# A TRANSCENDENTAL PHENOMENOLOGICAL STUDY: EXAMINING INTERPROFESSIONAL CLINICAL LEARNING EXPERIENCES TO DEFINE THE ESSENTIAL ACTIVITIES THAT WILL PROVIDE STUDENT TRANSFORMATION

by

James David Nash

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 transcendental phenomenological study was to describe the interprofessional education clinical experiences that pharmacy preceptors provide to Doctor of Pharmacy (PharmD) students during the final year of training within four different academic institutions. The theory guiding this study was Kolb's Experiential Learning Model (ELM) and its four components comprised of concrete experience, reflective observation, abstract conceptualization, and active experimentation. These experiences should incorporate all four components of the model to be true experiential learning events leading to transformation. An extensive literature review was provided to support the research. Transcendental phenomenology was the methodology used, as researchers were trying to capture the overall essence of the experience. Preceptors from five colleges/schools of pharmacy who practice in a variety of pharmacy practice settings were solicited for the research. Participants were recruited by the college's experiential administrators. Data collection methods were multifold, including interviews, focus groups, and document analysis. A thorough analysis of data, using modified van Kaam's method, was completed, along with the synthesis of the data. The findings of this research were discussed in chapter four. Seven themes were identified, which included activities, time, assessments, other healthcare professionals, other learners, enablers of Interprofessional Education (IPE), and confounders of IPE. Additionally, responses to the central and sub-research questions were provided as preceptors described the learning experience provided to students, and activities were identified that promoted the four components of the ELM. Activities that optimize medications and prevent problems are key to shared clinical decision-making. Chapter five concludes with implications, limitations, delimitations, and recommendations for future research.


*Keywords*: clinical, interprofessional education, interprofessional collaboration

## Copyright Page

## Dedication

This dissertation is dedicated first and foremost to my family who has allowed me countless hours away from them as I have persevered through writing and researching this wholeheartedly. Additionally, my God has not failed me, and He has been faithful and true to His promises of providing me the strength to finish and wisdom without reservation. Lastly, I thank many colleagues who have provided advisement and collaboration along the way.

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First, I would like to acknowledge my committee and chair who has advised me throughout this process. Through many iterations and drafts, there were times I felt like giving up but persevered through encouragement. My initial thoughts of really wanting to proceed with a quantitative approach with this research were not able to be done, and my committee and chair have helped me understand and stay in line with the qualitative approach that was needed.

Secondly, I am very appreciative of a synergy group that was formed a few years back between members of my university, and members from four other colleges/schools of pharmacy. I specifically was able to be a part of two groups, the experiential group and the interprofessional education group. Members of these groups have helped advise and guide me along the way. Group meetings were used to bounce off ideas and to gain agreement in established research questions, methodology, and data analysis.

My wife, Jennifer, has also been a constant source of inspiration and support. She is my best friend and has supported me emotionally and has prayed for me throughout, not only this dissertation process, but the coursework that had led up to this point. The small acts of love and caring have been appreciated, and I am so thankful God has blessed me with such a nurturing and caring person.

Lastly is the support I have obtained from colleagues and mentors along the way. To my past dean supervisor who has encouraged me to always find ways to research topics that support my daily job activities. To my associate and assistant dean colleagues who have allowed me to just talk through concepts and helped me look at things differently, this has helped me in more ways than you know.

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## List of Abbreviations

Accreditation Council for Pharmacy Education (ACPE)

Advanced Pharmacy Practice Experience (APPE)

Patient Protection and Affordable Care Act (ACA)

Agency for Healthcare Research and Quality (AHRQ)

Assessment of Interprofessional Team Collaboration Scale (AITCS)

Doctor of Pharmacy (PharmD)

Entrustable Professional Activity (EPA)

Experiential Learning Model (ELM)

Experiential Learning Theory (ELT)

Interprofessional (IP)

Interprofessional Collaborator Assessment Rubric (ICAR)

Interprofessional Collaboration or Interprofessional Collaborative (ICP or ICP)

Interprofessional Learning Continuum (IPLC)

Interprofessional Education (IPE)

Introductory Pharmacy Practice Experience (IPPE)

individual Teamwork Observation and Feedback Tool (iTOFT)

modified Interprofessional Collaborator Assessment Rubric (mICAR)

Students' Perceptions of Interprofessional Clinical Education Revised (SPICE-R)

Team Observed Structured Clinical Encounter (TOSCE)

World Health Organization (WHO)

# CHAPTER ONE: INTRODUCTION

## Overview

This transcendental phenomenological study examines the interprofessional education clinical learning experiences that pharmacy preceptors provide to Doctor of Pharmacy (PharmD) students during the final year of training within four different academic institutions. Interprofessional Education (IPE) is required for pharmacy learners and many other health professional students as part of the accreditation standards of the academic program. These experiences vary in practice settings but do not have any standardization of required activities. As a result, preceptors of these experiences, who are practicing pharmacists, often plan activities that may not meet the World Health Organization (WHO) definition of IPE or contain the four stages of the experiential learning model (ELM). This chapter provides the background needed to describe why this research is significant. First, historical background and social and theoretical contexts are provided. Next, the problem statement, the purpose of the study, and its significance are discussed, and the research questions that drive the study are explained and reviewed. Lastly, standard definitions are provided to help in understanding and continuity throughout the research.

## Background

IPE among health professional students continues to be encouraged to train students to work collaboratively with other health professionals while providing health care to patients. This background section provides further insight into this proposed research by looking at the historical, social, and theoretical contexts and the importance of creating standardization in the training of pharmacy students. These standardized clinical learning experiences, with identified activities, will create the platform for improving the healthcare environment, minimizing errors,

and improving the quality of care.

**Historical Context**

With the passing of the United States Patient Protection and Affordable Care Act in 2010, commonly referred to as ACA, collaborative healthcare among healthcare professionals has become a priority (Bachynsky, 2019; Patient Protection and Affordable Care Act, 2010). Three aims have been identified: improving patient quality of care, reducing healthcare costs, and increasing the number of insured people (Manchikanti, 2017). Additionally, the Institute of Medicine (IOM) has published three seminal reports, further indicating that the focus of healthcare on quality and patient safety and how healthcare professionals are educated, mainly through IPE, may help improve these factors (Institute of Medicine, 1999, 2001, 2003). The WHO has cast a vision for interprofessional learning, stating that IPE is to "prepare all health professions students for deliberately working together with the common goal of building a safer and better patient-centered and community/population-oriented US health care system" (Interprofessional Education Collaborative, 2011, p. 3). IPE has been defined as "when students from two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes" (WHO, 2010, p. 13).

Many, if not most, graduate health professions education program accreditation standards require IPE within curricula (Accreditation Council for Pharmacy Education, 2015; Accreditation Review Commission on Education for the Physician Assistant, Inc., 2020; *Commission on Osteopathic College Accreditation,* 2021). These programs provide most IPE activities in the didactic years of the program than in the clinical years. The Interprofessional Learning Continuum (IPLC) is an IPE activities framework that serves as a formal and informal model for academic programs to ensure IPE is placed throughout the academic program of study.

The model emphasizes the importance of IPE and a continual effort to increase IPE activities throughout the program of study and into clinical practice after students graduate and complete degree requirements (IOM, 2015).

Many IPE activities that have taken place in the clinical learning experiences have focused heavily on quantitative factors, such as the number of clinical interactions with a patient, and less on the qualitative factors and whether IPE is taking place (Cox et al., 2016; Tong et al., 2020). Furthermore, to best prepare students to work in an interprofessional education environment, students should be provided an opportunity in their clinical experiences to be involved in the shared clinical decision-making of patients' healthcare, as time for these decisions has not been highly prioritized (Pieterse et al., 2019). Therefore, identifying the activities that constitute an interprofessional clinical learning experience is needed to ensure health professional students, particularly pharmacy students, are graduating and continuing to practice in an interprofessional collaborative/collaboration practice (ICP) environment. In addition, standardizing these clinical learning experiences will provide the catalyst to change other organizational practices that promote ICP and improve health outcomes, where little evidence exists (Musaji et al., 2019).

Healthcare has been divided into many areas, leading to healthcare providers working in siloed environments where communication and collaboration between other healthcare providers are minimum. For example, a patient could see one provider for a specific condition or disease while under someone else's care. The two may never communicate or interact while caring for the patient. Add to these other health professionals that care for the patient, such as a pharmacist, where prescriptions may be processed and dispensed unbeknownst to other contributing healthcare members. Many landmark articles have been published to describe the dangerous

impacts of working in silos and fragmented systems (Bodenheimer, 2008; IOM, 2001). Therefore, ICP among healthcare providers is needed to ensure a holistic approach to patient care while maximizing quality and safety.

IPE has been adopted, and curricular approaches have been deployed to graduate practicing professionals who will strive for ICP in the healthcare setting. The IPLC model was built to visually depict the desire for IPE to exist as a continuum starting in the foundational years of training (IOM, 2015). As progression occurs from foundational education, to graduate education, to continuous professional development, IPE continues to increase. Most graduate professional academic programs end with students participating in capstones, practicums, or clinical and experiential rotations, where the knowledge learned in the earlier years of study is applied. Many systematic reviews have provided evidence of the benefits of IPE and ICP (Kangas et al., 2018; Pascucci et al., 2021; Witt Sherman et al., 2020). These studies have shown that collaborative practice has improved hospital readmissions, decreased the length of hospital stay, decreased clinical error rates, and improved health outcomes. These improvements make a case for supporting IPE and a need for continued emphasis on training students to practice in settings where ICP is embraced.

