

HEALTH SCIENCES INSTRUCTOR SELF-EFFICACY AND PROFESSIONAL
DEVELOPMENT EXPERIENCES: A PHENOMENOLOGICAL STUDY

by

Melanie Elizabeth Castle

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

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Abstract

The purpose of this phenomenological study aimed to understand the lowered self-efficacy of higher education health sciences faculty at the community college two-year degree level due to deficient professional development in a Mid-Atlantic state. The central research question guiding this study was: What are the professional development experiences of higher education health sciences faculty that affect self-efficacy? The theory guiding this study was Bandura's social cognitive theory, as it focuses on the behavior determinant of self-efficacy of the participants. A hermeneutic phenomenological methodology was used for this qualitative research design. Criterion sampling was used to interview fourteen faculty individually, followed by two focus groups to gather a deep, thick, and rich understanding of their shared experience. Direct non-participant observations of four simulated labs facilitated by the faculty and classroom instruction were also conducted to collect data for the study. I analyzed the data for a thematic analysis to distinguish principal themes of personal context, behavior modifications, and environmental influences among the participants. The results of this study concluded that health science faculty and college administration have the same goals of student success but different paths regarding the professional development needed, and a balance of the constructs of self-efficacy (triadic reciprocity), is necessary to increase self-efficacy and work collaboratively. These findings will provide context to the specific field of health sciences regarding their unique relationship with professional development and fill a gap in the literature regarding the self-efficacy of health science faculty amidst deficient professional development.

Keywords: self-efficacy, health sciences, higher education, professional development, triadic reciprocity

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Dedication

I dedicate this dissertation to God, my creator, from whom all good things flow.

To my children, Taylor, and Korey, may you pursue knowledge throughout your lives.

To my husband, Chris, your undying support, and love have always been my guiding light to pursue my educational journey.

Acknowledgments

I would like to acknowledge Dr. Breck Perry and Dr. Christian Raby who directed and mentored me with professionalism and poise toward the accomplishment of the completion of this dissertation. Thank you for your confidence and encouragement along the way.

I would also like to thank all the educators that developed me throughout this journey as well as all the educators in the field of health science that work selflessly to mold frontline healthcare patient advocates.

Table of Contents

Abstract	3
Copyright Page.....	4
Dedication	5
Acknowledgments.....	6
Table of Contents	7
List of Tables	12
List of Figures	13
List of Abbreviations	14
CHAPTER ONE: INTRODUCTION.....	15
Overview.....	15
Background.....	16
Historical Context	17
Social Context.....	18
Theoretical Context.....	19
Problem Statement	21
Purpose Statement.....	22
Significance of the Study	22
Research Questions	24
Central Research Question.....	24
Sub-Question One.....	25
Sub-Question Two	25
Sub-Question Three	25

Definitions.....	26
Summary.....	26
CHAPTER TWO: LITERATURE REVIEW.....	28
Overview.....	28
Theoretical Framework.....	28
Self-efficacy.....	32
Related Literature.....	33
The Construct of Self-efficacy.....	35
Self-efficacy of Teachers.....	36
Self-efficacy of Health sciences Teachers.....	39
Problem-based Learning.....	40
Critical Thinking.....	41
Blended Learning.....	42
Health Care Faculty Self-efficacy with Blended Learning.....	43
Accessibility and Globalization through Online Learning.....	44
Accessibility in Health-Related Online Courses.....	45
Student Completion and Success.....	46
Student Completion and Success in Health Sciences.....	47
Instructor Efficacy in Student Engagement.....	48
Instructor Self-Efficacy in Instructional Strategies.....	49
Instructor Self-efficacy in Using Technology for Instruction.....	50
Faculty Training and Professional Development.....	53
Faculty Training and Professional Development of Health sciences Faculty.....	56

Summary	57
CHAPTER THREE: METHODS	59
Overview.....	59
Research Design.....	59
Research Questions.....	60
Central Research Question.....	60
Sub-Question One.....	60
Sub-Question Two	61
Sub-Question Three	61
Setting and Participants.....	61
Site	61
Participants.....	62
Researcher Positionality.....	62
Interpretive Framework	63
Philosophical Assumptions.....	64
Researcher’s Role	66
Procedures.....	67
Permissions	68
Recruitment Plan.....	68
Data Collection Plan	69
Individual Interviews Data Collection Approach	70
Focus Groups Data Collection Approach	73
Observation Data Collection Approach	75

	10
Data Synthesis.....	76
Trustworthiness.....	77
Credibility.....	77
Transferability.....	78
Dependability.....	79
Confirmability.....	79
Ethical Considerations.....	80
Summary.....	80
CHAPTER FOUR: FINDINGS.....	81
Overview.....	81
Participants.....	81
Results.....	83
Better Alignment.....	83
Proficiency Before Implementation.....	86
Training.....	90
Outlier Data and Findings.....	93
Research Question Responses.....	94
Central Research Question.....	95
Sub-Question One.....	95
Sub-Question Two.....	96
Sub-Question Three.....	96
Summary.....	98
CHAPTER FIVE: CONCLUSION.....	99

Overview.....	99
Discussion.....	99
Interpretation of Findings	100
Implications for Policy and Practice.....	104
Theoretical Implications	106
Empirical Implications.....	107
Limitations and Delimitations.....	108
Recommendations for Future Research.....	108
Conclusion	109
References.....	110
Appendix A.....	137
Appendix B.....	138
Appendix C.....	140
Appendix D.....	141
Appendix E.....	144
Appendix F.....	146
Appendix G.....	147
Appendix H.....	148

List of Tables

Table 1. Faculty Participants.....	82
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List of Figures

Figure 1. Model of Triadic Reciprocity.....	31
Figure 2. Model of Key Behavioral, Environmental, and Personal Processes.....	32
Figure 3. Themes and Subthemes.....	83

List of Abbreviations

Faculty Development Programs (FDP)

Learning Management System (LMS)

CHAPTER ONE: INTRODUCTION

Overview

Before the COVID-19 global pandemic that forced quarantine in 2020, where higher learning had no choice but to move to a modality of online learning, higher education health science faculty were already struggling with an ineffective yet longstanding pedagogical framework. During the pandemic, the struggle was put in the spotlight and magnified. Many theories are associated with why the current pedagogy is no longer effective such as an absence of critical thinking skills, more diverse student populations, increasing modalities of delivery, and an advanced technological student population (Berga et al., 2021; Geer et al., 2021; Regmi & Jones, 2020; Sarfaraz et al., 2020). However, amidst the theories, there was a missing component of how health science faculty were professionally developed to mitigate those changes, which in turn took a toll on their self-efficacy (Dumulescu & Mutiu, 2021). Perceived self-efficacy is pertinent to higher education faculty and students (Ma et al., 2021). Forthcoming, a comprehensive study is presented concerning the background of perceived self-efficacy and how it pertains specifically to higher education faculty in a two-year community college health science program. The topic of health sciences faculty self-efficacy impacts performance, policy, and pedagogy at the faculty curriculum levels, particularly regarding the professional development of the health science faculty (Keiller et al., 2022). It also impacts enrollment, retention, and completion at the administrative level (Almutairi, 2020). This hermeneutic phenomenological study aims to understand the lowered self-efficacy for higher education health sciences faculty at the community two-year college degree level amidst a deficiency of professional development in a mid-Atlantic state. Chapter One of this study focuses on offering groundwork for the research. The background was explored through historical, social, and

theoretical contexts accompanied by my inspiration to perform this vital research specific to my field. Following the background, the study's problem, purpose, and significance are succinctly stated and concluded with the research questions guiding the study.

Background

This study assesses and evaluates higher education health science faculty's perceived self-efficacy concerning a rapidly evolving technologically changed student population devoid of concurrent faculty development. Technological advances have significantly impacted students' cognition and critical thinking skills (Rauscher & Badenhorst, 2021). Research validates that higher education faculty must adapt to technology in online learning or even more advanced pedagogies (Lee & Tsai, 2008). The changes in how students learn have evolved from a parallel evolution of technology (Fernandez-Arias et al., 2021). In the field of health sciences education, before there was instant access to data and information, students successfully learned by methods such as hands-on problem-based learning, where critical thinking skills are developed by adapting to circumstances as they were presented (Kelley et al., 2019; Pu et al., 2019; Sistermans, 2020). Today, students have become accustomed to a different way of receiving information, and faculty have not been developed to deliver a new way for students to learn (Guoyan et al., 2021).

The literature identifies how curriculums should support student self-efficacy; however, ignoring lowered faculty self-efficacy, because of requiring new skills without professional development, results in little to no progress (Bandura, 2012). Additionally, while some literature explores faculty self-efficacy in four-year programs in higher education, such as medical and nursing programs, there are seldom reports of two-year institution programs, such as health sciences, which use the same methodologies (Jafari et al., 2020; Lyons et al., 2017).

Historical Context

The history of higher education has a sorted past, seemingly linked to the influence of social, cultural, political, intellectual, and economic points of view (Angula & Schneider, 2021). In a text written by Charles Dorn (2017), several higher education facilities were evaluated based on these perspectives and how the tenets are manifested based on different eras of the nation's history. Higher education also has evolved concerning access (Levy, 2019). In earlier centuries, higher education was accessible to the interested scholar, who shared the fruits of their learning within their communities. Today, broader access is seen as a benefit for the community, including minorities, women, immigrants, and the poor, to improve the common good (Dorn, 2017).

The history of health sciences higher education is of particular interest to this research. Three historical phases of health sciences higher education programmatic assessment evaluate its progression over time. Emergence, evolution, and entrenchment guide the literature when drawing from its historical path (Pearce & Tavares, 2021). The understanding that the entrenchment of pedagogies and curriculum of problem-based learning and competency-based programming assist the reader in understanding specific and unique instructors have led the charge of health sciences higher education over time. Health sciences programs and most medical and nursing education programs have evolved from technological advancements, yet the curriculum remained unchanged for instructors. Many instructors have had to abandon how they were taught in the field and are tasked with new online learning platforms (Peseta et al., 2018). As an outcome of recent changes in delivery, the low competence of recent graduates motivates academic leadership to explore ways to improve standards (Munangatire & McInerney, 2021).

The history relevant to this research is explicitly directed to health sciences higher education faculty's perceived self-efficacy, and how, if more institutionally supported, it may be connected to programmatic outcomes. In a rapidly changing technological learning population, faculty have been tasked with a need to integrate technology into a deep-rooted pedagogical delivery system without adequate training or resources (Lee & Tsai, 2008). Self-efficacy was introduced as a motivational behavior derived from a social cognitive theoretical framework (Bandura, 1986). By exploring the history of self-efficacy of health sciences instructors using this theoretical framework over time into the current technological era, the research takes shape to guide higher education programs.

Social Context

The relevant social context used to frame this study focuses on teacher self-efficacy in higher education health sciences programs. It is generally accepted and supported in the literature that the instructor's role is to teach and develop self-efficacy, specifically by developing critical thinking among health education students through commonly accepted practices of problem-based learning and competencies (Chang et al., 2022). Ensuring faculty are also maintaining self-efficacy and supporting that happening at an institutional level is limited in the literature. This decreasing self-efficacy may explain recent trends of procrastination and burnout in post-secondary faculty (Hall et al., 2019). Furthermore, this may affect student achievement (Prewett & Whitney, 2021).

Although technological advances that have manifested into a changed student population are not new nor irrelevant in the literature, the recent pandemic of CoVid-19 exacerbated the crisis and forced the conversation (Ma et al., 2021). Higher education facilities and clinical sites banning students from hands-on training limited and further elicited challenges for health

sciences faculty forcing them to use online technologies as the predominant platform of instructional methods (Ma et al., 2021). The absence of familiarity with online teaching and removing the face-to-face interactions with students for a considerable amount of time needed to be explored concerning teacher self-efficacy changes.

While instructors and students have since moved back into the classrooms and to clinical sites, higher education has recognized a new dynamic to explore in modality and delivery when it comes to instruction (Ma et al., 2021). While many realized the irreplaceable benefits of face-to-face modalities of higher education, there is a new learning platform to tap into for delivery. Commonly, however, these are decisions implemented from administrative practices and expected to be carried out by faculty without development (Prewett & Whitney, 2021). It is beneficial and logical to recognize methods to encourage faculty who experience career burnout and undesirable change because faculty who feel negative affect are inclined to have increased faculty attrition, decreased successful classroom organization practices, decreased student learning outcomes, and suffer depression (Klassen et al., 2010; Lauermaann & Konig, 2016; Shin et al., 2013).

Theoretical Context

Previous studies related to health sciences instructors and their professional development (Carpenter et al., 2019; Steinert et al., 2019) endeavored to establish the need for strengthening health science faculty's professional identities related to self-efficacy or motivational strategies. Additional studies (Eun, 2019; Paynter et al., 2022) related to the problem connect Bandura's (1997) social cognitive theory, more specifically as it pertains to self-efficacy, and Vygotsky's (1978) social constructivist theory, more specifically as it pertains to a cognitive apprenticeship on a stance of how-to best design faculty professional development programs at academic

institutions. This context was integrated into the health sciences faculty problem-based methodology and used to guide the reader to a better understanding of the type of pedagogy of the health sciences student learning experience. The theoretical constructs were chosen with the intention to inform the reader of the unique relationship between health sciences faculty and health sciences students. In other higher learning programs, educators have a degree in education, where a theoretical platform is in their wheelhouse. This theoretical background is a foundation of support for understanding how students learn. This is not the case for health sciences instructors at the forefront of their teaching experience (Mikkonen et al., 2018).

Concerning the student's experience in health sciences and how their learning styles have evolved within technological advancements, Vygotsky's (1978) contributions to the social constructivist theory were the framework utilized. More recently, educational frameworks have appeared in the research regarding constructivist learning theories (Nsonwu et al., 2020). Freire (2000) introduces metaphors such as acquiring knowledge through 'banking' and 'kitchen,' which is viewed as an oppressive method and starts the conversation of a need to transform this type of education methodologies. Specifically, the health sciences programming pedagogy adapts to cognitive apprenticeship theory (Lyons et al., 2017). Cognitive apprenticeship has been integrated into the scaffolding of health sciences education. This research was dissected as to whether it is still the most effective application for this context, whether it is only the self-efficacy that needs to be nurtured, or if both self-efficacy and cognitive apprenticeship need reform. It seems necessary to include this additional theoretical context for the reader to have a holistic understanding of how the student must be developed by the health science faculty to be able to think critically when faced with numerous variables of patient care.

Problem Statement

The problem is that higher education health science faculty do not have a foundation of how people learn when they begin teaching or an understanding of how to adapt to an advanced technological generation and changing pedagogies, and in turn, lowering self-efficacy (Dumulescu & Mutiu, 2021; Regmi & Jones, 2020; Sarfaraz et al., 2020). Recent research is in abundance regarding nursing, and medical student program faculty perceived lowered self-efficacy (Berga et al., 2021; Foster & Bernstein, 2021; Geer et al., 2021; Virani et al., 2020). In health sciences academia, there is a need to add to the literature and understanding of lowered self-efficacy for higher education health sciences faculty at the community two-year college level amidst a deficiency of professional development for educating current and future health sciences faculty and higher education leadership. Health sciences faculty in higher learning need to be able to research theories, empirical data, and paradigms specific to their field of work amongst a technological generation of the student population that no longer achieves cognition through problem-based learning structured curriculum (Hasanpour et al., 2018). This study aimed to develop that literature gap to avoid lowered self-efficacy (Hall et al., 2019).

This hermeneutic phenomenological study aimed to understand lowered self-efficacy for higher education health sciences faculty at a community two-year college degree level amidst a deficiency of professional development. Understanding the phenomenon is to cultivate themes and translate the meaning of those experiences into logical and rational examples for practical purposes and potential studies (Creswell & Poth, 2018). A qualitative hermeneutic phenomenological study that describes health sciences faculty, specifically in a community college, was scarcely identified in the literature search.

Purpose Statement

The purpose of this phenomenological study was to understand the lowered self-efficacy for higher education health sciences faculty at the community college two-year degree level amidst deficient professional development in a mid-Atlantic state. At this stage in the research, lowered self-efficacy for higher education health sciences faculty is generally defined as an examination of human behavior based on determinants of perceived self-efficacy (Bandura, 1982a, 1986, 2001). It was the goal of this research to examine the relationship of self-efficacy to professional development.

The theories that guide this research are Bandura's (1986) social cognitive theory and Vygotsky's (1978) social constructivist theory. Bandura's (1997) social cognitive theory, in the context of the self-efficacy constructs of the triadic reciprocity, illustrates that the external factors of changes specific to the student population, technological advances, changing pedagogies, and deficient professional development are essential to consider when academia desires positive personal and professional organizational success. This theory is related to increased faculty efficacy related to higher outcomes (Carpenter et al., 2019; Steinert et al., 2019). The participants' descriptions of their experiences of the phenomenon were analyzed through the lens of the constructs of self-efficacy of personal, behavioral, and environmental factors (Bandura, 1997).

Significance of the Study

This study contributed to the understanding of how health sciences faculty self-efficacy is impacted by a lack of professional development in pedagogical methods. Administrators, faculty, and students will benefit from the results of this research because it will highlight the salient traits of the experiences and behaviors of faculty based on insufficient professional development

to develop health sciences instructors pedagogically moving forward. This section will define the effects of this research in grander detail amongst the theoretical, empirical, and practical perspectives.

The theoretical significance of this study will contribute to the theoretical underpinnings of how people learn. Throughout history, theorists have challenged previous theories of how people learn, resulting in several accepted constructs that learners still use today (Dirksen, 2016; Schunk, 2020). Applying the same principles of how student self-efficacy correlates with achievement to those tasked with teaching in a changing learning environment (Bandura, 1986) will benefit the field.

The empirical research will support health science-specific pedagogies by evaluating similar curriculums and methodologies for medical students and nursing programs. This study focuses on health sciences faculty's perceived self-efficacy to contribute its findings to the literature. The significance of narrowing the focus to health sciences is that most nursing and medical student programs are delivered in four-year institutions. This study therefore contributes to the literature regarding two-year academic programs. Health sciences programs are primarily offered through two-year institutions. Therefore, this research also contributes to the two-year institution faculty, which provides a more diverse non-traditional student population. The non-traditional student of two-year institutions does not experience the on-campus life that four-year institutions experience since there are no campus living opportunities.

The practical significance of this study contributes to the development of health sciences faculty and higher education at two-year community colleges as they construct professional development programming specific to increasing self-efficacy in pedagogical methods rather than their specific subject matter context. Health science faculty need to obtain professional

development outside their professional subject matter expertise and more towards pedagogical methods that adapt to a changing student population to benefit in the field of academia and health careers. The results and findings that focus attention on faculty experiences that lack pedagogical expertise will guide professional development programming and a supportive academic culture affecting positive change for faculty and enrollment, retention, and completion.

