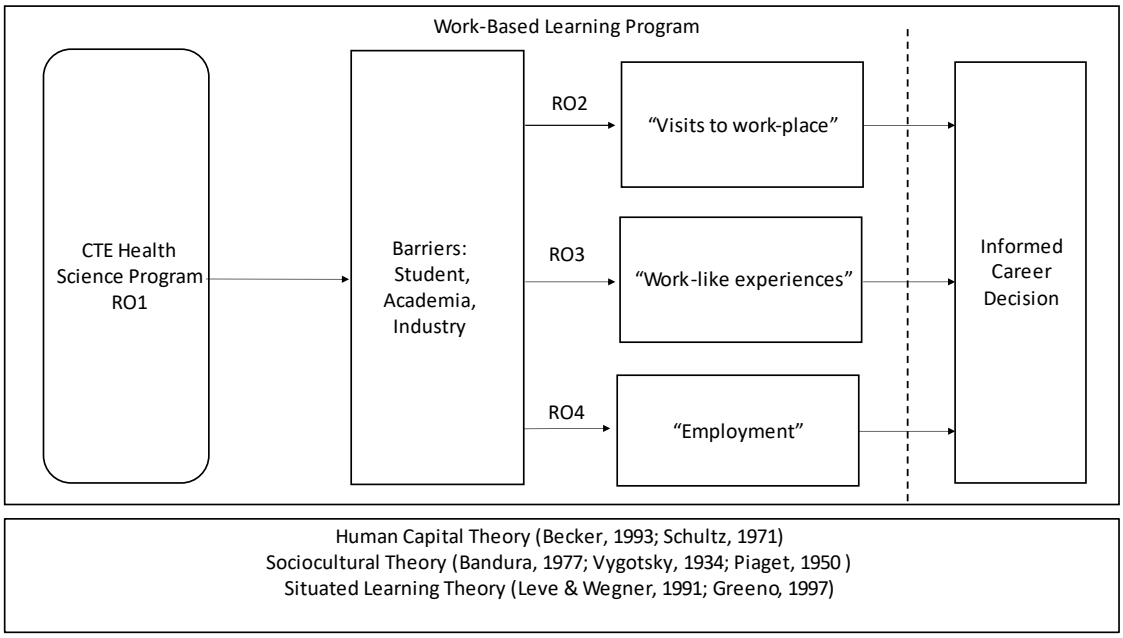

Figure 1. *Conceptual Framework.*

Human Capital Theory

The human capital theory has multiple researchers that provide influence. Becker (1993) defines the theory by stating that employee training and education investments influence business earnings. Schultz (1972) continues that generated revenues reflect the knowledge, skills, and abilities an employee contributes to the organization as human capital. In this study, the students represent human capital as future employees in the healthcare workforce pool. The next theory is the sociocultural theory.

Sociocultural Theory

The sociocultural theory focuses on thought development influenced by surroundings (Cherry, 2022). Bandura (1977) explains that learned behaviors have input from observing others performing tasks. As cited by Cherry, Vygotsky defines

sociocultural theory as the social factors that impact cognitive development that differ from culture to culture (Cherry, 2022). Piaget offers another perspective. Cherry captured Piaget's version of sociocultural development, which begins in childhood, and alternately explains that performance development remains universal (Cherry, 2022). For this study, work-based learning involves observational periods to learn work performances that others influence. Lastly, situated learning theory solidifies the foundation.

Situated Learning Theory

Situated learning theory derives from the view that people learn, see, and do within their role in the community (Lave & Wenger, 1991). Greeno (1997) expands the initial theory by adding that all instruction occurs in social environments, including when learning while alone. For this study, work-based learning programs rely on learning in multiple environments with influences from learning, seeing, and doing. Next, the researcher explains the significance of the study.

Significance of the Study

The Health Science career pathway currently has minimal active work-based learning programs compared to other industry pathways (C. Thames, Program Evaluator, Personal Communication, December 15, 2021). Current legislation focuses on work-based learning programs by prioritizing funding and influencing the rating of CTE programs. This study examines the health science educators' perceived barriers to implementing work-based learning program visits to the workplace, work-like experiences, and employment categories. Simply identifying the barriers will provide the foundation for resolving or minimizing the barriers to establishing the corridor for more

quality CTE programs. As more quality CTE programs exist, critical stakeholders of students, industry, academic institutions, and community residents will benefit.

Work-based learning programs provide industry-specific workplace experience while preparing students for real-world careers (Zook, 2019). With more quality programs, increased student opportunities exist for students to participate in a work-based learning program, thus providing them the experience and knowledge to make informed career decisions on real-world career selection. Next, academic institutions are responsible for establishing work-based learning programs in collaboration with industry partners. Identifying the barriers will provide educators with the knowledge to resolve and minimize barriers, thus increasing the number of work-based learning programs while leading to a program designation of a quality program.

Furthermore, the healthcare industry faces historical staffing shortages with stressed staffing pipelines (Harpaz, 2022). More work-based learning programs provide more student opportunities to gain experience and certifications, increasing the skilled workers' supply in staffing pipelines. The increased supply of qualified students could reduce the number of job vacancies allowing the healthcare industry to address the staffing shortages. Lastly, community citizens could benefit from more quality CTE work-based learning programs. Currently, 148 million residents live in communities medically underserved for medical, dental, or mental health services or with professional healthcare provider shortages (HRSA, 2022). With more skilled workers in the staffing pipeline supply, vacant healthcare professional positions project decreases, thus increasing healthy options for the community while removing the healthcare area

designations for healthcare professional shortages and medically underserved areas. Next, the researcher addresses assumptions.

Assumptions

The researcher presents assumptions to guide this study. First, each participant will partake in the questionnaire and provide honest, valuable insight into the population's perceptions to identify potential barriers or enablers of work-based learning programs for CTE Health Science pathways. In addition, the researcher assumes participants are motivated and encouraged to provide their personal opinions. The research seeks assistance in promoting and developing more work-based learning programs. Lastly, the researcher presumes that each participant will solely present their views and not collaborate with other participants to skew the study results. With these assumptions, the researcher also lists the limitations and delimitations of the study.

Delimitations

The researcher identifies three delimitations of the study. The study shortened the timeframe for data collection and the timing of the questionnaire. First, the researcher's shortened time frame for data collection presents a concern. Previous research dictates that most qualitative researchers underestimate the time for data collection. With only 50 questionnaire participants required, the researcher communicated their fears with the Mississippi Board of Education project manager. After the conversation, the researcher remains confident that the timeframe provides enough time for data collection. Another limitation is the timing of the study. The study will occur when educators are on summer break and preparing for the next semester, which could decrease participation. The

researcher also incorporated this concern into the study design by including incentives (Sauro, 2016) and acquiring organizational support for the study.

The researcher recognizes the described limitations and delimitations for this study. The researcher intentionally minimizes the identified constraints and encourages participants to complete the questionnaire. In addition, the researcher made choices to shape the research by recognizing that the timing and length of data collection are acceptable to complete the study. The researcher identified and acted to minimize the effects or influence on the study's conclusions. Subsequentially, the critical terms are determined and defined.

Definition of Terms

The researcher identified terms below used throughout this research that require defining. Each definition attempts to quantify, clarify or explain the usage or connection to the literature reviewed and provide a framework for the study. Furthermore, these defined terms provide the foundation for communication with readers, fellow researchers, and future research. The critical terms for this study are as follows:

1. *Academia* - "the life, community, or world of teachers, schools, and education (Merriam-Webster, n.d.)."
2. *Allied Healthcare* - "professions are not traditional healthcare positions like doctors, nurses, dentists, and pharmacists require a medical school. Positions care can require on-the-job training to formal education in graduate degrees. Jobs are in three primary care sectors: diagnostic professionals, administrative, rehabilitation workers, and health promotions (AIMS Education, 2019)."

3. *Career and Technical Education (CTE)* - *"t*he broad field of education encompassing the specialized skills and education in technical work professions (Association for Career and Technical Education, 2019)."
4. *Career Pathway* - "provides the structure for delivering quality programs for 79 career pathways in 16 clusters (Advance CTE, 2021c)."
5. *Career Pathway* - "a series of structured and connected education programs and support services that enable students, often while they are working, to advance over time to better jobs and higher levels of education and training (Career Ladders Project, 2011)."
6. *Career Ready* - "having obtained the three broad sets of skills necessary to be ready for a job: Educational, Technical, and Employability Skills (ACTE, 2021)."
7. *Rural Area* - "all areas not included in an urban area for population, housing, and territory (U.S. Census Bureau, 2021)."
8. *Medically Underserved Area* - "designed areas or populations with a shortage of primary care providers and a specific population subset that may experience economic, cultural, or language barriers (Health Resources & Services Administration, 2021)."
9. *Vocationalism* - "the perspective curriculum is guided by economic priorities and values (Steffes, 2020)."
10. *Work-based Learning* - "a federally supported program in Career and Technical Education (CTE) that connects workplaces to the classroom to prepare students for real-world careers (Zook, 2019)."

Summary

Chapter 1 provides a study background identifying the critical shortage of healthcare professionals (U.S. Bureau of Labor Statistics, 2021) and the projected growth of positions within the healthcare professions (U.S. Census Bureau, 2021) which magnifies the effects in rural communities (Crofut, 2019). The researcher subsequently explains that work-based learning programs in CTE coursework assisted with providing a skilled workforce for over 100 years (Zook, 2019). Then, the researcher addressed the current problem of a deficiency of healthcare work-based learning programs (New Mexico Hospital Association, 2018).

Next, the researcher defined the purpose of the study to examine the potential barriers to implementing work-based learning programs from the perspective of the educators in Health Science pathway roles. Additionally, the four research objectives provide a compass for the study to discover the perceived barriers to implementing work-based learning. Moreover, the conceptual framework adds a pictorial depiction of the research. The researcher started with the theoretical framework of Becker and Shultz's human capital development theory, Bandura, Vygotsky, and Piaget's sociocultural theory, and Greeno and Lave & Wenger's situated learning theory. All three theories provide the foundation for how individuals learn and develop skills for the workforce. The researcher continues by detailing the significance of the study for the four stakeholders: (a) students, (b) academia, (c) industry partners, and (4) community residents. Identifying potential barriers to implementing a work-based learning program could increase the number of quality CTE programs. Thus, providing more opportunities for students, increasing the number of quality programs for educational institutions,

increasing available industry-skilled workers, and increasing the number of professionals providing healthcare in the community.

Finally, the researcher discussed delimitations within the study, addressing potential concerns for the study. The researcher also presented delimitations for the timing of the inquiry. The researcher continued Chapter 1 by listing definitions for critical terms to quantify, clarify or explain the usage or connection to the literature reviewed to the framework of the study. Next, the researcher describes previous research and published materials in Chapter 2, providing the foundational literature review. Chapter 3 illustrates the makeup of this study, followed by Chapter 4, presenting the data collected.

CHAPTER II - LITERATURE REVIEW

The literature review is the basis for the study by reviewing previous research and articles. Chapter II begins by defining work-based learning and its connection to Career Technical Education. Furthermore, the researcher will review current success in Health Science pathway work-based learning with Richardson ISD's collaboration with Methodist Health System and Lincoln-West's partnership with Metro Health. Lastly, a description of healthcare positions, including allied healthcare positions and the critical shortages in the professions. First, healthcare designations provide funding and payment for the healthcare workforce.

Work-Based Learning

Work-based learning is defined in multiple ways and is different for every situation (Zook, 2019). Chris Zook described work-based learning as a federally supported Career and Technical Education (CTE) that connects the workplace and the classroom to prepare students for real-world careers (Zook, 2019). In another article, work-based learning is a purposeful move from academic staff-designed education to a collaboration between education providers and the health system (Attenborough et al., 2019). Work-based learning can include internships, job shadowing, simulations, or mentorships (Hyndman, 2017). Work-based learning can consist of other options, such as apprenticeships, work placement, and informal learning in the workplace (Keevy & Chakroun, 2015). There are two pieces in place, no matter what definition or design, an academic portion embedded into a workplace where students can practice theory in real-life work experiences (Hyndman, 2017). In addition, the needs of the workplace should focus on the key driver of active policies and strategies that secure learning (Keevy &

Chakroun, 2015). Work-based learning strategies introduce students to the workplace by providing career awareness, exploration, and planning activities opportunities. Students obtain critical skills required for the particular work placement (North Carolina Department of Public Instruction, n.d.).

Hamilton and Hamilton (1997) divide eight essential strategies for work-based learning into three categories: visits to the workplace, work-like experiences, and Employment. Visits to the workplace include job shadowing, and tours are short-term exposure to observing a worker (Hamilton & Hamilton, 1997). Another category is work-like experiences which provides volunteer and service-learning, unpaid internships, and student-run organizations that offer student-focused experiences in management and Employment in a particular workplace (Hamilton & Hamilton, 1997). The third category is Employment which includes apprenticeships, paid internships, cooperative education, and youth jobs that provide a long-term program with an earned wage (Hamilton & Hamilton, 1997). Visits to the workplace are short-term work-based learning solutions (Hamilton & Hamilton, 1997).

Tours and job shadowing are two groups of visits to the workplace. (Hamilton & Hamilton, 1997). The general purpose of the facility visit is career exploration with workplace tours or field trips (Hamilton & Hamilton, 1997). Job shadowing should be actively engaged in the profession (Williams, 2017). Ashely Williams, a CTE instructor at Central Arizona Valley Institute of Technology, developed her job shadowing events to include research, instruction on communicating with the professional pre-determined questions, and a reflection assignment (Williams, 2017). These steps provided a valuable experience with job shadowing and gave the students the structure to make informed

decisions in the workplace (Williams, 2017). The reflection piece closes the loop for the student, guiding the decision on whether the workplace meets their expectations for future Employment (Williams, 2017).

Federal Legislation

There are significant legislative measures that encourage Career and Technical Education programs. Federal aid or education funding is critical to each program's success. But each state is also tasked with supporting and encouraging the educational programs. However, they secured funding and support to influence the schools to broaden or initiate programs. First, federal funding supports the needs of the workforce and businesses.

Initial Legislation

In 1917, one of the first grants in aid programs, the National Vocational Education Act, was passed, naming state support with federal funding for presecondary vocational agricultural, industrial trades, and home economic education (Steffes, 2020). The Smith-Hughes Act is also called the National Vocational Education Act (Steffes, 2020). The events leading up to the passage of the National Vocational Education Act began in the late 19th century (Steffes, 2020).

Businesses and labor unions saw this as a solution to the workforce shortage, providing the skills required to industrialize the US rapidly (Steffes, 2020). This revolution had two sides: educators and moral philanthropists (Steffes, 2020). The philanthropists and moral reformers proposed changes to increase the moral value fibers in the workplace, which many feared as erosion in modern society (Steffes, 2020). The educators saw an opportunity to encourage new teaching methods and increase student

interest in active learning (Steffes, 2020). Momentum formed numerous groups, including the National Society for the Promotion of Industrial Education (NSPIE), in 1906 (Steffes, 2020). The NSPIE would lobby on behalf of the new educational approach to industrial trades, agriculture, and home economics (Steffes, 2020). The passage of the Smith- Hughes Act implied success in continuing to expand vocational education (Steffes, 2020).

The Smith-Hughes Act was a springboard for economic development and youth training magnified during the Great Depression and World Worlds II (Steffes, 2020). But after a few years, evaluations of the effectiveness were split. The success of providing funding and national attention to vocational education had counter impacts also. The Smith-Hughes Act saw far below reformers' anticipated enrollment below 20 % (Steffes, 2020). In addition, segregation of gender and race was visible due to the individual training impacts. Race played into who funneled into vocational tracks because of the assumption that the academic path was challenging (Steffes, 2020). Even with the unintended outcomes, the Smith-Hughes Act stretched the ideology of vocational (Steffes, 2020). The following legislation evolved to continue support of Career and Technical Education.

Federal Legislation Continued Support

The next significant Career and Technical Education legislation was the George-Reed Act of 1929, which removed home economics from outside the trade and industrial sections and added annual appropriations (Imperatore, 2018). Senator George did not stop there but collaborated on three more bills furthering Career and Technical Education (Imperatore, 2018). In 1936, the George-Deen Act authorized $14 million annually while

adding education for teachers and marketing professionals (Imperatore, 2018). The George Barden Act of 1946 doubled the funding to $29 million and established the Future Farmers of America and New Farmers of America groups (Imperatore, 2018). In 1956, amendments to the George-Barden Act of 1946 added nursing and fishery professions and provided centers specializing in vocational training (Imperatore, 2018). The subsequent legislative measures change vocational education's scope.