Weiss et al. (2019), in collaboration with the National Collaborative for Improving the Clinical Learning Environment (NCICLE), have defined a clinical learning environment (see definitions). This organization also released a report, *Expectations for an Optimal Interprofessional Clinical Learning Environment to Achieve Safe and High-Quality Patient Care,* which provides guidance and may be used to identify elements that would constitute an interprofessional clinical learning experience for students (“National Collaborative for Improving the Clinical Learning Environment," 2021; Weiss et al., 2019). The NCICLE is

focused on conversation, community, education, and innovation as ways to advance the interprofessional clinical learning environment. The report stated that clinical learning experiences should focus on training in patient safety, healthcare quality, teaming, supervision, well-being, for both patients and also healthcare team members, and professionalism ("National Collaborative for Improving the Clinical Learning Environment," 2021). This research supports this report and other efforts to structure a clinical learning experience for all health profession's students.

**Social Context**

The student will be the primary beneficiary of IPE within a structured clinical learning experience. Many studies, across all health disciplines, have focused on students' perceptions of IPE, highlighting the positive experience (Christopher et al., 2021; Dresser et al., 2021; House et al., 2017; Knepp et al., 2022; Spicer et al., 2022). Additionally, the patient will benefit from this research, as IPE clinical learning experiences become more defined, and ICP becomes more standardized in the healthcare setting, leading to positive outcomes and increased patient safety as promoted by WHO and IPE. Unfortunately, more studies must focus on the patient's experiences with ICP to confirm these proposed outcomes, as well as involve the patient in the shared clinical decision-making process (Gurtner et al., 2022; Morgan et al., 2020).

Designing interprofessional learning experiences could be challenging in many ways. Space and time are often cited as challenges and are metrics used to define success (Henderson-Kalb et al., 2022; Kodweis et al., 2022; Olenick et al., 2019; Sunguya et al., 2014). Continued efforts are made to balance quality with quantity in a clinical environment, such as a hospital or outpatient clinic. At the same time, administrative personnel often focus primarily on quantitative metrics, such as the number of patients seen and the number of prescriptions filled

(Esposito et al., 2015). Socially, how individuals from different professions work together collaboratively could also present challenges, especially when each professional does not understand the role and responsibilities of each profession, the contribution that member may bring to the care of the patient, the values and ethics that govern that professional, and methods of communication have not been established. Tong et al. (2020) have studied the importance of students establishing interprofessional identity significantly earlier in the curriculum to allow for the social elements of an IPE interaction between students of different professions to be more effective in the long run.

The Interprofessional Education Collaborative (IPEC) is an organization that is made up of 21 national health professional associations that represent and serve academic units at institutions of higher learning (2020). IPEC has published two documents used as standards for pushing IPE and ICP within educational and healthcare institutions. These two documents are *Team-Based Competencies, Building a Shared Foundation for Education and Clinical Practice,* and *Core Competencies for Interprofessional Collaborative Practice* (IPEC, 2020). Many IPE activities have been assessed using the competencies that IPEC has developed as a map. These competencies are value/ethics, roles/responsibilities, interprofessional communication, and team/teamwork. These are used as a guide for engaging students in IPE (IPEC, 2016). Additionally, many evaluative instruments measure how the IPE learning activity contributes to these competencies. Several of these instruments are discussed in Chapter Two. Socially, these competencies help center the experience around many social interactive components, such as communicating with each other and understanding the culture each professional brings to the experience.

**Theoretical Context**

The Experiential Learning Theory (ELT), also referred to as Experiential Learning Model (ELM), is a theoretical context for approaching the design of ICP experiences. This research sought to determine if the overall preceptor experience, which includes the activities that make up the interprofessional clinical learning experience, contains the four parts of the ELM. These four parts are set up in a cyclical format containing concrete experience, reflection, conceptualization, and experimentation (Kolb, 1984). Other studies in the literature have used ELM as a theoretical foundation for IPE applied to individual and team learning (Fewster-Thuente & Batteson, 2018, 2016; Poore et al., 2014) but mostly in simulated settings.

In an experiential/clinical learning setting, students are actively involved in a concrete experience. Students should reflect daily on the experiences encountered with team members and patients, with the reflection being set up formally or informally and ingrained within the schedule of the experience. Haque et al. (2017) have identified some tools that could be used for reflection on the activities that make up the interprofessional clinical experience. Incorporating these more intentionally in IPE clinical learning experiences will help ensure a complete iteration of the ELM cycle. Conceptualization and experimentation provide opportunities to change or proceed with different approaches than in the initial encounter to improve. This study focused on something other than the second part of Kolb's theory (1984) that discusses the learning styles of the individuals going through the experience and how everyone uniquely acquires knowledge.

The social learning theory, developed by psychologist Albert Bandura (1977), has also been considered part of the theoretical context for IPE clinical learning (Gurbutt & Milne, 2018). This theory focuses on learning from observation and making meaning of the knowledge gained. Four learning stages are involved: attention, replication, reproduction, and motivation (Horsburgh & Ippolito, 2018). These stages are self-explanatory in many ways. However, once a

behavior is observed with attention, the learner must be able to recall what was observed, reproduce the behavior, and, most of all, be motivated to act out the behavior.

## Problem Statement

The problem is that many preventable medical errors continue to be a leading cause of death in the United States (US) (Anderson & Abrahamson., 2017; Carver et al., 2022; Panagioti et al., 2019). The errors occurring are from various sources, including medication adverse drug events, under and over-treatment, and misdiagnosis (Carver et al., 2022; WHO, 2019). Communication breakdown is a primary reason for medical errors (Manias, 2018). Rosen et al. (2018) described the coordination of care between providers as ineffective and the teamwork as suboptimal, making this a public health issue. Additionally, it continues to be noted that health professional students might not be exposed to as much IPE /ICP as a student, translating to a practice environment that does not support ICP after graduation (France & Payne, 2017).

Manias (2018) stated that interdisciplinary collaboration is essential to getting healthcare professionals to communicate, and very little research systematically has been done in this area. Specific work is needed to examine other approaches that enhance interprofessional collaboration (Manias, 2018). Enhancing the healthcare team and having each healthcare member of the team aware of each other's role, with all working interprofessionally for the patient, while being aware and involved in the care, is an identified solution to decreasing med errors (Carver et al., 2022; Irajpour et al., 2019; Rosen et al., 2018). Patient safety improves and is also significant for improving staff safety when the healthcare team works together, accepting the contributions of team members (Rodziewicz et al., 2021). Many efforts are still taking place to define ICP/ICP (Morgan et al., 2020). As ICP continues to be the goal for treating patients effectively, efficiently, and safely, having consistent, structured experiences with identified

activities would be essential to ensuring an evolving continuum of learning and collaboration. Nagelkerk et al. (2017) stated that further research is needed that examines the type of ICP program, length, modalities to deliver, and resources that accompany and define the experience. Nwaesei et al. (2019) supported a structured approach to intentional IPE in the experiential education setting that involves a multimodal approach and targets key IPEC competencies. Defining broadly what the activities are for an interprofessional clinical learning experience is a necessary starting point to ensure ICP/ICP can take place fully and triple aim outcomes can be met.

## Purpose Statement

The purpose of this transcendental phenomenological study was to describe the interprofessional education clinical experiences that pharmacy preceptors provide to PharmD students during the final year of training within five different academic institutions. This description of the experience, with associated activities promoting shared clinical decision-making, structures an environment where communication is enhanced and medical errors and deaths are decreased. For this research study, an interprofessional clinical learning experience was generally defined as an experience taking place in a clinical learning environment that involves learners from two or more professions who learn with, about, and from each other to enable effective collaboration, including shared clinical decision making, influencing the care of a patient, and improving health outcomes. This definition brought together other formally defined terms (IPE, ICP/ICP, clinical learning environment) to provide a consistent, usable definition for the learning experience. The ELM guided this research, as defined by Kolb's experiential learning cycle (Kolb, 1984). A clinical practice experience was a perfect place to see

the entire ELM cycle play out in a re-iterative process, leading to transformative learning experiences.

## Significance of the Study

This study provided significant contributions to the knowledge and ever-growing body of literature guiding the education of healthcare professionals. Empirical, theoretical, and practical aspects of significance were briefly reviewed. Empirically, gaps in the literature were filled with this study. Practical significance provided an extensive contribution to moving forward with more structured learning experiences that enhance collaboration and communication. Theoretically, this study presented the preceptor's experience with and contribution to the ELM, thereby better understanding how the preceptor created the IPE learning environment.

### Empirical Significance

Much research has been published on the effects of interprofessional education on students' learning how to work together (Carney et al., 2019; Mattiazzi et al., 2023; Miselis et al., 2022). The terminology of shared clinical decision-making is starting to be used more frequently, especially as it relates to IPE and IPC (Detoni et al., 2022; Hsiao et al., 2022). This study will add to the current literature by describing the clinical learning experience from the preceptors' viewpoint, overall providing more context as to how an experience should be organized, and what activities the students should be doing to enhance collaboration amongst the healthcare team.