Research Questions

This qualitative hermeneutical phenomenological study aimed to understand the lowered self-efficacy for higher education health sciences faculty at the community college two-year degree level amidst deficient professional development in a mid-Atlantic state. Assessing health science faculty in two-year higher education programs of perceived self-efficacy offers understanding and vision into the professional development of these instructors who experience frustration and burnout (Hall et al., 2019). Furthermore, evaluating faculty self-efficacy with the intent to improve it provides better insight into how it correlates to improved student outcomes. The following central research and sub-questions directed this study.

Central Research Question

What are the professional development experiences of higher education health sciences faculty that affect self-efficacy?

This study has implications of developing programming to foster the development of health sciences faculty that are subject matter experts first with little to no pedagogical development yet held to the same expectations of student outcomes of other general education faculty. This central research question allowed me to establish that academia does foster the professional development of faculty; however, when it pertains to health sciences faculty, further professional development is warranted specific to improving self-efficacy as an instructor, not

just as a subject matter expert. This research question aimed to generalize themes related to health science faculty's motivation when selecting professional development opportunities (Creswell & Poth, 2018).

Sub-Question One

What personal experiences of higher education health sciences faculty affect self-efficacy?

This study used the lens of Bandura's (1997) self-efficacy constructs of triadic reciprocity to understand the external factors that health sciences faculty encounter and how they are motivated by these experiences to make choices regarding development. This sub-question is specific in relating to the health sciences faculty lack of (personal) motivation to choose development that would assist them in pedagogical knowledge.

Sub-Question Two

What behavioral experiences of higher education health sciences faculty affect self-efficacy?

Continuing with the triadic reciprocity lens, this sub-question was tailored to understand the health sciences faculty's decision (behavior) to use a stagnant curriculum amongst a changing student population when presented with decreased student outcomes. Understanding how faculty development translates into improved student instruction will support the research.

Sub-Question Three

What environmental experiences of higher education health sciences faculty affect self-efficacy?

Lastly, in the context of the third construct of self-efficacy, environmental factors, I sought to identify the external factors contributing to the health science faculty's lowered self-

efficacy. It is essential to understand the context of the environment where the behavior takes place. By exploring how health sciences faculty and students are affected by their environment, I gained a richer and deeper understanding of the stances, values, and positions the participants hold.

Definitions

1. *Self-efficacy* – Self-efficacy is defined as one’s perception of their ability to complete responsibilities which develop their confidence in making decisions (Bandura, 1997).
2. *Health sciences* – Health sciences is an interdisciplinary field that involves applying concepts from the natural and social sciences of health, disease, and healthcare. Health science includes a wide range of careers from patient care to medical testing and healthcare management (All Allied Health, n.d.).
3. *Faculty development* – Faculty development contains all actions that faculty seek to increase their knowledge, traits, and performance as instructors and experts in their field (Steinert, 2014).

Summary

Over time, a change in how students learn in an advanced technological era has impacted health sciences higher education faculty's perceived self-efficacy for lack of proper development to adapt to these changes. Moderators and factors mitigating these changes lend themselves to a more advanced technological student base and forced transitions for faculty to online learning environments and more advanced pedagogies in education. This study assessed and evaluated higher education health sciences faculty's perceived self-efficacy concerning a rapidly evolving technologically changed student population amidst deficient faculty development.

Health sciences faculty in higher learning need to be able to research theories, empirical data, and paradigms specific to their field of work amongst a technological generation of a student population that no longer achieves learning through a problem-based learning structured curriculum (Hasanpour et al., 2018). This study aimed to develop that literature gap to avoid lowered self-efficacy and burnout (Hall et al., 2019). In the upcoming chapters, a qualitative hermeneutic phenomenological study sought to understand the perceived lowered self-efficacy for higher education health sciences faculty at the community college two-year degree level amidst deficient faculty development.

CHAPTER TWO: LITERATURE REVIEW

Overview

A systematic review of the literature was conducted to explore the problem of health sciences higher education community college programs. Specifically, the review focuses on the faculty's perceptions of self-efficacy concerning critical thinking changes in a technological generation. This chapter reviews current literature related to the topic of study regarding the theories relevant to self-efficacy, a construct rooted in the social cognitive theory. Following the theoretical framework is a synthesis of recent literature on changes in health sciences students and self-efficacy of the health sciences faculty, amongst an evolution of virtually delivered curriculum demands in the field. In the end, a gap in the literature is identified, presenting a compelling need for the current study.

Theoretical Framework

A research study's theoretical framework provides a project's relevance and importance. Social cognitive theory is the framework that corroborates the association between the construct of self-efficacy and the relationship of this study. Bandura's (1986) social cognitive theory was developed to explain how learning transpires in a social setting with a dynamic and mutual collaboration of the person, environment, and behavior. This learning philosophy suited the theoretical framework for this study because health sciences academia models its principle. Before Bandura's research, most applications of learning theory were based upon animal and limited human interactions or one-to-one environments (Bandura & Walters, 1963). Bandura (1982a, 1986, 2001) developed a structure of evaluation of human behavior named *triadic reciprocity* between person, behavior, and environment. Bandura's findings confirmed that learning results from observation in a social context (Bandura, 1986, 1997, 2001). Knowledge is

acquired when discerning the modeled behaviors of others, and this is directly applicable to education and teaching skills. Bandura challenged the previous theory of cognition, behaviorism, based on the idea that reinforcement was not a learning variable (Schunk, 2020). Bandura (1977b) confirmed the deviation from behaviorism and noted that the novice did not need to do an activity to learn. Students can learn by observing others and modeling how to perform an activity (Bandura, 1977a). Over time, Bandura's (2012) social cognitive theory has evolved as a framework for learning methodologies that engage observational knowledge. The agentic perspective of social cognitive theory is directly applicable specifically to health sciences educational pedagogies in the way students learn from their superiors' observations (Bandura, 2006b). For the students, the environment is one that they have chosen. However, the educator's environment is perceived as an imposed task (Bandura, 2012). Bandura (2012) postulates that the evolution of technological advances, such as those in higher education modalities of learning, have modified how students and instructors communicate, teach, learn, and adapt to their surroundings. Social cognitive theory is tied directly to this topic of study from the lens of how this revolution has changed the self-efficacy of educators and students.

The social cognitive theory applies to showing and modeling skillsets to acquire knowledge and has been adapted to education models for this reason (Schunk, 2020). This theory will continue to be captured with the evolution of various traits and educational modalities (e.g., blended, online, and in-person modalities) (Schunk, 2020). A fundamental postulation of social cognitive theory is that humans long to manage those events that impact their environment and identify themselves as mediators of their environment (Bandura, 1997). This postulation is where self-efficacy aligns itself with the social cognitive theory.

Self-efficacy, a variable of the social cognitive theory, is relevant to the field of education not only for the student but also for the teachers (Fives & Buehl, 2016). Bandura used perceived self-efficacy as a basis of one's adaptable measure or belief of their ability to attain with the triadic reciprocity model of casualty determinants mentioned earlier (1982b, 1986, 1997). Instructional self-efficacy impacts how faculty model mastering critical thinking to learners. In a generation of students with extensive technology usage, instructors may lack self-confidence in their ability to instruct and model critical thinking proficiently in the ways they previously did (Hall et al., 2019). Instructors that have low self-efficacy may exhibit changes in behaviors that impact student achievement in a negative learning outcome (Schunk, 2020).

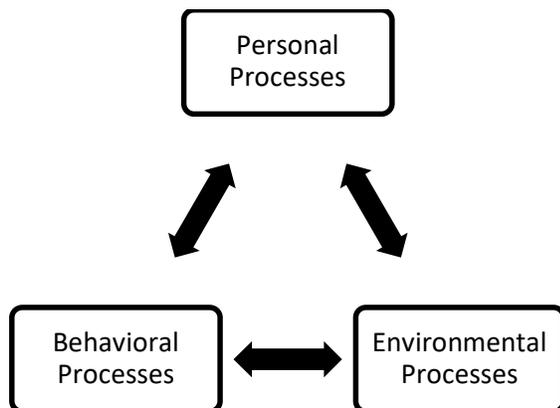
Social cognitive theory is a cognitive or emotional assessment of the behavior of humans which highlights the position of the collective surroundings on characteristics such as incentive, cognition, and self-regulation (Usher & Schunk, 2019). Social cognitive theory widely applies to the psychological branch of learning and provides a significant lens into education and health care (Schunk & DiBenedetto, 2020). Many theorists have expanded and contributed to the principles of social cognitive theory. Regarding this research, Bandura's social cognitive theory research guides the theoretical framework.

Previous assumptions of social cognitive theory implied that motivation was an integral part of human performance and social variables (Schunk & DiBenedetto, 2020). Observational learning also significantly impacted Bandura's initial theory (Bandura, 1977b; Bandura & Walters, 1963). Procedurally enacting these determinants (motivation, environment, and observation) all lend to a modeled behavior that reciprocates a predictable, specified, and desired outcome (Bandura & Walters, 1963). Bandura (1977a) also contended that determinates are entwined in human behavior. In addition to self-efficacy, Bandura also integrated a conceptual

framework of *triadic reciprocity* (Figure 1), which defined the correlation of the determinants of behavioral, environmental, and personal behaviors (Bandura, 1986).

Figure 1

Model of Triadic Reciprocity



Note: Adapted from Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.

Bandura (1977a) developed the notion in the social cognitive theory that human behavior is conditional on a feeling of or concept of *agency*. This sense of agency controls one's being, transcending into establishing objectives, and applying tactics to complete those objectives (Schunk & DiBenedetto, 2020). Fundamental to this agency premise is one's self-efficacy or identification of one's abilities to perform (Bandura, 1977a, 1997). Research evidence later supported Bandura's social cognitive theory and motivation theories by incorporating the conceptual framework of reciprocal interactions (Schunk & DiBenedetto, 2020).

While there is a plethora of developed theories of social cognitive theory describing human behavior, Bandura's specific theory informed and guided the work on the phenomenon. That phenomenon is that health science faculty have a modified perceived self-efficacy to effectively teach an evolving technological generation and an evolving workforce and academic institution delivery platform. Bandura translates how humans behave inside the framework of

said *triadic reciprocity* (Bandura 1982a, 1986, 2001). The components of these reciprocal interactions are behavioral, environmental, and personal variables (Bandura, 1986) are a foundational lens to the processes that were focused on specifically, regarding higher education faculty in the field of health sciences programming. Figure 2 demonstrates these determinants rooted in social cognitive theory and its bearing on motivational growth. The figure is not an exhaustive inventory, yet it is specific to Bandura's theory.

Figure 2

Model of Key Behavioral, Environmental, and Personal Processes

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Note: Adapted from Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.

Self-efficacy is the confidence an individual holds concerning their abilities and is a dynamic concept rooted in social cognitive theory (Bandura, 1997). Higher education health sciences programs are influenced by whether faculty maintain their self-efficacy to model critical thinking competency in their students (Chaves-Barboza et al., 2019). Derived from the conceptual framework of social cognitive theory, the theoretical construct of self-efficacy is a valid application to conduct the research in this study due to its nature of affecting how faculty perform when faced with challenges, such as an evolving educational platform and student population.

Self-efficacy

Bandura (1997) postulated that self-efficacy is an attitude that one carries about themselves towards completing a task based on their confidence to perform the task successfully. Within a higher education context, students and faculty must be confident in one's capabilities to perform tasks with mastery. Efficacy has been described as an individual's beliefs, views,

inspirations, and performance through a lens into human behavior that has veered away from tasks they once performed with confidence and may be discouraged they will be effective at completing (Bandura, 1989, 1993; Pfitzner-Eden, 2016). According to Bandura (2018), it is normal human behavior and desire to want success and accomplishment due to performing a task or taking a risk. Understandably, when a reward is not foreseen, one's motivation to complete tasks is avoided (Snyder & Fisk, 2016). In the related literature, theories, and speculations into the dynamics that health sciences instructors are currently faced with are synthesized.

In the related literature section, the construct of the theoretical framework is viewed through the paradigms specific to the relationships of health sciences faculty and their personal, behavioral, and environmental correlations to self-efficacy. The personal process of self-efficacy is synthesized both in the past and present context. The behavioral process is evaluated according to how it affected instructor motivation to improve their processes. The environmental processes provide insight into how current events and changes affect their behavioral regulation process.

Related Literature

Bandura (2006b) posits that self-efficacy is affected by one's convictions and ability to deliver positive outcomes. Standard practices, central tenets, and pedagogies of higher learning health sciences programs were researched to address self-efficacy, such as self-efficacy of oneself and teachers. Across the literature, a common theme demonstrates a change in the student population regarding critical thinking development at the stage they enter higher education (Chang et al., 2022; Jafari et al., 2020; Nauman, 2017; Pu et al., 2019; Sellars et al., 2018; Teng et al., 2019). Critical thinking development is standard pedagogy in health sciences higher education and most medical education programs because it follows the constructivist theory of acquiring knowledge and a cognitive apprenticeship model (Lyons et al., 2016; Pu et

al., 2019). Historically, the pedagogical approach, known as problem-based learning, accomplished critical thinking development amongst students (Kelley et al., 2019; Sistermans, 2020). Recently, what has worked historically has not shown the same outcomes (Chang et al., 2022; Jafari et al., 2020; Nauman, 2017). Faculty, however, are tasked with delivering improved outcomes with no institutional support to identify the changes in a modified, highly advanced technological revolution (Chaves-Barboza et al., 2019; Fernandez-Arias et al., 2021; Hall et al., 2019). There are volumes of indications of what has changed in the student population regarding critical thinking development in the literature. Most scholars speculate that K-12 curriculums do not develop these skills before college and that recent generations are much more accessible at a high-speed rate to technology problems rather than on their own experiences (Fernandez-Arias, 2021; Sellars et al., 2018). The expectation for a different result following the same processes leads to faculty lowered perceived self-efficacy in their ability to change methodologies, which substantiated a need to explore this topic further.

Associated issues related to lowered self-efficacy throughout the literature reveal a correlation to decreased outcomes, especially in student performance, with a scarce examination of the same for higher education faculty, specifically in health sciences. Chaves-Barboza et al. (2019) state that comparative studies support and encourage self-efficacy development. On the other side of the issue, failure to nourish self-efficacy efforts correlates to behavioral outcomes such as procrastination and low motivation (Chaves-Barboza et al., 2019; Hall et al., 2019). Numerous works (DeSantis & Christopher, 2021; Gomez et al., 2022; Velasco et al., 2022) support self-efficacy concerning K-12 and student learning, and the literature is expanding in the faculty of higher education, specific to the fields of medical school programs and nursing, with a bit of exploration into the health sciences programs. The following sections synthesized and

critiqued a literature review concerning the interacting determinants of faculty's perceived self-efficacy. The intention was to relate the issues of increased pressures on faculty, not necessarily due to the processes but rather their own perceived self-efficacy in an environment they have yet learned to excel (Bandura, 2012).

The Construct of Self-efficacy

Bandura (1982b, 1986, 2001) examined human behavior based on determinants of perceived self-efficacy. The findings provided the research with an understanding of how perceived self-efficacy can manifest behavior outcomes. Motivation encourages one's desire to acknowledge lowered self-efficacy and then to take steps to improve their perceived self-efficacy if they believe in the reason for its value (Schunk, 2020). Self-efficacy can deter a person from attempting tasks such as learning if self-efficacy is low (Bandura, 1993; Schunk & Di Benedetto, 2016). Understanding self-efficacy is fundamental in dissecting learner and expert contributions to a given situation. If the learner has low self-efficacy, they may not attempt to learn the task at hand, which debilitates the learning process as an outcome for the novice. The same is true for the expert. Suppose the expert uses old techniques for instruction and has low self-efficacy in their ability to learn new technology to teach the same task. In that case, they may not take steps to incorporate a technology that the learner is accustomed to in the learning process. This reciprocal interaction manifests outcomes (Bandura, 1986, 1997). Self-efficacy positively correlates to achievement, whether it references the novice or the expert (Bandura, 1986).

Bandura's initial research into the social learning theory emerged as the construct of self-efficacy (Miller, 2011). Bandura postulated that through observation of others, one could attain cognitive knowledge through processing the information they are observing (Bandura, 1993). The research surrounding Bandura's social learning theory revealed three symbiotic dynamics:

psychological characteristics, behavior, and environment (Miller, 2011). Self-efficacy materialized from Bandura's findings which concluded that how an individual feel about their abilities in each task is directly related to their experience and accomplishment of that task (Bandura, 1977a). This experience contributes to their motivation to perform the said task even in the face of difficulties, which affects learning (Bandura, 1977a).

For this research, self-efficacy was the guidepost to understanding why a given group of participants would not embrace a difficult task if it were believed (by themselves) that they would not be capable of task success. When a person's efficacy is predisposed to their thoughts, behaviors, and motivation (Bandura, 1989, 1993), it hinders their capacity to learn when faced with adversity. Exploring what can be done to 'rewire' one's self-efficacy in these matters is the motivation of this study. Bandura (2018) speculates that providing an environment of support will result in individuals believing that they can accomplish new tasks even when faced with adversity. Without a sense of support and the realm of success, one will avoid learning new tasks (Bandura, 2018).

Self-efficacy of Teachers

An instructor's perception of their abilities is a dynamic and forever evolving process, especially in higher education (Chaves-Barboza et al., 2019). Higher education instructors' advancement and sustainment of high self-efficacy can prompt self-development within educational goals and outcomes (Chaves-Barboza et al., 2019; Duchatelet & Donche, 2019). There is a correlation between instructor self-efficacy and student completion, and therefore presents an opportunity for higher education to foster the context for instructor preparation and guidance within transitional phases of student needs such as the CoVid-19 pandemic (Dumulescu & Mutiu, 2021).

The most valuable research on teacher self-efficacy has come out of the CoVid-19 pandemic and its profound effect on the education system, with the motivation of maintaining student success when confronted with a wholly transitioned modality of delivery falling upon teachers (Guoyan et al., 2021; Hall et al., 2019). The expectations placed on teachers during this transitional phase of education were not limited to but included advanced knowledge of technology, more commitment, and the challenge to provide the same outcomes for learners (Guoyan et al., 2021; Hall et al., 2019). More importantly, that expectation has continued as instructors and students transition out of the pandemic, yet teacher self-efficacy is a critical factor in determining the sustainability of such a commitment (Guoyan et al., 2021).