Expanding the number of eligible students for Career and Technical Education was the focus of the Vocational Education Act of 1963 (Imperatore, 2018). Furthermore, the act now funds the student population, including a unique language for disabled and disadvantaged students (Imperatore, 2018). In 1968 and 1976, The Vocational Education Act added amendments to include post-secondary schools and equal opportunities for female populations (Imperatore, 2018). In 1984, Career and Technical Education added the name of a Kentucky representative Carl. D. Perkins (Imperatore, 2018).

The Carl D. Perkins Act amendments began in 1990, focusing on accountability, alignment from secondary to post-secondary, and industry partnerships (Imperatore, 2018). The School to Work Opportunities Act of 1994 expanded the expectation of industry partnerships to encourage learning environments established for youth in the workplace (Hamilton & Hamilton, 1997). By 1998 and 2006, the Carl D. Perkins Act received some more amendments and reassurance with funding to continue to work on vocational education (Imperatore, 2018). In 1998, the amendments changed the name of the American Vocational Association to Association for Career and Technical Education while strengthening the states' reserve fund to ensure 85 % would reach the lowest level of programs (Imperatore, 2018). In 2006, the changes funded the Basic State Grant and

Tech Prep with $1.3 billion while retiring the language of vocational education (Imperatore, 2018). During the 2015 legislative meetings, the Perkins bill revision added another $1.117 billion to continue training for the skills required in the workforce (Imperatore, 2018). 2016 was a challenging legislative session for the Perkins Act, with negotiations stalling in the Senate after reauthorization in the House (Imperatore, 2018). Even though reauthorizations stalled in the Senate, amendments in the House desired flexibility, innovation promotion, and streamlined administration (Imperatore, 2018). However, 2018 would be a different outcome for the Perkins Act. (Association for Career and Technical Education, 2018).

Current Legislation

Signed into law on July 31, 2018, The Strengthening Career and Technical Education for the 21st Century Act (Perkins V) permits continuous congressional commitment to Career and Technical Education (U.S. Department of Education, n.d.). The new legislation provides $1.2 billion for our youth and adults partaking in Career and Technical Education (U.S. Department of Education, n.d.). When signed, the effective date was set for July 1, 2019, to provide nearly one year for states to establish plans per change (Association for Career and Technical Education, 2018). The requirement requires a one-year transition plan followed by a four by the spring of 2020, covering July 1, 2020, to June 30, 2024 (Association for Career and Technical Education, 2018). The bill has a few definitional changes introduced.

The bill accepted some definitions adopted from the Workforce Innovation and Opportunity Act aligning the wording for career pathways, in-demand industry sectors, workforce development boards, and out-of-school youth (Association for Career and

Technical Education, 2018). In addition, work-based learning received a formal definition, including terminology that sustained interactions in the workplace and simulated environments (Association for Career and Technical Education, 2018). Also, documenting the work-based learning program must foster in-depth and firsthand task accomplishment required for the industry and career field (Association for Career and Technical Education, 2018). Furthermore, a significant definitional change was reducing the required occupational fields offered from five to three for an academic institution to classify as an Area Career and Technical Education School (Association for Career and Technical Education, 2018). The bill lists 25 authorized uses varying in scope (Association for Career and Technical Education, 2018).

The list contains various uses for supporting programs to study career pathways, improving guidance and counseling programs, and accelerated or dual enrollment programs (Association for Career and Technical Education, 2018). Furthermore, competency-based and work-based learning programs take on an enhanced role in integrating into Career and Technical Education (Association for Career and Technical Education, 2018). Included in the use of funds is the change in provisions for middle grades, changing to fifth thru eighth grades instead of prohibited funding below seventh grade (Association for Career and Technical Education, 2018).

State Legislation

Each state is responsible for identifying its workforce demands while developing talent pipeline strategies for the future workforce (National Governors Association, 2022). For the last six years, different states have participated in various phases, acting as mentor states, learning lab states, and participants of the Policy Academy (National

Governors Association, 2022). The policy Academy provides technical assistance, peer learning opportunities, and topic-specific learning labs (National Governors Association, 2022). After six years of data collection, the National Governors Association identified four components that provided a robust work-based learning structure: work-based learning shared definition, data collection and analysis, stakeholder engagement, and a strategic communication plan (Baddour & Hirsch, 2021).

The shared definition aligns with a shared understanding to provide the foundation for the governor's vision and all communication with stakeholders (Baddour & Hirsch, 2021). Continuing with the shared definition, the committee or working group can derive metrics critical for evaluating and identifying city gaps (Baddour & Hirsch, 2021). Next, the governor needs to convene all stakeholders to establish a loop of communication to advise the potential state learning action plan, including policy, implementation, and management (Baddour & Hirsch, 2021). Lastly, the governor must use various communication tools to disseminate the vision and work-based learning efforts to influence student participation, employer and educator engagement, and parent awareness (Baddour & Hirsch, 2021). The work-based learning structure funding is a product of state vocational education workforce boards (Baddour & Hirsch, 2021).

Mississippi Workforce Development Areas

The Smith-Hughes Act requires workforce development boards for each state (Steffes, 2020). There are four areas for Mississippi Twin Districts, Delta, Southcentral Mississippi Works, and Mississippi Partnership (MDES, 2022b). Each defined area provides support for the local counties regarding funding, and training opportunities for youth, adults, and dislocated workers (MDES, 2022b).

Twin Districts

The Twin Districts, also referred to as the Southern Mississippi Planning and Development District, provides funding, information, and resources for industry leaders to make informed decisions and accomplish planned development (Southern Mississippi Planning and Development District, 2022). The district services 15 counties in the southeastern Mississippi areas, establishing economic vitality opportunities to improve the quality of life (Southern Mississippi Planning and Development District, 2022). Established as a 501(c)3 organization, donations and contributions from local businesses and residents assist in building the community (Southern Mississippi Planning and Development District, 2022). SMPDD is one of the nation's largest and most diversified planning and development entities (Our Mission, 2022).

Delta

The Delta provides coverage for six counties and 35 municipalities with the objective of local government assistance (South Delta Planning and Development District, 2021). Services provided include grant writing assistance and technical assistance on planning, concluding with the 5-year comprehensive strategy (South Delta Planning and Development District, 2021). In addition, the Delta is the primary administrative and fiscal support for the Workforce Innovation and Opportunity Act for the counties and municipalities within the defined area (South Delta Planning and Development District, 2021).

Southcentral Mississippi Works

Formed in 1968, the Southcentral Mississippi Works is also known as the Central Mississippi Planning and Development District (Central Mississippi Planning and

Development District, 2022). The Central Mississippi Planning and Development District assists with creative solutions for the 17 counties and seven WIN job centers (Central Mississippi Planning and Development District, 2022). Their activities support local labor requirements and develop the skills and abilities required by the workforce (Central Mississippi Planning and Development District, 2022). Like the other districts, Central Mississippi Planning Development District serves as the liaison for all federal and state funding for workforce development (Central Mississippi Planning and Development District, 2022).

Mississippi Partnership

Referred to as the Three Rivers Planning and Development District, the Mississippi Partnership promotes economic development for general, civic, and social programs while fostering long-term planning goals (Three Rivers Planning and Development District, 2022). Since 1971, the Three Rivers Planning and Development District has provided multiple services for 27 counties in northern Mississippi (Three Rivers Planning and Development District, 2022). The district partners with the local industry to establish performance standards and workforce skills required (Three Rivers Planning and Development District, 2022). In addition, the district oversees the 41-county Mississippi Access to Care (MAC) that encompasses the Delta and Mississippi Partnership districts.

The four workforce districts provide valuable services for their assigned counties using the WIN Job Centers, which fall in their area. Each ensures its constituents have the skills to succeed and meet local demands. Next, the researcher dives into Career and Technical Education.

Career and Technical Education

Career and Technical Education design provides technical, academic, and employability skills for adult secondary and post-secondary students for success in the workplace (Stauffer, 2020). The foundation of career and technical education began in the first 50 years of the United States' existence (The Awakening, 1776-1826, 1976). In the era of new beginnings, apprenticeships, and other forms of education, fathers to sons, stressed the importance of the skilled trades and professions for the affluent and the state's prosperity (The Awakening, 1776-1826, 1976). The private ventures proved to shift from family education to more formal apprenticeships. They gave a glimpse into the new America that would have opened an education system embedded in society to provide an opportunity for careers (The Awakening, 1776-1826, 1976). The second 50 years of the United States proved significant due to the establishment of manual labor schools and the formalization of the educational administration.

In 1917, the role of career and technical education began with the Smith-Hughes National Vocational Education Act (ACTE, 2019). The Smith Hughes National Vocational Act was the first investment in secondary vocational education (ACTE, 2019). For the next 100 years, numerous legislations would continue to fund Career and Technical Education from the George Barden Acts, Vocational Amendments, and Carl Perkins Vocational and Applied Technology Act Amendments (Advance CTE, 2021a). With each act or amendment, funding would detail additional focus areas of secondary and post-secondary programs to modern-day emphasis on work-based learning (ACTE, 2019). Career and Technical Education has evolved into 16 career pathways (Advance CTE, 2021a).

Career Pathways

Each pathway for Career and Technical Education addresses the uniqueness of each industry. The 16 pathways are Agriculture, Food and Natural Resources; Architecture and Construction; Arts, Audio-Video Technology, and Communications; Business, Marketing, and Finance; Education and Training; Health Science, Hospitality and Tourism; Human Services; Information Technology; Law, Public Safety, Corrections, and Security; Manufacturing; Science, Technology, Engineering, and Mathematics; and Transportation, Distribution, and Logistics (Mississippi State University Research and Curriculum Unit, 2021). Established pathways within each pathway prepare students for the workforce or post-secondary systems (Advance CTE, 2021a). Seventy-nine paths spread throughout the 16 pathways, with knowledge and skills statements identified (Advance CTE, 2021a). With Health Science as the focus of this research, a more detailed breakdown follows.

Health Science Pathway

The study focuses on the Health Science pathway for Career and Technical Education. The pathway divides into five strategic pathways (Advance CTE, 2021b). The paths listed are Therapeutic Services, Diagnostic Services, Health Informatics, Support Services, and Biotechnology Research and Development (Advance CTE, 2021b).

The scope of practice for the therapeutic services pathway centers on changing the health status over an identified timeframe. Professionals within this pathway provide patients with acute care, treatment, and counseling for their medical conditions (Advance CTE, 2022). Second, the Diagnostic Services pathway detects, diagnoses, and treats diseases, injuries, and other physical conditions with tests and evaluations (Advance

CTE, 2022). Third, the Health Informatics pathway shifts from direct patient care to behind data with multiple levels of related employment (Advance CTE, 2022). Charged with managing and securing the data, healthcare administrators manage computer applications, financial information, and patient data (Advance CTE, 2021b). Next, the Support Services focus on the management sector for professional and technical positions (Advance CTE, 2021b). The newest pathway is Biotechnology Research and Development (Advance CTE, 2021b). The biotechnology pathway directs the bioscience research and development in medical conditions identifying treatment evolution or accuracy of tests (Advance CTE, 2021b). These pathways provide vital skills and knowledge required to perform professionally within the healthcare industry (Advance CTE, 2021b).

Work-Based Learning in Health Science Pathway

Questions about work-based learning in healthcare remain sparse (Spouse, 2001). In 2001, Jenny Spouse discovered the conception of learning in healthcare (Spouse, 2001). Jenny Spouse's discusses how learning with formal lectures and demonstrations requires reconceptualization (Spouse, 2001). Some of the same practices still exist in healthcare education two decades later. Education remains in a classroom with a demonstration rather than in a healthcare setting, where hands-on learning enhances immersion in a healthcare setting.

Healthcare includes clinical training as part of every program. However, the activity is limited to observation and little hands-on training, with minimal hours to meet academic training requirements. Work-based learning focuses on emersion in the workplace due to competency and confidence (Spouse, 2001). Previous research

addressed the need for exposure to realities and situated learning in a healthcare workplace (Thessin et al., 2018, p. 61). For students, observing the processes and procedures in action added extra weight to the seriousness of learning (Thessin et al., 2018, p. 62). Employers also need to prepare the culture of the working environment.

A culture where learning is revered depends on trust, how much allotted time for discussion about procedures, and where employees accept investigation and speculation (Spouse, 2001). Steven M. R. Covey states that foundational trust is the new currency of our interdependent and collaborative world (FranklinCovey & CoveyLink, n.d.). Furthermore, a learning culture requires investment at all levels of an organization (Spouse, 2001).

As high school district programs are increasing, two have proven to achieve program and implementation success, Richardson ISD and Lincoln-West. The Richardson ISD is in a rapidly growing area, while the Lincoln-West is in an economically challenged area. The Richardson ISD provides a case of intervention to success, while Lincoln-West proves the importance of funding to maintain programs. First, the background and success of the Richardson ISD Health Science collaboration.

Richardson ISD and Methodist Health

Richardson ISD partnership with Methodist Hospital. Richardson ISD initiated a new collaboration with Methodist Health in the 2016 -2017 school year (Chavez, 2017). Methodist Health donated 7,000 square feet to convert the initial 220 students (Chavez, 2017; Fancher, 2017; Wadsack, 2021). Nursing Aides and medical technicians' training were unavailable in a traditional classroom (Chavez, 2017). Learning in an actual hospital makes the activity more realistic (Chavez, 2017). Since its 2016-2017 inception, the

program has grown to 1,057 in participation in the 2021-2022 school session (Wadsack, 2021). In addition, the program now offers a dual credit option for students due to its collaboration with Dallas College (Wadsack, 2021).

The dual credit option allows high school students to begin the college experience and earn up to 16 hours of college credit while in high school (Wadsack, 2021). Furthermore, students completing all four years will make a Patient Care Technician Level 1 certificate (Wadsack, 2021). These programs just do not benefit the students but also Methodist Health.

Since students can begin working shortly after graduation, this creates a workforce pool for the health system (Fancher, 2017). Texas is facing a critical healthcare workforce shortage (Wadsack, 2021). Texas is also struggling with affordability to rank 51st nationally (Wadsack, 2021). This workforce pool would not have come to fruition if the committee had not addressed a community need.

The program is a product of a task force established to resolve the issue of a diminishing healthcare workforce four years prior (Fancher, 2017). The task force combined the school district and community healthcare representatives (Fancher, 2017). The vision was to establish a strategic plan to address the rapid growth f the community and enrich student learning (Fancher, 2017). The critical success and duplication of the program require a community healthcare facility partner (Fancher, 2017). The product of four years of planning and four of execution produces healthcare professionals who continue their studies in healthcare and others who work directly in healthcare (Wadsack, 2021). Ricardson ISD and Methodist collaboration is an excellent example of vision and collaboration producing a thriving workforce and academic pipeline. Still, Lincoln-West

School of Science and Health and MetroHealth is other rendition making waves in healthcare education.

Lincoln-West School of Science and Health Partnership with MetroHealth

In 2016, Cleveland Metropolitan School District and Metro Health formed a partnership to support the commitment to the youth in the underserved population (MetroHealth, 2019a). Four foundations provided over $200 thousand in grants to update the facility with classroom renovations and required equipment (MetroHealth, 2019a). The collaboration offers students a unique pathway to learn the Health Science professions and advance healthcare within the community (Lincoln-West School of Science and Health, 2021). The students attend classes at the campus of Metro Health, engulfed in the environment as Metro Health professionals are mentors (Lincoln-West School of Science and Health, 2021). Clinical professions are not the only professions studying at the campus with Human resources, information technology, food services, marketing, and engineering learning with internships (Lincoln-West School of Science and Health, 2021). The framework established sends students in later grades twice a week while younger students visit the healthcare campus once a month (MetroHealth, 2019a).

The first class registered just 24 students who graduated in June 2019 (MetroHealth, 2019a). All graduates received colligate program acceptance after completing a 200-hour internship working with doctors, electricians, chefs, or other professionals (MetroHealth, 2019a). In addition to academic success, the student's attendance rates exceeded their peers, and one-third spoke English as a second language (MetroHealth, 2019a). These first 24 students paved the way for the 2020 class accepting over 100 students for the opportunity to gain real-world experiences within a healthcare

facility (MetroHealth, 2019a). The work-based learning program encouraged another program at MetroHealth, Academic Inspiration for MetroHealth Success Mentoring Program.