As stated previously, medical errors continue to occur, and enhancing communication between healthcare professionals will decrease these errors and improve patient safety (Carver et al., 2022; Irajpour et al., 2019; Rosen et al., 2018). What needs to be discovered are the specific activities that contribute to supporting an interprofessional care team environment, first in the

learning environment with students, but also long-term, as students who have trained in these settings seek career opportunities that promote interprofessional collaborative practice (ICP). As programs seek to build curricula with more IPE, finding relevant places to incorporate IPE within the clinical years will intentionally continue to embrace the movement towards ICP and fully meet accreditation standards. Additionally, as students progress along the IPLC, increased opportunities for health professionals to work in an ICP will expand.

**Practical Significance**

Findings from this study will benefit academic programs immensely, mainly experiential and clinical offices, as clinical practice experiences are further defined with an interprofessional twist. As this study proceeds with standardizing IPE activities, it will help break down barriers that have existed in the past for exploring IPE in the clinical setting. Many barriers exist to conducting IPE, including space and time and understanding what to do with each student as defined by roles and responsibilities (Meleis, 2016; West et al., 2016). Defining the experience and associated activities will also help create a guide and foundation for faculty and preceptors to use for creating an interprofessional learning experience that is well-designed and has consistent activities that will lead to ICP and the achievement of favorable patient outcomes and experiences (Brewer & Flavell, 2019; Dow et al., 2019; Makic & Wald, 2017).

**Theoretical Significance**

The ELM argues that, for learning transformation to be successful, the entire ELM cycle must be experienced iteratively, as knowledge is created through transformation (Kolb, 1984). McKeachie and Svinicki (2014) also stateed that what sets the ELM apart from other theories is acknowledging experience in the learning process and its effectiveness in offering meaning to the learner. The theoretical significance of this project is that the theory will be expanded further

into the IPE arena by ensuring, collectively, the established standardized IPE activities implement the entire ELM cycle leading to student transformation.

## Research Questions

The purpose of this transcendental phenomenological study was to describe the interprofessional education clinical experiences that pharmacy preceptors provide to PharmD students during the final year of training within four different academic institutions. By examining these experiences, standardized activities were identified that structure these experiences in the four required areas of pharmacy practice. It is also essential that the entire ELM cycle is met iteratively. One central research question was identified with four subordinate questions; each centered around the four stages of the ELM. Chapter Two discusses each stage of the ELM more fully.

### Central Research Question

How do pharmacy preceptors describe the interprofessional clinical learning experience offered to PharmD students during the final year of training?

Focusing on the experience offered by the preceptors to students provided an opportunity to capture the unique activities of each experience and practice setting, leading to standardization for academic pharmacy programs.

### Sub-Question One

What are the activities of the clinical learning experience that promote concrete learning to students in an interprofessional setting?

Morris (2019) studied what constitutes a concrete learning experience and found that learners first must be involved and active as participants. Additionally, students' experiences are risky and novel ones that inquire into specific real-life problems and issues. The knowledge must

be uniquely situated in place and time, and critical reflection must serve as the mediator of learning meaningfully (Morris, 2019). White (2017) stated that a concrete experience involves the senses, and Kolb and Kolb (2018) shared that active, engaging experiences could range from field trips to role-playing events, but the learner needs to be actively involved. As students are in direct patient care areas, opportunities abound for active engagement with the healthcare team and patients. It is important to note that this first stage should only involve learning, and reflection on the experience only fully takes place at the next stage.

**Sub-Question Two**

What are the activities of the clinical learning experience that promote reflection to students in an interprofessional setting?

Reviewing and reflecting on an activity or experience encountered is the second stage of Kolb's model (1984). Reflective observation can occur in various forms, and McLeod (2017) stated it is essential to note if any inconsistencies exist between understanding and the experience. Essentially, students are thinking about what was done explicitly in the experience. Then, the learner steps back and asks questions about the experience. Rolfe's reflection model (2011) consists of asking three questions, including *what*, *so what*, and *now what,* is a tool that could be used when reflecting on activities in general. Reflection takes place as one thinks through the experience just encountered. Kohonen et al. (2000) further added that reflection involves perceptions, and the learner is not just thinking about the actions taken during a concrete experience but also about feelings and emotions. For purposes of this study, the reflection will focus on learners reflecting on self-actions, peer actions, and associated feelings and emotions.

**Sub-Question Three**

What are the activities that help the student make meaning out of the clinical learning experience encountered in an interprofessional setting?

Students must understand the meaning of the experiences encountered in an interprofessional clinical learning environment. Abstract conceptualization is when learners start generalizing knowledge from previous experience (Kolb, 1984). It focuses on the meaning of the experience by often reinforcing it with other content, such as lectures or readings (Kolb & Kolb, 2018). Finally, students conclude what was learned and how to move forward (McLeod, 2017). White (2017) stated that abstract conceptualization involves intangible concepts, such as emotions and feelings.

**Sub-Question Four**

What are the activities of the clinical learning experience that promote the application of material learned, reiterated, in an interprofessional setting?

With active experimentation, learners apply what was learned previously to either the same or different activities. The conclusions from abstract conceptualization are now put into place (Kolb, 1984). This is the re-iterative process that is so important in the ELM. Active experimentation is when students use the new knowledge to participate in a different experience or a re-iteration of the previous experience. The knowledge gained from experience is meant to be transformative in many ways. For this research, active experimentation was those activities that learners experienced multiple times throughout the experience. Transformation will take place by describing the experience from the preceptor's view and pinpointing the activities that align with each stage of the ELM.

## Definitions

1. *Clinical learning environment* - "Hospitals, medical centers, and other clinical settings in which clinicians train and practice" (Weiss et al., 2019, p. 5).
2. *Experiential education*- "A philosophy that informs many methodologies in which educators purposefully engage with learners in direct experience and focused reflection in order to increase knowledge, develop skills, clarify values, and develop people's capacity to contribute to their communities" (Association for Experiential Education, 2014, para. 1).
3. *Health Professionals*- "Maintain health in humans through the application of the principles and procedures of evidence-based medicine and caring." "Study, diagnose, treat and prevent human illness, injury and other physical and mental impairments in accordance with the needs of the populations they serve" (WHO, 2013, p. 57).
4. *Interprofessional Education (IPE)*- "When students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes" (WHO, 2010, p. 7).
5. *Interprofessional Collaborative Practice (ICP)*- "When multiple health workers from different professional backgrounds work together with patients, families, carers, and communities to deliver the highest quality of care" (WHO, 2010, p. 7).
6. *Learning Health System*- "Designed to generate and apply the best evidence for the collaborative healthcare choices of each patient and provider; to drive the process of discovery as a natural outgrowth of patient care; and to ensure innovation, quality, safety, and value in healthcare" (Institute of Medicine et al., 2007, p. ix)

7. *Stakeholder(s)*- Identified in health systems as professionals, both clinicians and non-clinicians, patients, managers, healthcare product providers, government/policymakers, and scientists (Maghsoudi et al., 2020).

## Summary

IPE in the experiential /clinical setting needs to continue to be defined to embrace IPE opportunities throughout the entire academic program within graduate health professional programs. Ramping up efforts in the clinical years of training align well with the IPLC model, leading to ICP. The advantage of ICP is multifold, ensuring a less fragmented healthcare system, improving patients' quality of care, decreasing medical errors, and improving health outcomes. The purpose of this transcendental phenomenological study was to describe the interprofessional education clinical experiences that pharmacy preceptors provide to PharmD students during the final year of training within four different academic institutions. Colleges and schools of pharmacy, including other graduate health profession education programs continue to be challenged by accrediting agencies to incorporate IPE within all years, including clinical years, of the curriculum. Identifying and agreeing upon activities in these experiences that support the ELM cycle will help pharmacy academic programs establish and standardize IPE within the clinical/experiential years. The central research question and associated sub-questions are structured with the theoretical framework, helping add empirical, theoretical, and practical significance.

# CHAPTER TWO: LITERATURE REVIEW

## Overview

Chapter two reviews the theoretical framework that served as the backbone of this research and study, as well as related literature. The discussed literature provides further understanding of precepting in an interprofessional setting and how specific professions, beyond pharmacy, train and prepare to accept the role of preceptor for learners from different health disciplines. Additionally, the review highlights medical errors, their impact on society, and specific measures that have been put in place to mitigate errors and improve patient safety. Major focus is on Interprofessional Education (IPE) and Interprofessional Collaboration / Interprofessional Collaborative Practice (IC/ICP), including competencies created for IPE, implementation of activities in programs and practical settings, enabling and impeding factors, assessment tools being used, and how the coronavirus (COVID-19) has impacted efforts. Schools and colleges of pharmacy continue to seek ways to incorporate IPE into the Doctor of Pharmacy (PharmD) curriculum. Most pharmacy academic programs and other disciplines have purposefully integrated IPE into the didactic portions of the curriculum, while the experiential components have not been as purposeful. Fahs et al. (2017) called this concern out to serve as a motivating factor for developing an IPE clinical experience. Standardization is needed across the academy, as various clinical experiences have developed and implemented IPE activities and events, but these still need to be consistently implemented. This standardization is also needed to improve patient care quality and achieve the Triple Aim in healthcare (Earnest & Brandt, 2014; IOM, 2015; Josiah Macy Jr. Foundation, 2013). Additionally, since clinical rotations are experientially based, the experiential learning model (ELM) is the theoretical framework used to support this research study and assess the utilization of all components.