The impact of transitioning the traditional in-person classroom into a virtual one challenged the traditional theoretical framework concerning how people learn (Guoyan et al., 2021). In the best circumstances for online learning, educators must obtain advanced technological skills to achieve higher self-efficacy. Active learning must transform students into independent, highly motivated learners based on passive learning modalities. Haverback (2020) points out that teachers' self-efficacy predicts usage of advanced technology, such as that used in the virtual context, of students' performance.

The preponderance of the literature has focused on studies centered around medical student programs and nursing programs, which leaves a gap in the research for health sciences instructors. There lies a hindrance to searching for theories, frameworks, and constructs of how to develop and adapt to the changing landscape of instruction in higher learning, where cognition is used to respond positively to hands-on problem-based learning practices. Instructors are now faced with advanced technological frameworks minus training, lowered self-efficacy, and burnout (Hall et al., 2019; Kaur et al., 2021).

Higher education faculty in a community college, and staff and administrators should establish an encouraging atmosphere in which faculty are free to seek the tools and resources to perform their job confidently and competently with the administration's support (Almutairi, 2020). With a supportive environment, professional development and personal growth can be fluent and reciprocated in higher self-efficacy (Almutairi, 2020). Increasing faculty self-efficacy is intertwined with higher student self-efficacy (Myyry et al., 2022). It is a reciprocal relationship in which the instructor's success is a direct result of the learner's success which, in turn, gives the student a perspective of being an agent of their behavior (Foster & Bernstein, 2021). Delivery of the content from the master to the novice is critical to the student's success. However, it does not stand alone; faculty-perceived self-efficacy has reliably proven indispensable in the learner's success (Mahler et al., 2018).

Instructors that maintain the confidence and competence to perform instruction modalities and course delivery in any form independently without additional facilitators or peers are rooted in perceived self-efficacy by their emotional intelligence (Hu et al., 2019; Wu et al., 2019). While there is a correlation between self-efficacy and emotional intelligence, they are both independent of experiences (Wu et al., 2019). The independent experiences continue to enforce the presumption that faculty would increase their perceived self-efficacy with more research in the field to call upon professional development in which they can observe and simulate the environment in which they are called to deliver instruction (Aparisi et al., 2020; Wu et al., 2019). Working towards this goal, explicitly concerning disciplines such as health sciences, is likely to increase and develop perceived self-efficacy, opposing the mitigating circumstances of the stress of how the course is delivered (Skaalvik & Skaalvik, 2019).

Self-efficacy of Health sciences Teachers

In a systematic review of the occupation and job qualifications of health sciences teachers, it is essential to differentiate them from general education faculty (Mikkonen et al., 2018). Most higher education programs strive to attain accreditation for their programming. These accreditation organizations set the standards for the educational requirements of the academic institution in addition to higher education requirements of faculty. Specific to health and medical programs, a subject matter expert credentialed in the field of study they will be overseeing is required, along with a set number of years of fieldwork experience (Mikkonen et al., 2018). Most health sciences faculty are not inherently educators, nor have they studied education. They generally acquire educational program training once the college hires them. The methodologies that were taught to them mentioned in this research are how they learned their field of study. The methodologies then reciprocate in their role as an instructor (Van Wyk & Van Zyl, 2020).

Much of the knowledge that health sciences instructors impart is based on their field of working experience (Youm & Corral, 2019). Health sciences teacher competence has recently been coming about in the literature (Giraldo et al., 2022; Youm & Corral, 2019). It is evident that little is required as far as core competencies, and it is recommended that this be required for the importance of training and increasing self-efficacy in instructors. Therefore, attaining better student outcomes, actively participating in research, and building competence, especially in an evolving technologically advanced student population, will improve teacher competence (Mikkonen et al., 2018). Higher education programming faces the increased demands of a diminishing healthcare workforce (Gonzalo & Ogrinc, 2019). In addition, workforce leaders are demanding a restructuring of medical education curriculum structures to meet the needs of more

technically advanced students. Without institutional support for faculty, self-efficacy is lowered to effectively impact these demands (Gonzalo & Ogrinc, 2019).

To examine and dissect the level of self-efficacy of health sciences instructors, researchers must have a base of knowledge of what the expectations of health sciences instructors' competencies are held accountable to, and the factors related to those competencies (Mikkonen et al., 2018). It is only from this foundation that academic institutions can develop more professionals. Mikkonen et al. (2018) conducted a systematic review of quantitative studies that supported the fact that participating in research and competency-based professional development will provide support for improving faculty self-efficacy.

Problem-based Learning

Problem-based learning offers various applications in teaching methods (Hmelo-Silver, 2004). In problem-based learning, novices learn in a group setting when presented with scenarios of an environment with no exact solution. Problem-based learning is ideal for health sciences education. Problem-based learning provides a foundation for facilitators or teachers to aid cognitive and metacognitive learning (Schunk, 2020). Metacognition is an awareness of how one learns (Dirksen, 2016) and is how health sciences faculty become subject matter experts. It is this behavior that nourishes their motivation to take on the task of becoming instructors in the field (Hermes et al., 2020). Based on their outcome of success in learning their respective profession, they then inculcate the self-efficacy to expect the same result from their students (Youm & Carroll, 2019). When the student evolved and was presented with new ways of learning followed by a pandemic that halted an environment conducive to problem-based learning, health sciences faculty experiences and perspectives of their self-efficacy were altered (Gonzalo & Ogrinc, 2019).

Medical schools have easily adapted this methodology to complement information-delivery processes with assistance in applying what students learned (Luke et al., 2021). The stages of problem-based learning assist the learner in connecting what they know, what they do not know, and what the knowledge gaps are to acquire additional knowledge to eliminate them (Dirksen, 2016). This learning application applies to medical education methodologies in the research due to its effectiveness in preparing clinical students for the field of healthcare (Du et al., 2022). Problem-based learning is a pedagogical approach commonly applied in health education to assist students in learning (Ibrahim et al., 2020; Preeti et al., 2013; SerVant-Miklos, 2018). A critical key to the learning method of problem-based learning is that the outcome is highly dependent upon the learner's motivation (Ibrahim et al., 2020). This motivation is perhaps where this research's problem, purpose, and significance will reveal the outcome change.

Critical Thinking

Unlike problem-solving, as discussed above, critical thinking attempts to comprehend the nature of the problem (Schunk, 2020). Health sciences educational programs aim to foster and improve critical thinking skills within students to prepare them for the field of healthcare work where the patient is the most significant variable. Every encounter will require adaptation, and nurturing students' aptitudes to process variables is a critical intention of their educational training (Chang et al., 2022). The past decade has seen vast amounts of literature on how the student population entering the workforce has changed their critical skills (Teng et al., 2019). There are many yet-to-be-proven theories of why this change has come about, with most causes leaning towards the rapid evolution of technology and access to information, which eliminates the processes of problem-solving and critical thinking (Sellars et al., 2018).

Factoring in this dynamic, a concept that health sciences faculty rely on for instruction, they are now faced with yet another roadblock on how to perform their job effectively (Pu et al., 2019). The literature reveals a cyclic cycle of evolution of new delivery methods and new technology without a parallel development of the trainer, which in turn leads to lowered self-efficacy because of the omission of a mutual collaboration of the person, environment, and behavior (Bandura, 1986; Bandura, 2012; Hettihewa et al., 2017). Circling back to the theoretical framework of social cognitive theory, Bandura (2012) concludes that not only does it stipulate that knowledge forecasts behavior but also a model of understanding and change.

Blended Learning

Blended learning, formerly known as hybrid learning, is a modality of teaching that merges face-to-face instruction with online or distance education (Arora et al., 2021). In recent history, blended learning programs have been integrated into higher education and health care education programs of higher learning institutions (Frenk et al., 2010; Graham, 2006; Graham et al., 2013; Vahed et al., 2017). Following the CoVid-19 pandemic, there has been an increase in blended learning implementation in higher learning (Ehrlich et al., 2020; Moszkowicz et al., 2020; Torda et al., 2020).

Blended learning modalities have been effective in health sciences because they allow more clinical application time and less classroom time (Arora et al., 2021). When implemented with intentionality, the advantages are a personalized educational experience for the learner and a controlled cadence of the learning objectives (Arora et al., 2021). For the instructors, there is an opportunity to direct and oversee student engagement and progress through a Learning Management System (LMS). There is also an incentive for cost-saving possibilities for the

educational institution (Arora et al., 2021). When factoring in that most adult learners are of the non-traditional type (Bock et al., 2020), blended learning programs are befitting.

Additionally, considering the health care learner's rigid clinical schedule, blended learning can be well-suited to higher education health sciences programs (Arora, 2021). The disadvantages of blended instruction come to fruition when the professional development of faculty does not accompany its implementation. This lack of development could be because of the allocation of time required and the lack of monetary resources (Ruiz et al., 2006). Regardless, it is a modality that has proven its sustainability as an educational delivery method and therefore needs to be embraced by the higher education faculty tasked with competently delivering it.

Health Care Faculty Self-efficacy with Blended Learning

Traditionally, a K-12 teacher development would go through training at a collegiate level, combined with practicum experiences and distance coursework (Smothers et al., 2020). However, for health sciences faculty, there is not this formal training. They are subject matter experts first, mostly learning online course delivery and pedagogies as they enter the education realm (Smothers et al., 2020). Factoring in the increase of non-traditional models of instruction, such as blended learning, health sciences faculty perceived self-efficacy beliefs without preparation programs could be affected. Research shows that the relationship between self-efficacy belief and deviation from familiarity with problem-based methodology affects faculty motivation to learn new course delivery models (Singh et al., 2021; Smothers et al., 2020).

Bandura (1977a) postulated that self-efficacy is a belief in oneself to take the initiative to complete a duty. The presumption is that health science faculty have not been prepared to deliver online coursework in the blended learning model. This postulation is influenced by the triadic reciprocity determinants of personal, behavioral, and environmental factors (Bandura, 1977a).

Research has been carried out explicitly related to self-efficacy beliefs and health sciences faculty teaching blended learning models (Smothers et al., 2020). Nevertheless, distance education in the United States has continued to rise in all disciplines in higher education (Seaman et al., 2018). With self-efficacy beliefs being convincingly connected to teacher performance, it is necessary to dive into this field to improve health science faculty effectiveness and, in turn, affect learner outcomes in a positive manner (Smothers et al., 2020).

Accessibility and Globalization through Online Learning

Two factors that have accompanied online learning modalities for academic institutions are student accessibility to online resources and a much more diverse student population that bring with them diverse learning styles and needs regarding how people learn (Virani et al., 2020). The goals to integrate more accessibility and globalization were initiated at a government level in the 1970s (Jarillo et al., 2019). These goals were identified by academic institutions and began to be implemented into the modalities of delivery (Su & Cheng, 2019). The relevance of this regarding this study is that faculty need development in these areas to accommodate the needs of classroom management (Virani et al., 2020). Professional development is another consideration in and amongst the many variables affecting faculty today and their perceived self-efficacy to effectively meet all the additional considerations that accompany online and blended learning models.

When considering the accessibility of blended and online course management, an academic institution needs to consider how to train faculty on the methods of implementing closed captioning, screen readers, medical conditions that are affected by looking at various forms of technology, and access to the technology itself (Arima et al., 2019). Accessibility is mandated, and regardless of a student's disability, they must be afforded an equal educational

experience as other online learners according to the Rehabilitation Act of 1973 and enforced by the U. S. Department of Education, Office of Civil Rights (U.S. Equal Employment Opportunity Commission, 1973). Shaheen and Watulak (2019) even postulate that every component of an online course is accessible to those requiring hearing and seeing adaptations; this includes any Learning Management System implemented for said instruction (Shaheen & Watulak, 2019).

Accessibility mandates have improved the availability of the existing technology since its conception, allowing more and more students the flexibility of asynchronous learning (Padmo et al., 2019). Regardless, the academic institution logically safeguards access to online learning models as the demand increases for this type of delivery. This safeguard is accompanied by a strong educational technology support team that can quickly develop online tools for student learners to efficiently navigate course materials and resources (De Jong et al., 2020).

Even with the rise in demand and implementation of online course options, literature also reported a decline in retention in this modality of instruction, primarily because of the student's perception of it (Hamann et al., 2021). Adding to this declining retention, the workforce also initially responded that employing students who obtained online instruction was met with mixed feedback, even though Ragusa and Crampton (2017) reported in a study that 78% of students encountered comparable in-person methods. Concerning healthcare education programs that were forced to go online during the pandemic, employers were especially burdened with factoring in how much these clinical institutions depend on their student population being on-site to gain knowledge and experience (Bahethi et al., 2021).

Accessibility in Health-Related Online Courses

Simulation technology is increasing in the related literature regarding how it pluralizes and complements health-related educational programs. The pandemic expedited this type of

technology, and academic faculty in health sciences programming are seeing an increase in the solicitation of this type of software (O'Brien et al., 2022). With the possible adaptation of this type of technology into health-related educational programs, accessibility will again need to be at the forefront.

The Department of Defense has successfully implemented simulation technology in instruction (Mun, 2022). Implementing simulation technology into health-related educational programs could benefit from the collaboration of this well-established curriculum delivery. The exception is that the very nature of the eligibility of armed forces participants does not provide academic institutions with the information needed to provide equal accessibility across the student population. Regardless, simulation is a valuable tool to deliver content and assess cognition of learning tasks in medical education in all disciplines (Chernikova et al., 2020). The high cost of this type of technology keeps deterring health sciences programs at the community college level. However, their increase in popularity and success, especially during the pandemic, hints that they will soon be an added resource for both faculty and academic institutions to develop training and accessibility (O'Brien et al., 2022).

Student Completion and Success

In higher education, student success comes in a variety of ways. In general education fields, many students would consider success by completion of their curriculum, graduation, and high-grade performance (Afkhaminia et al., 2018). The student's well-adjusted acclimation often measures factors that predict this completion success to their new environment, how well the institution contributes to a strong base of support to the student's well-being, and the expansion of their critical-thinking abilities (Van der Zanden et al., 2019).

Ideally, student completion and success could be defined when the workforce and community welcome graduates. Additionally, these graduates contribute to the economy and perform their newly learned competencies in a way that provides growth for society (Mehaffy, 2018). Mehaffy (2018) has established that 11 million jobs will be open that require degrees with not enough graduates to fill those vacancies. This disparity results from declining student readiness to begin college out of high school (Edmondson & Matthews, 2021). This disparity has stimulated state leaders to collaborate at the community college levels to fill this gap (Mourad & Hong, 2017).

Student Completion and Success in Health Sciences

The meaning of success for a student in a health sciences program includes completing and graduating the curriculum's required learning objectives and successfully passing a national registry in the field of study (All Allied Health, n.d.; Yatzak et al. al., 2021). The national registry is an external assessment that grants the graduate licensure or certification once they pass the exam. In most health science fields; the graduate is not eligible to enter the workforce of their respective field unless they gain this certification/licensure. Therefore, the health science curriculum follows the examination specifications for the board exam for their learning objectives (All Allied Health, n.d.). In addition, health science students attend clinical facilities where they are held to complete a required number of competencies specified by the board exam requirements to complete the college program. (Institute for Credentialing Excellence, n.d.).

Limited research explores students' success in health sciences programs concerning the increase of adding non-traditional course delivery methods. Regmi and Jones (2020) conducted a systematic review of the factors affecting remote learning in health sciences education, which was the first literature review of the enablers and barriers of online learning. Regardless, their

findings are noted, and an opening to continued research is warranted to promote resources in the field. The available indications of the review suggest that online delivery specific to health sciences is restricted by scarce resources. The monetary implications of the time it would take to acclimate instructors to a mastery level and the lack of accountability to the instructional design to promote it in the health science curriculum inhibits its implementation (Puljak et al., 2020; Regmi & Jones, 2021).

Regmi and Jones (2021) later expand on the effects of distance learning on health sciences education in another study. In that study, it is sustained that although the literature supports an equitable outcome of online-learning success compared to face-to-face learning, there is still limited research to pull from the studies. A significant point is made and held close as a guidepost throughout this research that the purpose of any health professional is not just to educate the students and fill the workforce with competent graduates; its primary intent must always be to improve human health. This premise is critical in emphasizing the importance of understanding what health sciences educators face. It is universally understood that if one aspect of the system of health sciences education fails, human health is negatively impacted (Puljak et al., 2020).

Instructor Efficacy in Student Engagement

Professional development and training reinforce the recurring theme rooted in Bandura's triadic reciprocity (1977a). Modeling behavior based on observation instills student engagement and, in turn (reciprocates) the perception of higher self-efficacy in both the student for the instructor feedback, yet also for the instructor to witness the outcome of higher quality student engagement (Bradshaw et al., 2018). This persistent appearance in the literature

strengthens the stance that faculty professional development in unfamiliar course delivery modalities creates higher perceived self-efficacy in student engagement.

In a 2021 study, 264 college-level instructors were evaluated on their emotional intelligence as a source of self-efficacy in Pakistan (Kazmi et al., 2021). Their work concluded that self-efficacy and emotional intelligence are correlated indicators of higher-level success for faculty. The significance of this research is that it exposes another factor the instructor faces in today's globalized education system. Not only is the instructor accountable for delivering content knowledge, but they must now meet the needs of a highly diverse student population concerning their needs and classroom management (Ahmed et al., 2019).

Instructor Self-Efficacy in Instructional Strategies

The CoVid-19 pandemic in 2020 stimulated new ideas for higher education faculty perceived self-efficacy. Academic leadership was integral to continuing education for all levels of academics, with an expectation of instantaneous outcomes (Dumulescu & Mutiu, 2021). In many ways, educators were forced to adapt to distance education. Within the healthcare field, there was added pressure to get graduates out into the field, facing an abrupt shortage of workers mounted against the uptake of patients flooding the medical facilities.

The effectiveness among instructors in a forced instructional strategy ultimately would bring a more significant emphasis on the already questionable perceived self-efficacy of the instructor's ability to teach the learning objectives (Singh et al., 2021). The situation's urgency once again forced academic structures to enter a domain without practical, real-world training and associating it with pedagogic theory (Geer et al., 2021). Post-pandemic progression of resources that align with the challenges of healthcare students evolving education delivery models is still shifting more rapidly than the instructors can obtain training in instructional

strategies (Blake et al., 2021; Mute Browning et al., 2021). This inequity, combined with new mental health effects of isolation, anxiety, and loneliness post-pandemic, contributed to lowered faculty self-efficacy (Stawicki et al., 2020).

Ciampa and Gallagher (2021) discovered the correlation between instructor self-efficacy and their corresponding improved perception of self-efficacy for teaching rendered improved efficacy in classroom teaching (Ciampa & Gallagher, 2021). The study was built upon elementary student teachers, which may transfer to higher education health sciences programs. However, identifying the gap in the literature identifies the critical nature of contributing to the understanding of increasing the self-efficacy of instructors. One post-pandemic positive takeaway is that though it was a challenging and adverse event, the faculty persevered with resilience, increasing self-efficacy (Nwosu et al., 2019).