Academic Inspiration for MetroHealth Success Mentoring Program, AIMS, contuse the Lincoln-West students' support for success (MetroHealth, 2019b). The program provides students with mentors who meet monthly to engage with goals, academic progression, challenges, and high school transition (MetroHealth, 2019b). This program emphasizes employers' role within the work-based learning program. With any program, potential barriers exist.

Barriers to Work-based Learning Programs

Barriers are factors that slow down processes, misdirect, or prevent goal completion (Thompson, n.d.). Barriers are misdirection, stagnation, obfuscation, and access (Thompson, n.d.). Misdirection is the short-term goal hindering the long-term vision (Thompson, n.d.). Next, stagnation is the culture does not grow or learn relevant skills (Thompson, n.d.). Furthermore, obfuscation evolves from confusing or poorly explained training aides or instruments (Thompson, n.d.). Lastly, access to training is a viable barrier due to numerous reasons employees’ situations restrict flexible, accessible opportunities (Thompson, n.d.). Since barriers differ for each job, employers need to evaluate and evolve training to minimize each barrier by rewarding mentors, making training flexible and supporting a growth culture (Thompson, n.d.).

Allied Healthcare

AIMS Education defines the professions supporting traditional healthcare professions of nurses, doctors, and dentists as allied health (AIMS Education, 2019). The

allied healthcare professions comprise over 60% of healthcare jobs (ASAHP, 2020). These jobs could require licensure, certification, or regulation by the state (AIMS, 2019). In addition, the training for these positions can range from post-secondary to on-the-job training or graduate degrees (AIMS, 2019). The positions work in all diagnostic, rehabilitative, and preventable healthcare locations (AIMS, 2019). These positions are the foundation of healthcare and fulfill the desire to help others (AIMS, 2019). The allied health positions are a large portion of the projected 3.2 million healthcare job openings by 2026 (Bateman et al., 2021).

Critical Shortages in Healthcare Professions

Labor force participation decreased to 63.3% in 2021 (Furguson, 2022). 94% of the state and local Chamber of Commerce reports difficulty locating workers (Dubay, 2022). Data suggests 11 million job openings, while 6 million Americans classify as unemployed (Ferguson, 2022). The trend of more job openings than unemployed workers began in April 2021 (Dubay, 2022). Health professions are in high demand throughout the United States (U.S. Bureau of Labor Statistics, 2021). Many nurses still contemplate quitting their jobs and trade, while one in three in other healthcare professions (Harpaz, 2022). This attrition leaves the healthcare industry facing unprecedented times with the pandemic and staffing shortages (Harpaz, 2022). The predicted demand for nurses alone is one million by 2026 (Bateman et al., 2021). At a minimum, 29 states will not meet their nurses' demands (Bateman et al., 2021). The critical shortages do not exist in nurses only. The allied health profession's predicted growth is 10% over the next five years (Bateman et al., 2021). But 6.5 million are expected to leave these professions in the same timeframe (Bateman et al., 2021). Adding this subtraction to the projected increase

will leave 3.2 million allied healthcare position vacancies (Bateman et al., 2021). As staffing shortages increase, the risks to healthcare systems rise for medical errors, workplace violence, workplace injuries, and lawsuits (Bateman et al., 2021). The hazards include burnt-out staff, staff in unfamiliar new roles, and not enough staff in the scheduling pool (Bateman et al., 2021). Without systematic changes, the healthcare industry is on the brink of a dangerous chapter (Harpaz, 2022). These vacancies will increase the designations of medically underserved populations/areas and healthcare professional shortages.

Designations of Healthcare Areas

Healthcare area designations assist in determining which areas or facilities receive a particular supply of federal resources (HRSA, 2021). A shortage of medical, dental, or mental health professionals is the driving force behind geographic, population, or facility designations (HRSA, 2021). For designation approval, the process begins in the state Primary Care Offices (HRSA, 2021). The Primary Care office conducts a needs assessment, determines where areas are eligible, and then submits a designation application (HRSA, 2021). The Primary Care Office uses the Shortage Designation Management System (SDMS) to document the details (HRSA, 2021). The supplied data includes clinical practice activity, locations, hours available at each site, and the time required to serve specific populations (HRSA, 2021). The review begins with comparing the supplied area information to the National Health Service Corps (NHSC) governing statutes and regulations, business rules, and additional data sets of mapping data from the Environmental System Research Institute, demographic data from the census bureau, health-related data from the Centers for Disease Control and Prevention National Vital

statistics and federally qualified health center using HRSA's Uniform Data System (HRSA, 2021). If approved, the Primary Care Office receives the designation with a calculated score forwarded to the Data section within HRSA (HRSA, 2021). Next, the researcher defines each designated classification, starting with the Health Professional Shortage designation.

Health Professional Shortage Area

Health Professional Shortage Area designates areas, populations, groups, or facilities that currently experience a shortage of healthcare professionals (Health Resources and Services Administration, 2019). The geographic classification defines the deficit for an entire population with the geographic area (Health Resources and Services Administration, 2019). A population classification describes the lack of a specific population within a geographic area with typically designated populations of low-income, migrant farmworkers, Native American/Alaska natives, Medicaid eligible, and people experiencing homelessness (Health Resources and Services Administration, 2019). These two previous designations address the population demographics served, while the facility classifications describe the healthcare facility.

The facility classification addresses the shortage within a facility in three types: Other Facilities, Correctional Facilities, and State Mental Hospitals. For the Other Facility classification, the facility can be a public or non-profit serving such geographic or population with a shortage of healthcare professionals (Health Resources and Services Administration, 2019). A Correctional Facility designation describes a facility lacking healthcare professionals within a medium to maximum-security classified federal and state correctional institution (Health Resources and Services Administration, 2019). The

third group is State Mental Hospitals, which have a shortage of psychiatric professionals (Health Resources and Services Administration, 2019). These population-focused designations provide access to primary healthcare services in a Medically Under-served Area or Medically Underserved Population (Health Resources & Services Administration, 2021).

Medically Underserved Area/Population

A medically underserved area/population defines an area with a shortage of healthcare professionals (Health Resources & Services Administration, 2021). The lack of primary care can be a whole county, a group of neighboring counties, urban census tracts, or paired county or civil divisions classified as Medical Underserved areas (Health Resources and Services Administration, 2019). However, for the classification of the Medically Underserved population, the geographic area must have a shortage of primary care health that serves low-income, migrant farmworkers, Native Americans/Alaska, Medicaid eligible, and people experiencing homelessness (Health Resources and Services Administration, 2019). The last designation is the Governor (Health Resources & Services Administration, 2021).

Governor-Designated and Secretary-Certified Shortage Areas for Rural Health

Within a U.S. state, a governor can classify an area as Governor-Designated and Secretary-Certified Shortage Areas for Rural Health Clinics (HRSA, 2021). The shortage plan establishes zones in rural health clinics to address the provider shortage (HRSA, 2021). Rural health clinics operate to increase primary care services for populations within rural classified communities (HPSA Acumen Inc., 2021). The clinic must be 51 percent primary care and physically located within a non-urbanized area (HPSA Acumen

Inc., 2021). With over 50,000 residents, the US Census Bureau classifies the geographic area as an urban location (U.S. Census Bureau, 2021). For an area to classify as rural, the site cannot reside in an urban area (U.S. Census Bureau, 2021).

Summary

According to Zook (2019), the researcher began defining work-based learning by connecting the workplace and classroom, preparing students for real-world careers. Next, a work-based learning program has three categories: visits to the workplace, work-like experiences, and Employment (Hamilton & Hamilton, 1997). Then, the researchers listed the significant legislation for funding such programs as Career and Technical Education programs. The first was the Smith-Hughes National Vocational Education Act of 1917, providing funding for agricultural, industrial trades, and home economic education (Steffes, 2020). The last legislation addressed was The Strengthening Career and Technical Education for the 21st Century Act (Perkins V), continuing financial support for career pathways, workforce development boards, and out-of-school youth (SCTEA, 2018). After legislation, the researcher described the four workforce development boards for the state of Mississippi of the Twin Districts, Delta, Southcentral Mississippi Works, and Mississippi Partnership boards (MDES, 2022). Each workforce development board covers a state-specific area that addresses workforce development needs (MDES, 2022). The researcher then explained the 16 Career and Technical Education pathways, highlighting Health Science (ACTE, 2021). Following the Health Science pathway, the researcher provided examples of current work-based learning shortcomings of limited exposure and hands-on capability in actual healthcare settings (Spouse, 2001).

A few programs have emerged with promising results in Richardson ISD, Methodist Health in Dallas, Texas (Chavez, 2017), and Lincoln-West School of Science and Health collaboration with MetroHealth (MetroHealth, 2019a). Richardson ISD provides a dual credit option and a Patient Care Technician certification for graduates (Fancher, 2017). The Richardson ISD program snowballed from 220 to 1,000 students (Chavez, 2017). At the same time, the Lincoln West program mirrored other programs with certifications that began with 24 students expanding to over 100 students in the following years (MetroHealth, 2019a). The research continued addressing some document barriers to work-based learning programs and the critical healthcare professional shortage faced throughout the United States (Harpaz, 2022). The staffing shortages create certain designated areas like the health Professional Shortage area, the medically underserved area/populations area, and the Governor Designated and Secretary certified shortage areas for Rural Healthcare (HRSA, 2021). The area classification provides the facilities with additional federal resources (HRSA, 2021). Next, Chapter 3 describes the methodology of the study.

CHAPTER III - METHODOLOGY

Chapter 3 will identify the research design for a qualitative descriptive study. Then, Chapter 3 defines the population and sample while establishing the research procedures framework for capturing the required data to fulfill the four research objectives. The questionnaire instrument's description and mapping provide the groundwork to ensure the tool captures the envisioned data. After data collection, Chapter 3 explains the study's content analysis, data analyses, and interpretation procedures. The researcher first reviews the research objectives.

Research Objectives

The research objectives provide the compass for the research purpose and procedures. Furthermore, each research objective offers data collection and analysis guidance. The researcher reiterates the research objectives as follows:

RO1 - Describe the participants' demographics regarding gender, age, race, years of experience, geographic location, and the current number of students in the Health Science Program.

RO2 - Explore the perceived barriers to “Visits to the Workplace" in healthcare work-based learning programs.

RO3 - Explore the perceived barriers to “Work-Like Experiences” in healthcare work-based learning programs.

RO4 - Explore the perceived barriers to “Employment” in healthcare work-based learning programs.

Research Design

A study's design provides the framework for the research (Trochim, 2006). Qualitative research is typically the choice of researchers when the researcher wishes to understand further the context or setting of identified issues (Creswell, 2013). In addition, qualitative research fits research studies for topics not easily measured, and the subject is complex with multiple variables (Creswell, 2013). This research examines the barriers to work-based learning programs, which depend on the academic program, industry partners, and students. Thus, the researcher chose a qualitative research methodology.

Qualitative research presented in most textbooks lists five approaches: narrative, phenomenological, grounded theory, case study, and ethnography (Colorafi & Evans, 2016). Sandelowski (2000) promotes another way called qualitative descriptive. The foundation of qualitative descriptive methodology derives from naturalistic inquiry (Colorafi & Evans, 2016). A qualitative descriptive methodology is an option when the researcher answers questions relevant to practitioners and policymakers (Sandelowski, 2000). The flexible approach for qualitative descriptive features various theoretical angles. The theoretical framework affects how data may be utilized (Colorafi & Evans, 2016). In addition, qualitative descriptive matches with any purposeful sampling option (Neergaard et al., 2009; Sandelowski, 2000).

Role of the Researcher

Creswell (2013) explains the difficulty for the researcher to remove their bias during data collection, data analysis, and deriving the conclusion due to the interpretative nature of qualitative research. Nevertheless, Ruona (2009) states that the researcher gains creditability from the participants by detailing their interest in the topic through personal

statements. The researcher is active in the workforce development industry, collaborating with local school districts and Health Science educators to establish work-based learning programs. In addition, the researcher has presented at multiple statewide Mississippi Board of Education meetings interacting with Health Science educators in personal conversations. Therefore, the researcher accepts the potential personal bias due to the individual discussions. The researcher will initiate intentional steps and validation strategies to increase the objectivity of the research. The researcher addressed the acceptance of their personal beliefs and interests in the limitations section while avoiding the fact that they hold specific views.

Population

A population is a group the research desires to generalize (Trochim, 2006). In addition, the sample is a subset of the study population (Fink, 2003). This study explores barriers to implementing work-based learning programs in the Health Science pathway of Career and Technical Education programs. Career and Technical Education programs provide employability skills to students in secondary and post-secondary institutions (Stauffer, 2020). Career and Technical Education instructors' responsibilities include establishing and implementing work-based learning programs for their schools (C. Thames, Program Evaluator, Personal Conversation, December 15, 2021). The educators work with local industry and students to match the needs and requirements (C. Thames, Program Evaluator, Personal Conversation, December 15, 2021). Few Mississippi school districts have healthcare provider-sponsored work-based learning programs beyond shadowing and facility tours (C. Thames, Program Evaluator, Personal Conversation,

December 15, 2021). Hence, the population for this study is educators assigned to the Mississippi School Districts in the Health Science pathway.

According to the Mississippi Department of Education's Health Science project manager, there are approximately 200 instructors assigned as educators within Mississippi school districts (D. Dunaway, Project Manager, Personal Communications, May 26, 2022). In Appendix A, the Mississippi Department of Education's Health Science project manager agrees via email to support the questionnaire distribution to ensure all instructors receive the email request for participation. Next, the researcher breaks down the sampling procedures.

Sampling Procedures

For this study, the sampling procedures are purposive in nature. Purposive sampling captures participants with shared characteristics required for data collected by the questionnaire (Crossman, 2020). Purposive sampling has multiple types addressed for this study: homogenous, total population, and expert sampling procedures (Crossman, 2020). Homogenous sampling captures participants due to shared characteristics (Crossman, 2020). The shared feature is that all potential participants are Health Science educators for Career and Technical Education programs assigned to school districts within Mississippi. Another purposive sampling type is total population sampling which includes sampling the entire population to gain a review of experiences (Crossman, 2020). Since all instructors within the population will have an opportunity to participate, the research determined total population sampling to fit the study. The last sampling type is expert sampling. Expert sampling targets a sample with knowledge embedded in a particular form (Crossman, 2020). For this study, the target sample possesses firsthand

expertise in working with the students, industry, and school districts within the work-based learning programs to identify the potential barriers to success.

The Mississippi Board of Education Career and Technical Education office provided access to the population. The Health Science pathway project manager pledged to support the study by emailing the questionnaire participation request to all educators under the office's purview (Appendix A). This agency support ensures the questionnaire request email comes from within the different school districts' network, thus minimizing the risk of receiving the spam label, which results in the instructors not seeing the participation request. In addition, the questionnaire request email from the Health Science and Sports Medicine pathway office provides a sense of urgency for the instructors to participate, thus increasing completion rates.

For the number of participants required, research shows multiple views pending on the research type. Morse and Bernard both have a sample size of 30 but differ in the high range of 50 and 60, respectively, as cited by Mason (Mason, 2010). In comparison, Mason captures Creswell's statements 20 to 30 for grounded theory and 5 to 25 for phenomenology studies (Mason, 2010). Mason continued with Bertaux's explanation of 15 participants being the minimal acceptable (Mason, 2010). Another research pair, Ritchie and Lewis (2003), define a rule of thumb for a single qualitative study, often with less than 50 participants, due to the complexity of data management for quality and analysis (Ritchie & Lewis., 2003, p. 84). For this study, the researcher reviewed and compared the questionnaire framework. The researcher selected 30-50 as a sample size range to coincide with Morse for grounded theory and ethnography research which qualitative descriptive contains the same characteristics. In addition, the researcher

applied Ritchie and Lewis's sample size rule, which states that less than 50 participants for the acceptable sample size for qualitative research (Ritchie & Lewis, 2003, p. 84).

Institutional Review Board

When a study includes human subjects, the rights and privacy of the participants require protection (Roberts, 2010). Each university establishes a committee to review each research project conducted within university programs called an Institutional Review Board (Roberts, 2010). The researcher is responsible for providing detailed information for the proposed study, including the participant consent process, confidential information protection steps, and recruitment procedures (Roberts, 2010). Since this study engages human subjects with a questionnaire, the University of Southern Mississippi Institutional Review Board must obtain the required approval before data collection can begin (Roberts, 2010). Appendix B is the University of Southern Mississippi IRB Approval letter.