## Theoretical Framework

Experiential learning was defined by David Kolb, an educator, as a process that creates knowledge through a transformational experience (Kolb, 1984). Kolb was inspired by many others, such as Dewey and Lewin, who set the stage for creating the experiential learning model (ELM). John Dewey specifically looked at the experiential theory from the lens that knowledge is constructed by both the environment and individuals' interactions throughout a specific period or setting (Beard, 2018). Dewey believed that the experience encountered was educational only if it led the learner to new experiences (Beard, 2018). Kurt Lewin, a social psychologist, developed the Theory of Learning in the 1930s, which focused on an individual's behavior and the environment in which it occurs. Both symbolic forces and interactions in one's environment are responsible for forming the behavior, which is reinforced or changed by the strength of these interactions (Burnes, 2012). Dewy and Lewin set the stage for Kolb to create an educational theory that sets the experience at front and center stage. The ELM comprises four elements, forming a learning cycle (Kolb & Fry, 1975). These elements are concrete experience, reflective observation, abstract conceptualization, and active experimentation. The starting point can be any of these four areas but usually begins with the learners participating in a concrete experience (Kolb, 1984).

Butler et al. (2019) summed up the four stages of the ELM as *Do*, *Reflect, Think, and Apply,* which is the article's title. Advanced Pharmacy Practice Experiences (APPEs) are a part of the PharmD curriculum labeled *experiential education*. Therefore, the ELM fits well as the theoretical framework for the dissertation and its associated research. In addition, this framework has been used by many researchers (Fewster-Thuente & Batteson, 2018; Poore et al., 2014),

collecting data during IPE exercises with healthcare professional students from a variety of professions and aligning this data with the stages of ELM.

Based on the well-established ELM theoretical framework, students must have opportunities to experience each phase of the learning cycle, including reflection, for learning and transformation to occur and for a positive impact on course performance (Clark, 2009; Kolb, 1984; Sasnett & Ross, 2012; van Diggele et al., 2020). Shrader and Zaudke (2018) purposefully called out the need for a process of reflection and debriefing as one of the top ten best practices for interprofessional precepting, which guides both the examination of existing IPE activities (identifying ways each phase of the learning cycle is present or missing) and the definition of the essential components of the IPE experience. Too often, IPE consists of compliance-level activities that stop after the concrete experience phase and does not provide an opportunity for reflecting on the experience and actively experimenting with adjustments and reiterations of the experience (Richard et al., 2018; Zarezadeh et al., 2009). As a result, programs can report that learners participated in an IPE activity, satisfying a superficial level requirement for accreditation purposes. ELM helps to explain why these activities have to accomplish the transformational outcomes described in the Interprofessional Education Collaborative (IPEC) and World Health Organization (WHO) statements (IPEC, 2011; WHO, 2010). The ELM clarifies what is necessary for this transformation and provides the framing for defining the essential elements.

## Related Literature

Highlighting the pharmacy preceptor's experience offered to pharmacy learners is limiting, as it does not necessarily share the experience from the viewpoint of other healthcare professionals who may be involved in precepting students in the experience. Medical errors,

specifically medication errors, continue to occur in healthcare settings, and measures have been put in place to decrease the quantity, severity, and impact on patient care. Several tools and strategies are used to promote ICP while helping identify inappropriate medications for specific patient populations. IPE continues to be the focus of much research, as ICP between healthcare professionals is sought to ensure high-quality patient care is provided. Models of IPE have been designed and implemented in a practical setting. Barriers and enablers of IPE have been identified, as well as the learners' and healthcare professionals' perceptions and attitudes toward the activities taking place. COVID-19 has impacted both IPE and ICP in many ways, leading to setbacks in various healthcare institutional settings and providing opportunities to proceed differently with how it is delivered (Vazquez et al., 2021; Wetzlmair et al., 2021). Many assessment tools have been created that are reliable and valid to assess IPE. However, there still needs to be more establishment and standardization of IPE activities that are both experiential and transformational within the clinical learning environment.

**Interprofessional Precepting**

The research focuses on the pharmacy preceptor's interprofessional learning experience offered to pharmacy learners. Research has been conducted on the perception and experiences of other health professionals who serve as preceptors and the best practices of precepting within an interprofessional setting. Shrader and Zaudke (2018) studied interprofessional precepting and developed the top ten practices for interprofessional precepting to break the siloing effect that is still taking place in healthcare settings among various healthcare professionals. These practices can serve as a starting point for any preceptor to structure a learning experience that is interprofessional and collaborative in focus. A significant takeaway from this research is that settings need to be created that are high quality and set the foundation for ICP and healthcare

system transformation (Shrader & Zaudke, 2018). Weinstein et al. (2018) have also found that for IPE/ICP learning experiences to be sustainable, focused efforts need to be on faculty development of the preceptors, and continuous programmatic assessment is necessary for evaluating progress and effectiveness, especially in primary care settings.

Focusing on other specific professions, Horner (2018) discussed how nursing preceptors are essentially developing themselves when efforts are made to teach students in any setting, but more specifically in an interprofessional setting. “Effective precepting requires a separate skill set than being an expert clinician” (p. 545), and the roles of other team members must be known to have a practical experience for learners (Horner, 2018). Hudak et al. (2017) found that physician assistant (PA) preceptors define ICP differently, whereas the vast majority believe it is just getting multiple disciplines in one setting without any structured responsibilities. Additionally, it was noted that students learn how to work in a team by being in teams and how preceptors must role model to learners the team skills that are necessary for IPE to be facilitated (Hudak et al., 2017). The Commission on Accreditation of Athletic Training Education recently added IPE and ICP to professional programs’ accreditation standards (2018). It was known that these programs needed to train preceptors in IPE/ICP for these to be fully implemented and accepted within training environments. Schwieterman et al. (2021) showed that even a brief asynchronous online module effectively influenced the preceptor’s beliefs, behaviors, and attitudes toward ICP. In other settings, structured tools have been created, such as the interprofessional objective structured teaching experience/evaluation (iOSTE) as a tool for the professional development of preceptors serving in an interprofessional setting. This tool was shown to effectively enhance preceptors’ abilities to precept learners in this setting (Shrader et al., 2017b). The iOSTE was built from the OSTE, simulating a high-fidelity professional

development learning environment where actors role-play learners (Trowbridge et al., 2011). Shrader et al. (2017b) concluded that a safe and inclusive environment must be in place to promote learning in the interprofessional setting.

In an interprofessional setting, a question about who can serve as a preceptor has been raised. For example, is it appropriate for nursing faculty to precept pharmacy learners, or if the focus is on patient care, what difference does it make? The Health Professions Accreditors Collaborative (HPAC) stated that the answer to this question is guided by multiple factors, such as accreditation standards, state board regulations, academic program governance, and traditional ways of carrying out the learning experience (HPAC, 2019). Recently, in Washington State, legislation was passed that permits students of a specific profession to be interprofessionally precepted in a service-learning setting by another profession if what is being learned and assessed with knowledge and skills falls under the scope of practice of both the students and preceptors (Akers et al., 2022). This legislation is not unique to Washington State, as Colorado also pursued legislation changes. By modifying the definition of an intern and defining who can supervise the intern, interprofessional education opportunities increased for pharmacy learners (Franson & Gilliam, 2019).

Medicine and nursing, specifically nurse practitioners, have had to deal with this question on precepting, especially as legislation has advanced the practice for nurse practitioners. Woolforde et al. (2022) shared the nursing-physician partnership in interprofessional precepting to improve the attitudes of ICP is in many ways unique. It is agreeable in most cases that nurse practitioner students, specifically family nurse practitioners, can be precepted by those trained and have similar practice and scope of care as the student being trained. Specifically, the National Council of State Boards of Nursing, NCSBN, stated that preceptors for Nurse

Practitioners need to be certified by respective agencies, such as the American Association of Colleges of Nursing (AACN), American Nursing Credentialing Center (ANCC), American Association of Nurse Practitioners (AANP), and have minimally one year of experience in the respective clinical setting and both physician and physician assistants can serve as preceptors if board certification has been obtained in the area of practice. In addition, the preceptor should have an unencumbered, active license/certification (NCSBN, 2022). Similarly, standard 9.3 of the Association of America Medical Colleges and American Medical Association Liaison Committee on Medical Education's, *Functions and Structure of a Medical School* (2020) stated that it is ultimately the responsibility of the medical school to ensure that medical students are appropriately supervised while in the clinical learning environment, and the activities that the student is engaging in, being evaluated on, and supervised, must be in the scope of practice of the individual supervising. As the experience of the pharmacist preceptor unveils and necessary components of an interprofessional clinical learning experience are identified, it will be of most importance to determine who can precept or supervise students performing specific activities, regardless of the professional identity of the preceptor.