Instructor Self-efficacy in Using Technology for Instruction

In blended or online instruction models, much dependence has fallen upon LMS, requiring knowledge of computers for instruction and communication with students (Sarfaraz et al., 2020). In many ways, online delivery of course instruction and the technology that delivers it has changed the landscape of higher education programs (Singh et al., 2021). A factor in the success of online and blended instruction is that online instructors effectively engage with the student in this environment, encouraging the same participation they do in a face-face setting (Sarfaraz et al., 2020). This engagement requires competence and a sense of self-efficacy to use the technology for instruction effectively. If the instructor has a lower perceived self-efficacy to effectively perform these tasks, the motivation to take steps to learn these technologies may suffer from the motivation to perform (Kazmi et al., 2021). Supportive and adequate

development and implementation of resources for instructor training are imperative to increase instructor self-efficacy in using technology for instruction.

One element missing in online learning is the ability of the instructor to notice nonverbal clues that they would typically see in a face-to-face classroom setting (Sarfaraz et al., 2020). This lack of engagement is perhaps another deterrent to embracing technology in instruction (Paul & Jefferson, 2019). This review of related literature recognizes the result of the rapid conversion to online technologies in the classroom of higher education and its effectiveness in learning outcomes (Singh et al., 2021). There is a place for this technology and learning pedagogy when it is developed effectively (Sarfaraz et al., 2020).

Gudek (2019) conducted a study that aligned with the theory of this research regarding instructor self-efficacy toward technology used for instruction. Gudek (2019) postulated that there is an interrelationship between the members of that study and their approach toward technology in the educational setting, particularly in distance learning, and those members' consciousness of self-efficacy with technology, such as computers and items of their field. Logically, one who is fluent with technology would be more accommodating to implementing technology in the educational environment, and this research confirms this notion. The development of faculty tasked with employing technology for instruction has effectiveness when synthesizing the literature regarding this subject (Kazmi et al., 2021; Sarfaraz et al., 2020; Tenzin et al., 2019). Redundantly, the literature review revealed that many studies are suited to other education disciplines, such as K-12 or four-year higher institutions. Gudek's (2019) work contributes to the self-efficacy relationship to delivering instruction; however, the participants were elementary music teachers. The purpose of this research is commonly aligned with

delivering instruction and instructor self-efficacy; however, it is homed in on health sciences faculty at community colleges.

This research work still has a lot to consider providing reputable knowledge on the interrelationship between instructors' sense of self-efficacy and student self-efficacy outcomes. A validated tool was implemented to measure the elementary teacher participants' positions: a computer self-efficacy scale and a digital technology attitude scale (Gudek, 2019). For scaling the tool, Likert-style answers to 10 and 39 inquiries, respectively. The findings confirmed the hypothesis earlier in the paragraph, which postulated an interrelationship amongst the study members. Their approach toward technology in the educational setting, particularly in distance learning, and those members' perceived self-efficacy with technology, such as computers and items in their field, reveal the interrelationship (Gudek, 2019). A fascinating discovery, however, was that the connection between the participant's overall understanding of computers in general and their self-efficacy was not a factor (Gudek, 2019). Amongst other studies concerning instructor self-efficacy using technology in blended and online learning, the residing conclusions agree with the overarching theme that faculty are not experiencing high self-efficacy when new technology is introduced in the already distance model (Bailenson, 2021; Brownlee, 2020; Singh et al., 2021)

Some studies provide positive outcomes for instructors that adopt new technology regardless of how it was implemented (Jones, 2019). There is a difference and much to be researched of the differences between emergency remote instruction, which requires instructors to use technology, and actual online learning when an instructor is motivated to learn it (Hehir et al., 2021; Hodges et al., 2020). This difference indicates that embracing discomfort and resisting complacency regarding instructor implementation of technology is an excellent platform to

balance the variables of personal, behavioral, and environmental intercessions with faculty training and professional development models (Hampsten, 2021).

Faculty Training and Professional Development

To achieve a successful implementation of online and blended course delivery, specifically in health sciences higher education faculty, an undertaking of professional development is imperative to improve self-efficacy amongst instructors and students (Keiller et al., 2022). Faculty Development Programs (FDPs) are significant for healthcare instructors and their role in delivering content (Tenzin et al., 2019). FDPs apply evidence-based training designed to foster the instructor in all the roles they are expected to apply as an educator in higher learning health sciences (Ziedonis & An, 2019).

Faculty development in relation specifically to healthcare educators is complex in and of itself due to the many moving parts internally and externally (Keiller et al., 2022). For example, the face of education has drastically changed its delivery, as noted throughout this research, veering away from evidenced-based pedagogies of face-to-face instruction to blended learning models to forced online instruction during a pandemic. Externally, healthcare educational programs must stay abreast of the workforce dynamics, such as a push in healthcare facilities to integrate interprofessional learning skills (Oddih & Nwagbo, 2020). This type of integration falls back on the original and initial training of the healthcare students. However, this is not new to healthcare, where technology and advances constantly evolve faster than educational programs can keep pace (Keiller et al., 2022).

Health professionals who are educators are more commonly going to lean towards professional development when given the option that more develops their clinical skills, rather than in course delivery models and modalities, assumingly based on their already lowered self-

efficacy in that area (Lewis & Steinert, 2020). Faculty will navigate towards an area of development where they know they will effectively perform the tasks. Researchers discern this based on Bandura's construct of self-efficacy based on social cognitive theories (Bandura, 1977a).

Identifying instructors perceived self-efficacy is, in turn, effectively modifying their sense of self-efficacy. This modification regarding changes in course delivery models and student outcomes in a generation of highly technologically dependent student populations, classroom management in an online platform, and the use of specialized technologies is an advantage for academic institutions. (Behar-Horenstien et al., 2019). Educational institutions are tasked with implementing professional development to achieve success, specifically online delivery systems, and modalities, and to provide such training early and often (Bilal et al., 2019). This development can be a significant undertaking for an academic institution, which is why it is essential to bring on board all the stakeholders, including but not limited to those in charge of the legal and economic requirements of the school (Carpenter et al., 2016). Perhaps, joining forces of the instructors, administrators and staff would align several objectives of a professional development initiative of such a wide scale. This development includes course audits/evaluations, instructional design teams along with course mentorship, accessibility in the online realm, and most of the structured education for the faculty tasked with implementing it all (Vaughan & Garrison, 2019).

Faculty development is not limited to health sciences instructors continuing education in their clinical fields to remain subject matter experts (Oddih & Nwagbo, 2020). Faculty development also includes what it takes to design course implementations that meet the legal essentials of accessibility, promote student engagement, and increase student outcomes (Oddih &

Nwagbo, 2020). With this increased accessibility and globalization of education with the onset of blended and online learning models, faculty development now includes increased knowledge of how students learn in an online modality of instruction (Wynants & Dennis, 2018). These topics need to be relevant as online programs increase their need for resources. The phrase that a team is only as good as the weakest link is relevant when considering the urgency of developing faculty regarding their self-efficacy agency (O'Brien & Batista, 2020).

This research aimed to determine whether faculty in health sciences in a higher education community college have a lower perceived self-efficacy. It was also a goal to discover if this results from a changed student population, an evolving classroom modality delivery system to blended learning, and an absence of training or development in each of these realms. Once the problem is perhaps more transparent concerning the interrelationship of that faculty's perceived self-efficacy to student outcomes, then perhaps, resolving the issues with faculty development will be revealed. This section dissected the premise that the related literature supports the development of faculty (Watson & Marschall, 2019), with the dynamics in which they are faced (Gudek, 2019), and to improve faculty perceived self-efficacy to complete the training needed to implement a changing educational platform (Frantz et al., 2019). The best practices to achieve this faculty professional development are debated but not quite materialized in the literature.

Watson and Marschall (2019) noted that faculty professional development is more commonsensical to employ in the training of their role rather than once they are already in the role. This idea lends itself to providing a supportive environment that accompanies the instructor from the moment they start with an academic institution. Remembering that health sciences faculty are subject matter experts who have no formal training in education and are not novices when it comes to continuing their education concerning their expertise, they must now foster the

theories of how people learn (Frantz et al., 2019). Tenzin et al. (2019) conclude that self-efficacy will improve when faculty enter with a commitment to professional development activities, engagingly and acceptingly.

Faculty Training and Professional Development of Health sciences Faculty

The literature is limited regarding health sciences faculty and professional development (Tenzin et al., 2019). Regardless, an institution's faculty is a reputable resource (Van Wyk & Van Zyl, 2020). The return on investment for an institution will only have a positive outcome when developing its faculty. There are challenges to integrating health sciences faculty personal and professional development requirements with training for academic roles (Julien, 2019). However, an academic institution must recognize the additional professional development required for health sciences instructors and meld these roles (Van Wyk & Van Zyl, 2020).

Professional development is a familiar and common task to health sciences professionals. Depending on their credential, health sciences professionals must attain a set amount of education credit hours during varying timelines (All Allied Health, n.d.). However, this education is clinically based and not related to academia. Mathews et al. (2014) reveal that it is vital to approach professional development for health sciences faculty at the onset of their academic careers. Harden and Crosby (2000) designate 12 functions for health science instructors, grouped into six charges: the information provider; the role model; the facilitator; the assessor; the curriculum and course planner; and the resource material creator. Based on these charges, learning objectives and aptitude development are suggestive in the literature as a guidepost to professional development initiatives for academic institutions (Stefani, 2009; Sanford & Kinch, 2016; Barut & Wijaya, 2020). A starting point would be those charges that the health science faculty feel the least confident (lowered self-efficacy) in performing (Hettihewa et

al., 2017; Paritakul et al., 2015). Hettihewa et al. (2017) researched how the charges ranked amongst the health science faculty and concluded it was the assessor role they felt the least confident. More research into these core competencies regarding health science faculty is a valuable way to provide academic institutions a means to begin a supportive professional development program for health sciences faculty (Van Wyk & Van Zyl, 2020).

Summary

The subject matter synthesized in this literature review aligned with the problem of the study, in that higher education health science faculty is not developed before having to adapt to an advanced technological generation, lowering self-efficacy. The commencement of synthesizing the literature, however, is the operationalization of the triadic reciprocity of social cognitive theory and how it affects self-efficacy. Adding to the literature, health sciences faculty in higher education present a need, as well, to be professionally developed to adapt curriculum and pedagogy to increase perceived self-efficacy. Health sciences faculty in higher learning need to be able to research theories, empirical data, and paradigms specific to their field of work amongst a technological generation of a student population that no longer achieves learning through problem-based learning structured curriculum (Hasanpour et al., 2017). This study aimed to develop that literature gap to avoid lowered self-efficacy and burnout (Hall et al., 2019).

Equipping health sciences faculty with training and resources improves faculty self-efficacy. Researchers have recently examined the validity and practical applicability of problem-based learning that stimulates learning efficiency and learning outcomes. This research is a commonly used pedagogy applied to health sciences curriculum with little guidance on how to apply this pedagogy in a virtual learning environment placing the commitment on faculty

(Sistermans, 2020). Based on their curriculum structures, medical and nursing students have been studied exhaustively for critical thinking skills and critical-thinking disposition, but little is documented at the health sciences level. When finished with their respective programs of study, these students are the frontline technical professionals of the healthcare system. By addressing the skills needed for improved critical thinking outcomes and how to train faculty to adapt to the advanced technological requirements needed to deliver these methods, medical curriculum designers can better understand the needs of future students – not only at high-level practitioners but at all levels of the medical hierarchy (Pu et al., 2019). The intention here was to establish the significant role that faculty perceived self-efficacy plays in their confidence and competence to deliver positive outcomes. To dissect the relationship between these two factors, additional research practices should continue. Knowledge should be obtained that will feed into how to develop effective training programs that bring faculty to a level of higher self-efficacy designed to enhance all the triadic reciprocity determinants and functional properties of perceived self-efficacy. The related literature has established a chance to synthesize a systematic review of education in a generation. However, a noticeable gap exists in the literature involving conceptual and theoretical work regarding health sciences education, its faculty, its perceived self-efficacy, and how that impacts student outcomes (Regmi & Jones, 2021).

CHAPTER THREE: METHODS

Overview

This hermeneutic phenomenological study aimed to understand the lowered self-efficacy for higher education health sciences faculty at the community two-year college degree level amidst a deficiency of professional development in a mid-Atlantic state. The subsections of this chapter present the research design, the research questions directing the study, the participants, and its setting. This chapter provides a comprehensive account of the data collection process, followed by an explanation of how the data is analyzed and synthesized. This chapter concludes by establishing the study's trustworthiness and the ethical considerations implemented to ensure its credibility.

Research Design

A qualitative research method was used for this study because it best aligns with my research questions in gathering a deep, thick, and rich narrative. This study aimed to determine to what degree health science faculty's perception of their self-efficacy in instructional strategies and modality delivery can affect their student success rate. Creswell (2016) provided guidance when considering the design structures of a plan or proposal consisting of six elements: study a unique sample, assume an unconventional perspective, observe an uncommon field site, collect atypical forms of data, present findings in an unusual way, and focus on a timely topic. In the case of this research, the unique sample consisted of healthcare faculty of a two-year higher education community college statewide system which has scarce related literature in the field. The angle focused on the sample's perceived self-efficacy and the effect on student achievement. The uncommon field site involves faculty instructing in an online environment outside the typical pedagogy of a hands-on competency-based problem-based learning environment

(Sistermans, 2020). The atypical forms of data were collected data of online technology assessments. The presentation of findings is presented in Chapter Four. Lastly, this research supports a timely topic, especially in the aftermath of the CoVid-19 pandemic, where instruction was forced to integrate new technologies with little to no training or professional development for health science faculty (Guoyan et al., 2021).

A hermeneutic phenomenological design structure was best suited for my study because it exposes health sciences faculty experiences and my familiarity with the deficiency of professional development and how it relates to self-efficacy. Creswell and Poth (2018) defined a phenomenological study as one that studies people who share an experience within a particular phenomenon. This study focuses on the experiences of health science faculty during an evolving student population amongst a stagnate curriculum and how their perceived self-efficacy has been affected. This research was accomplished by collecting data through interviews, focus groups, and observation (Creswell & Poth, 2018). Further, the specific type of phenomenological study will be hermeneutic because it complements pedagogic research (Van Manen, 2016). As the researcher, the intention was to investigate the experience of the health science faculty and examine the combination of those experiences formulating a textural and structural description of the faculty's encounters (Van Manen, 2016).

Research Questions

Central Research Question

What are the professional development experiences of higher education health sciences faculty that affect self-efficacy?

Sub-Question One

What personal experiences of higher education health sciences faculty affect self-

efficacy?

Sub-Question Two

What behavioral experiences of higher education health sciences faculty affect self-efficacy?

Sub-Question Three

What environmental experiences of higher education health sciences faculty affect self-efficacy?

Setting and Participants

A characteristic of qualitative research is that the data is not collected in a simulated manner but in a more natural setting (Hatch, 2002; LeCompte & Schensul, 1999; Marshall & Rossman, 2015; Ravitch et al., 2016). The setting was within the health science faculty classrooms and labs for this research. With college approval (Appendix B), the participants for this study consisted of 10 to 15 health science faculty of a two-year accredited community college in a mid-Atlantic state. For this study, the hermeneutic phenomenological approach was implemented to examine the participants' shared experiences specific to health sciences.

Site

Community college is a two-year college that offers several associate degree programs (Martin, 2021). Specific to this research study, the focus is on the school of health sciences. The setting in this community college offers eight health science programs that employ fifteen faculty ranging from a Dean to Adjunct Faculty. The leadership and structure of the college are organized so that faculty are ranked dependent on their education level and length of employment. The organization ranges from entry-level instructor to full professor.

This community college is a statewide college system across a mid-Atlantic state. The

programs represented are Health Care Support, Medical Imaging, Surgical Technology, Diagnostic Medical Sonography, Medical Assisting, Laboratory Technology, Respiratory Therapy, and Paramedic Science. All faculty offices, laboratories, and classrooms are offered in one wing of the institution—the laboratories house equipment which allows for simulated and problem-based learning. The classrooms contain overhead projection resources, whiteboards, and computer podiums. This site was chosen because the research aims to investigate the shared experiences of health science faculty members in their environment. The phenomenological approach used in this study meets the standard of being located at a single site (Creswell & Poth, 2018).

Participants

Participants in this study consisted of fourteen instructors of core content areas and are credentialled within their respective fields of study. All the instructors are subject matter experts first. Their experience in education is secondary. This disparity is common among health science instructors due to accreditation, which requires health science faculty to be credentialled subject matter experts (All Allied Health, n.d.). I fully engaged in my research by observing and interviewing the participants once consent (see Appendix D) was obtained (Angrosino, 2007).

Researcher Positionality

This qualitative phenomenological hermeneutic study is motivated by my experience as a healthcare field worker/educator and my desire to evolve as an instructional designer of health-related online education. My career is rooted in over 30 years of fieldwork as a healthcare technologist and educator. Although education has separated me from my ultimate passion for patient care, my focus as an educator is to effectively impact the patient indirectly through students and future healthcare providers. Considering my experience in the field and my role

now as an educator, I find healthcare instruction teetering more towards academia alignment and perhaps silencing the healthcare faculty's driving passion for the human essence that must be maintained at the educational institution. When healthcare instructors are challenged in the aspect of pedagogy they have known and relied on, self-efficacy is affected (Sarfaraz et al., 2020). As a person with experience in the field and education, I was able to interpret the experiences of health science faculty and fill a gap in the literature on improving self-efficacy advances in health sciences academic programs.

Interpretive Framework

Social constructivism is the paradigm that will guide this research for its concentration on how people learn, the detail of accounts, and the analysis of its implications (Schunk, 2020). As the researcher in this study, I intended to seek an understanding of peers in the same environment and their experiences (Creswell & Poth, 2018). Through a triangulation of the data collection, I built a subjective meaning (Creswell & Poth, 2018) of health sciences faculty towards their higher learning environment amongst a changed technological student population and how this affected their self-efficacy. To find meaning in self-efficacy, social constructivism, also known as interpretivism, is the logical worldview of the research (Denzin & Lincoln, 2011; Mertens, 2015). Socially derived subjective meanings were sought primarily through the focus group interviews due to the interaction that will take place in facilitating rhetoric that may not have been individually assumed (Creswell & Poth, 2018).