Instrument

The researcher created a questionnaire after completing the literature review. The questionnaire instrument is a self-administered questionnaire with 26 questions addressing Research Objective 1 through Research Objective 4, as depicted in Table 1. Using an online platform allows ease of distribution and a low-cost option for the researcher (XM Support, 2022). The researcher chose Qualtrics for familiarity and access due to university-provided access for zero cost. In addition, the researcher used the Qualtrics option to anonymize responses, which will not record IP address, location data, or participant contact information (XM Support, 2022).

Block 1 of the questionnaire contains the project title and the researcher's contact information. A brief purpose provided an overview of the study's purpose to examine the barriers to work-based learning programs from an educator's perspective. Then the research offered a description of the study addressing the 22-question questionnaire. Next, the research defined the three types of work-based learning programs: visits to the workplace, work-like experiences, and employment categories defined by Hamilton and Hamilton (Hamilton & Hamilton, 1997). The researcher used the option to collect informed consent to close the block with the statement: "I consent below; I give my consent to participate in this research project." The participant must select I consent to confirm.

After informed consent, the questionnaire continues with seven questions (Q1-Q7) addressing participant demographics. The questions collect the gender, age, race, occupation, years of experience, program zip code, and the number of students in the Career and Technical Education program. The gender question has options for Male, Female, Non-binary/third gender, and Prefer not to say, as suggested by Qualtrics. The next question has options for White, Hispanic, Latino, Black or African American, Native American, Asian, Pacific Islander, or Other to collect the participant's race. The following two questions address the participant's occupation and years of experience. The occupation question had choices for the Instructor, Director, or Other, while years of experience have grouped selections of 0-1 Year, 2-5 years, 6-10 Years, and 10+ years. The following question collects the zip code, allowing the researcher to group the participants into workforce development areas and identify if they reside in a designated healthcare

professional shortage. The number of students in the Career and Technical Education provides an insight into the gravity of the need for a work-based learning program.

The following questions address Research Objective 2 thru Research Objective 4. Question 8 thru Question 22 focuses on the categories of Visits to the Workplace, Work-Like Experiences, and Employment (Hamilton & Hamilton, 1997). Each work-based learning program category questioned if there is an active work-based learning program, what barriers are present, and how many students would participate. The researcher created an instrument map to ensure all questions align with a Research Objective.

Mapping each instrument question to a research objective increases the content validity (Phillips et al., 2013). In addition to content validity, face validity reflects how the instrument appears on the surface and the comprehensiveness of the questions (Fink, 2003). Table 1, Instrument Map, has the research objectives listed in the first column, the information required to accomplish the goal in the second column, and the instrument question to gain this data in the last column.

Table 1

Instrument Map Connecting Questions to Research Objectives

Research Objective	Information Collected	Instrument Question
RO1	Demographics for grouping in gender, age, occupation, experience, location, role within the CTE program, and the number of students.	Q1, Q2, Q3, Q4, Q5, Q6, Q7
RO2	Active status of the current "Visits to the Workplace" work-based learning program	Q8
	Barriers to the "Visits to the Workplace" category.	Q9, Q10, Q11
	The number of potential participants in the work-based learning program	Q12, 13

Research Objective	Information Collected	Instrument Question
RO3	Active status of the current "Work-Like Experiences" work-based learning program	Q14,
	Barriers to the "Work-Like Experiences" category.	Q15, Q16, Q17
	The number of potential participants in the work-based learning program	Q18, 19
RO4	Active status of the current "Employment" work-based learning program	Q20,
	Barriers to the "Employment" category.	Q21, Q22, Q23
	The number of potential participants in the work-based learning program	Q24, Q25

While the IRB reviewed the approval request, the researcher conducted an instrument pilot test using academia and work-based learning professionals like the population in experience and knowledge (Fink, 2003). The research utilized personal connections to recruit professionals to participate in the pilot questionnaire. The pilot questionnaire contained the proposed study's entire 22-question instrument, including informed consent and five additional questions. The additional four questions addressed were the device type used to complete the questionnaire, readability of questions, navigational issues, and recommendations for improvements. In addition, the researcher intends to capture the amount of time the pilot participant spent completing the questionnaire. After the instrument pilot test, the researcher plans to incorporate the feedback and recommendations into the participant questionnaire before data collection.

Data Collection Procedures

Qualitative data collection methods accumulate contextual data (QuestionPro, 2022). Online software provides a broader reach for participants and relieves participants'

stress due to answering questions in the researcher's presence (QuestionPro, 2022). In addition, the participants can accomplish the questionnaire anywhere and on any device type (QuestionPro, 2022). The researcher used Qualtrics online platform to distribute a researcher-created 26-question questionnaire to collect data.

Table 2 below details the 37-day data collection plan. Before the study began, the researcher invited (Appendix B) 10 participants (Fink, 2003) to complete an instrument pilot test (Appendix C). The instrument pilot test provides valuable insight into the quality and useability of the research instrument (Fink, 2003; Schaefer & Dillman, 1998). The pilot test participants suggested a few corrections to make the questionnaire flow. A respondent asked if the questionnaire was considered 508 compliant. The research confirmed that the questionnaire was 508 compliant. According to the Qualtrics ExpertReview option, the questionnaire passed the WCAG-compliant test. Passing this test implies that persons with disabilities could participate in the questionnaire, including respondents using screen reader programs for the visually challenged. Another respondent requested a back button to revisit questions. The researcher added the back button option in Qualtrics. Even though this option allows a respondent to revisit a question, only questions within the block are accessible (Qualtrics, 2022). Lastly, a respondent requested a category explanation before each grouping of questions. The researcher added the definitions before each category block. The researcher believed all corrections improved the usability and quality of the questionnaire. Next, the researcher initiates the IRB approval process (Appendix D). While waiting for IRB approval,

Schaefer and Dillman (1998) state that a personal letter encourages participation which can be distributed by email. After IRB approval, the researcher requested a pre-

empted personal email from the sponsor announcing the study and requesting participation the day before initiating the study. Then on Day 1, the researcher communicated thru an email to the sponsor to begin data collection and requested participation (Appendix E) by completing the questionnaire (Appendix F). Schaefer and Dillman (1998) suggest multiple contacts with potential participants to encourage participation. On Day 4, the researcher communicated via an email (Appendix G), reminding the potential participants of the study and requesting instrument completion.

The questionnaire will close once submissions reach 50 completed questionnaires to align with Ritchie and Lewis's rule for sample size in qualitative research (Ritchie et al., 2003). On Day 7, the researcher closed the questionnaire to participation after 50 participants completed the questionnaires with at least one barrier question answered. The researcher communicated with the sponsor thru an email, thanking everyone for potentially participating in the study. Providing a monetary reward encourages a response rate increase of 17 % (Millar & Dillman, 2011). For this study, the researcher offered five Visa prepaid cash cards as rewards for participation, one card each for five selected participants. Forty-eight participants elected to participate in the gift card drawing. This gave a better than 10% chance of winning a gift card.

Table 2

Data Collection Plan

Timeframe	Tasks
Day 0	Completed instrument pilot test with 10 participants skilled in research or Career and Technical Education. Adjusted and added questions to resolve identified concerns. Gained approval from the Office of Research Integrity for the study

	The sponsor sent preempted e-mail to Health Science educators promoting the questionnaire and study participation
	Sent Sponsor questionnaire and study participation e-mail request
Day 1	The sponsor sent the researcher's questionnaire and study participation requests to health science educators
Day 4	Sent a reminder to encourage participation.
Day 7	Closed questionnaire as 50 participants completed the questionnaire.
	Sent the sponsor a thank you e-mail to forward to the entire population.
	Continued data analysis for completed questionnaires.
Day 27	Selected winners from participants for gift cards (5) $100 prepaid Visa cards using a web-based random number generator.
	Sent text to the five gift card winners and received delivery method.
Day 31	Replaced one winner due to failure to provide a working contact information
	Sent winner notification to replacement participant
Day 34	Sent gift card emails to winners
Day 37	Sent reminder text to winners

On Day 27, the researcher used a number-generating application to select the winners. The researcher notified the winners via text message requesting acceptance confirmation. On Day 31, the researcher replaced one winner due to nonworking contact information. On Day 34, the researcher purchased the gift cards for each winner and emailed the electronic gift card. On Day 37, the researcher communicated via text message confirmation that the winner received the gift card electronically.

Trustworthiness

Qualitative researchers typically use trustworthiness to describe the credibility of the data analysis and research findings (Roberts, 2010). Eight common validation

strategies Qualitative researchers use to increase the validity of the research: clarifying researcher bias, external audits, member checking, negative case analysis, peer review, prolonged engagement, rich and thick description, and triangulation (Creswell, 2013). Creswell suggests that a researcher complete at least two strategies to increase trustworthiness. The researcher reviewed the eight strategies for eliminating and selecting methods for the study.

Since the study includes an electronically administered qualitative questionnaire, prolonged engagement and member checking are challenging to accomplish. The researcher did not have physical contact with the participants, excluding protracted engagement. Triangulation requires data collection or references from multiple data sources (Creswell, 2013). This study's sample is one homogenous group. The researcher excluded triangulation since there is only one data source. Rich and thick description requires observation of the situation (Roberts, 2010). No opportunities exist for physical participant observation due to the electronically self-administered questionnaire instrument. Therefore, the researcher eliminated the rich and thick description strategy.

Next, negative case analysis requires a review of the opposite responses (Creswell, 2013). The data collection only collects barriers to implementing work-based learning programs. The opposite of barriers is enablers, which the researcher determined as out of the study's scope, eliminating negative case analysis. The last strategy, peer-reviewed, requires collaboration with a similar researcher regarding the field of study, ability, or qualifications (Creswell, 2013). The researcher eliminated the peer review strategy due to the difficulty of locating and collaborating with fellow researchers of the

same competencies. For this study, the researcher selects clarifying researcher bias, external audits, and journaling to promote reliability.

Clarifying Researcher Bias

The researcher acknowledged the potential bias by working within the workforce development and healthcare industry. According to Ruona, transparency assists researchers by communicating interests thru personal statements (Ruona, 2019). The researcher used transparency to alert the potential participants of the researcher's profession. Furthermore, the researcher communicated the intended use of the results and agreed to share the results with the Mississippi Department of Education. The researcher anticipated this use of transparency aided commitment from participants.

External Audits

To fulfill the external audits, the researcher coordinated with a peer to provide feedback on the entire study and overall thought process. By providing a set of questions for specific concerns (Indeed Editorial Team, 2021), the researcher guided the discussion with the peer to get pinpoint feedback. The peer provided suggestions on the naming of the themes. The researcher agreed and changed the themes of each variable. The student barriers changed from transportation, extracurricular activities, and healthcare restrictions by adding costs and scheduling conflicts. The researcher removed extracurricular activities and combined the data with scheduling conflicts. For academia barriers, the researcher added program requirements to address the responses. Furthermore, the researcher changed the industry barrier theme of restrictions to healthcare requirements while leaving access and staff. The researcher approved of the feedback provided by the peer and believed the changes added value to the study.

Journaling

Lastly, the researcher journaled daily to reflect on data collection activities, on newly collected raw data, and to document the thought process through the study period beginning after the proposal defense. The researcher detailed the process, his thoughts, and his feelings. The thoughts collected assisted the researcher in staying grounded in the data. In addition, documenting the feelings of excitement and anxiety assisted the researcher when reviewing the study and providing suggestions for future studies. Furthermore, the journaling provided additional self-awareness when analyzing the data to ensure the data led to the findings, not personal emotions or experiences.

Data Analysis Plan

The research aims dictated the approach to analysis. Although deductive approaches are available, qualitative descriptive research prefers inductive approaches while being explorative in kind (Kim et al., 2017). Qualitative descriptive research uses two methods of data analysis: content and thematic (Vaismoradi et al., 2013). Vaismoradi (2013) argues that both offer legitimate methods for a lower interpretation required for qualitative description. Content analysis has a broad range for many career fields that use this method, including the social science disciplines (Luo, 2022). In addition, content analysis remains highly flexible and occurs at low costs if access to the data source is accessible (Luo, 2022). Content analysis has three approaches derived from the degree of the involvement of inductive reasoning for initial codes: conventional, directed, and summative (Hsieh and Shannon, 2005).

The conventional content analysis derives the coding and categories from the text data (Hsieh & Shannon, 2005). The conventional approach pairs with a topic with limited

literature availability or existing theory (Hsieh & Shannon, 2005). The researcher immerses in the data to gain new insights for guiding the category development (Hsieh & Shannon, 2005). Two challenges appear with the conventional approach. If the researcher fails to understand the context thoroughly, miscategorization can result leading not accurately reporting the data causing potential trustworthiness issues for the study (Lincoln and Guba, 1985). Another challenge is possible confusion with another research methodology (Hsieh & Shannon, 2005). Since content analysis follows a systematic process, other researchers can duplicate it, yielding high reliability for the study (Luo, 2022).

In contrast, the researcher's subjectivity in content analysis can lead to validity concerns (Luo, 2022). When used with surveys, content analysis dissects the verbatim responses to the open-ended questions (Lavrakas, 2008). Content analysis analyzes qualitative data systematically and converts it to quantitative data for statistical analysis.

The researcher chose content analysis for this research due to the quantitative statistical analysis capability of qualitative data by sorting and comparing different entries into useful summarized information. In addition, the researcher carefully considered each question and ensured all open-ended questions were mapped to the appropriate objective to address potential validity concerns (Kim et al., 2017).

Table 3

Data Analysis Map

Research Objective	Variables	Data Type	Data/Statistic Test
RO1	Gender	Nominal	Descriptive/Frequency Distribution

	Age	Ordinal	Descriptive/Frequency Distribution
	Occupation	Nominal	Descriptive/Frequency Distribution
	Experience	Interval	Descriptive/Frequency Distribution
	Location	Nominal	Descriptive/Frequency Distribution
	Number of Students.	Ordinal	Descriptive/Frequency Distribution
RO2	Student Academia Industry	Nominal	Content Analysis Frequency Distribution
RO3	Student Academia Industry	Nominal	Content Analysis Frequency Distribution
RO4	Student Academia Industry	Nominal	Content Analysis Frequency Distribution

Multiple researchers have used content analysis containing eight steps for their projects. Datt and Chetty (2016) list each step: preparation of data, defining the unit or theme, developing categories and coding scheme, pre-testing the coding scheme on a sample, coding all text, assessing the consistency of coding employed, drawing inferences based on coding or themes, and the last presentation of the results. Step 1 is preparing the data by transcribing all data collected (Datt & Chetty, 2016). Next, the researcher identified the themes based on the objectives (Datt & Chetty, 2016). After identifying the themes, the researcher created categories and coding schemes using deductive or inductive methods (Datt & Chetty, 2016). For this study, the researcher used an inductive method for establishing the coding and categories since the codes come from

the data (Datt & Chetty, 2016). Then, the researcher tested the categories and codes on a sample data text to ensure consistency (Datt & Chetty, 2016). The following two steps of coding all text and then analyzing the surface by verifying the validity and reliability (Datt & Chetty, 2016). Then the researcher connected the codes and categories by looking for patterns and relationships under each theme (Datt & Chetty, 2016).

Summary

This chapter began by revisiting the research objects before defining the research design. The study's framework is qualitative because the data increases the understanding of the topic (Creswell, 2013). The researcher explained the appropriateness of the qualitative descriptive research design because the result customers are practitioners and policymakers (Sandelowski, 2000). Next, the role of the research is vital to qualitative study trustworthiness. The researcher needs to minimize bias when collecting data, analyzing data, and forming conclusions due to the qualitative interpretative nature (Creswell, 2013). Then the chapter continued by defining the study's population of Career and Technical Education, Health Science pathway, and educators, which encompasses a sample of educators from Mississippi, about 200 potential participants. Since the study engages human subjects, the research discussed the importance of the Institutional Review Board and the process for approval. The chapter continued with a detailed plan for data collection using a researcher-created questionnaire instrument designed in Qualtrics. After data collection, the analysis phase used content analysis as the compass for coding and categorizing the data for presentation. Chapter 4 discusses the data collected, while in Chapter 5, the researcher will discuss the findings, conclusions, and recommendations.

CHAPTER IV - RESULTS OF THE STUDY

The study examines the perceived barriers to implanting work-based learning programs with secondary Career and Technical Education programs within Mississippi school districts. The four research objectives provide the scope for the data in the nominal and ordinal categories. Research Object 1 focuses on the demographics, while Research Objective 2, Research Objective 3, and Research Objective 4 sought out the barriers for each variable student, academia, and industry. Along with barriers, Research Objective 2, Research Objective 3, and Research Objective 4 gathered status and the delta for student participation with barriers removed. This chapter begins by describing the emergent themes.