Straub et al. (2020) recently noted that physicians and nurses working in an interprofessional environment highly valued ICP. When questioned, physicians stated they did not have much training in IPE but highly valued the ICP competencies, while nurses were trained and appreciated IPE more than the physician counterparts. It is becoming increasingly known that, if other physicians or health care providers are to precept students from other professions, it is necessary to understand the roles and responsibilities of the other profession. Monahan et al. (2022) shared that, by medical residents shadowing wound care nurses that roles and responsibilities were further understood and appreciated. This should be considered a

groundwork or foundation for IPE clinical learning experiences, since roles and responsibilities are often misunderstood (Furr et al., 2020).

**Medical Errors**

The leading cause of death in the US is smoking tobacco, while cardiovascular disease, cancer, and unintentional injuries are also top causes (Kamerow, 2020). It has been reported that medical errors are the third leading cause of death in the United States (Makary & Daniel, 2016). Although, in 2020, COVID-19 surpassed medical errors and became third on the list (Ahmad & Anderson, 2021; Reynolds, 2021). Most medical errors are preventable and are not always evident or harmful to the patient (Karande et al., 2021). Nevertheless, medication and prescribing errors are essential for targeted initiatives, as these have been noted as the leading cause of avoidable patient harm (WHO, 2017). Adverse drug events (ADEs) have led to more than 70,000 injuries or deaths in the US each year and contribute up to $5.6 billion annually ("Medication Errors and Adverse Drug Events", 2019). Beyond the promotion of IPE/ICP, there are other ways to prevent medical errors.

The Agency for Healthcare Research Quality (AHRQ) released the following report, *Making Healthcare Safer III: A Critical Analysis of Existing and Emerging Patient Safety Practices* (2020), where five threats to patient safety were addressed. These included medication-management issues, diagnostic errors, healthcare-associated infections, nursing-sensitive reports, and procedural events (AHRQ, 2020). In medication management, diabetic agents, anticoagulants, and opioids were highlighted as areas for intervention. This is not the first time we have seen these medication classes top the list, as several initiatives by a variety of constituents have targeted these for intervention (Budnitz et al., 2007, 2021). The report also focused on the geriatric population and reducing adverse events in older adults (AHRQ, 2020).

Every three years, the American Geriatrics Society (AGS) updates the list known as the Beers Criteria, named after geriatrician Mark Beers, which is a guide used by many professionals for selecting, minimizing use, and avoiding specific medications that are considered inappropriate for use in older adults (American Geriatrics Society, 2019). Over the years, several publications have used the Beers Criteria as the primary foundation for researching medication safety (Nelson et al., 2022; Rock et al., 2022; Wang et al., 2022). In general, not only are there inappropriate medications that are discouraged in specific populations, such as the elderly, but the chance of adverse events increases with the use of multiple medications prescribed for a patient or self-care use. The term *polypharmacy*, multiple medications, has been defined differently. Masnoon et al. (2017) studied the terms used, the most common being when a person uses five or more medications. With much of the population aging and living longer than before, adverse drug events from the use of polypharmacy are expected to rise, as older adults live with multiple morbidities (Marengoni et al., 2011). Pharmacists and associated learners have used the Beers Criteria as a guide for interventions and recommendations to prescribers in an ICP/IPE setting (Bryan & Menighan, 2020; Marvin et al., 2018; R. Patel et al., 2018b; Suss & Oldani, 2020).

Another tool often used in the healthcare setting to selectively choose appropriate or inappropriate medications for specific patient populations is the screening tool of older person's prescriptions (STOPP) and the screening tool to alert to the proper treatment (START) criteria. This tool was first introduced in 2008 (Gallagher et al., 2008), and another version was later released in 2014 (O'Mahony et al., 2014). This criteria looks at, not only potentially inappropriate meds to prescribe in older adults (STOPP), but also medications that are often not prescribed or omitted and should be initiated or started (START) in this population (O'Mahony

et al., 2014). Unlike the Beers Criteria, STOPP/START has significantly been associated with improving medication appropriateness and reducing adverse drug reactions in older adults. For example, Sultan et al. (2021) used STOPP/START in an interprofessional student-run medication review program and showed that, compared to standard care received by a resident, an interprofessional program has more recommendations implemented using STOPP/START than standard care. In a primary care setting, STOPP/START is also effective in helping implement appropriate prescribing criteria (Pala et al., 2021). Additionally, multiple studies have shown STOPP/START as an effective tool for identifying inappropriate medication and omissions of therapy within additional healthcare settings and specific patient populations (Ma et al., 2020; Parker et al., 2019; Siripala et al., 2019).

Since the introduction of electronic health records (EHRs), medical errors have decreased (Carayon et al., 2009; Chaudhry et al., 2006; Janett & Yeracaris, 2020). One method that has been used in decreasing errors is known as the five rights of medication use, which was first introduced in 2007 by the Institute of Medicine (IOM). These rights are the right patient, drug, route, time, and dose (Grissinger, 2010; Hanson & Haddad, 2021; Martyn et al., 2019). Other methods to decrease medication errors have been noted recently in the literature. Manias et al. (2020) conducted a systematic review of interventions that prevent medication errors, specifically in surgical settings. Many interventions centered around the use of computerized physician order entry and automated medication distribution systems. Other proposed initiatives that utilize technology, such as barcoding, standardization in drug coding and labeling protocols, and pharmacy solutions, such as barcoded prefilled syringes and avoidance of lookalike containers, are areas where institutions can focus efforts (Bindra et al., 2021). In addition, pharmacist-led educational interventions, such as handouts and pocket-sized flashcards to

prescribers, and reports that show previous errors, serve as reminders for accurately prescribing medications and can decrease medication errors (Jaam et al., 2021).

A few other areas that are being noted as promising ones to put effort and focus on preventing medical errors beyond IPE/IPE are teaching students more critical thinking skills and being conscientiously aware of burnout in the workplace setting. Both can be areas to consider when implementing an interprofessional clinical learning experience. Royce et al. (2019) highlighted that critical thinking skills must be reinforced in the clinical experiential years to avoid the atrophy of these skills. It is further noted that reflective practice, as emphasized in the ELM, and strategies surrounding cognitive bias are necessary to improve patient safety. Cognitive bias has been studied extensively in the literature and has led to diagnostic errors (Croskerry, 2013; Hamm & Nagykaldi, 2018; Ozdemir & Finkelstein, 2018). Burnout among the health professions is higher than ever, and AHRQ estimated that burnout affects all professions (Bridgeman et al., 2018). An association has been established between burnout and errors (Kraus et al., 2020; Menon et al., 2020; Motluk, 2018; Sováriová Soósová, 2021; Tawfik et al., 2018; Trockel et al., 2020).

**IPE Model and Competencies**

The interprofessional learning continuum (IPLC) model visually displays how IPE should be a continuous learning process throughout one's career consisting of formalized and informalized learning (IOM, 2015). Much of the formal organized IPE has occurred in the foundational years and decreases in activities as one progresses into practice settings. Institutions surveyed have concluded that many activities take place in the foundational years, and more practice-based experiences are needed, as well as a better way of tracking IPE activities for accreditors (Congdon, 2016; Grice et al., 2018). The IPLC was built to emphasize that the most

significant opportunity for IPE is when students work collectively together in practice experiences. For this reason, the model displays the continuum of building IPE efforts and activities along the years of learning, where the most significant amount of IPE occurs in the final clinical and experiential years of these training programs leading to lifelong ICP (IOM, 2015). A challenge in the clinical experiential years of training is needing a standardized framework that outlines the essential elements to help provide an IPE experience to students. Although the ELM provides a general theoretical framework, a conceptual framework is needed to ensure all components of the ELM are intact for the activities considered essential and transformational by design.

Six national education associations of health came together in 2009 to form the Interprofessional Education Collaborative (IPEC). This group has expanded to over 20 associations and works collectively to advance learning experiences with an IP focus. The overall goal is to improve health outcomes and enhance team-based care (IPEC, 2020). IPEC initially published core competencies for ICP in 2011, and this was updated in 2016 with the competencies being values/ethics, roles/responsibilities, communication, and teams/teamwork (IPEC, 2016). While this has been a highly influential report, it has not led to helping standardize a basic definition of a clinical learning experience, nor has it helped identify the standard elements that would make up an experience. Additionally, these competencies are used to gauge and assess several IPE activities to determine if student learning objectives are mapped to these competencies and to ensure that IPE events throughout the learning continuum cover all the competencies and respective sub-competencies. The ELM will guide how the learning cycle can specifically ensure these competencies are satisfactorily met.

The WHO has defined the term IPE as an "experience that occurs when students from two or more professions learn about, from, and with each other" (WHO, 2010, p. 7). At the same time this definition was coined, the WHO also separately defined ICP as "when multiple health workers from different professional backgrounds work together with patients, families, [carers], and communities to deliver the highest quality of care" (WHO, 2010, p. 7). Additionally, van Diggele et al. (2020) stated that IPE will support students in the workforce when both teamwork and collaboration must be the focus. Therefore, defining and understanding the elements essential for an IPE practice experience is necessary. A standard definition that defines Interprofessional Clinical Practice Learning Experience has yet to be created. Therefore, pharmacy faculty from four institutions forming a synergy group for this research coined a definition that could be used as a starting point for setting the stage for the learning experience. This term has yet to be officially published, as it is research in progress. Consensus will need to be obtained from other faculty representing disciplines involved in the IP Clinical Practice Experience. At this stage in the research, an interprofessional clinical learning experience will be generally defined as an experience taking place in a clinical learning environment that involves learners from two or more professions who learn with, about, and from each other to enable effective collaboration, including shared clinical decision making, influencing the care of a patient and improving health outcomes. As the essence of the experiences the preceptors provide is captured, are all four stages of the ELM present to set learners up for an overall transformative experience (Kolb, 1984)?