Broad, general, and open-ended questions guided the construction of the researched meaning (Creswell & Poth, 2018). As a constructivist researcher, the goal was to provide a method for the data collection while seeking understanding through the interaction's familiar themes. Simultaneously, understanding was sought by providing the cultural settings of the

participants (Creswell & Poth, 2018). This knowledge was a commonality the researcher has with the participants, identifying their interpretive framework, and consistent reflection was observed for non-bias (Brown et al., 2006).

The data collection methods seek to understand the faculty's shared experience by way of their interactions and by revealing familiar themes (Van Manen, 2016). Moustakas (1994) even confirmed that constructivism is discernable in phenomenological studies, in which individuals define their understanding of their experiences. Simultaneously, understanding was sought by providing the cultural settings of the participants (Creswell & Poth, 2018). This understanding expresses the cohesion that I have with the participants. Van Manen (2016) confirmed that meaning can be derived when research is engaged in phenomenological studies and individuals describe their experiences.

Philosophical Assumptions

Huff (2009) provided the key points as to why philosophy is unique in research: the direction of research and outcomes, the scope of training and research experiences, and the basis of evaluative criteria for research-related decisions. This study, specifically the problem statement, comes from a position or observation of a shared experience of lowered self-efficacy and a desire to research the precepts of this commonality amongst peers. The intent of seeking an understanding of the problem is to reveal its origin in exploring the phenomenon. Identifying the assumptions in this research comes from the idea that assumptions can change through the process; therefore, it is crucial to have a starting point where the research began philosophically (Van Manen, 2016). The three assumptions addressed in this study are ontological, epistemological, and axiological.

Ontological Assumption

It is accepted that multiple realities will be revealed by interviewing individuals, observing, and conducting focus groups (Creswell & Poth, 2018). The ontological philosophical assumption supports the social cognitive theory, where one can apply control over the nature and value of one's life (Bandura, 2001). I reported on all the realities identified in the data collection through the development of the constructs of self-efficacy (Creswell & Poth, 2018). Different perspectives and themes were also reported concerning the findings built through the shared experiences amongst socialization with peers (Creswell & Poth, 2018). It is important to note that when it comes to the ontological assumption or the researcher's beliefs on the nature of reality, there is a singular reality for the researcher of God's word. There is also the belief that multiple realities can be translated into that one truth of God's word.

Epistemological Assumption

While the assumption of multiple realities may be preconceived into a common phenomenon, the constructed realities need to be recognized amidst the research process (Creswell & Poth, 2018). Through observation and individual interviews, a valid construct was obtained. This form of data collection allowed the intimacy between me, the researcher, and the physical research which provided a non-threatening environment of full disclosure of their experiences. Until this happened, knowledge and understanding were only perceived reality. Guba and Lincoln (1988) supported the proximity to the participants and the subject matter. Through a subjective experience of the participant's processes, I minimized detachment between myself and the participants.

Axiological Assumption

My experience as a health sciences instructor in higher education was incorporated into

the study because of my perceived lowered self-efficacy when faced with a highly technologically advanced student population that no longer learns from the designed pedagogy. Berger (2015) also recommends that the reader acknowledge the researcher's social position. I am a 49-year-old white American female with a background in health sciences and higher learning education. This experience carried specific perspectives into the stories voiced as much as the researched subject matter. It is imperative to recognize these values and the biases they brought to stay objective in obtaining data.

Researcher's Role

As a human instrument in the study, it is critical to provide transparency in this study (Creswell & Poth, 2018). My role was to obtain the proper consent while providing authenticity of their position. The participant sample consists of one direct supervisor, with the remainder being academic peers. I also acknowledge that I have the role of managing online courses specific to health sciences. My duties include supervision of maintaining course policies and expectations. I do not directly supervise two faculty peer's participants. Therefore, there is no power differential between me, the researcher, and the participants.

I am an educator in the school of health sciences at the site that I will conduct the research, however, I will effectively be discreet and disconnected from the participants. Although I share the role of being an educator, I am not in contact with the participants regarding this research professionally or personally and do not believe this to be of subsequent ethical conflict. Additionally, I recognize that biases could be a factor in the instruments that I design and the emotions of the shared phenomenon that I have experienced. While bias is inherent to the qualitative research design (Wa-Mbaleka, 2020) I was cognizant of identifying when it was occurring by conducting my research explicitly and with reflexivity (Lincoln et al., 2017).

Procedures

This phenomenological hermeneutic study was conducted in seven steps. First, I acquired IRB approval from the academic institution where the study occurred (see Appendix B) so that I may seek IRB approval at Liberty University. Second, I acquired approval from the institutional review board (IRB) at Liberty University to conduct the research (see Appendix A). Third, I moved forward with the data collection appropriate for the design upon receiving full IRB approval.

The fourth step was to inform the faculty participants via email (see Appendix C) and provide information and consent forms (see Appendix D). The approved consent detailed the research's purpose and the role of the participants (Creswell & Poth, 2018). The fifth step was to conduct in-depth individual interviews (see Appendix E). Interviews are one of the methods used to gather data in phenomenological research design methods that serve many purposes (Van Manen, 1997). The in-depth interviews were conducted via virtual video-recorded sessions. I transcribed the interview sessions manually and utilized the built-in transcription component of the virtual method used. While the lengthy interview is the overarching method of gaining knowledge in the phenomenological investigation, additional types of data collection appropriate for the design are a review of the literature about the topic, such as focus groups and observations (Creswell & Poth, 2018).

In this study, the sixth step was to conduct a focus group with the same participants to develop the theory in a more interactive forum (Krueger & Casey, 2014; Morgan, 1997). The focus group sessions were held in a virtually recorded session (see Appendix F). The seventh and last step of data collection was conducted with direct observation as a non-participant (Bernard, 2011). Close observation in an indirect manner, such as the non-participant, can be an

experiential anecdote (Van Manen, 1997). The direct observation as a non-participant was in the selected program's didactic setting and/or a simulated laboratory guided by an observational protocol (see Appendix G) which was used to process what was observed procedurally (Angrosino, 2007). Once the data collection concluded, a phenomenological reflection was analyzed and coded for themes and meanings (Van Manen, 1997).

Permissions

No data was collected from participants until necessary approvals were attained. IRB approval (see Appendix A) was attained from Liberty University and the higher education institution where the participants are employed (see Appendix B). In this higher education site, the highest level of authority is the Senior Data Strategist, the President's appointed representative. Consent was also requested from the campus Chancellor, the campus Vice Chancellor of Academic Affairs, the campus Dean of the School of Health Sciences, and the Program Chairs of each of the Health Sciences Schools. In addition, informed consent (see Appendix D) was attained from each participant. The informed consent included information about the purpose of the study and the data that was collected from them, including the amount of time it took. Moreover, the informed consent also provided details on how the participant could withdraw if they choose to and whom they might contact if they had more questions about the research (Talada, 2022).

Recruitment Plan

The sample of participants consisted of fourteen health sciences faculty participants employed at one campus. This sample was chosen because all participants have experienced the same phenomenon being studied (Creswell & Poth, 2018). Once approval was obtained to conduct this study, a recruitment email was sent via email (see Appendix C) to the participants.

In this qualitative phenomenological study, criterion sampling was appropriate. It met quality assurance standards since the participants all have experienced a technological savvy changed student population in the field of health sciences at a community college (Creswell & Poth, 2018). Once participants agreed to volunteer in the research, they were required to complete a consent form (see Appendix D) which provided information regarding the study, risks, and rights as participants.

Data Collection Plan

Creswell and Poth (2018) posited that interviews are the primary source of data collection within phenomenological data procedures. In addition to interviews, some options may include documents, observations, and art (Creswell & Poth, 2018). The intricacies and difficulties in the qualitative research process mandate a robust, carefully planned research strategy (Marshall & Rossman, 2015). The goal of this study's proposed research topic were individual interviews with health sciences faculty instructors. Creswell and Poth (2018) postulate that when considering the foundation of the phenomenological approach, the outcome desired is to translate the shared experiences of the phenomenon of the faculty members. Along with the underlying philosophies, the desire to express a lived phenomenon of lowered self-efficacy concerning student critical thinking in a technological was exposed.

Ajemba and Arene (2022) iterated to cross-validate and triangulate with varied data collection methods. Other research data collection procedures in this study were observations and focus groups. The observational participation of the research was to conduct observations of the faculty within their simulated laboratories where students are provided problem-based learning and competencies where critical thinking skills are developed (Jafari et al., 2020; Kelley et al., 2019; Pu et al., 2019).

Individual Interviews Data Collection Approach

A factor that distinguishes phenomenology from other research methods is that it does not automatically search to evaluate experiences within a balanced or homogenous group; instead, it distinguishes that it is the shared phenomenon or experience of the participant that is necessary (Van Manen, 1997). After all IRB approval was obtained for this study, individual semi-structured interviews were conducted first with each health sciences faculty participant at the beginning of the Spring semester. The interviews were conducted one-on-one virtually via Zoom meetings. During the individual interview meetings, the research questions that were addressed for data collection were:

Individual Interview Questions

1. Please describe your educational background and career through your current position. CRQ
2. Please describe how you developed your style of instruction. SQ1
3. What is your understanding of perceived self-efficacy? SQ1
4. Please describe your experiences working with students in the modalities of face-to-face, blended, and online delivery methods. SQ2
5. What changes in the student population and their learning methods have you experienced? SQ3
6. Please describe an experience when you changed an instruction delivery method that resulted in a positive student outcome. SQ1
7. Describe your challenges when working in a virtual platform to simulate hands-on learning. SQ3

8. What professional development experiences have prepared you to work with students performing problem-based learning methodologies in the modalities of face-to-face, blended, and online delivery methods? CRQ
9. What professional development experiences have you had working with the technology necessary to conduct instruction? CRQ
10. Please describe an experience when you were inspired to learn new technology for delivering instruction. SQ2
11. How can faculty professional development be tailored to improve the method of or modality of instruction you are currently using? CRQ
12. Please describe an experience when school administration accepted feedback and ideas to improve instruction delivery methods. SQ2
13. How receptive are faculty to school administration in regards to instruction delivery methods? SQ3
14. What else would you like to add to our discussion of your experiences regarding technology in the classroom? SQ1
15. What else would you like to add to our discussion of your experiences with program students that have not discussed? CRQ

Questions one through three intended to provide the reader with the conceptual framework of the participants by beginning with a grand tour question (Marshall & Rossman, 2015) that acted as an icebreaker and established rapport. Questions four through seven contributed to the research of basic knowledge of the participant's understanding of the central research question. Questions specific to outliers that affect one's behavior, such as the changes happening in questions four through seven, provides insight into this context (Bandura, 1977b).

Questions eight through eleven connects the instances where the faculty recognize when they are motivated to change their behaviors as a response to their environment and personal factors. Questions twelve and thirteen relate self-efficacy to their resultant behavior in that positive reinforcement will likely affect motivation tying it back to the theoretical framework of this study (Bandura, 1977b). Questions fourteen and fifteen assisted the research with the hermeneutic phenomenological methods by obtaining the personalized experiences of the recipients.

Individual Interview Data Analysis Plan

Van Manen (2016) referred to conducting thematic analyses when researching a desired meaning of the human experience. Theming of the data also lends itself to phenomenological interviews (Saldaña, 2021). In this study, I analyzed how the responses were interrelated to the investigated phenomenon to gather these themes. From the viewpoint of theming the data, I transcribed the individual interviews into 'is' and 'means' statements and exposed what each collection proposed (Saldaña, 2021). To horizontalize the data, I incorporated the self-efficacy constructs related to the central research question's personal, behavioral, and environmental processes to categorize the themes.

Data analysis of hermeneutic phenomenology guided my research to interpret the participant's experiences distinctly (Rapport, 2005; Van Manen, 1997). Consequently, through my data analysis, I sought to acknowledge each participant's response with the anticipation of personal, behavioral, and environmental constructs relevant to their lifeworld. When the individual interviews concluded, I compared the transcription from Zoom to the audio recording, ensuring accuracy while acquainting myself with the data. I conducted the first level of data analysis with In-Vivo methods (Saldaña, 2021) as I went through the transcripts and extrapolated

meaning as Van Manen (1997) suggested. In the second level of coding, I sought patterns (Saldaña, 2021). I gained a deeper understanding to move this information to the categories of codes in the second level of data analysis (Van Manen, 1997). Once I understood the themes that I identified in the transcripts, I was able to develop the essence related to their experiences. Miles et al. (2020) identified this categorization method as a type of structural coding which relates well to my data analysis – transitioning from a high-level to a more granular analysis.

Focus Groups Data Collection Approach

To create more profound meaning in a dynamic social environment, I conducted two focus group discussion with the participants. Ideally, the focus group will be in-person to encourage dialogue among the participants, but to accommodate logistics of the participants, a virtual platform was used. The focus group questions were developed and reported in the same manner as the individual interview questions were formatted. Alignment of the focus group questions to the central research question and sub-questions was maintained (Patton, 1990).

Focus Group Questions

1. What was your perceived self-efficacy when you started instruction in the field of your health science specificity? SQ1
2. What is your perceived self-efficacy with your ability as an instructor in your health science specificity? SQ1
3. What are the biggest challenges you face with the instructional modalities of face-to-face, blended learning and online instruction? SQ2
4. What are your biggest challenges when using technology in the classroom and laboratory? SQ3

5. How would you benefit from professional development concerning a changed student population? CRQ
6. How is faculty development prioritized in relation to your credential requirements and instructional requirements? CRQ
7. How does faculty development affect student achievement? CRQ
8. What else would you like to add to our discussion regarding your experience of a changed self-efficacy? CRQ

The focus group questions one and two align with the sub-research questions by identifying the participants' understanding of self-efficacy. These same questions addressed where they fell on a spectrum of their self-efficacy concerning the challenges to teaching methodologies in their respective field in response to a changed student population. Questions three and four focused the discussion on the challenges identified in their environment and how their behavior is affected by these changes. Questions five through seven focused the research on how faculty development (or lack thereof) affects their behavior changes. Question eight helped validate the discussion with feedback for the field of higher education in hopes of developing faculty in health sciences and beyond.

Focus Group Data Analysis Plan

The focus group interview answers were analyzed in the same way the individual interview data collection method was to explore the shared experiences of the phenomenon gathered by method. The data was analyzed the same way the individual interview was analyzed. Retaining Saldaña's (2021) analytic strategy of theming the data as the first cycle of analyzing the data, I extrapolated meanings and made interpretations from the transcription of the focus group recorded session. I then provided patterned coding and categorized emerging themes

(Saldaña, 2021). The data was divided among the self-efficacy constructs. Attention to textural and structural descriptions integrated a synthesized narrative for analysis (Miles et al., 2020; Van Manen, 2016). Van Manen's (2014) 'phenomenological reflection' was the guidepost for organizing the compiled data in the focus group analysis. As with the individual interview data analysis, first-order coding was conducted manually by In Vivo coding, and second-order pattern coding was implemented for data categorization (Saldaña, 2021).

Observation Data Collection Approach

Non-participant direct observation complemented the interviews and focus group data collection to deepen the phenomenon's rich understanding (Creswell & Poth, 2018). Additionally, triangulation and cross-validation of the data collection processes was achieved (Patton, 1990). Observing health sciences faculty in their domains of lab simulations and didactic instruction contributed to the phenomenological understanding of the participants' shared experiences (Van Manen, 2016).

As a non-participant direct observer, I watched and recorded field notes from afar, paying particular attention to the interaction between the faculty and the student (Creswell & Poth, 2018). The personal, behavioral, and environmental processes in a live setting was also monitored. Creswell and Poth (2018) recommended using an observation protocol (see Appendix G) to record information in this study. By using an observational protocol, I tracked the chronological order of the class or lab session, guiding my reflection on the events (Creswell & Poth, 2018).

Observation Data Analysis Plan

Saldaña (2021) guided the data analysis in coding on the first and second levels. The observation notes extended the interview statements to a deeper understanding of the shared

phenomenon the participants are experiencing. Based on the interview statements grouped into units or themes, an interpretation guided the pattern forming (Saldaña, 2021). When analyzing the observation findings, an account of the faculty's experience related to the phenomenon developed a textural explanation providing verbatim cases (Van Manen, 2016).

Data Synthesis

After articulating each data collection method analysis, the data was synthesized to identify themes that confirm the research questions inherent to the phenomenon. Since the participant count of this research is relatively low, the data is manageable and was synthesized manually rather than using software that would require an in-depth understanding, not typically mastered by a novice researcher (Saldaña, 2021). The participants' responses served as the hermeneutic text from which descriptions of higher education health sciences faculty's experiences were derived and interpreted. These textual and structural descriptions aligned thematically as they related to the constructs of self-efficacy (personal, behavioral, and environmental) and the social cognitive theory framework. By using the hermeneutic process, interpretations and implications for professional development were communicated. Creswell and Poth (2018) posited that structural and textural descriptions are an insight into a phenomenon's setting and framework, thus depicting them as helpful in pointing out the implications. The structural and textural accounts of the interviews, focus groups, and observations aligned existentially to describe how self-efficacy is experienced by participants (Van Manen, 1997). In the case of this research, the goal was to construct the essence of lowered self-efficacy for higher education health science faculty to initiate positive change in the process of professional development.

Trustworthiness

Lincoln and Guba (1985) theorized that the trustworthiness of a qualitative study is critical to gauge its value. Credibility, transferability, dependability, and confirmability are essential elements of a trustworthy scholarly work of research (Lincoln & Guba, 1985). The trustworthiness of this research was validated by the procedural evidence I maintained.

Polkinghorne (1989) concluded that validation refers to the concept that one's notion is well-founded and reinforced; additionally, the universal fundamental account provides a precise representation of the collective structures and fundamental influences that manifest in the instances assembled. Following this section are listed criteria that increase the trustworthiness of this qualitative study.

Credibility

Steps to increase the creditability (internal validity) perceived by the reader include prolonged engagement, persistent observation, data triangulation, peer debriefing, and member checks (Cohen & Crabtree, 2006). Lincoln and Guba (1985) concurred that the techniques listed above will authenticate the discoveries and conclusions of the study. The prolonged engagement was validated by documenting time with the faculty by conducting interviews, direct observation as a non-participant, and composing focus groups. Persistent observations were evidenced by analyzing and synthesizing the data collected. This synthesis included time organizing, sorting, and coding the data into common themes.

Data triangulation was achieved within the described data collection methods of individual interviews, focus groups, and observation (Creswell & Poth, 2018; Lincoln & Guba, 1985). Peer debriefing was documented regarding the feedback and commentary gathered within the chair and committee of the dissertation formed. Peer debriefing also increased credibility by

listing interactions between the researcher and professors or experts in the field. The third collection method was direct observation as a non-participant, fulfilling the data triangulation. By observing faculty in their domain of instruction, a more rich and deeper understanding of the instructor's relationship with students and technology provided credibility to my study (Lincoln & Guba, 1985).