Emergent Themes

The participants answered open-ended questions about the perceived barriers in the facets of students, academia, and industry. The participants' responses led to the researcher developing nine themes: (a) transportation, (b) schedule conflicts, (c) healthcare requirements, (d) behavior, (e) costs, (f) equipment and supplies, (g) program requirements, (h) staffing, and (i) access. Each theme appeared through the responses, and a few appeared in multiple variables. Figure 2 depicts the relationship between the variables and themes. Each grouping has the themes illustrated below. First, the researcher explains the themes that appeared for student barriers.

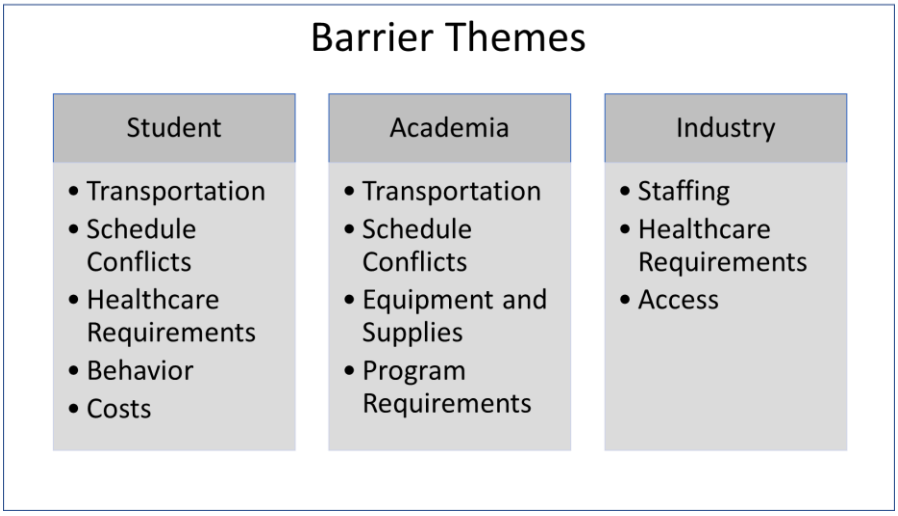

Figure 2. *Barrier Themes*

Student Barriers' Emergent Themes

Five themes appeared throughout the participant responses: (a) transportation, (b) schedule conflicts, (c) healthcare requirements, (d) behaviors, and (e) costs. Multiple participants responded by referencing student difficulty with acquiring or covering the additional costs for transportation. Next, several responses addressed students' difficulty arranging schedules to fulfill all the obligations of academics, extracurricular activities, and employment. Students have to choose between events and the health science program. Healthcare requirements appeared in multiple responses revealing the minimum employment age and vaccination requirements as significant barriers for students. According to participants, students and parents are reluctant to get vaccinations and refuse to comply. One participant for a student barrier stated: "Refusal to maintain Immunization requirements such as TB skin test, flu shots, COVID vaccinations." A few participants talked about how the students' behaviors could affect involvement in a program. Lastly, a few participants referenced the additional costs for students to take

part since the school district could not provide some of the items. One participant stated: "9th and 10th graders who don't have their license." While other participants indicated: an "inability to drive to the workplace."

Academia Barriers' Emergent Themes

The participants explained academia barriers in four themes: (a) transportation, (b) scheduling conflicts, (c) equipment and supplies, and (d) program requirements. Participants explained transportation issues due to the lack of vehicles and drivers to haul the students. Next, a participant detailed: "difficulty in covering their class requirements with substitutes while chaperoning students at events." A few participants stressed concerns about the lack of equipment and supplies available for engagement in work-based learning events. Lastly, the participants referred to the difficulties of adhering to the program requirements of the school district and education board. The participants referenced the additional requirements their particular school districts put on students that partake in off-campus events during the school day. A participant stated: " District will not allow students to leave more than a class period at a time due to the risk of missing other important information in other classes." In comparison, other participants voiced their concerns about the hours and documentation required to receive credit.

Industry Barriers' Emergent Themes

The industry barriers that appeared fell into three themes: (a) staffing, (b) healthcare requirements, and (c) access. A few participants referenced that the local facilities did not have the appropriate staffing to meet the program's demands. Next, multiple responses addressed the local industry's desire to enforce the healthcare requirements without any deviation, including vaccinations without waivers. A couple of

participants stated: "required Covid vaccination" and "Covid policies" as barriers. Access to facilities drew a significant response from participants addressing the local industry's refusal to participate in a work-based learning program or distance to a facility. One participant stated: "facilities cannot accommodate our number of students." While another described: "local industry not allowing students." Now, the researcher describes the participants' demographics.

Research Objective 1

Research Objective 1 described the demographics of each of the participants. First, the personal characteristics of gender, age, and race. Table 4, Participants' Personal Characteristics, depicts the variables of gender, age, and race with frequency and percentage. Then, program characteristics follow with the role, years of experience, and the number of active students in their program. Table 5, Participants' Program Characteristics, displays each variable with the participants' answers as frequency and percentage. Lastly, the researcher reported the program's zip codes by the corresponding workforce development area. Table 6 shows the number of participants by workforce development area in frequency and percentage. First, the research explains gender responses.

Gender

The applicant survey asked the participants to choose between male, female, non-binary/third gender, or prefer not to say. All the participants selected male and female choices. Males recorded seven participants, while there were 43 female participants. Males comprised 14% of the population, while females were 86%. Table 4 displays the results by male, female, and other groupings.

Table 4

Participants' Personal Characteristics

Variable	Frequency	Percent
Gender		
Male	7	14%
Female	43	86%
Other	0	0%
Total	50	100%
Age		
20-29	1	2%
30-39	11	22%
40-49	20	40%
50-50+	18	36%
Total	50	100%
Race		
Black/African American	5	10%
White	45	90%
Other	0	0%
Total	50	100%

Age

The questionnaire requested the age demographic and grouped the responses into four options: 20-29, 30-39, 40-49, and 50-50+. The 20-29 grouping received one recorded answer for 2% of the responses. The 30-39 pairing received 11 responses from 22% of the participants. The largest grouping was the 40-49 age group, where 20 corresponds to 40% of the participants. The participants' 50-50+ age grouping followed by 18 selections and 36% of participants. These values depict the population for the study age falls between the 30-50+ age groups with an outlier of 20-29 age grouping. Since the position requires a Register Nurse degree and experience (U.S. Bureau of Labor

Statistics, 2022a), this is understandable that very few Health Science instructors would fall below 30 years of age.

Race

The survey question, which captured the race demographics, offered nine different options: Asian, Black/African American, Hispanic, Latino, Native American, Pacific Islander, White, Other, and Two or more. All the participants fell within two categories: Black/African American and White. The Black/African American grouping recorded five selections for 10% of participants. White received the remainder of the participants with 45 for 90% of recorded answers. The researcher grouped all categories with zero responses and displayed them as others in Table 4. This demographic closed the personal characteristics of the participants.

Role

The participant had two choices for the role question: instructor and other. Part of the requirements to participate in the study was that the person had to serve in an instructor role. The survey system directed them to the end of the survey for those who selected other for their role. Therefore all 50 participants were educators and accounted for 100% of the survey participants. The researcher depicted the two options in Table 5.

Table 5

Participants' Program Characteristics

Variable	Frequency	Percent
Role		
Educator	50	100%
Other	0	0%
Total	50	100%
Years of Experience		
0-1 Year	2	4%
2-5 Years	19	38%
6-10 Years	13	26%
10+ Years	16	32%
Total	50	100%
Number of Active Students		
1-15	1	2%
16-30	13	26%
30+	36	72%
Total	50	100%

Years of Experience

The years of experience survey question had four choices: 0-1, 2-5, 6-10, and 10+ year groupings. The 0-1 year grouping received two participants for 10% of the participants. The 2-5 years group recorded the most participants, with 19 participants for 38% calculation. The next option, 6-10 years, received 13 participants for 26% of the participants. The second largest group, the last option, finished with 16 participants, or 32%. Table 5 displays that the participant broadly represents two to more than ten years of experience, with an outlier of less than a year through one year of experience. The last program's characteristic participant demographic is the number of active students.

Number of Active Students

The survey question for the number of active students enrolled in the respective program had three options: 1-15, 16-30, and more than 30 students. The 1-15 grouping recorded one participant for 2% of the participants. The next grouping, 16-30, obtained 13 participants for 26% computation. The last choice received the most participants, with 36 replies from 72%. Table 5 depicts the responses for the programs ranging from 16 to more than 30 active students. The outlier was one program that recorded less than 16 active students.

Workforce Development Area

Mississippi has four workforce development areas (MDES, 2022). Each area supports the local community with funding and training opportunities (MDES, 2022). The survey collected the program's zip code. But the researcher depicted the zip group by workforce development area to provide increased anonymity for future research. Table 6 placed the four workforce development areas as the variable for reporting in frequency and percentage. All four workforce development areas received participants. The Twin Districts received 24 participants for 48% calculation representing most of the participants. South Mississippi Works and Mississippi Partnership were close in frequency, with 12 and 13, respectively. They accounted for 24% and 26% of the participation. The Delta closed with three participants showing 6% of the results.

Table 6

Participants' Workforce Development Area

Variable	Frequency	Percent
Workforce Development Area		
Twin Districts	24	48%
Delta	3	6%
Southcentral Mississippi Works	12	24%
Mississippi Partnership	11	22%
Total	50	100%

Research Objective 1 Summary

The study participants reside in all four workforce development areas within Mississippi. The educators' program characteristics show programs ranging from 16 to more than 30 active students. The educators have an experience level of more than two years. The personal characteristics of the study participants show a majority female population older than 40 years. In addition, most of the study participants selected White as their race.

Research Objective 2

Research Objective 2 provided the framework to identify "Visits to the Workplace" active programs, barriers to implementation, and student participation. Table 7 depicts the educators' responses to the survey questions about their program status. Next, the researcher used Table 8 to display the perceived barriers to implementation for students, academia, and industry. Then the researcher presents the responses for the number of students who presently participate with barriers or barriers removed in Table 9.

Program Status

The researcher created a questionnaire that requested participants to respond to the status of their "Visits to the Workplace" program. Table 7 depicts the data for each workforce development area by the survey choices, yes and no. The Twin Districts workforce development area responded with 23 participants with 17 active programs. The Mississippi Partnership recorded nine active programs. Southcentral Mississippi Works has a total of six active programs, while the Delta ended with one active program. The entire study totaled 33 active programs out of the 50 participants for the study. Next, the research explains the barriers for each variable of the student, academia, and industry.

Table 7

"Visits to the Workplace" Work-Based Learning Program Status

Variable	Twin Districts	Delta	Southcentral Mississippi Works	Mississippi Partnership	Total
Active Program					
Yes	17	1	6	9	33(67%)
No	6	2	6	2	16(33%)
Total	23	3	12	11	49(100%)

Student Barriers

Three questions on the study questionnaire addressed barriers to implementing a successful work-based learning program in the "Visits to the Workplace" category. Table 8 depicts the responses of each workforce development area. The participants identified 83 perceived barriers for students. The Twin Districts had the most barriers, with 37. Southcentral Mississippi Works recorded 22 barriers, while Mississippi Partnership supplied 18. The Delta closed with six identified barriers. The healthcare restrictions

grouping was the most prevalent, with 30 total barriers. Transportation and scheduling conflicts followed, with 21 and 18, respectively. The behavior grouping totaled ten barriers, and the cost grouping added four barriers. Academia barriers follow student barriers in Table 8.

Table 8

"Visits to the Workplace" Barriers

Variable	Twin Districts	Delta	Southcentral Mississippi Works	Mississippi Partnership	Total
Student					
Transportation	8	2	8	3	21
Schedule Conflicts	8	2	5	3	18
Healthcare Requirements	13	1	5	11	30
Behavior	6	1	2	1	10
Cost	2	0	2	0	4
Total	37	6	22	18	83
Academia					
Transportation	5	1	1	1	8
Schedule Conflicts	11	1	6	5	23
Equipment and Supplies	3	1	2	0	6
Program Requirements	6	0	5	1	12
Total	25	3	14	7	49
Industry					
Staffing	9	0	4	1	14
Healthcare Requirements	12	2	6	6	26
Access	14	2	8	5	29
Total	35	4	18	12	69

Academia Barriers

Academia barriers logged a total of 49 educator-perceived barriers. The barriers displayed in the workforce development area in Table 8 and grouped into transportation, schedule conflicts, equipment and supplies, and program requirements categories. Twin Districts recorded 25, while Southcentral Mississippi Works closed with 14 barriers.

Mississippi partnership followed with seven barriers identified, and the Delta with three barriers. Schedule conflicts received the most responses, with 23, and program requirements closely followed with 12 barriers. Academia provided transportation barriers recorded eight times. Equipment and supplies were identified six times by the educators. The researcher continues by addressing the industry barriers.

Industry Barriers

Table 8 displays the industry barriers by workforce development areas and staffing, healthcare requirements, and access categories. There was a total of 69 barriers calculated. The Twin Districts and Southcentral Mississippi Works led the barriers with 35 and 18 barriers, respectively. Mississippi Partnership identified 12 barriers leaving the Delta with four perceived barriers. Access to facilities received most of the responses with 29. Healthcare requirements follow with 26 barriers listed. The staffing category closed the study with 14 responses. With the barriers identified and categorized, the researcher explains student participation.

Student Participation

The questionnaire captured the number of students currently participating and the educator's projected number of students increase, with barriers removed. Table 9 illustrates the responses by workforce development area and then calculated delta. With barriers, there are currently 486 students participating in "visits to the workplace" work-based learning programs. The Twin Districts reflects the majority with 260 and the Delta with the least 13 students presently participating. Mississippi Partnership shows 126 students, while Southcentral Mississippi recorded 87 students. The project participation increases for each workforce development area with no identified barriers. The educator

projection for participation without barriers totaled 1,077. That would be a 220% increase in participation. All four workforce development areas increased participation. Southcentral Mississippi Works increased by 201 students and Mississippi Partnership by 79 students. The Twin Districts had the most significant numerical increase, with 324; the Delta had the smallest increase of 35 students. The research recaps Research Objective 2 data collected.

Table 9

"Visits to the Workplace" Student Participation

Variable	Twin Districts	Delta	Southcentral Mississippi Works	Mississippi Partnership	Total
Student Participation					
With Barriers	260	13	87	126	486
Barriers Removed	536	48	288	205	1077
Difference	+324	+35	+201	+79	+639
Difference Percentage	+125%	+250%	+230%	+63%	+131%

Research Objective 2 Summary

The "visits to the workplace" data showed 33 active work-based learning programs out of 50 participants. In addition, 83 barriers for students with healthcare requirements received the most with 30 barriers. But transportation and scheduling conflicts closely followed. Next, academia barriers provided 49 perceived barriers. Twenty-three barriers to scheduling conflicts were the most prevalent in academia. Thus, industry barriers received 69 barriers identified with the most falling in "access to facilities" the most significant barrier. Lastly, the researcher discussed student participation. The data calculated a 220% increase in participation without identified barriers. Now, the researcher portrays Research Objective 3.

Research Objective 3

Research Objective 3 focuses on the "work like experiences" work-based learning program. Table 10 displays the educator responses by workforce development area and status of their program. Then, the researcher explains the perceived barriers to the "work-like experience" work-based learning implementation and program success. Table 11 displays student, academia, and industry barriers in each workforce development area. Lastly, the researcher depicts the student presentation with the barriers and educator projections for when there are no identified barriers. Table 12 displays the responses by workforce development area and is categorized by barriers and with barriers removed. Next, the researcher details the status of the participants' program status.

Program Status

Table 10

"Work-like Experiences" Work-Based Learning Program Status

Variable	Twin Districts	Delta	Southcentral Mississippi Works	Mississippi Partnership	Total
Active Program					
Yes	6(25%)	1(33%)	3(25%)	4(36%)	14(33%)
No	13(54%)	2(67%)	8(67%)	6(55%)	29(67%)
Total	19(79%)	3(100%)	11(92%)	10(91%)	43(100%)

43 of the 50 participants responded to the question on the status of their "work-like experiences" work-based learning program. Table 10 displays the data by workforce development area while grouped by yes or no choices. Fourteen participants stated their program has an active "work-like experiences" work-based learning program. The Twin Districts led the grouping with six yes responses. Southcentral Mississippi Works and

Mississippi Partnership followed closely with three and four, respectively. The Delta had 1 participant state that their program was active. The researcher addresses the perceived barriers to implantation, with more inactive programs than active ones.