**IPE/ICP Programmatic Implementation and EPAs**

There is no standardized structure for how institutions and programs can classify, categorize, or define IPE during the experiential /clinical years. This structure would optimize

IPE experiences for students, improve current experiences, and increase the number of experiences for learners, as the elements serve as a guide and framework. Entrustable Professional Activities (EPAs) are one potential opportunity proposed to offer some structure and standardization. An EPA is a unit of practice with defined responsibilities and tasks that a trainee should be able to achieve, unsupervised, to show attainment of competence in many areas (ten Cate, 2005). The level of entrustment is to increase over time to where the supervising preceptor would eventually be able to confidently state that the learner is competent in any given area of practice and is ready for practice without supervision. Five levels have been proposed to assess and rank trainees, where the first level is observation with no execution, even with direct supervision. Levels two and three are the execution of activities with direct supervision or reactive supervision. Level four is supervision at a distance, while the fifth level is when the trainee has mastered complete entrustment from the supervisor and becomes the supervisor of other trainees (ten Cate, 2013).

Core EPAs have been defined for new pharmacy graduates consisting of six domains (Haines et al., 2017a). These are patient care, interprofessional team member, population health promoter, information master, practice manager, and self-developer (Haines et al., 2017a). There is some question as to whether EPAs and IPE can be combined and reconciled, and if there is a combined fit (ten Cate & Pool, 2019). The interprofessional team member domain assesses the individual on how they collaborate as a member of the IP team. Some of the supporting examples noted are, “contributing medication-related experience to the team’s work” and “communicating a patient’s medication-related problem(s) to another health professional” (Haines et al., 2017a, p. 3). The ELM requires multiple learning cycles, which is the missing component of many CORE EPAs. For students to demonstrate entrustability, the activities that

are completed need to require multiple learning cycles to establish that transformation has also been achieved. Scott et al. (2021) set out to quantify the use of the interprofessional team member domain of EPAs, and the tasks pharmacists completed varied but did fit within this domain.

Unfortunately, there is disagreement as to where pharmacy students, who are participating in clinical rotations as part of the final year of training, are ranked at the level of entrustment (ten Cate, 2016; VanLangen et al., 2019). Additionally, some research has questioned EPAs as a measure of IPE competence, since IPE is by nature the interaction of two or more individuals from different professions (Haines et al., 2017b; Ramaswamy et al., 2021; Wagner & Reeves., 2015). Assigning tasks and other activities to individual students from different professions cannot assess IPE, since these clinical activities are unique to each student (ten Cate & Pool., 2019). EPAs could help define unique elements for a student carrying out the duties and roles that are unique to their respective profession on APPEs. There are even specific assessment tools and calculators being created to measure these effectively (Smith et al., 2020). However, unfortunately, these would not be able to provide structure for an IPE clinical learning experience. A working group has been created to revise EPAs for pharmacy education and preliminary suggested changes have been published (Medina et al., 2023).

**IPE/ICP in Practical Settings**

Multiple studies have been done in a variety of practice settings promoting IPE and ICP. These studies can provide a starting point for understanding and identifying common elements that promote a quality learning experience (Nwaesei et al., 2019; Theodorou et al., 2018; Yune et al., 2020). However, many of these draw from experiences of professions and practice settings, only sometimes involving the pharmacy profession. In addition, student perception of IPE has

been studied, with most of these reporting significant positive results, and IPEC competencies are usual targets to note any improvement pre-and post-IPE events.

As previously mentioned, reflective observation is one of the ELM steps (Kolb, 1984). Introductory Pharmacy Practice Experiences (IPPEs) are experiential learning experiences that occur in the earlier years as part of the pre-APPE curriculum to prepare students for APPEs and practice (ACPE, 2015). ACPE expects that IPPEs "expose students to common contemporary US practice models, including interprofessional practice" (ACPE, 2015, p. 8). Burkhardt et al. (2019) found that an essential piece of an ICP experience is to implement a reflective assignment within the structure of the experience. This helped document that IPE was taking place in the earlier years of the curriculum. Similarly, Dinkins and Haltom (2018) have used reflection to focus on elements that were prominent themes of learning within the experience with IP teamwork, roles and responsibilities of pharmacist and technician, and policies/procedures being the most common. This practice of reflection connects back to the ELM as one of the four key components.

During a primary care APPE between pharmacy, medical, and nurse practitioner students, IPE showed that structured interactions, using patient cases with identified conditions that were not real cases between students, benefit and enhance collaboration (Patel et al., 2018a). Grice et al. (2018) suggested that IPE in APPEs should focus on and emphasize concepts taught in the pre-APPE curriculum, including IPPEs. The APPEs should provide additional opportunities that would build on skills to improve patient outcomes. Furthermore, structured IPE APPE activities should not just include rounding with a medical team but be more intentional by "specifically targeting IPE competencies in the design/developmental phases of the activity" (Grice et al., 2018, p. 206). An example is quality improvement initiatives that would not only enhance

individual skills and knowledge but also provide opportunities for collaboration among healthcare team members (Hunt et al., 2018). Lastly, reflection should be structured purposefully within an APPE, and the intention/reflection (I/R) practice helps facilitate meaningful experiences. The I/R practice is a set of questions that students answer at the beginning, midpoint, and final time frames of the APPE (Fierke et al., 2019).

Another key to preparing pharmacy learners to work in ICP settings is ensuring IPE activities focus on individual competencies and team-building skills (Ascione, 2019). However, Boland et al. (2016) successfully used IPEC competencies as foundational training with a group of IP students, which ultimately increased confidence in working within an IP team and using team-based strategies in caring for patients. A tool used extensively is the Team Strategies & Tools to Enhance Performance & Patient Safety (TeamSTEPPS) (AHRQ, 2019). Having IP teams work through the TeamSTEPPS program together will optimize performance and help adapt and respond to emergent issues. The tool has been used extensively for IPE in actual and simulated settings (Brock et al., 2013; Garbee et al., 2013; Paige et al., 2014).

IPE should occur in all types of practice settings that involve more than one profession interacting with each other. O'Connell et al. (2020) explored the feasibility of IPE in a community pharmacy setting when student pharmacists were paired with student physician assistants. Time was spent in the community pharmacy and emergency department setting and students indicated an increased understanding of each profession's roles, team functioning, and team care after the event. Hatfield et al. (2020) discussed how home-based clinical care is an emerging opportunity for IPE, as students from different professions help deliver adequate healthcare to patients. Service-learning experiences and other global health opportunities also foster IPE opportunities (Coffin et al., 2021). Within these experiences, students from various

professions provide care to a population in need while increasing understanding of each other's profession, enhancing cultural competence, and fostering tolerance (Coffin et al., 2021).

Another unique setting where IPE/ICP has taken place is in clinics that provide pro bono services to patients. Charrette et al. (2020) highlighted the benefits of physical therapy and pharmacy students working together in such a clinical setting. Students learn about the roles and responsibilities each other serves while providing critical services to the community. For example, student pharmacists provided medication reviews, while student physical therapists were able to provide balance assessments (Charrette et al., 2020). George et al. (2017) also showed how student-led, interprofessional pro-bono clinics, involving more disciplines beyond pharmacy and physical therapy successfully filled a need in the community. However, most importantly, these clinics provided an ideal landscape for students to learn how to work together to develop clinical skills. In addition, these clinics have helped specific professions, such as occupational therapy, provide an opportunity to open the mindset of those from other professions to see what the profession can bring to the table when caring for a patient (Rogers et al., 2017). Generally, outside of an interprofessional setting, it has been found that students participating in student-run or pro-bono experiences prepare students to function at high levels of competency as they move through the clinical years of training (Erdman et al., 2020).

The examples above show how IPE activities are scattershot across the board, where some include aspects of the ELM while others do not. By defining the essential elements of an interprofessional clinical experience and utilizing the ELM as the framework, programs can stand confident that each ELM phase is met, while assuring the multiple iteration requirement is intact. In addition, this will provide more assurance to accrediting agencies that IPE is standardized and consistent across the academy.

**IPE/ICP Enabling and Impeding Factors**

It is not only necessary to understand facilitating or enabling elements that make up an IPE learning experience in the clinical year of training but also potential barriers that could impede such experiences. Many studies have reported enabling and impeding factors for IPE or ICP (Olenick et al., 2019; Poghosyan et al., 2017; Sudeshika et al., 2021; Supper et al., 2014; Szafran et al., 2017; West et al., 2016). Barriers include institutional factors, as well as both student and practitioner-related factors. To improve the healthcare of the patient in mind, other barriers may be present that are patient-related. Just as IPE/ICP brings together individuals to work collaboratively, orchestrating and synchronizing schedules to allow a variety of stakeholders to successfully plan, implement, and complete learning experiences can be rewarding but challenging at the same time.