Member checks will include two processes. In compliance with the IRB, a statement was included in the informed consent of the study participants, stating they each will have a chance to review and approve their transcript that will be included in the research (Lincoln & Guba, 1985; Talada, 2022). The second process of the member check was presented after analyzing the research, and the findings were generated to acquire authenticity. Once again, Lincoln and Guba (1985) state that this validation by the participants preceding the publication supports the study's credibility. Using credible processes throughout data analysis to communicate the participants' shared experiences increase the reader's authenticity (Creswell & Poth, 2018).

Transferability

Transferability implies that the findings of this study could be helpful in other frameworks due to the detailed narrative of the setting, participants, theming of the data, and categorization of the themes (Lincoln & Guba, 1985). The research goal was that in the context of the participants, health sciences faculty and their experiences would transfer to other higher education health sciences programs to promote further research to inform favorable structures to improve self-efficacy through faculty development. In addition, the maximum variation in the sample was presented as the sample consists of diverse representations of age. There was only one site sampled; however, this site represents a diversity of the field of study with eight programs in health sciences which includes Medical Imaging, Surgical Technology, Medical

Assisting, Diagnostic Medical Sonography, Medical Lab Technology, Paramedic Sciences, Respiratory Therapy, and Healthcare Specialist.

Dependability

Dependability and confirmability often increase trustworthiness (Lincoln & Guba, 1985). Specific to dependability (reliability), creating an audit trail (see Appendix H) increases the trustworthiness of the research. Detailed and extensive logs were kept throughout the research, including observations, records of data collection, thoughts and processes, and reflexive notes. The logs and findings will provide a means for a qualified researcher to conduct an external audit of the research findings. Lastly, a peer debriefing of the researchers' logs and processes was conducted. A thorough review of the research process and products by the dissertation committee and the Qualitative Research Director will be conducted.

Confirmability

Outside of the commonalities of the dependability factors, confirmability (objectivity) establishes techniques for increasing trustworthiness by confirmability audits, audit trails, triangulation, and reflexivity (Lincoln & Guba, 1985). It will be the challenge and responsibility of the researcher to provide evidence of neutrality from the participants, removing bias, motivation, or interest (Lincoln & Guba, 1985). This neutrality was accomplished within confirmability audits performed by the participants. The researcher presented the audit trails (see Appendix H) to the dissertation committee and qualitative research director to ensure increased confirmability. The triangulation of the data has been established in the previous sections. Reflexivity, by way of researcher logs, exploited any diversion of neutrality.

Ethical Considerations

I obtained site and participant access and consent. Additionally, I informed the participants of the voluntary nature of the study and their right to withdraw from the study at any time and the confidentiality measures that I upheld of the site and participants. The research was kept in locked storage and password-protected computers. Pseudonyms were used in place of the site name and the participants names when transcribing the interview responses. The participant sample consisted of one direct supervisor of the researcher, with the remainder being academic peers. I also established that there was no power differential between myself and the participants. Lastly, I provided an audit trail (see Appendix H) to the dissertation committee and qualitative research director.

Summary

This hermeneutic phenomenological study aimed to understand the lowered self-efficacy for higher education health sciences faculty at the community two-year college degree level and its effect on student achievement in a mid-Atlantic state amidst deficient development. In Chapter Three, I detailed the subsections of research design, the research questions directing the study, the participants, and its setting. I identified a comprehensive account of the data collection process, which aligned with Van Manen's (2014) hermeneutic phenomenological research design and methodology. This was followed by an explanation of how the data was analyzed and synthesized primarily aligned with Saldana's (2021) coding methods of qualitative research. I identified a comprehensive account of the data collection process, followed by an explanation of how the data was analyzed and synthesized. This chapter establishes the study's trustworthiness and the ethical considerations implemented to ensure its credibility. Chapter Four will detail the research results, emphasizing the data analysis.

CHAPTER FOUR: FINDINGS

Overview

This hermeneutic phenomenological study aimed to understand the lowered self-efficacy for higher education health sciences faculty at the community two-year college degree level amidst a deficiency of professional development in a mid-Atlantic state. The problem is that higher education health science faculty do not have a foundation of how people learn when they begin teaching or an understanding of how to adapt to an advanced technological generation and changing pedagogies, and as a result, have lowered self-efficacy (Dumulescu & Mutiu, 2021; Regmi & Jones, 2020; Sarfaraz et al., 2020). This chapter describes the findings of this study, including participant descriptions, narrative themes, and subthemes reasoned from the data, revealed outlier data, and the corresponding research question responses. A summarization of the findings concludes this chapter.

Participants

Criterion sampling for fourteen health sciences faculty members was used to seek participants that have experienced a technological savvy changed student population in the field of health sciences at a community college (Creswell & Poth, 2018). The participants' identities were guarded in this study, using pseudonyms as replacements for actual names and the site setting to ensure confidentiality. IRB approved (see Appendix A) the recruitment of participants as described in Chapter Three. Demographics for the faculty participants were: one White man and thirteen White women. The participants differing levels of responsibility and individual educational experiences supplied the credibility of this study in that the data was not collected in a simulated manner but in a more natural setting (Hatch, 2002; LeCompte & Schensul, 1999; Marshall & Rossman, 2015; Ravitch et al., 2016).

Table 1*Faculty Participants*

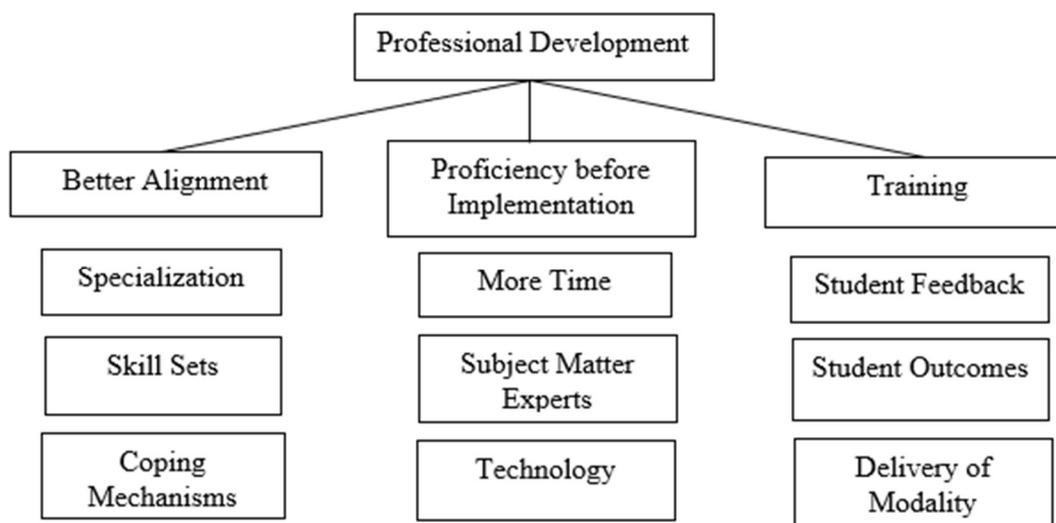
Faculty Participant	Position	Years in Education	Content Area of Highest Education Earned	Method of Participation
Cory	Program Chair	13	Economics and Insurance	Interview/Focus Group
Deb	Program Chair	13	Adult Education in Community Colleges	Interview/Focus Group/Direct Observation
Emily	Program Chair	15	Management and Leadership	Interview/Focus Group
Jenny	Faculty	17	Adult Education	Interview/Focus Group
Karen	Program Chair	9	Healthcare Administration	Interview/Focus Group
Kenzie	Program Chair	8	Business Healthcare Management	Interview/Focus Group/Direct Observation
Loralei	Dean	23	Nursing	Interview/Focus Group
Lyla	Program Chair	13	Health Sciences	Interview/Focus Group
Mindy	Program Chair	15	Leadership Development	Interview/Focus Group/Direct Observation
Payton	Faculty	2	Medical Imaging	Interview/Focus Group/Direct Observation
Rory	Faculty	6	Athletic Training	Interview/Focus Group
Sarah	Faculty	4	Criminology	Interview/Focus Group
Tammy	Program Chair	20	Human Resources	Interview/Focus Group
Tyra	Faculty	8	Adult and Career Education	Interview/Focus Group/Direct Observation

Results

The themes of this study are given below. Each theme and subtheme results from an all-encompassing data analysis and synthesis from individual interviews, focus groups, and direct observations gathered in the field. The data is submitted in the diagram listed below and narratively for the remainder of this chapter.

Figure 3

Themes and Subthemes



Better Alignment

Positive student outcomes, retention, and completion are the basis of measurement for academic institutions regarding their performance. The link between the students and college administration in delivering the product of education and reciprocating success is their faculty. College staff and faculty agree on this relationship but approach it differently. Health science faculty are subject matter experts hired as faculty educators with minimal experience in teaching and learning. Nearly every participant expressed that they were highly confident in showing students how to do their professional skill set; however, they needed guidance on translating

their actions into words in front of a classroom. Cory stated, "I felt confident teaching in the field as a clinical preceptor but teaching in the classroom was challenging." Karen backed this feeling up by responding, "I struggled in the beginning transforming application of skills into words for lecturing." The essence of the feedback was that there needs to be more of an alignment of professional development and training to teaching and learning. School leadership focuses on professional development with delivery platforms such as Zoom and learning management system training. Tammy stated, "the professional development here is generalized and does not help us know how to teach the professions of health sciences."

Specialization

Health sciences faculty participants recounted several professional development events that the college has recommended and, at times, mandated, where the theme or topic concerned technology platforms which served the masses and were helpful. However, regarding program-specific training and development, the participants unanimously recalled no training. When asked how professional development could be tailored to serve them beneficially, all participants recognized administrators' difficulty in offering topics that serve all program and general education faculty. There was an essence that health science faculty would need to explore collaborating more as schools rather than from the administration level. Emily shared, "health sciences programs are highly structured, so maybe tailor professional development to the schools and programs." The school of health sciences encompasses eight separate ancillary programs that share standard procedures of structured curriculums and clinical time. All participants conveyed that their teaching style culminated from how they were taught and that they were not trained as teachers. Specialization of professional development that would support health sciences faculty with teaching and learning styles and those areas they have in common would be worth

exploring. Karen supported this possibility and noted, "health sciences is such its own world, different from the rest of the college and the ways we need to instruct our students."

Specialization of professional development is a significant undertaking. It would not only take faculty-faculty collaboration, but it would also include faculty-administration collaboration to ensure the institution is sustaining the requirements of accreditation and strategic plans. Jenny ensured a willingness to start the conversation by stating, "health science faculty are receptive to feedback and input by administration because they are not set in their ways as teachers since they were not trained that way."

Skill Sets

As mentioned earlier, participants stated there is an offering of professional development that is mandated each contract period; however, the offerings are generalized. Sarah noted that "motivational speakers are good for professional development," but when recalling how it could apply to the classroom, she asked, "what skills are you actually teaching me; give me real steps and measures to take to help." Currently, mandated professional development hours are top-down directives with minimal takeaways in the form of a skill set. Deb stated, "the trend has been for the institution to change the masses without giving time to see the outcomes, the problem with this is, health sciences work on outcomes." When the participants were questioned about their professional development historically, there was a consistent recollection that it is disconnected from what instructors do in the classroom. Cory recalled, "the professional development we do here has more to do with problem-solving at an administrative level and has not prepared me for students." The participants revealed a desire for those experiences that they would improve their skill sets, expand their knowledge base, and increase their confidence.

Coping Mechanisms

The theme of how health science faculty react to changes they have seen amongst the student population they encounter revealed itself to be an area where they seek professional development. Most of the participants noted the exacerbation of the attention to the mental health crisis that they were seeing come into the classroom post-pandemic. "We are now in an era of mental health and being focused on myself," according to Sarah, "I don't know how to talk about these things with my students." There was an overwhelming sense of coming from an era where problems were left at the classroom door and did not merge into the time for learning to nowadays, "where it is difficult for students to disconnect one world from the other," according to Karen. Many participants felt this was due to the current technological era of being continuously connected to phones and social media. Participants noted many occasions of students monopolizing their class to discuss mental health crises where the instructor is unsure how to de-escalate and transition back to learning objectives. Kenzie reported with angst, "we need coping skills to help our students be successful."

Proficiency Before Implementation

Changes are inevitable in any profession. New technology and processes are a way to help professions grow, and student success and outcomes in academia drive a lot of that. For changes to accurately measure their outcomes, they must be rolled out proficiently and adequately. Lorelei recalled the rollout of a new LMS platform and the training experiences before implementation, "all of us were provided the minimum amount of training to set up a course and work within it before its rollout." Lyla recalled an experience where a new delivery modality was mandated to accommodate students, "the modality was implemented, and we were told to do it; there was no training as far as the equipment, and now our outcomes are low." The

participants noted that training and professional development must occur before implementing changes. In addition, there must be time to implement the change and receive outcomes.

In events like the recent pandemic that forced colleges to switch from the classroom to online instruction immediately, it is understandable that these ideal steps of change did not occur. The college quickly rolled out online instruction platform training to faculty over two weeks at most, faculty recalled. Faculty participants learned enough to get by and quickly adapted to what worked and were only working through the quarantine once returning to the classroom. Three years have passed, and the participants are still managing with this 'bare minimum' training. Lorelei noted, "let us do some formal training; we've not done a formal reset; let's start again; it is past the point of time to do this." At the same time, academia began to assess these new ways of globalizing the delivery of education by using platforms such as Zoom.

Sarah recalls a data-driven meeting intended for something other than professional development where the student outcomes discussed were low. Nevertheless, no course of action was offered to help faculty become proficient. Sarah emphasized, "I need real steps and measures to implement to help because if what we are doing isn't working, then give me something specific to make it better." The theme that evolved from this discussion with the participants was that enough time has passed that it is time for more professional development from that initial basic training to become more proficient in these new modalities of delivery and that they do not feel they are best serving their student population with the bit of knowledge they have.

More Time

Many participants revealed a pattern they see with the institution implementing changes in delivery and training faculty later, if at all. Many participants relayed that the training is offered after the changes are implemented. However, it is optional, and with their other

responsibilities, they cannot take the time to become proficient at it. Therefore, they will avoid implementing changes because they need to feel proficient to benefit from them. Emily noted, “there is a lot of technology out there that would be helpful, given the time and willingness to explore it; there is something to be said for just being able to get into the content, dig deep, and sit with it.” An example of this was presented by Tammy, who encountered an opposing response from the other participants when the pandemic forced instructors to teach online. Tammy stated that their program was already running in a blended delivery modality for several years and shared, “we had a head start teaching completely online because of the long amount of time we were already teaching the blended model.”

Another example, when considering more time is needed to become proficient before implementation, is separate from the institution, more so to the advancement of technology. Sarah felt it was important to recognize that “staying up to date on equipment can be difficult.” On top of their full-time responsibilities, health science faculty find it challenging to commit time to learning and advancing technology in the field. Kenzie furthered this theme by stating, “my challenge with technology is troubleshooting.” Most of the participants agreed that they struggle to find more time to learn how to troubleshoot on the equipment, even in the classroom, labs, and the field where their students are learning.

Subject Matter Experts

Understanding the differences between health sciences faculty and general education faculty regarding the time required for professional development to build a collaborative relationship with college administration is essential. Health sciences faculty are subject matter or content experts hired as educators. Rory recalls that when beginning a career in higher education, “I knew nothing about really teaching in the classroom.” For health sciences graduates to work in their respective fields, they must graduate with an associate degree and pass a board registry

exam. The accrediting bodies of the respective health sciences schools mandate this requirement. This requirement deviates the health science instructor from the general education instructor in two ways, explained here.

The first is that at a community college, it is required to hold, at minimum, a bachelor's degree. Therefore, when a general studies instructor is hired, they already hold this degree. When health sciences instructors are hired, they are generally placed into an academic plan to seek their bachelors within a prescribed time frame while working. Kenzie shared during the interview, "I graduated from this program with my associate degree and now I am here teaching and working on my bachelor's degree, I really had to change my nature balancing all of this with family." While only temporary, it limits instructors' time to seek other professional development when attending school and maintaining a full-time job.

The second difference is that after obtaining the degree, health sciences faculty are required to maintain their credential, which requires varying hours of continuing education per year. General education faculty do not hold this requirement. Therefore, the time health sciences faculty must spend on additional professional development in areas of teaching and learning is more of a time requirement. This time commitment contributes to the essence of professional development being addressed more specifically to different programs like health sciences; as Tammy shared, "we need to look at the programs individually versus looking at them as a whole in order to be more proficient."

Technology

Overall, the participants were unanimous about accepting new technology in the classroom if it "best serves the student," according to Lyla, "but make sure faculty are trained on new technology." Faculty participants deviated from their comfort level with technology with how the students use it and the technology used in the classroom. Cory said, "I am 40 years old,

but with my students and their social media and using technology to communicate, I feel 90 years old." Items discussed in the focus groups, where participants started to realize common issues, they see are students using incomplete sentences when communicating verbally and with phone etiquette. Health sciences instructors are now tasked with clinical sites requesting more attention be placed on phone etiquette between a student technologist and a physician or a patient. Deb revealed "I have had to add professional phone etiquette to my curriculum because of complaints from clinical sites." Keeping up with the technology to relate to this generation of students is something health science faculty deems necessary to be more proficient in their roles.

Regarding technology, a gap was expressed with faculty participants in what they have in their classrooms and labs as the technology required for their field and the technology the students encounter at their clinical sites. Participants recognized it is not financially feasible to replace equipment and technology in their labs as quickly as in the field; however, when instructing on equipment in the lab that does not match the clinical site equipment, faculty find it difficult to translate what they do not know. Students will return to the lab setting with questions about troubleshooting equipment they have in their clinical experience. Health science faculty should find more time in the clinical setting to get trained on what is out there to feel more equipped to work with students. Sarah noted, and Tyra agreed that "staying up-to-date with technology, compared to clinical sites, is challenging."

Training

The recurring theme throughout the data collection and analysis is that health science faculty crave more training to be better instructors and feel more competent when dealing with teaching and learning styles. Jenny noted "in the beginning, I felt very unconfident, over time though, figuring it out as I go, I feel a little more confident." This theme evolved from patterns

discovered of consistent and almost duplicated feedback of their confidence being dependent on student feedback, student outcomes, and delivery of modality and how these relationships drive their self-efficacy. When the participants need to catch up in these areas, they must be equipped with the skill sets to improve when not trained as educators. Deb captured this theme by saying, "health sciences faculty are outcomes-driven, and when that does not work, we need to help our faculty."