Student Barriers

Table 11

"Work-like Experiences" Barriers

Variable	Twin Districts	Delta	Southcentral Mississippi Works	Mississippi Partnership	Total
Student					
Transportation	4	2	3	0	9
Schedule Conflicts	3	0	4	2	9
Healthcare Restrictions	5	0	0	2	7
Behavior	3	0	1	0	4
Cost	0	1	0	0	1
Total	15	3	8	4	30
Academia					
Transportation	1	0	0	1	1
Schedule Conflicts	6	2	1	2	11
Equipment and Supplies	0	1	0	0	1
Program Requirements	6	0	5	0	11
Total	13	3	6	3	24
Industry					
Staffing	3	0	1	1	5
Healthcare Requirements	8	2	0	1	11
Access	5	1	6	5	17
Total	16	3	7	7	33

Table 11 represents the educator's perceived barriers to this work-based learning program category. Each workforce development area logged barriers and grouped them by transportation, schedule conflicts, healthcare restrictions, behavior, and cost. Thirty barriers were identified, with schedule conflicts, transportation, and healthcare restrictions receiving the highest responses, with nine, nine, seven, and seven,

respectively. Behavior ended with four responses and cost, with one educator identifying a barrier. The Twin Districts identified 15 barriers, with Southcentral Mississippi Works recording eight barriers. Mississippi Partnership logged four barriers, leaving three for the Delta workforce development area. With student barriers identified, the researcher follows with academia barriers.

Academia Barriers

Identified academia barriers are displayed in Table 11 in each workforce development area and grouped by transportation, schedule conflicts, equipment and supplies, and program requirements. There was a total of 25 barriers identified. Transportation, along with equipment and supplies, recorded one barrier each. Schedule conflicts and program requirements received eleven barriers for each one. The Delta and Mississippi Partnership workforce development areas documented three barriers for academia. Southcentral Mississippi Works' educators identified six barriers leaving the remaining thirteen barriers for the Twin Districts. The last barriers to the "Work-like Experience" category are industry barriers.

Industry Barriers

Table 11 depicts the industry barriers by staff, healthcare requirements, and access categories and then groups into the workforce development areas. The educators reported 33 barriers, with access recording 17 instances. Healthcare requirements followed with eleven carriers while staff received five barriers. Southcentral Mississippi Works and Mississippi Partnership recorded seven barriers, and the Delta reported three barriers. The Twin Districts represented 16 of the 33 reported barriers for the industry

variable. With all the barriers discussed, the researcher details the student participation in the "Work-like Experience" work-based learning program.

Student Participation

Table 12 displays the responses for student participation by each workforce development area and groups by participation with barriers and educator-projected student participation with barriers removed. The educators projected an increase of 376 student participation without identified barriers. The Twin Districts led with a difference of 159. Currently, 140 students participate in a "Work-like Experiences" work-based learning program. But the educators predicted 399 students would participate with barriers removed. Next, Southcentral Mississippi Works entered a difference of 106. Forty-four students participate now, but 150 students project to join without barriers. Subsequently, Mississippi Partnership recorded a difference of 66. With 40 students participating, the educators predicted 106 for participation without barriers. Lastly, the Delta workforce development area showed a difference of 45 students due to 13 participating and 58 projected in the future without barriers. The researcher recaps Research Objective 3 reported data next.

Table 12

"Work-like Experiences" Student Participation

Variable	Twin Districts	Delta	Southcentral Mississippi Works	Mississippi Partnership	Total
Student Participation					
With Barriers	140	13	44	40	237
Barriers Removed	399	58	150	116	723
Difference	+159	+45	+106	+76	+506
Difference Percentage	+114%	+346%	+241%	+190%	+214%

Research Objective 3 Summary

Research Objective 3 data provided insight into the program status for fourteen programs recording active. Educators identified more inactive than active programs. Next, the researcher explained the relationship between student, academia, and industry barriers. The most significant student barriers listed were transportation and schedule conflicts, closely followed by healthcare requirements. Academia barriers reflected scheduling conflicts and program requirements which have the most effect on success. Then industry barriers listed access as the most significant barrier to school districts' "work-like experiences" in work-based learning programs. The barriers identified impact student participation. With these barriers removed, student participation would increase by 376 students. Now, the researcher will describe the data for Research Objective 4.

Research Objective 4

Research Objective 4 focuses on collecting data for program status, barriers to implementing programs, and student participation in the "Employment" work-based learning category. Table 13 captures the data for program status concerning workforce development areas and then sorted by the program status. Table 14 displays the educators' perceived program barriers, which depicts the barriers in each workforce development area and then grouped by student, academia, and industry. Next, the researcher describes the current student participation with barriers once educator projections remove barriers. First, the research describes the status of the "Employment" work-based learning programs.

Program Status

The study had 50 participants, with only 41 responding to the "Employment" work-based learning program status question. Table 13 depicts the data collected from each workforce development area and the program's status. Only six participants selected yes for an active

work-based learning program for the "employment" category. The Delta, Southcentral Mississippi Works, and Mississippi Partnership received one active program. The Twin Districts recorded three active programs. All the workforce development areas calculated more inactive programs than active ones. The researcher will describe the barriers for each student, academia, and industry with the active programs identified.

Table 13

"Employment" Work-Based Learning Program Status

Variable	Twin Districts	Delta	Southcentral Mississippi Works	Mississippi Partnership	Total
Active Program					
Yes	3(13%)	1(33%)	1(8%)	1(9%)	6(15%)
No	16(67%)	2(67%)	9(75%)	8(73%)	35(85%)
Total	19(79%)	3(100%)	10(83%)	9(82%)	41(100%)

Student Barriers

The participants identified 23 "employment" work-based learning program barriers for students. Table 14 depicts the barriers for each workforce development area while grouping into transportation, schedule conflicts, healthcare requirements, behavior, and costs. The educators identified 23 programs with student barriers. Ten educators identified healthcare requirements as the most significant barrier to implementing an

"employment" work-based learning program. Next, participants recorded transportation and schedule conflicts with six and five active programs, with corresponding barriers. One educator stated that student behavior is a program barrier. Zero educators listed costs as a barrier to work-based learning programs' "employment" category. For student barriers, the Twin Districts recorded the most barriers with 15. The remaining workforce development areas, Delta, Mississippi Partnership, and Southcentral Mississippi Works, independently recorded three, three, and two program barriers.

Table 14

"Employment" Barriers

Variable	Twin Districts	Delta	Southcentral Mississippi Works	Mississippi Partnership	Total
Student					
Transportation	2	2	1	1	6
Schedule Conflicts	2	1	1	1	5
Healthcare Requirements	10	0	0	0	10
Behavior	1	0	0	1	2
Cost	0	0	0	0	0
Total	15	3	2	3	23
Academia					
Transportation	0	0	0	0	0
Schedule Conflicts	3	1	2	2	8
Equipment and Supplies	0	1	0	0	1
Program Requirements	3	0	4	4	11
Total	6	2	6	6	20
Industry					
Staffing	3	0	2	2	7
Healthcare Requirements	8	2	0	0	10
Access	10	1	5	5	21
Total	21	3	7	7	38

Academia Barriers

The educators identified 20 programs with academia barriers. Table 14 depicts the academic barriers in each workforce development area and groups them into themes: transportation, schedule conflicts, equipment and supplies, and program requirements. One educator listed equipment and supplies as barriers to implementing an "employment work-based learning program. Program requirements received the most program barriers, with 11 educators citing a barrier. Schedule conflicts were the second largest number of programs, with eight educators stating a barrier. None of the educators recorded transportation as an academia barrier. For the workforce development areas, Twin Districts, Southcentral Mississippi Works, and Mississippi Partnership all recorded six programs with barriers. The Delta had two educators respond with barriers to the "employment" work-based learning program. The researcher will follow by describing the industry barriers.

Industry Barriers

Table 14 depicts the educator's perceived barriers in each workforce development area. Then the research grouped the barriers by staff, healthcare requirements, and access. The educators identified 38 barriers to implanting an "employment" work-based learning program. Access to facilities recorded the highest number of barriers, with 21 instances. Healthcare requirements follow with ten programs reporting barriers. Staff had seven programs reporting barriers for the "employment " category. Mississippi Partnership and Southcentral Mississippi Works recorded seven programs with barriers each. The Delta workforce development area recorded three programs with industry barriers. The Twin

Districts have the most barriers reported with 21 programs. With the program barriers listed, the researcher will detail student participation.

Student Participation

Table 15 depicts student participation with and without barriers. Each workforce development area shows an increase in projected student participation due to barrier removal. The Twin Districts projects the most considerable change in student participation by projecting a student increase of 236. The Mississippi partnership followed with a projected growth of 54 students. The Delta and Southcentral Mississippi Works with close projections of a rise of 41 and 45 students, respectively. The total projected increase was 376, calculating a 365% increasing student participation by addressing the perceived barriers. Next, the researcher will review Research Objective 4 reported data.

Table 15

"Employment" Student Participation

Variable	Twin Districts	Delta	Southcentral Mississippi Works	Mississippi Partnership	Total
Student Participation					
With Barriers	28	5	50	20	103
Barriers Removed	264	50	91	74	479
Difference	+236	+45	+41	+54	+376

Research Objective 4 Summary

The researcher described the data for Research Objective 4. The educators identified that there are more programs listed as inactive versus active. Only six educators stated that their "Employment" work-based learning programs had active students. The

highest number of barriers listed were healthcare requirements and student schedule conflicts. Academia showed schedule conflicts and program requirements as the most significant barriers. At the same time, industry barriers captured access to facilities as the most significant barriers for programs. Next, the researcher listed the barriers for students, academia, and industry. Lastly, the researcher depicted a 365% increase in student participation without identified barriers.

Summary

Chapter 4 began by describing the demographics of the participants. The researcher detailed the personal demographics of each participant. Most participants choose female for gender, White for their race, and older than 40. The participants' program demographics depicted all as educators. A significant amount has more than two years of career and technical education experience with a program of 30 or more students. Next, the researcher detailed the barriers grouped by student, academia, and industry for each of the three work-based learning categories of "visits to the workplace," "work-like experiences," and "employment." The researcher noted that schedule conflicts and healthcare requirements are the most considerable barriers to student work-based learning programs. Academia barriers displayed schedule conflicts and program requirements as the most challenging barriers. The researcher showed access to the facilities as the dominant barrier group for the industry barriers. Lastly, the researcher described the student participation for each category program. All three work-based learning program categories recorded a significant increase in student participation with none of the identified barriers. All categories showed an increase of over 200% in projected student participation. The data presented for each research objective captures

the perception of the secondary Career and Technical Education Health Science program educators. In Chapter 5, the researcher provides an overview of the study, details of the findings, and future suggested research.

CHAPTER V - CONCLUSION

Chapter V begins with a summary of the study by acknowledging the deficient work-based learning programs for the health science pathway. The study explored the secondary educators' perception of the barriers to their programs from student, academia, and industry viewpoints. The researcher continues with the findings, conclusions, and recommendations for each of the work-based learning categories: "visits to the workplace," "work-like experience," and "employment" work-based learning program barriers. The researcher then discusses the study's limitations and techniques used to minimize the effects on the study. Subsequently, the researcher suggests future research into the barriers to health science work-based learning programs and details the impact of the study results. But first, the researcher provides a summary of the study.

Summary of Study

Healthcare professionals continue to remain in high demand. A recruiting pathway to a portion of healthcare positions is a career and technical education program with secondary school districts. Work-based learning programs prepare students for the workforce. The health science pathway has fewer active work-based learning programs than other industries. This study explored the educators' perceptions of barriers to implementing programs. Identifying these barriers provides the foundation for resolution, increasing the quality of the work-based learning programs and producing a career-ready graduate. Using a qualitative descriptive methodology, the researcher coordinated to survey the health science educators in Mississippi secondary school districts.

The researcher utilized a 26-question instrument to capture the perspectives of 50 educators. The questionnaire requested the educators to list barriers for each category of

work-based learning, "visits to the workplace," work-like experiences," and "employment" in terms of students, academia, and industry. The data collected satisfied the research objectives for demographics thru perceived barriers. As the content analysis continued, the researcher identified themes for each variable from the verbatim responses. Next, the researcher clarifies the findings for the work-based learning category.

Findings, Conclusions, and Recommendations

The researcher's data analysis identified three findings. Healthcare requirements, schedule conflicts, and access to healthcare facilities barriers influenced the implementation of health science work-based learning programs. The research details each finding below by describing the finding, connecting the finding to literature, and stating recommendations to minimize influence.

Finding 1. Healthcare requirements are a primary barrier to health science work-based learning programs.

According to participants, healthcare requirements present a daunting barrier to work-based learning programs in the health science pathway. The data reflects challenges for industry and students in all three categories of work-based learning programs. For the "Visits to the workplace" category, healthcare requirements correspond to 30 of the 83 student barriers and 26 of 69 industry-identified barriers. Again for "work-like experiences" and "employment" categories, healthcare restrictions reflected resistance to implementation. Participants express concern for students with required vaccinations and the minimum age of 18 for employment.

The participants stated that healthcare facilities mandate certain vaccinations for students and employees, which creates industry barriers. Some healthcare facilities enforced the requirement denying students access to facilities that refused to acquire the mandated vaccinations. In addition, Mississippi law requires a minimum age of 18 years old to work in a healthcare facility. Most students complete the health science pathway in their junior year of high school and are not 18 years old. The participants echoed that the healthcare industry uses this mandate to limit the tasks for health science pathway students. The vaccination and age mandates influence the success of health science pathway's work-based learning programs.

Conclusion for Finding 1. A Mercer LLC whitepaper states healthcare allied health projections expect 6.5 million professionals to choose another career which will drive 3.2 million vacancies by 2026 (Bateman et al., 2021). Twenty-nine states missed recruitment goals within the last few years (Bateman et al., 2021). These statistics reflect that the current employment requirements stress the healthcare systems throughout the country. Beyond current employees, the participants acknowledge that these requirements will also affect future employees.

The results depict a current effect on student participation, with the number of inactive programs within Mississippi school districts drastically higher for the "work-like experiences" and "employment" categories of work-based learning programs. Participants project that student participation would increase by over 250% if school districts addressed the identified barriers. These work-based learning programs provide a pipeline for healthcare systems to fill these critically staffed and high-demand allied health positions.

Recommendation for Finding 1. This finding is two-fold with vaccinations and age restrictions. The researcher recommends that school districts and supporting organizations engage with healthcare systems. Each healthcare system develops its required vaccination list. The school districts and supporting organizations could educate the healthcare systems on the level of engagement required for work-based learning events. After learning the expectations and level of engagement, the healthcare systems could change the vaccination requirements.

In addition, the school districts, support organizations, and healthcare systems could partner to influence potential change with Mississippi legislators on age restrictions. This potential change requires a team effort to show the impact of the 18 year-old minimum age restriction on the industry and the development of future professionals. Changing the vaccination and minimum age requirements would influence staffing levels which could minimize Finding 1.

Finding 2. Schedule conflicts are a secondary barrier to health science work-based learning programs.

Participants indicated that schedule conflicts hindered the implementation of work-based learning programs. The researcher documented participants' replies for schedule conflicts as a significant barrier for students and academia for all three work-based learning program categories. The student barriers listed were extracurricular activities and academic credit course requirements for schedule conflicts. Student extracurricular activities mentioned were employment and athletics.

Participants stated that the time required for travel and events to accomplish the work-based learning program presented schedule difficulty for academia. Pending on the

school district's block schedule, participants' stressed that they must travel and host the event within the traditionally scheduled class time due to school districts' requirements. With school schedules occurring during the day, participants stated this influences when the healthcare facilities could assist with work-based learning activities. Participants echoed the challenges the schedule conflicts as industry staffing barriers. When the student and academia schedules require activities, the industry is stressed with increased workloads, thus limiting staffing available. The data combining the student schedule, academia schedule, and industry capability are significant barriers for participants' health science work-based learning program.