Research has been completed to identify known factors that promote or support IP teamwork in primary care environments (Poghosyan et al., 2017; Supper et al., 2014) and nursing homes (Gulla et al., 2019). Poghosyan et al. (2017) identified the factors that were sorted into four relational, organizational, processual, and contextual domains. Relational factors noted were the nurse practitioner's relationships with physicians, administrators, and staff, as well as the role of the nurse practitioner itself. Organizationally, the administration must gain support, and the nurse practitioners represent and advocate for the team. Processual factors were time, space, and task masking among team members. Finally, contextual factors were the scope of practice and economic impact (Poghosyan et al., 2017). Olenick et al. (2019) also studied positive and negative factors and noted positive factors centering around patient care, student learning opportunities, and healthcare workers working together. Concerning negative factors

were coordination of schedules and discipline issues, where members of specific disciplines remain territorial with specific activities in the patient care setting.

Supper et al. (2014) noted that ICP's primary facilitators are common interests among the different professions, the opportunity to develop new professional fields, improve the quality of care, and overall collaboration with each other. Barriers noted were team building, training on IPE, funding, defining, and understanding each other's roles, reporting, and confidentiality (Supper et al., 2014). Gulla et al. (2019) focused on the barriers and facilitators that might present during an IP medication review using mentoring and clinical evaluation between professionals caring for patients in a nursing home. Barriers included instruments, competency, dilemmas that challenge ethical standards, electronic health record knowledge and proficiency, ever-changing drug regimes, and lack of time (Gulla et al., 2019). On the flip side, promoters were the environment for learning, colleagues being solicited for difficult decisions, overall engagement, the perceived scale of importance for the intervention received, with importance and relevance as high priority, overall communication improvement, and relatives that were pleased with the service (Gulla et al., 2019).

Several researchers have performed studies or literature reviews to identify barriers and enablers of IPE in higher education health professions' curricula, as well as any standard links or factors between the two, when embedding IPE into curricula (Burkhardt et al., 2019; Chen et al., 2016; Lawlis et al., 2014; McLaughlin et al., 2019). Five elements have been identified as *fundamental* in either successfully enhancing IPE or inhibiting it. These are "government funding, higher education institutional funding, faculty development programs, organizational support for embedding IPE into curricula, and staff ownership and commitment across all

disciplines" (Lawlis et al., 2014, p. 308). The IPE program was successful if it contained one or more of these five elements.

Burkhardt et al. (2019) reported within IPPEs that were set up for ICP/IPE, in both community and hospital settings, barriers were centered around communication, access to charts, workloads, mutual respect, the overlap of roles, hierarchy issues, nonphysician leadership, and personal relationships. McLaughlin et al. (2019) set out to identify the characteristics of a high-performing healthcare team involving student pharmacists. At an organizational and team level, appropriate resources and procedures must be in place. In contrast, communication and characteristics of "knowledge, experience, and knowing strengths and weaknesses" (McLaughlin et al., 2019, p. 63) are needed, at the individual level. Barriers of space and time devoted to activities were among the top challenges noted to effectively integrate learners into the interdisciplinary team environment (McLaughlin et al., 2019).

Chen et al. (2016), in addition to organizational and administrative barriers for IPE, identified more training is needed for preceptors of students in IPE settings to understand the goals, curricula, and scope of practice of students from different professions, as well as how to precept students from other professions in busy clinical environments. A systematic review of both qualitative and quantitative literature was completed by Visser et al. (2017), focusing on the medical and nursing students' and residents' perceptions of IPE in a clinical setting with other healthcare students. In the review, most barriers noted for IPE to be effectively carried out were learners feeling intimidated, the lack of formal assessment, and limited or no interaction between medical students and nurses. Facilitators were the creation of authentic learning activities that were urgent and establishing relationships, as well as getting to know each other.

Financial barriers can interfere with ICP, especially in integrated care initiatives. Specific barriers are noted, such as inadequate patient reimbursements for specific professions performing patient care services or funding for the initiative itself (Gilles et al., 2020). Additional faculty, serving as preceptors and mentoring learners, adds to the cost and should be weighed against the benefits of providing additional opportunities for education and overall long-term cost-savings (Block et al., 2021). Fahs et al. (2017) identified procuring and maintaining financial support as a lesson learned from instituting IPE, and how important it is to create a budget and business plan to ensure success.

Both facilitators and barriers to IPE/ICP must be known and addressed to have a successful learning experience. Resources, including financial, must be dedicated to these efforts, including financial, to ensure success. In addition, specific efforts should be dedicated to team building, understanding each other's roles and responsibilities, and devoting time to activities. It is also essential that preceptors receive training on how to precept students from various health disciplines.

**IPE and COVID-19**

During the COVID-19 pandemic, steps were taken to continue to safely care for patients. Lessons have been learned that could help define the elements essential for an IPE clinical learning experience. Several advantages exist to using telephonic or virtual platforms, via Google Meet or MS Teams, for IPE. First, these modalities help connect multiple individuals synchronously, including patients and other team members who previously may have yet been able to attend these events due to conflicting schedules and space. It helps socially connect these individuals with others (Winship et al., 2020). Finally, the virtual platforms ensure students are

being afforded opportunities to participate, even for those students participating in clinical /experiential rotations outside the geographic area.

There are many examples, particularly in rural communities, where telehealth IPE models have been used to deliver healthcare to those who need it. Browne et al. (2021) successfully created a model where psychiatric mental health nurse practitioners, pharmacy, and social work students could deliver care via telehealth to rural communities. Creativity peaked during the COVID-19 pandemic to deliver IPE in non-traditional clinical settings using virtual platforms, and the online platform allowed more students to be involved in the learning experience compared to the traditional in-person means (Jones et al., 2020; Robertson et al., 2021). Bautista et al. (2020) described an IPE rotation for pharmacy and medical students that reached out to vulnerable patients that needed follow-up care, but COVID-19 was causing delays. Interprofessional huddles, interviewing patients using a collaborative approach, as well as practicing communication with each other interprofessionally were focused items that could translate out to potential elements for an IPE clinical learning experience. Although telehealth has provided many conveniences for patients and providers during the COVID-19 pandemic, which will likely continue in the future, there is a growing concern about how this may be impactful to both patients and providers, as this type of communication is not always preferred and can be stressful (Tewksbury et al., 2021).

Beyond the actual clinical setting, COVID-19 forced academic programs to restructure many ways both didactic coursework and clinical coursework, including IPE, were provided to students. For example, the Yale School of Medicine provided students with a clinical IPE opportunity through the Interprofessional Longitudinal Clinical Experience (ILCE), where students traditionally work nearby each other (Takizawa et al., 2021). During COVID-19, these

experiences moved to an online format using technology, such as Zoom and the breakout room features, to help students meet with specific interprofessional team members, creating plans and answer assessment questions, as well as utilizing the technology to meet and interview volunteer patients (Takizawa et al., 2021). Videoconferencing was also advantageous to many pharmacy programs (Higbea et al., 2021), where synchronous sessions between preceptor and students would take place to discuss patient cases collectively. In many cases, access to electronic health records was permissible but required HIPAA-compliant approved communication methods via the collaborating institutions (Higbea et al., 2021). Other IPE efforts utilized cases where students from various professions would collaborate and work together to develop a treatment plan (Engelmann et al., 2021). Overall, it was determined that students could still achieve interprofessional education effectively through online means.

**IPE Simulation**

Many programs have incorporated elements of IPE within the academic program and curricula using simulation. Although this does not replace real-life experiences, it provides an opportunity to mimic real-life scenarios, including the engagement and interaction of learners from various professions. The use of simulation increased during the COVID-19 pandemic, and some professions, such as nursing, have been guided by accrediting agencies to incorporate more simulation, up to 50% of curricula, instead of clinical placements. This decision comes from the National Council of State Boards of Nursing (NCSBN), which led a national longitudinal randomized controlled study that provided evidence that simulations of high quality can provide comparable outcomes to students participating in traditional clinical hours for up to half of these hours (Hayden et al., 2014). Xavier and Brown (2021) articulated the importance that simulation has in student learning, primarily in how to communicate and work together as a healthcare

team. When appropriately designed, the activities should align with competencies for IPE/ICP. Korayem and Alboghdadly (2020) highlighted how simulation can be used in the APPE setting, supplementing the learning experience to ensure all learning objectives are met and improving student satisfaction.

Simulations, ranging in fidelity, have been created in various settings and with various health professional students. Chiniara et al. (2012) discussed the taxonomy and complexities in the framework for choosing the media, design, and modality for simulation, and several studies have been published over the years, highlighting simulation ranging in fidelity with students from different health professions (Liaw et al., 2014; Mai et al., 2018; Munshi et al., 2015; Weir-Mayta et al., 2020). Simulation fidelity should increase over time, eventually reaching reality in clinical experiential settings.