Student Feedback

When asked, how did you develop your teaching style, most participants responded with, "I teach the way I was taught," according to Lyla. The way they were taught was that they were given an objective and shown how to perform the task. Next, they were to replicate the task several times in varying conditions with the same expectation of an outcome. After replicating the task in varying circumstances, they were to test out the task, which represented their competency in the objective. In health science professions, technologists are expected to perform an objective and have the same outcome in a world of variables being the patients they encounter. This outcome requires critical thinking. It is the outcome of health science programs to improve critical thinking skills. However, Jenny has struggled with current practices because "critical thinking skills are less today than they have been in the past." When students are motivated to learn, they participate in the tasks, and this provides feedback to the instructor on how they need to adapt their teaching styles to serve each student better where they are at with their understanding. Lyla iterated, "I ask for my student's feedback and then change things up." Payton agreed by noting, "I rely on feedback." Many participants communicated that in today's student population, many shifts had affected their ability to instruct and where they would like to seek guidance and development.

A standard reference to student engagement and learning styles was that students now are very immediate and transactional based. Lorelei stated, and many other participants agreed, that “students are very much now giving feedback of just tell me what I need to know and no more.” Mindy expanded and reflected that “my earlier era of students was much more participatory and motivated to learn; hungry for understanding.” Health science faculty rely on student feedback to gauge their competence in teaching the task. They show the student how to do a task and explain why it is essential, and many students need help to go forward with applying what they were taught. When they cannot get the feedback, they need to adapt their critical thinking skills that rely on the variability they are accustomed to in their subject matter. This outcome exploits the health science faculty’s minimal development with teaching and learning skill sets.

Student Outcomes

When asked the participants directly what their understanding of their perceived self-efficacy was, it was clear that the term was unfamiliar. Cory shared, “I have heard the term before, but off the top of my head, it is not something I am familiar with.” When the question was reworded, asking what their confidence level was in their ability to deliver instruction and have a successful outcome, the answer was unanimous; they were highly confident. When reworded, Cory said, “when you ask it like that, I have an extreme amount of confidence.” They all provided that they held this confidence because most of their students passed their board registry exams. Emily stated, “My confidence comes from my students passing their boards.” Students passing their board exams is the outcome that health science faculty measure their ability. This response seemed contradictory to the previous sub-theme, where they expressed, they felt they needed more confidence with this generation of students’ feedback. When prompted to expand on that, it was clear that these were two different measurements of their self-efficacy. Payton confirmed, “her self-efficacy is affected by students passing their boards.”

Delivery of Modality

There was an undeniable contention among the participants when discussing the comfort level, effectiveness, and preference of modality delivery. Karen was adamant that “either stop with online modalities or provide better professional development for the educators.” With the quarantine of 2020, all faculty were forced to switch to a virtual format. Post-pandemic, there is still a strong push from the college for students to have an online learning option. Health sciences faculty do not support this as an effective delivery modality for their field. Mindy states when asked by potential incoming students if her program could be offered online that, the response is, “this is a hands-on profession, therefore, requires a hands-on education.”

Regarding relating the delivery method to faculty self-efficacy, all the participants said they gauge their effectiveness by seeing the student’s reactions in person. Jenny expressed, “face-to-face is more interactive; you get to see those light bulb moments that show up on their faces; my understanding of self-efficacy is my ability to interact and get feedback or a response from them.” Karen went further with why standard delivery is warranted over online delivery to speak on how virtual platforms exacerbate the disconnect and the barriers of communication by stating “students have lost their communication skills and teaching online just perpetuate that.”

Outlier Data and Findings

Naturally, outlier data revealed itself through widespread data collection and analysis. Health science faculty range in their experiences, proficiencies, and education. The health science faculty participants' experience levels varied from 2 to 23 years.

The Stress on Program Students

During the data collection, it suddenly occurred to Lorelei, when asked what different experiences health science program students have and their readiness as they entered structured programs versus general education, that "faculty need to have a better understanding of this

transition." All the participants agreed there is a disservice to program students by not better preparing them for the change of rigor, the field itself, and the vetting process. Due to this, retention is negatively impacted. Lorelei's revelation, however, brought forth an area that should be explored in that health science faculty have yet to consider that students may be entering the program that took all their pre-requisite courses online and is now having to transition to hands-on learning. They may also have a background of handholding from pre-requisite instructors and are now required to study independently and out of the box.

The Stress on Faculty and Students of Safety

A new concern is making its way into classrooms for all faculty; however, it is doubled in complexity when it comes to health science program students and faculty. This concern is safety. Students are asking the participants what the protocols are and where to find safety "when" (no longer "if") escalated events start to happen, considering the increase of mental health crises and school shootings. Lorelei said she "would like to see professional development also include de-escalation tactics and techniques." At the same time, Mindy agreed, "the professional development I would like to see is safety training in light of recent shootings." Mindy experienced the third national school shooting in our country's history before going into education while working in the field, taking care of the victims. This experience has remained with her and brought to light that health science faculty spend much time still connected to their fieldwork and program students doing their clinical work. They not only experience the fears of safety on their campus but then experience working with victims in their clinical time in the field.

Research Question Responses

The health sciences faculty participants explained their experiences with professional development and their confidence levels as subject matter experts versus how to be an educator.

Interviewing 14 participants and observing 4 laboratory events of the instructors in their environment demonstrated that there is a cadence to their instruction when they teach content. This section offers concise answers to the research questions for the discussion in Chapter Five. This section supplies short and direct narrative answers to each research question using primarily the themes developed in the previous section.

Central Research Question

What are the professional development experiences of higher education health sciences faculty that affect self-efficacy? The findings revealed three principal themes: more alignment, faculty need to feel proficient before implementing change, and more training. The most prominent component that fuses these three themes, and their related subthemes, is the lowered self-efficacy the faculty experienced in their inability to impart recognized teaching and learning methodologies. The participants all acknowledged they had yet to receive professional development for teaching and learning styles; however, when given the opportunity to choose professional development, they did not seek this type of training. Emily focused attention into a theory behind this, stating, "there is a lot of professional development out there to learn new things, given the time and willingness to explore it." This response is representative of lowered self-efficacy. Tyra communicated that she had not sought training to develop teaching and learning styles and reflected that "it sounds like I do not even care about growing."

Sub-Question One

What personal experiences of higher education health sciences faculty affect self-efficacy? Health science faculty's personal experiences of how they were taught in the field were their undisputed theme regarding their confidence to teach others. Lyla expressed, "I teach a lot by experience." They believed they had the skills necessary to do their job well regardless of the

lack of teaching and learning styles. The mastery experiences they had as students themselves resulted in higher self-efficacy.

The participants' personal experiences also evolved from the repetition of the environment. Emily noted, "I feel like I am fairly efficient because of the cyclic nature of an academic setting." All the participants conveyed that when measuring their self-efficacy from when they started in their educational role to currently, their confidence had grown, and their belief in their ability increased with positive student outcomes.

Sub-Question Two

What behavioral experiences of higher education health sciences faculty affect self-efficacy? Jenny said it best regarding how health science faculty self-efficacy is related to their behavioral experiences by relating, "much professional development is focused on the progressive types of education; but the problem with that is, we are a behavioral science." This response captures why health science faculty are not confident they will successfully make changes in their delivery or problem-based methodologies. Health science faculty and their students were trained by watching behavior and repeating it to be successful, which is a behavioral type of learning. Therefore, if the faculty can continue "as is," their self-efficacy remains high.

Sub-Question Three

What environmental experiences of higher education health sciences faculty affect self-efficacy? Health science faculty described environmental factors throughout technology data collection, being forced into a virtual delivery method, and a difference in the student population. The participants all perceived these were factors of their environment outside their control. It was clear that they expected that the school administration would provide guidance.

The participants overwhelmingly welcomed technology when it pertained to the technology, they deemed best served the student. When it comes to technology, self-efficacy was high, with the caveat of being given enough time to train on it before implementing it. Faculty self-efficacy was lower when technology pertained to the student's inability to disconnect and care for their mental health. Karen said, "students can't disconnect, yet they are craving that connection when they come to class and want to monopolize my entire class because this may be the first time that they have been face-to-face with real people since the last class."

The discussion regarding face-to-face and virtual delivery methods revealed a very low self-efficacy. Because of its nature, the participants were unanimous that health science could not be taught on a virtual platform. Karen iterated, "health sciences is such its own world, different from the rest of the college and the ways we need to instruct our students, I don't have any control over how I deliver my course, and it is very challenging" when referring to her curriculum committee. All the faculty would only consider the possibility of success if put in that situation.

Regarding a changed student population, self-efficacy was low since the faculty did not feel confident in communicating on issues such as mental health and the student's decreased critical thinking and clinical application. Jenny spoke about decreased critical thinking by noting, "there is definitely a difference in students today with their abstract thinking and application; they struggle with being able to come out of the box and apply what they've learned." Mindy said, "we are a constant and steady resource for these students, this is hard and consumes much of my time and I need the skills to help them cope."

Summary

Health sciences faculty experiences with professional development were found to affect their self-efficacy in needing more alignment, a need to feel proficient before implementing change, and insufficient training in teaching and learning styles. Health science faculty learned their skills through behavioral methodologies and depended on this structure to feel successful. It was discovered through this study that health science faculty need their instruction to be looked at separately from the college to maintain a higher self-efficacy. When health science faculty's personal experiences, behavioral experiences, and environmental experiences deviate from their trusted methodologies, their self-efficacy is lowered.

CHAPTER FIVE: CONCLUSION

Overview

This hermeneutic phenomenological study aimed to understand the lowered self-efficacy for higher education health sciences faculty at the community two-year college degree level amidst a deficiency of professional development in a mid-Atlantic state. This chapter begins with a discussion that associates the discoveries of this study to the empirical and theoretical sources while rendering thematic conclusions into an interpretation of the professional development experiences of higher education health sciences faculty that affect self-efficacy. Subsequently, this chapter delivers implications for policy and practice, theoretical and methodological implications, and the limitations and delimitations pertinent to this study. Lastly, this chapter will conclude with recommendations for future research about health science program-specific professional development and self-efficacy.

Discussion

After identifying a gap in the literature related to self-efficacy specific to health sciences faculty concerning professional development, this study began with the question, "What are the professional development experiences of higher education health sciences faculty that affect self-efficacy?" This central research question was reinforced by the theoretical framework of the reciprocal relationship of social cognitive theory, particularly the three components of triadic reciprocity. The site selected for this study was a two-year community college with a School of health sciences faculty. The academic institution and administration were exceedingly accommodating and approved the participants' recruitment, which expedited data collection through interviews and inside the classroom labs. The thematic outcomes resulting from the analysis and synthesis of the data are discussed in this chapter. The interpretations of the

findings, implications for policy and practice, and theoretical and empirical implications are presented. This section concludes with the study's limitations, delimitations, and recommendations for future research regarding the professional development of health science-specific faculty.

Interpretation of Findings

This section deliberates on the summary of thematic findings consequential to the data collection, analysis, and thematic progression. The summary delivers a succinct outline of the three themes described in Chapter Four. My interpretation of the findings is also discussed, intertwining the outcomes to theoretical and empirical literature and, at the same time supplying new information about health science faculty self-efficacy concerning professional development experiences.

Summary of Thematic Findings

The findings revealed that health sciences faculty experiences with professional development were found to affect their self-efficacy in needing more alignment, a need to feel proficient before implementing change, and insufficient training in teaching and learning styles. A need for more training in teaching and learning styles specific to how health sciences faculty need to deliver instruction stood out as the place to begin in increasing self-efficacy. The findings revealed that health science faculty believed they would be more successful with this type of foundational professional development. Developing health science faculty in a way that they feel proficient at delivering content that relates specifically to their student population while maintaining methodologies, they currently trust is the essence of this study's message. I observed faculty within their labs with their students in a face-to-face instructional environment, and they exhibited confidence and cadence in their methods. In conclusion, this study revealed high self-

efficacy in health science faculty when pertaining to their subject matter content in the environment of face-to-face interaction where they could rely on student feedback. When health science faculty were asked to instruct the same content in a virtual environment or a changed student population, self-efficacy went down, and they attributed this to a lack of teaching and learning style professional development.

Same Goals with Different Paths. The essence of the findings revealed that health science faculty and college administration have the same and consistent goal of fostering an environment that results in the best student outcome is the mission. The expectations of how to accomplish the said goal are the issues lowering the self-efficacy of health science faculty; as Cory points out, "the professional development we do here has not prepared me for students, students come here because we are the content experts, and they want us to teach them, and that's what I want to do." Health science faculty are tasked with raising students' self-efficacy (Tadesse et al., 2022) at the frontline, in the classroom setting leading the students to perceive themselves as the agents of their change (Bandura, 1989). Increased health science faculty self-efficacy works synchronously with student self-efficacy (Afkhaminia et al., 2018). College administrators are tasked with improving barriers to attrition (Ebrahim et al., 2021), growing completion credentials (Sutton, 2022), and boosting student experiences and outcomes (Crowe, 2021). The paths on these parallel missions were identified as different in the findings. The lowered self-efficacy is because health science faculty and college administration do not align on how said faculty can achieve an environment in which health science faculty feel secure in their methodologies and delivery and can pursue training that constructively affects their job performance. My findings highlight how instrumental the alignment of health science faculty and administration paths is to reach the same goal.

When health science faculty and college administration align their paths to the outcomes of increased student success, an alignment of specific professional development will follow, and progress in a positive direction will be the result. An example of this phenomenon is how leadership allows for professional development opportunities. All the participants recalled opportunities supported by school leadership to attend professional conferences in which student participation was the focus. Most health science credentials provide opportunities like this for the profession's growth. These experiences have no objective of faculty teaching and learning. Karen was able to recall professional development that did have an objective specific to her credential and her profession as an educator in her credential. This opportunity was based on an award received by an independent application. However, the academic institution supported additional faculty in her specialty to accompany the faculty that received the scholarship. Both faculty shared their positive experiences and how much they learned as health sciences educators, which in turn manifested into techniques and procedures they implemented in their classroom management that empowered student achievement. This outcome exemplifies college leadership and health science faculty alignment that supported the student. Ratner et al. (2022) identified that continued professional development is invaluable to supporting quality, mainly when forming a sense of community. Ratner et al.'s (2022) findings recognized that faculty and leadership alignment forms a sense of community. Rory, the faculty that accompanied Karen, reinforced this sense of community that has now formed between leadership and health science faculty by sharing, "I am shy and newer in my role, but if I provided feedback on how to improve delivery methods, I think I would be welcomed with open arms and acceptance."

One of the findings of this study was the significance of the social context between college leadership and health sciences faculty and its negative implications that affect self-

efficacy. Kenzie and Lorelei both mentioned the harmful practices that have continued since returning to the classroom post the CoVid-19 pandemic that has implications for faculty burnout. Regarding the primary training faculty received as a necessity during the pandemic to get by with switching to an online platform, Lorelei responded that it is "time to start again, let us do some formal training, it is past the point of time for this." Kenzie spoke to a different outcome that has continued post-pandemic: "during Covid, everybody transitioned to online teaching from home, and no one knew how to disconnect from work; everybody was working all of the time and that seems to be the same expectation now." These findings parallel the empirical literature signifying that while Covid may have opened new ways of delivery for leadership to explore to support enrollment, attrition, and completion, without faculty development that ensures the proficiency to carry this out successfully can lead to a barrier in the feeling of cohesiveness between faculty and administration (Prewett & Whitney, 2021; Shin et al., 2013). It is valid for college leadership and health science faculty to have the conversation regarding perceived expectations and the adverse effect of the implications if left off the table, such as decreased successful classroom organization practices, decreased student learning outcomes, and depression (Klassen et al., 2010; Lauermann & Konig, 2016; Shin et al., 2013).

Balance is the Key to Self-efficacy. Self-efficacy can be high in one or more of the constructs of triadic reciprocity and low in another, creating a shift in the overall perceived self-efficacy (Bandura, 1993; 2012) of health sciences educators. This interpretation revealed itself consistently throughout this study. All the participants were confident in viewing themselves as the agents of their adaptability (Bandura, 1977a) to the personal processes of outcome expectations, the environmental processes of social models, instruction, feedback, opportunities for self-evaluation, and the behavioral processes of effort and persistence. Cory,

Karen, Tyra, Sarah, and Mindy all stated they feel highly efficient in teaching their content in their desired modality and methodology and receive a positive outcome from their students based on feedback and board examination scores. This revelation substantiates Mikkonen et al.'s (2018) conclusion that health science faculty have assessed themselves highly regarding their competence in the specific field of subject matter. They were also agents of their change when presented with negative student feedback. Cory recalled that "changing how I dealt with students helps them with their confidence." This experience corroborates Myyry et al.'s (2021) findings that student feedback in an environment of face-to-face improves teacher self-efficacy.

Where health sciences faculty exhibited lowered self-efficacy, a personal process, was with their behavioral processes of choice of activities and environmental regulation. An example of this was presented by all the participants in the recall of their transition to online during Covid. All the participants described this as a negative experience and an unwillingness to re-introduce online education delivery regarding health sciences education. This finding agrees with Ma et al.'s (2020) conclusion that post-Covid self-efficacy following online instruction remains low because of the lack of online teaching pedagogies and feedback evaluation.

Implications for Policy and Practice

The results of this study have implications for policy and practice associated with health science faculty professional development. The first portion poses recommendations, particularly for college administrators offering a health science school. This portion is followed and mainly focused on professionals at the institution responsible for facilitating professional development and training for health science faculty and staff.

Implications for Policy

College administrators, Board of Trustees, and governance at the state level are all limited fiscally in areas of spending, including professional development for faculty and staff. They should rank professional development high for health science faculty over broader development that covers the masses. As learned in this study, high-self-efficacy faculty is vital to managing the classroom at the frontline of the college's biggest asset, the student population. By investing in faculty's specific needs of professional development in their area of specialization, college administrators will strengthen and reinforce the college's mission of teaching and learning that then rolls out to support student learning and concludes into a feeder system of the community's workforce. I recommend that policymakers offer direction and resources to community colleges, allowing college leadership to allocate professional development to each School's specific needs.

Implications for Practice

The direct implication for practice focuses on health science faculty professional development and training. One recommendation is to change professional development and training timing within a health science faculty's educational career. Based on the findings of this study, health science faculty, their students, and the college would benefit from teaching and learning style training before entering the classroom during their onboarding. Another recommendation would be to develop a role within the school of health sciences dedicated intentionally to facilitating the professional development of their uniqueness. This role would report to college administration to ensure a gateway to ensuring requirements are being met at all levels of accreditation. These practices and recommendations should be applicable in all schools and programs of the college and supported with assessment and measurement of their

effectiveness. Faculty and administration collaboration efforts in professional development must always be focused on improving student outcomes.