Conclusion for Finding 2. School districts request that healthcare facilities support local schools in the work-based learning arena. Some healthcare facilities support more than one school or district, especially for rural classified areas. Participants identified an issue with the allotted training periods healthcare facilities' provided for availability. Staffing shortages affect providing the appropriate level of healthcare (Bateman et al., 2021). The staffing of a healthcare facility is directly proportional to the healthcare facility's ability to assist school districts. School Health Science educators find meeting the work-based learning program's hourly requirements challenging. Furthermore, looking at student involvement projections, this is a considerable barrier for school districts.

Participants also stressed their challenges with scheduling events to meet all requirements. Some participants stated difficulties with academia demands for student participation during scheduled class time. Others stated difficulty scheduling learning events due to student extracurricular activities for the "employment" and "work-like

experience" categories. This result aligns with the literature stating that students engage teachers and coaches to resolve conflicts between academics and extracurricular activities (Dutton, 2019). The school and health science educators must provide student services to address such scheduling issues.

Recommendation for Finding 2. Scheduling events is challenging the more parties that are involved. The researcher recommends that the school districts and supporting organizations review the academic credit limitations for work-based learning events. Currently, for a portion of the "visits to the workplace" and "work-like experiences" categories, students must accomplish work-based learning tasks during the typical school day schedule. Lengthy commute distances limit the time to accomplish work-based learning tasks by increasing student time off campus while influencing attendance in other classes or extracurricular activities. This result aligns with the literature stating that students engage teachers and coaches to resolve conflicts between academics and extracurricular activities (Dutton, 2019).

Furthermore, revising the academic credit for events could reduce the extracurricular activities portion of the identified barrier. These extracurricular activities enhance the student experience during high school. A student should not have to choose between the health science program, athletics, band, or academic clubs. Allowing other timeframes for work-based learning to earn academic credit might elevate or minimize the schedule conflict effects on the implementation of programs.

Finding 3. Access to healthcare facilities is a tertiary barrier to health science work-based learning programs.

The participants identified access to healthcare facilities as another barrier to implementing health science work-based learning programs. In Mississippi, some schools are not within commuting distance of healthcare systems that can support work-based learning. In rural areas, healthcare facilities are limited in capability. In addition, staffing healthcare professional in rural areas is very challenging. Facility and staffing capabilities restrict work-based learning programs.

This data also reflects in the transportation theme for student and academia barriers. Participants stated that students did not have reliable transportation or could not afford the additional transportation costs. For academia, participants acknowledged that travel distances for some rural programs exceed 80 miles round trip, which increases the cost of transportation and exceeds current budgets. Combining the lengthy travel distance and capability of healthcare facilities proves an intimidating barrier for the participants' health science work-based learning programs.

Conclusion for Finding 3. Health Resources and Sevices Administration manages a program to classify facilities in communities and areas as Health Professional Shortage Area, Medically Underserved, and Governor Designated (HRSA, 2021). The U.S. has a large portion of counties classified as shortage areas (HSPA Acumen Inc., 2021). With many rural areas, Mississippi reflects a higher percentage of shortage areas (HSPA Acumen Inc., 2021). The study results confirm that access to healthcare facilities is a considerable barrier.

Participants reflected that having access to appropriate healthcare facilities was a burden. Living in rural areas impedes students, academia, and industry regarding access to capable healthcare facilities. Recruitment in rural and underserved areas is difficult due to the low applicant desire to reside in such areas (Bateman et al., 2021). The participants state that the effects on allied health recruitment begin with these work-based learning programs. The data suggest a potential 350% increase in student participation by removing barriers to "employment." The projection for future participation reflects access as a substantial barrier. Facing an already historical staffing shortage and stressed pipelines (Harpez, 2022), school districts and the healthcare industry need to address these concerns to increase the recruitment of rural facilities.

Recommendation for Finding 3. The researcher recommends that school districts and supporting organizations engage with surrounding healthcare systems to educate them on the work-based learning requirements and identify their facilities' capabilities. The collaboration should include the critical stakeholders of the school district and healthcare facility. The focus should reinforce the changes in the work-based learning programs by listing potential funding sources and detailed healthcare system capabilities. Since the work-based learning programs have changed slightly, this collaboration will assist the school districts in learning the facilities' capabilities while increasing the surrounding healthcare systems' knowledge of the work-based learning requirements.

In addition, the researcher recommends that the school districts and supporting organizations review current practices for student transportation that increase funding allocations. During the review, the school districts and supporting organizations must review the allocated budgets and potential transportation methods to minimize the

identified barriers. With the current changes to the work-based learning programs, previous budgets could limit the implementation of programs. In addition, the modes of transportation need reviewing to identify potential shortfalls and supplementary modes. Accurately allocating budgets and identifying more modes of transportation could minimize the influence of this finding.

Summary of Findings

The researcher detailed the three findings with the finding explained, the finding connected to the research, and recommended a potential resolution. Finding 1, healthcare restrictions, addressed the vaccination and age limitation for employment. Finding 2, schedule conflicts, showed the influence of the multiple influences of the student, academia, and industry schedules. Finding 3, access to healthcare facilities depicts the limitation on the capability of rural healthcare facilities. The research recommends the engagement of the school districts and supporting organizations to minimize the influences of the identified barriers. Therefore, the researcher will now explain the study's limitations.

Limitations of Study

The researcher identified several limitations within the study. First, the researcher currently works within the healthcare industry in Mississippi. With knowledge of the industry, the researcher employed several techniques to minimize the effect of personal bias. First, the researcher will include all data collected during the study. Using all the data is a strategy to limit researcher bias (Swanson and Holton, 2005). Swanson and Holton (2005) suggest that purposive sampling can source potential bias if the researcher selects the population and sample with the purpose in mind. The researcher provided all

Health Science educators in one state an opportunity to participate in the study. Next, the researcher recognized that participants could be reluctant to participate. According to Sauro (2016), the researcher needs to appeal to the intrinsic motivation of the potential participants in the welcome screen, describing the impact and result benefits. In the request for participation email and welcome screen of the questionnaire, the researcher explained the importance of the educators' expertise and the importance of the data to assist in solving potential issues in implementing work-based learning programs. In addition, the researcher engaged with the Mississippi Board of Education Health Science project supervisor for study support. With the governing body in support, educators' reluctance to participate should decrease.

Recommendations for Further Research

The current study collected the health science educators' perceptions of potential barriers to implementing work-based learning programs within school districts. The researcher recommends two future research projects: the first focuses on academia and the latter on the healthcare industry. The researcher suggests establishing the focus group agenda using the current data to shape the agenda.

The first project focuses on academia. Further research will provide a better understanding of the barriers identified. The research, conducted by the Mississippi State University Research and Curriculum Unit, should include a focus group with members from the school districts and students. The agenda and focus group approach should dive into the barriers to explain each barrier's influence and potential resolutions. After compiling the project results, the researcher should brief the school districts and

supporting organizations. Lastly, the researcher needs to publish the findings to ensure the socialization of the topics.

The second project focuses on industry. Further research is required to break down the identified barriers and their effects. The project should include a focus group with healthcare industry members within each workforce development area. The focus groups should use current data to begin the planning and focus group approach and examine each of the barriers identified. After compiling the project results, the researcher should brief the school districts, industry, and supporting organizations.

Furthermore, the researcher should publish the findings. The qualitative methodology of a focus group would provide an avenue for the researcher to detail and identify the gravity of each barrier.

Discussion

The researcher established the framework around the qualitative descriptive methodology. The flexibility of the structure allowed the researcher to capture the fundamental nature of the barriers to work-based learning. As Sandelowsky (2000) stated, the qualitative descriptive methodology fits well when the participants are practitioners and play an active role in the program execution and change management. The purposeful sampling of secondary health science educators supported the methodology, with all responses rapidly occurring within seven days.

Furthermore, the study explored the perceptions of health science educators of barriers to implementing a work-based learning program. Study participants willingly provided valuable insight into the challenges faced by students, academia, and industry partners. The results parallel concerns with healthcare requirements of vaccinations to

work in healthcare by industry and students. The healthcare industry recently faced a portion of staff choosing other employment options due to the vaccination requirements (Bateman et al., 2021). These results provide a foundation for other researchers to study and expand the barrier's root cause and potential resolutions for each barrier.

Summary

This chapter began with a summary of the study addressing the need to capture the educators' perceptions of barriers to implementing a work-based learning program. The researcher utilized a questionnaire with 26 questions to poll the health science educators within Mississippi school districts. Fifty participants identified several barriers to implementing their work-based learning programs.

Then, the researcher explained the three findings of the study: healthcare restrictions, schedule conflicts, and access to healthcare facilities. Healthcare restrictions on vaccinations and minimal working age prevent educators from implementing programs due to industry enforcement and student choice. In addition, schedule conflicts present a significant barrier between the student, academia, and industry. The difficulty in merging the schedule forces student to choose future employment over extracurricular activities. The third finding, access to healthcare facilities, depicts a barrier due to the lack of capability for local rural healthcare facilities, increasing commute distances to other facilities. The educators have limited timeframes to accomplish the training events as school districts mandate the accomplishment during class times. The research suggested the engagement of school districts and supporting organizations to minimize the influence of the findings while collaborating with the surrounding industry to promote change.

Next, the researcher addressed the study limitations of potential researcher bias and population. With the researcher's employment within the healthcare industry, a potential bias could arise from previous knowledge. The researcher acknowledged the limitation of the population's potential reluctance to participate. The researcher enacted several methodologies to minimize the potential bias by including all data and purposive sampling in the study. The researcher secured the support of the Mississippi Department of Education Health Science program manager. This support proved critical to gaining the required number of participants within a short timeframe. The researcher proposed future research with focus groups. Focus groups allow the researcher to engage an individual and expand on the answers by interpreting their own words and voices. Another research proposal was a focus group with academia and industry. These focus groups should break down the barriers to explain the gravity and potential resolutions. Lastly, the researcher discussed the overall study experience by detailing the population's willingness to participate and the richness of the data and findings.

The researcher believes this study's results, findings, and recommendations can affect positive change in health science work-based learning programs. The researcher also understands that this study could influence change within other industry pathways within career and technical education. Furthermore, the researcher imagines that future research will further improve work-based learning programs, thus preparing the students for the workplace and making informed career decisions.

APPENDIX A - Permission to Access Population

Re: Survey Support for Dissertation

Deanna Dunaway <ddunaway@mdek12.org>

Tue 5/31/2022 8:27 AM

To: Daniel Harrison <Daniel.D.Harrison@usm.edu>

Deano,

Thank you for allowing the Secondary Health Science teachers to participate in your Work Based Learning Barriers survey. I will gladly pass the survey along to all health science and sports medicine teachers.

DEANNA DUNAWAY RN , Program Supervisor
Health Sciences & Sports Medicine
Office of Career and Technical Education
Mississippi Department of Education
601-359-2371 | mdek12.org

MISSISSIPPI DEPARTMENT OF EDUCATION

APPENDIX B - Request for Participation in Pilot Questionnaire

From: Daniel Harrison

Sent: Saturday, July 9, 2022 7:21 PM

To:

Subject: FW: Participation Requested in a Questionnaire Pilot Test

Good afternoon,

My name is Deano Harrison. I am a doctoral candidate at the University of Southern Mississippi in the School of Leadership. I request your participation in a pilot test for a questionnaire I intend to use for my dissertation. Below is a brief description of the purpose and study. The results from this test will not be used in data collection or analysis. Your feedback is requested to ensure the questionnaire formatting and questions are easily understood by potential respondents. This research is pending approval by the Institutional Review Board (Protocol #22-989). Pilot Questionnaire results will not reflect in the results of the study.

Your participation is entirely voluntary, and your information will remain anonymous.

Dissertation: Barriers to Implementing Work-based Learning Programs: A Health Science Educator Perspective.

Purpose: This investigation explores perceived barriers of the Health Science cluster work-based learning programs by collecting educator perceptions of their program barriers for success.

Description of Study: The researcher will be using a questionnaire to gather information on the perceived barriers to work-based learning programs. The 23-question questionnaire will take approximately 20 minutes, comprising multiple-choice, fill-in-the-blank, and open-ended text-type questions. No invasive techniques will be used, nor will this questionnaire require personal or confidential information to be provided.

If there are any questions, feel free to contact me by email: Daniel.d.harrison@usm.edu.

Link to questionnaire: Good afternoon,
My name is Deano Harrison. I am a doctoral candidate at the University of Southern Mississippi in the School of Leadership. I request your participation in a pilot test for a questionnaire I intend to use for my dissertation. Below is a brief description of the purpose and study. The results from this test will not be used in data collection or analysis. Your feedback is requested to ensure the questionnaire formatting and

questions are easily understood by potential respondents. This research has been approved by the Institutional Review Board (Protocol #22-989).

Your participation is entirely voluntary, and your information will remain anonymous.

Dissertation: Barriers to Implementing Work-based Learning Programs: A Health Science Educator Perspective.

Purpose: This investigation explores perceived barriers of the Health Science cluster work-based learning programs by collecting educator perceptions of their program barriers for success.

Description of Study: The researcher will be using a questionnaire to gather information on the perceived barriers to work-based learning programs. The questionnaire will take approximately 20 minutes, comprising multiple-choice, fill-in-the-blank, and open-ended text-type questions. No invasive techniques will be used, nor will this questionnaire require personal or confidential information to be provided.

If there are any questions, feel free to contact me by email: Daniel.d.harrison@usm.edu.

Link to questionnaire:
https://usmuw.co1.qualtrics.com/jfe/form/SV_1Mv0FToHKw4YRVA

Or the QRC:

Thank you in advance for your participation.
Deano Harrison
228 243 5737

APPENDIX C - Pilot Test Questionnaire

Barriers to Implementing Work-Based Learning Programs: A Health Science Educator Perspective

Project Title: Barriers to Implementing Work-Based Learning Programs: A Health Science Educator Perspective - Survey Pilot Test

Principal Investigator: Deano Harrison 228-243-5737
Email: daniel.d.harrison@usm.edu
College, School and Program: University of Southern Mississippi, School of Leadership, Human Capital Development Doctorate

RESEARCH DESCRIPTION

Purpose: This investigation aims to examine perceived barriers of the Health Science career pathway work-based learning programs by collecting educator perceptions.

Description of Study: The researcher will be using a questionnaire to gather information on the perceived barriers to work-based learning programs. The questionnaire will take approximately 20 minutes to complete comprising of multiple choice and open-ended text type questions. No invasive techniques will be used, nor will this survey require personal or confidential information be provided.

Benefits: There are no direct benefits from participating in this study. No payment will be made for participation in this study. However, all participants have the option to enter a raffle for one (1) of five (5) $100.00 gift cards. If yes is selected to enter raffle, the participant is sent to another survey to provide name and phone number. With 50 projected participants, there is a 1 and 10 chance of winning a gift card. Winners will be contacted by text for delivery information. Furthermore, the study results will potentially benefit the Career and Technical Education community within Mississippi.

Risks: There are no known risks in participating in this study.

Confidentiality: All data gathered from the survey will be kept on a single password-protected personal desktop computer. The data will be stored for 3 years at the end of this study. The data will potentially be used in future study planning.

Alternative Procedures: There are no alternative procedures associated with this study.

Participant's Assurance: This study and this consent form have been reviewed and approved by the Institutional Review Board (Protocol #22-989), ensuring that research projects involving human subjects follow federal regulations.

Any questions or concerns about rights as a research participant should be directed to:

Chair of the Institutional Review Board
The University of Southern Mississippi
118 College Drive #5125
Hattiesburg, MS 39406-0001
Phone Number: 601-266-5997

Any questions about this research project should be directed to the Principal Investigator using the contact information provided above.

I understand that participation in this project is entirely voluntary, and I may withdraw without penalty, prejudice, or loss of benefits at any time. All procedures to be followed and their purposes were explained to me. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected. Any new information that develops during the project will be provided to all sampled if that information may affect my willingness to continue participation in the project.

CONSENT TO PARTICIPATE IN RESEARCH By clicking "I consent" below, I give my consent to participate in this research project. Please close your browser now if you do not wish to participate in this study.

- ○ I consent (4)

1. What is your gender?

- ○ Male (1)
- ○ Female
- ○ Non-binary/third gender
- ○ Prefer not to say

2. What is your age?

- ○ 20 - 29
- ○ 30 - 39
- ○ 40 - 49
- ○ 50+

3. What is your associated race?

- ○ Asian (4)
- ○ Black/ African American (5)
- ○ Hispanic (6)
- ○ Latino (7)
- ○ Native American (8)
- ○ Pacific Islander (9)
- ○ White (10)
- ○ Other (11)
- ○ Two (2) or More (12)

4. What is your occupation?

- ○ Educator (4)
- ○ Other (6)

5. How many years of CTE experience do you possess?

- ○ 0-1 Year (4)
- ○ 2-5 Years (5)
- ○ 6-10 Years (6)
- ○ 10+ Years (7)

6. What is your CTE program's postal zip code?

_____

7. How many active students are enrolled in your CTE Health Science programs?

- ○ 1-15 (4)
- ○ 16-30 (5)
- ○ 30+ (6)

Please answer the following questions using the terms below.