Theoretical Implications

Bandura's social cognitive triadic reciprocity model was used as the theoretical framework for this study. This model included an evaluation of the correlation of the determinants of behavioral, environmental, and personal behaviors of health science faculty and was justified as a suitable framework for determining the professional development experiences of higher education health sciences faculty that affect self-efficacy. Based on my findings, this study corroborates previous research in that self-efficacy determines motivation to be an agent of change. This is evidenced in my research in that when the participants self-efficacy is high, such as in their confidence to teach their subject matter, they were motivated to change according to student feedback. Faculty self-efficacy lowered when they were forced to teach in an unfamiliar modality and lost their motivation to be an agent of change to improve the situation. They were unwilling to adapt to this new modality being mandated by the circumstances. This study extends previous research by realizing the significance of collaboration when there is a hierarchal system for lowering or raising self-efficacy.

In this research, two examples were provided of areas where faculty needed development. Both areas were a result of a mandated change where faculty exhibited no motivation to be an agent of change. Prior research shows us lowered self-efficacy results in one not seeing themselves as an agent of change. Therefore, until faculty are developed in these areas of mandated change, in a way that they can see favorable outcomes after their application, they will remain stagnant in their motivation to change. I concluded that Bandura's (1986) model of triadic reciprocity evaluates human behavior, assuming the conditions are free of limitations and

barriers. Human behavior is no longer authentic when a limitation is placed, such as that in a hierarchal structure.

Empirical Implications

The empirical literature on self-efficacy is reinforced by my findings that when there is not a limitation placed on any of the determinants of triadic reciprocity, self-efficacy is higher (Almutairi, 2020; Bandura, 1977a, 1982a, 1982b 1986, 1993, 2001; Behar-Horenstein et al., 2019; Chang et al., 2022; Duchatelet & Donche, 2019). This was witnessed in my direct observations of faculty in their respective field of laboratory lessons. I witnessed faculty comfortable in their environment and confident in their instruction reinforced by their cadence. Faculty were also in a traditional face-to-face modality. Faculty displayed motivation to change and adapt when provided instant feedback from their students. If the student did not understand the instruction, faculty were able to adapt until they received a positive outcome that they desired. The student also exhibited higher self-efficacy and were able to see themselves as an agent of change. The empirical implications were substantiated in this reciprocal event where raising faculty self-efficacy, raised student self-efficacy.

Nevertheless, there needs to be a more significant component of how the human behavior model is affected when there is no dynamic of mutual collaboration of the person, environment, and behavior. The literature only corroborates a social setting where human behavior is within their control. This new finding substantiates the importance of monitoring self-efficacy and how it determines outcomes in administrator-faculty and faculty-student outcomes. This new finding also creates opportunities for more collaboration, especially when everyone has the same goal but different ways of reaching the same goal.

Limitations and Delimitations

Three limitations were presented in this study. The first limitation was that participants were all White and predominately female. The only diversity of the sample came from age. Due to the specificity of the participants in this study, this was an unavoidable limitation when choosing one site. Second, there needed to be more time. The structure of the site term limits dictated health science faculty members' availability. With scheduled breaks and off time, there was only a limited time window for data collection. The third limitation was that observations needed to be in person to experience faculty and students in their natural setting, which relied on what was left in each School's curriculum regarding lab time.

Choosing a unique sample by criterion sampling to examine health science-specific faculty was a delimitation of this study. As the researcher, being in the same field and working amongst the participants creates an inherent bias that could not be avoided and was another delimitation of the study. The small and specific sample was a third delimitation that led to a phenomenological study over an ethnographic study to gather a more profound and richer interpretation of the data. For more allowance for interpretation, I chose a hermeneutic study over a transcendental study.

Recommendations for Future Research

A quantitative study evaluating self-efficacy and student retention and completion outcomes is recommended. This kind of research would be more meaningful to college leadership, who must base decisions on hard facts and data, and could substantiate the value of this study specific to the subject of professional development and its future in a more school-specific format.

For future qualitative studies, a case study that evaluates an exemplary roll-out of health sciences faculty professional development would be valuable to the field and college administrators that need a model to evaluate. Another qualitative study recommendation would be to explore other learning platforms besides those listed in this study that health science faculty in higher education are delivering for their curriculums. This recommendation would add to the field when exploring new technology and ways to become more global with a hands-on learning-based model.

Conclusion

This study aimed to understand the lowered self-efficacy for higher education health sciences faculty at the community college two-year degree level amidst deficient professional development. After performing a literature review and framing the study in Bandura's (1986) triadic reciprocity model of self-efficacy, I conducted a hermeneutic phenomenological and qualitative study. Health science faculty participants were interviewed in individual interviews and focus groups. They were observed on-site at a community college until data saturation was accomplished. The data were analyzed and synthesized into three predominant themes that described the determinants of lowered self-efficacy amidst deficient professional development: more alignment, faculty need to feel proficient before implementing change, and more training. The most significant findings from this study are that balance of the determinants (personal, behavioral, and environmental processes) is critical to maintaining higher self-efficacy because they are entwined in human behavior.

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Appendix A

IRB Approval Letter

LIBERTY UNIVERSITY

INSTITUTIONAL REVIEW BOARD

March 2, 2023

Melanie Castle
Breck Perry

Re: IRB Exemption - IRB-FY22-23-843 THE RELATIONSHIP BETWEEN HEALTH SCIENCES INSTRUCTOR SELF-EFFICACY AND PROFESSIONAL DEVELOPMENT EXPERIENCES: A PHENOMENOLOGICAL STUDY

Dear Melanie Castle, Breck Perry,

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

Your study falls under the following exemption category, which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:104(d):

Category 2.(iii). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:

The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by §46.111(a)(7).

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

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

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

Sincerely,

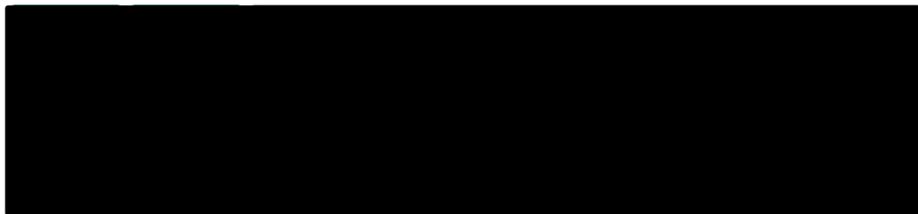
G. Michele Baker, MA, CIP

Administrative Chair of Institutional Research

Research Ethics Office

Appendix B

Site IRB Approval Letter



Notice of IRB Determination

Institutional Review Board

Study Title: THE RELATIONSHIP BETWEEN HEALTH SCIENCES INSTRUCTOR SELF-EFFICACY AND PROFESSIONAL DEVELOPMENT EXPERIENCES: A PHENOMENOLOGICAL STUDY

Protocol Number: 22008

Principal Investigator: Melanie Castle

IRB Reviewer: [REDACTED]

Date of Determination: 1/21/2023

Expiration Date: 1/21/2025

Type of Review:

Initial Review

Requested Re-review

Other

IRB Determination:

Exempt

Does not qualify as research under 45 CFR §46.102(l)

Meets Exempt category under 45 CFR §46.104(d)

Category 1: Research conducted in established or commonly accepted educational settings involving normal educational practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction.

Category 2: Research that only includes the use of educational tests, survey procedures, interview procedures, or observation of public behavior, and at least one of the criteria in 46.104(d)(2)(i)-(iii) is met.

Category 3: Research involving benign behavioral interventions in conjunction with the collection of information from an adult subject through verbal or written responses (including data entry) or audiovisual recording if the subject prospectively agrees to the intervention and information collection and at least one of the criteria in 46.104(d)(3)(i)(A)-(C) is met.

Category 4: Secondary research for which consent is not required: secondary research uses of identifiable private information or identifiable biospecimens, and at least one of the criteria in 46.104(d)(4)(i)-(iv) is met.

Category 5: Research or demonstration projects that are conducted or supported by a Federal department or agency, or otherwise subject to the approval of department or agency heads, and that are designed to study, evaluate, improve, or otherwise examine public benefit or service programs; procedures for obtaining benefits or services; possible changes in or alternatives to programs or procedures; possible changes in methods or levels of payment

Category 6: Taste and food quality evaluation and consumer acceptance studies that meet criteria under 46.104(d)(6)(i) or (ii).

Category 7: Storage or maintenance for secondary research for which broad consent is required: Storage or maintenance of identifiable private information or identifiable biospecimens for potential secondary research use if an IRB conducts a limited IRB review and makes determinations required by 46.111(a)(8).

Category 8: Secondary research for which broad consent is required: Research involving the use of identifiable private information or biospecimens for secondary research use, and meets the criteria listed in 46.104(d)(8)(i)-(iii).

IRB Review Type

- Exempt
 Expedited Review
 Full Review

IRB Review Result

- Approved via Exempt Process
 Approved via Board Review
 Denied

Review Notes

Your IRB Review for the referenced study Protocol Number 22008 has been considered and evaluated to approved via the Exempt process and consideration of the submitted IRB approval, including all required documents for the IRB submission.

Please make note of the following:

- This notification should be retained for your records.
- Please note that IRB approval does not include [REDACTED] endorsement to conduct the study. **The investigator is expected to pursue separate approval from a member of [REDACTED] staff at an appropriate level of local or statewide leadership relevant to the area of study to receive appropriate endorsement before contacting participants.** Nor does approval obligate faculty or students to participate or assist in your study, per standard definitions of consent.
- Note that it is the sole responsibility of the Principal Investigator to recruit subjects for the study. While the PI may request assistance in subject recruitment from other [REDACTED] faculty or staff, the faculty and staff have no responsibility to assist in the recruitment, and any assistance is voluntary.
- If the protocol changes in a way such that the basis for approval is no longer accurate, and may no longer conform to the criteria for approval, a new Initial Review application will need to be submitted. Investigators should contact the IRB office via email prior to making changes in order to confirm that the status will not be affected.
- **Study expiration:** the IRB determination expiration date is listed on page 1 of this document. Should you need more time to complete your research, it is your responsibility as the Principal Investigator to submit a request for continuing review 4 weeks prior to the date of expiration in order to avoid a lapse in IRB approval.
- Investigators are expected to be guided by the ethical principles for all research involving humans as subjects, set forth in the report of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research (the "Belmont Report"). For a copy of the Belmont Report, see <http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.htm>.
- Please review the [REDACTED] IRB policy [REDACTED] for more information.

Please contact [REDACTED] with any questions.

[REDACTED]
 Senior Data Strategist and IRB Representative

Appendix C

Faculty Participant Recruitment Letter

Dear Sir or Ma'am,

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a Doctor of Philosophy degree. The purpose of my research is to understand the lowered self-efficacy for higher education health sciences faculty at the community college two-year degree level and its relatedness to faculty professional development, and I am writing to invite eligible participants to join my study.

Participants must be serving as health science faculty or administrative staff at [REDACTED]. Participants, if willing, will be asked to participate in four procedures. First, participants will be asked to participate in a recorded virtual or in-person, open-ended interview that will take approximately 45 minutes. Second, participants will have the opportunity to review their interview transcripts for accuracy purposes, which should take approximately 15 minutes. Third, participants will be asked to participate in a recorded, virtual or in-person focus group that will take approximately 45 minutes. Fourth, I will observe one class/lab simulation for 45 minutes. I will be a silent observer documenting my observations on an observation protocol that the observed faculty will be able to review for accuracy purposes. Names and other identifying information will be requested as part of this study, but the information will remain confidential.

To participate, please contact me at [REDACTED] or [REDACTED] for more information and/or to schedule an interview.

A consent document will be provided for you at the time of the interview. The consent document contains additional information about my research. If you choose to participate, you will need to sign the consent document at the time of the interview.

Sincerely,

Melanie Castle
Doctoral Candidate

[REDACTED]

Appendix D

Consent

Title of the Project: The relationship between health sciences instructor self-efficacy and professional development experiences: a phenomenological study.

Principal Investigator: Melanie Castle, Doctoral Candidate, School of Education, Liberty University

Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, you must be serving as a health sciences faculty or administrative staff at Ivy Tech Community College, Terre Haute Campus. Taking part in this research project is voluntary.

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

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

The purpose of the qualitative hermeneutic phenomenological study is to understand the lowered self-efficacy for higher education health sciences faculty at the community college two-year degree level and its relatedness to faculty professional development in order to provide the field with credible research specific to health science programming and faculty development.

What will happen if you take part in this study?

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

1. Participate in a virtual or in-person, audio and video-recorded interview that will take no more than 45 minutes.
2. Participants will have the opportunity to review their interview transcripts for accuracy purposes.
3. Participate in a virtual or in-person, audio/video-recorded focus group interview that will take no more than 45 minutes.
4. I will observe one class/lab simulation for 45 minutes. I will be a silent observer documenting my observations on an observation protocol that the observed faculty will be able to review for accuracy purposes. This procedure will not be recorded.

How could you or others benefit from this study?

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

Your participation may significantly contribute to the future of faculty professional development and improved self-efficacy specific to health sciences programming at a two-year community college.

What risks might you experience from being in this study?

The expected risks from participating in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

Liberty University
IRB-FY22-23-843
Approved on 3-2-2023

How will personal information be protected?

The records of this study will be kept private. Published reports will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records. Participant responses will be kept confidential by replacing names with pseudonyms.

- Interviews will be conducted in a location where others will not easily overhear the conversation.
- Confidentiality cannot be guaranteed in focus group settings. While discouraged, other members of the focus group may share what was discussed with persons outside of the group.
- Data collected from you may be used in future research studies or shared with other researchers. If data collected from you is reused or shared, any information that could identify you, if applicable, will be removed beforehand.
- Data will be stored on a password-locked computer. After three years, all electronic records will be deleted and all hardcopy records will be shredded.
- Recordings will be stored on a password-locked computer for three years and then deleted. The researcher will have access to these recordings.

Does the researcher have a conflict of interest?

The researcher serves as a professor at Ivy Tech Community College. To limit potential or perceived conflicts, no individuals over whom the researcher has academic authority will be recruited for participation. This disclosure is made so that you can decide if this relationship will affect your willingness to participate in this study. No action will be taken against an individual based on his or her decision to participate or not participate in this study.

Is study participation voluntary?

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

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

If you choose to withdraw from the study, please contact the researcher at the email address or phone number included in the next paragraph. Should you choose to withdraw, data collected from you, apart from focus group data, will be destroyed immediately and will not be included in this study. Focus group data will not be destroyed, but your contributions to the focus group will not be included in the study if you choose to withdraw.

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

The researcher conducting this study is Melanie Castle. You may ask any questions you have now. If you have questions later, you are encouraged to contact her at [REDACTED] and/or [REDACTED]. You may also contact the researcher's faculty sponsor, Dr. Breck Perry at [REDACTED].

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

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the IRB. Our physical address is Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA, 24515; our phone number is 434-592-5530, and our email address is irb@liberty.edu.

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Your Consent

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

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

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

Printed Subject Name

Signature & Date

Liberty University
IRB-FY22-23-843
Approved on 3-2-2023

Appendix E

Individual Interview Questions

1. Please describe your educational background and career through your current position.
2. Please describe how you developed your style of instruction.
3. What is your understanding of perceived self-efficacy?
4. Please describe your experiences when working with students in the modalities of face-to-face, blended, and online delivery methods.
5. What changes in student population and their learning methods have you experienced?
6. Please describe an experience when you changed an instruction delivery method that resulted in a positive student outcome.
7. Describe your challenges when working in a virtual platform to simulate hands-on learning.
8. What professional development experiences have prepared you to work with students performing problem-based learning methodologies in the modalities of face-to-face, blended, and online delivery methods?
9. What professional development experiences have you had working with the technology necessary to conduct instruction?
10. Please describe an experience when you were inspired to learn new technology for delivering instruction.
11. How can faculty professional development be tailored to improve the method of or modality of instruction you are currently using?
12. Please describe an experience when the school administration accepted feedback and ideas to improve instruction delivery methods.

13. How receptive are faculty to school administration regarding instruction delivery methods?
14. What else would you like to add to our discussion of your experiences regarding technology in the classroom?
15. What else would you like to add to our discussion of your experiences with program students that we have not discussed?

Appendix F

Focus Group Questions

1. What was your perceived self-efficacy when you started instruction in the field of your health science specificity?
2. What is your perceived self-efficacy with ability as an instructor in your health science specificity?
3. What are the biggest challenges you face with the instructional modalities of face-to-face, blended learning, and online instruction?
4. What are your biggest challenges when using technology in the classroom and laboratory?
5. How would you benefit from professional development concerning a changed student population?
6. How is faculty development prioritized in relation to your credential requirements and instructional requirements?
7. How does faculty development affect student achievement?
8. What else would you like to add to our discussion regarding your experience of a changed self-efficacy?

Appendix G**Observation Protocol**

<i>Length of Activity</i>	
<i>Descriptive Notes (In Chronological Order)</i>	<i>Reflective Notes</i>
	<i>Labeled Diagrams</i>

Appendix H

Audit Trail

Raw Data	The Individual Interviews and Focus Group sessions were held and recorded via Zoom and the files were saved in a password protected electronic file folder on a password protected laptop. The Direct Non-Participant Observation protocols were manual recorded, and the hard copies were locked in a personal file cabinet. The files were scanned and held in the electronic file folder that was password protected along with a password protected computer. All field notes were also manual documented, and the hard copy kept in a personal locked file cabinet and electronic scanned to the electronic password protected file.
Data Reduction and Analysis Products	All manually documented field notes were both manually documented and scanned into password protected file and locked file cabinet.
Data Reconstruction and Synthesis Products	The Individual Interviews and Focus Group sessions were transcribed via Zoom and stored electronically in a password protected laptop. Both Interview and Focus Group transcripts were printed for pre-coding purposes and then for Level 1 In-Vivo coding. The In-Vivo Coding were typed into individual documents and stored electronically by pseudonym in a password protected file. Level 1 descriptive coding occurred manually with handwritten notes for the observations. Level 2 Pattern Coding occurred in all three instances of data collection. Thematic codes were extracted from the pattern codes through the Data Synthesis. All manually documented field notes were both manually documented and scanned into password protected file and locked file cabinet.
Process Notes	All manually documented field notes were both manually documented and scanned into password protected file and locked file cabinet.
Materials Relating to Intentions and Dispositions	Signed Consent Forms were collected from each participant prior to any data collection. The consent forms were scanned into a password protected file folder on a password protected computer. The hardcopies are in a locked file cabinet.
Instrument Development Information	The required documents for the study (IRB approval, recruitment letter and responses, Site IRB approval, Domain approval) electronically saved in a password protected file folder and password protected computer.