Terms: The below list describes the categories used within the survey instrument as defined by S.F. Hamilton and M. A. Hamilton in "When Is Learning Work-Based" published May 1997.

"Visits to the Workplace" Category - includes job shadowing and tours which are short-term exposure to observing a worker.

"Work-Like Experiences" Category - provides volunteer and service-learning, unpaid internships, and student-run organizations that offer student-focused experiences in management and employment in a particular workplace.

"Employment" Category - includes apprenticeships, paid internships, cooperative education, and youth jobs that provide a long-term program with an earned wage.

8. Do you have an active work-based learning program at a local healthcare provider in the "Visits to the Workplace" category?

- ○ Yes (1)
- ○ No (2)

9. What student barriers prevent success in the "Visits to the Workplace" category work-based learning program?

_____

10. What academia barriers prevent success in the "Visits to the Workplace" category work-based learning program?

_____

11. What industry barriers prevent success in the "Visits to the Workplace" category work-based learning program?

_____

12. How many students are (would) participate in a work-based learning program at the local healthcare provider in the "Visits to the Workplace" category?

_____

13. Do you have an active work-based learning program at a local healthcare provider in the "Work-Like Experiences" category?

- ○ Yes
- ○ No

14. What student barriers prevent success in the "Work-Like Experiences" category work-based learning program?

_____

15. What academia barriers prevent success in the "Work-Like Experiences" category work-based learning program?

_____

16. What industry barriers prevent success in the "Work-Like Experiences" category work-based learning program?

_____

17. How many students are(would) participate in a work-based learning program at the local healthcare provider in the "Work-Like Experiences" category?

_____

18. Do you have an active work-based learning program at a local healthcare provider in the "Employment" category?

- ○ Yes
- ○ No

19. What student barriers prevent success in the "Employment" category work-based learning program?

_____

20. What academia barriers prevent sucess in the "Employment" category work-based learning program?

_____

21. What industry barriers prevent sucess in the "Employment" category work-based learning program?

_____

22. How many students are(would) participate in a work-based learning program at the local healthcare provider in the "Employment" category?

_____

23. What device type was used to complete survey instrument?

- ○ Laptop/Tablet Computer
- ○ Desktop Computer
- ○ Phone

24. Where the questions easy to read and understand?

- ○ Yes
- ○ No

Display This Question:
If 24. Where the questions easy to read and understand? = No

24a. Please list difficult questions and suggestions to clarify.

_____

25. Where there any navigational issues while taking the survey?

- ○ Yes
- ○ No

Display This Question:
If 25. Where there any navigational issues while taking the survey? = Yes

25a. Please list the navigational issues.

_____

26. Please provide any feedback and recommendations for survey improvement.

_____

27. Would you like to participate in the gift card drawing? (Selecting no, removes any chance of gift card award)

- ○ Yes
- ○ No

APPENDIX D - IRB Approval

Office *of* Research Integrity

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

118 COLLEGE DRIVE #5116 • HATTIESBURG, MS | 601.266.6756 | WWW.USM.EDU/ORI

NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident submission on InfoEd IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER:	22-989
PROJECT TITLE:	BARRIERS TO IMPLEMENTING A WORK-BASED LEARNING PROGRAM: A HEALTH SCIENCE EDUCATOR PERSPECTIVE
SCHOOL/PROGRAM	School of Leadership
RESEARCHERS:	PI: Daniel Harrison Investigators: Harrison, Daniel~Brown, Hamett Q.~
IRB COMMITTEE ACTION:	Approved
CATEGORY:	Expedited Category
PERIOD OF APPROVAL:	27-Jul-2022 to 26-Jul-2023

Donald Sacco, Ph.D.
Institutional Review Board Chairperson

APPENDIX E - Invitation to Participate in the Study

From: Daniel Harrison
Sent: Thursday, July 28, 2022 9:38 PM
To: [redacted]
Subject: Complete Questionnaire for a Chance to Win One (1) of Five (5) $100.00 Gift Cards

Good afternoon,
My name is Deano Harrison. I am a doctoral candidate at the University of Southern Mississippi in the School of Leadership. You are invited to participate in a questionnaire examining potential barriers to implementing work-based learning programs. Your expertise is vital to future work-based learning program success in Mississippi. This research has been approved by the Institutional Review Board (Protocol # 22-989).

The questionnaire requires approximately 15-20 minutes to complete. You can use any electronic device with internet access to complete the questionnaire. The online questionnaire will close when there are 50 completed questionnaires or at midnight on 11 Aug 2022.

After completing the questionnaire, please use the link to input your name and preferred email for contact if you would like to enter a drawing to win a gift card. Five (5) $100.00 gift cards (10% of participants) are available for questionnaire participants if selected after data collection.

Your participation is entirely voluntary, and your information will remain anonymous.

If there are any questions, feel free to contact me by email at Daniel.d.harrison@usm.edu or by phone at 228-243-5737.

Questionnaire Link: Please click or copy the link below into your internet browser:

Link to questionnaire: Barriers to Implementing Work-Based Learning Programs (qualtrics.com)

Or the QRC:

Thank you in advance for your participation.
Deano Harrison
228 243 5737

APPENDIX F - Participant Questionnaire Instrument

Barriers to Implementing Work-Based Learning Programs: A Health Science Educator Perspective

Project Title: Barriers to Implementing Work-Based Learning Programs: A Health Science Educator Perspective

Principal Investigator: Deano Harrison 228-243-5737
Email: daniel.d.harrison@usm.edu
College, School and Program: University of Southern Mississippi, School of Leadership, Human Capital Development Doctorate

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Benefits: There are no direct benefits from participating in this study. No payment will be made for participation in this study. However, all participants have the option to enter a raffle for one (1) of five (5) $100.00 gift cards. If yes is selected to enter raffle, the participant is sent to another survey to provide name and phone number. With 50 projected participants, there is a 1 and 10 chance of winning a gift card. Winners will be contacted by text for delivery information. Furthermore, the study results will potentially benefit the Career and Technical Education community within Mississippi.

Risks: There are no known risks in participating in this study.

Confidentiality: All data gathered from the questionnaire will be kept on a single password-protected personal desktop computer. The data will be stored at the end of this study for use in future studies.

Alternative Procedures: There are no alternative procedures associated with this study.

Participant's Assurance: This study and this consent form have been reviewed and approved by the Institutional Review Board (Protocol #22-989), ensuring that research projects involving human subjects follow federal regulations.
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Direct any questions about this research project to the Principal Investigator using the contact information provided above.

I understand that participation in this project is entirely voluntary, and I may withdraw without penalty, prejudice, or loss of benefits at any time. All procedures to be followed and their purposes were explained to me. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected. Any new information that develops during the project will be provided to all sampled if that information may affect my willingness to continue participation in the project.

CONSENT TO PARTICIPATE IN RESEARCH By clicking "I consent" below, I give my consent to participate in this research project. Please close your browser now if you do not wish to participate in this study.

- ○ I consent
- ○ I do not consent

Skip To: End of Survey If Project Title: Barriers to Implementing Work-Based Learning Programs: A Health Science and Sports Me = I do not consent

1. What is your gender?

- ○ Male (1)
- ○ Female (2)
- ○ Non-binary/third gender (3)
- ○ Prefer not to say (4)

2. What is your age?

- ○ 20 - 29 (5)
- ○ 30 - 39 (6)
- ○ 40 - 49 (7)
- ○ 50+ (8)

3. What is your associated race?

- ○ Asian (4)
- ○ Black/ African American (5)
- ○ Hispanic (6)
- ○ Latino (7)
- ○ Native American (8)
- ○ Pacific Islander (9)
- ○ White (10)
- ○ Other (11)
- ○ Two (2) or More (12)

4. What is your occupation?

- ○ Educator (4)
- ○ Other (6)

5. How many years of CTE experience do you possess?

- ○ 0 - 1 Year (4)
- ○ 2 - 5 Years (5)
- ○ 6 - 10 Years (6)
- ○ 10+ Years (7)

6. What is your CTE program's postal zip code?

_____

7. How many active students are enrolled in your CTE Health Science programs?

- ○ 1 - 15 (4)
- ○ 16 - 30 (5)
- ○ 30+ (6)

The below term describes the category used within the question block as defined by S.F. Hamilton and M. A. Hamilton in "When Is Learning Work-Based," published May 1997.

"Visits to the Workplace" Category - includes job shadowing and tours which are short-term exposure to observing a worker.

Barrier definition for study:

Student Barrier: Any deterrent, actual or perceived, which prevents a student from participating in a work-based learning program.

Academia Barrier: Any deterrent, actual or perceived, which prevents an academic Institution from implementing or executing a work-based learning program.

Industry Barrier: Any deterrent, actual or perceived, which prevents an industry partner

from participating in a work-based learning program.

8. Do you have an active work-based learning program at a local healthcare provider in the "Visits to the Workplace" category?

- ○ Yes (1)
- ○ No (2)

9. What student barriers prevent success in the "Visits to the Workplace" category work-based learning program?

_____

10. What academia barriers prevent success in the "Visits to the Workplace" category work-based learning program?

_____

11. What industry barriers prevent success in the "Visits to the Workplace" category work-based learning program?

_____

12. How many students participate in your work-based learning program at the local healthcare provider in the "Visits to the Workplace" category?

_____

13. How many students would participate in your work-based learning program at the local healthcare provider in the "Visits to the Workplace" category if mentioned barriers were removed?

_____

The below term describes the category used within the question block as defined by S.F. Hamilton and M. A. Hamilton in "When Is Learning Work-Based," published May 1997.

"Work-Like Experiences" Category - provides volunteer and service-learning, unpaid internships, and student-run organizations that offer student-focused experiences in management and employment in a particular workplace.

Barrier definition for study:

Student Barrier: Any deterrent, actual or perceived, which prevents a student from participating in a work-based learning program.

Academia Barrier: Any deterrent, actual or perceived, which prevents an academic Institution from implementing or executing a work-based learning program.

Industry Barrier: Any deterrent, actual or perceived, which prevents an industry partner from participating in a work-based learning program.

14. Do you have an active work-based learning program at a local healthcare provider in the "Work-Like Experiences" category?

- ○ Yes (1)
- ○ No (2)

15. What student barriers prevent success in the "Work-Like Experiences" category work-based learning program?

_____

16. What academia barriers prevent success in the "Work-Like Experiences" category work-based learning program?

_____

17. What industry barriers prevent success in the "Work-Like Experiences" category work-based learning program?

_____

18. How many students participate in your work-based learning program at the local healthcare provider in the "Work-Like Experiences" category?

_____

19. How many students would participate in your work-based learning program at the local healthcare provider in the "Work-Like Experiences" category if the mentioned barriers were removed?

_____

The below term describes the category used within the question block as defined by S.F. Hamilton and M. A. Hamilton in "When Is Learning Work-Based," published May 1997.

"Employment" Category - includes apprenticeships, paid internships, cooperative education, and youth jobs that provide a long-term program with an earned wage.

Barrier definition for study:

Student Barrier: Any deterrent, actual or perceived, which prevents a student from participating in a work-based learning program.

Academia Barrier: Any deterrent, actual or perceived, which prevents an academic Institution from implementing or executing a work-based learning program.

Industry Barrier: Any deterrent, actual or perceived, which prevents an industry partner from participating in a work-based learning program.

20. Do you have an active work-based learning program at a local healthcare provider in the "Employment" category?

- ○ Yes (1)
- ○ No (2)

21. What student barriers prevent success in the "Employment" category work-based learning program?

_____

22. What academia barriers prevent success in the "Employment" category work-based learning program?

_____

23. What industry barriers prevent success in the "Employment" category work-based learning program?

_____

24. How many students participate in your work-based learning program at the local healthcare provider in the "Employment" category?

_____

25. How many students would participate in your work-based learning program at the local healthcare provider in the "Employment" category if mentioned barriers were removed?

_____

26. Would you like to participate in the gift card drawing?

- ○ Yes (1)
- ○ No (2)

Skip To: End of Survey If 26. Would you like to participate in the gift card drawing? = No

APPENDIX G - Invitation to Participate in Study Reminder

From: Daniel Harrison
Sent: Sunday, July 31, 2022 8:55 PM
To: [redacted]
Subject: Reminder - Complete Questionnaire for a Chance to Win One (1) of Five (5) $100.00 Gift Cards

Good morning,

This email serves as a reminder of the invitation to participate in a research project.

My name is Deano Harrison. I am a doctoral candidate at the University of Southern Mississippi in the School of Leadership. You are invited to participate in a questionnaire examining potential barriers to implementing work-based learning programs. Your expertise is vital to future work-based learning program success in Mississippi. This research has Institutional Review Board approval (Protocol #22-989).

The questionnaire requires approximately 15-20 minutes to complete. You can use any electronic device with internet access to complete the questionnaire. The online questionnaire will close at midnight on 11 Aug 2022.

After completing the questionnaire, please use the link to input your name and preferred email for contact if you would like to enter a drawing to win a gift card. Five (5) $100.00 gift cards are available for questionnaire participants if selected after data collection.

Your participation is entirely voluntary, and your information will remain anonymous.

If there are any questions, feel free to contact me by email at Daniel.d.harrison@usm.edu or by phone at 228-243-5737.

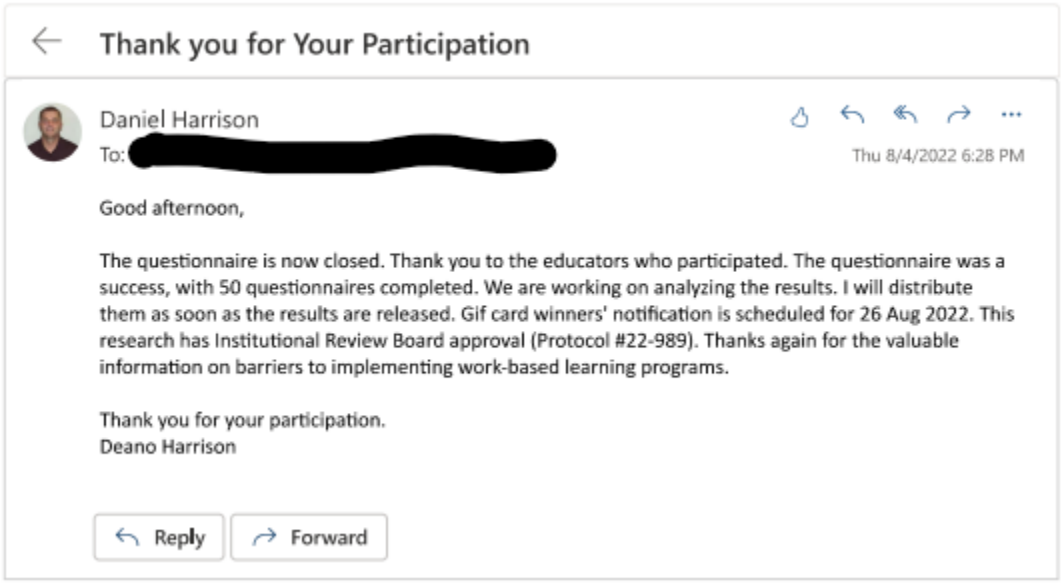
Questionnaire Link: Please click or copy the link below into your internet browser:

Link to the questionnaire: https://usmuw.co1.qualtrics.com/jfe/form/SV_1UoCcheNchBeh2C

Or the QRC:

Thank you in advance for your participation.
Deano Harrison
228 243 5737

APPENDIX H - Thank You for the Study Participation Email



Thank you for Your Participation

Daniel Harrison

To: [redacted]

Thu 8/4/2022 6:28 PM

Good afternoon,

The questionnaire is now closed. Thank you to the educators who participated. The questionnaire was a success, with 50 questionnaires completed. We are working on analyzing the results. I will distribute them as soon as the results are released. Gif card winners' notification is scheduled for 26 Aug 2022. This research has Institutional Review Board approval (Protocol #22-989). Thanks again for the valuable information on barriers to implementing work-based learning programs.

Thank you for your participation.
Deano Harrison

Reply Forward

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