A few specific studies are described here to highlight simulation in the IPE setting and how the practice setting varies with the healthcare professions. For example, occupational therapy and nursing students participated in a three-hour simulation in an acute care hospital setting with interprofessional socialization being an essential item assessed (Washington et al., 2021). Additionally, pharmacy students, medical, social worker, and nursing students participated in a simulation that focused on communication during the transition of care and the development of care plans for patients with altered mental status (Blakely & Biehle, 2021). Another simulation to note is pharmacy students collaborating with social worker students, where the students asked simulated patients questions about substance abuse and other factors that targeted social determinants of health (Crowl et al., 2021). All these simulations vary in the scenario and focus on specific IPE domains and competencies, ultimately preparing the students for ICP.

Higher fidelity simulations, involving human patient simulators, have also been studied in preparing students for interprofessional collaboration. A higher level of readiness has been noted among senior students in medicine, nursing, and pharmacy than students in younger years. Readiness was measured using a validated tool but included communication, teamwork, and respect and trust for each other (Southall & MacDonald, 2021). Higher fidelity simulations, involving mannequins, standardized patient actors, or role-playing provide safe environments for students to learn and make mistakes, without fear of compromising patient safety (Lewis et al., 2012). A new skills-based curriculum has been created in pharmacy using high-fidelity patient simulation, creating an operational and educational structure with defined resources across the curriculum (Andrews et al., 2020).

**IPE Assessment Tools**

There are different ways to assess student learning. For IPE, there are several tools created for assessing student readiness, knowledge, and collaboration between others during both simulated and real-life settings. Studies have been conducted to determine what are the outcome measures assessed during IPE clinical placements, and which assessment tool should be used (Collins et al., 2019; Guitar & Connelly, 2020). Specific assessment tools such as the Jefferson Teamwork Observation Guide (JTOG) and the Interdisciplinary Education Perception Scale (IEPS) are newer ones used, and the IEPS tool was most frequently used during clinical experiences, setting a standard for use for future IPE experiences (Guitar & Connelly., 2020). The IEPS consists of 18 items that assess student perceptions of IPE experiences (McFadyen et al., 2009). Other tools used in more recent studies are also to be noted. The DIAM model was created to help design, implement, assess, and modify IPE activities (Smith et al., 2021). The

SITIAT tool is an instrument that assesses individual performance in IPE activities, whereas traditional tools are used to measure performance as a team (Daulton et al., 2021).

The assessment of IPE outcomes has been challenging, and efforts have been made in this area to provide validated and reliable tools. With learning and transformation being end goals, choosing an assessment tool to evaluate the IPE/ICP experience for these endpoints should be a top priority. Kirkpatrick (1959,1998) developed a prominent theoretical framing model for many of the IPE assessment tools, focusing on teamwork as the primary outcome and not necessarily ensuring an experience is grounded in the ELM. The model would be one to use in this continuum of learning and is an outcomes evaluation model. When knowledge, skills, or attitudes change, learning takes place, and this model could be used before the first IPE activity of any academic program, during the training and education of individuals from different professions, and upon ending the formal academic program of study and transitioning into the workforce. The four levels of the original Kirkpatrick Model consist of reaction, learning, behavior, and results. The Kirkpatrick Model has been reconfigured over time to expand to more levels (Barr et al., 2005; Hammick et al., 2007). Specifically, the reconfigurations produced a split at levels two and four, where changes in attitudes and perceptions are being evaluated in addition to knowledge and skills. IPE assessments can now consider not only the change to the organization but also the benefit to the patient, as perception and attitudes have already been assessed in a variety of healthcare settings (Mosley et al., 2012; Reeves et al., 2016; Reeves et al., 2017; Schussel et al., 2019). This will help obtain the broader Triple Aim goals of improving the experience of care, improving the health of populations, and reducing per capita healthcare costs. The Kirkpatrick Model could be included as part of the assessment components of an

interprofessional clinical learning experience, as it would be able to distinguish and assess the activities being configured for these various experiences.

In addition to the tools noted above, there are many other validated and reliable tools to assess an IPE/ICP clinical/experiential learning setting. The choice of the tool depends on what is explicitly being measured. Additionally, some tools assess the team, while other tools assess the individual. Several of these require the learner to self-report, while others are meant to be used by an observer. The Students' Perceptions of Interprofessional Clinical Education Revised (SPICE-R) assessment measures student perceptions of IPE/ICP (Dominguez et al., 2014). The Assessment of Interprofessional Team Collaboration Scale (AITCS) is a tool used for evaluating the cooperation, coordination, and partnership of healthcare teams in an ICP setting (Orchard et al., 2012), while the Team Observed Structured Clinical Encounter (TOSCE) assesses teamwork behaviors of IP student teams (Lie et al., 2015). The mICAR, modified Interprofessional Collaborator Assessment Rubric, is a modified version consisting of 17 items of the 31-item Interprofessional Collaborator Assessment (ICAR). These observer tools measure students on components, such as communication, collaboration, roles/responsibilities, conflict management, team functioning, and approach to care (Curran et al., 2011; Hayward et al., 2014). The individual Teamwork Observation and Feedback Tool (iTOFT) focuses on IP observable behaviors under the four headings of "shared decision-making", "working in a team", "leadership," and "patient safety" (Thistlethwaite et al., 2016, p. 527). The Attitudes Towards Health Care Teams Scale (ATHCT), measures the attitudes of both the learner and preceptors toward working in IP teams (Heinemann et al., 1999; Kim & Ko, 2013). Lastly, the Team Skills Scale is a 17-item tool measuring interpersonal skills, discipline-specific skills, and geriatric care skills (Grymonpre et al., 2010). This is an ideal tool to use with an IP team of learners and

preceptors from all disciplines to be able to assess students, generally, without feeling attention needs to be directed by each preceptor to students in the respective discipline.

Shrader et al. (2017a) systematically reviewed assessment tools used to measure IPE outcomes in pharmacy education. Thirty-six assessment tools were identified as being relevant for pharmacy education, offering advantages and disadvantages. However, in most cases of IPE/ICP assessment, students of a specific profession are never formally assessed by another profession. This is an area of concern and should be researched further to understand why this is not taking place. Crowl et al. (2020) noted this as a future step in research and specifically referenced that a tool should be used that could provide a 360-degree evaluation, providing feedback from a variety of individual sources. These suggestions of introducing a 360-degree assessment tool and ensuring feedback and assessment of students are being conducted by preceptors from multiple professions could be considered for assessing an interprofessional clinical learning experience once the standardized elements have been defined fully.

Assessment in the IPE setting should also be structured to provide formative and summative assessments to students to meet the goals of transformation, as indicated by the ELM. Just as the student self-reflects on performance and learning from an IPE experience, making changes along the way, preceptors must provide a formal assessment to students through the experience. Hence, students continually understand the learning objectives and how these are being fully met. The evaluation tool selected to assess the student's learning and understanding will vary depending on what is being measured and should show progress toward competency.

## Summary

This chapter offered a wealth of information on what has been studied in IPE and how it has been structured, clinically and educationally. The theoretical model being used, ELM,

provides a framework to structure the experience thoroughly, as the research questions focus on each stage of the model. IPE competencies and other models have been generated, leading to IPE being well-established in the earlier years of curricula for most professional graduate programs. It was necessary to highlight specific literature on how interprofessional experiences are taking on the challenge of preparing and professionally developing other professions to take on the preceptor role for students unique to the preceptor's professional identity. This is an area that academic programs will want to put effort into as interprofessional education clinical learning experiences increase in quantity and quality. Programmatic implementation examples have been shared, and the pharmacy profession has created specific EPAs for gaining the entrustability of the student by the preceptor on several activities, one linked to IPE. There are concerns raised on whether this can be measured. Practice models that lead to ICP/ICP have been put in place, and creativity has been high as institutions had worked through the COVID-19 pandemic. Much research has been discussed on the enabling and interfering factors to getting IPE efforts in place. These barriers have been one reason IPE has dwindled downward as learners progress to advanced clinical years, including post-graduate training. Many assessment tools have been created to assess specific IPE elements.

During the clinical years, students are in closer proximity to one another, learning "with, about, and from each other to enable effective collaboration and improve health outcomes" (World Health Organization, 2010, p. 13), and IPE can be maximized. Identifying the elements that would need to set the infrastructure for IPE to take place for pharmacy students during an advanced pharmacy practice experience in the final year of training is needed to increase opportunities for all health professional students in the clinical experiential years of training. Providing IPE experiences in clinical /experiential settings will help emerging professionals

understand the roles and responsibilities of those in different professions, leading to environments where ICP is embraced fully in various practice settings. Establishing the activities for IPE to promote ICP in the advanced pharmacy practice experience will provide the groundwork for improving the quality of patient care the team delivers. Learners will be able to apply the knowledge that has been learned, and preceptors, when trained, will feel more confident in providing assessments to students from other disciplines and seek out ways to further interact with all students. This research focused on how the experience offered to students is structured, and understanding the experience in its entirety will help standardize the experience, identifying essential activities that should comprise the makeup of an interprofessional clinical learning experience. Describing the experience from the preceptor's viewpoint was the first step in gaining information on the essential activities that would create standardization in IPE clinical learning experiences. Training more students interprofessionally will lead to graduates who want to practice intercollaboratively and seek practice opportunities upon graduation and passing licensure exams. This will improve the quality and efficiency of healthcare provided to patients, reducing overall medical errors.

# CHAPTER THREE: METHODS

## Overview

The purpose of this transcendental phenomenological study was to describe the interprofessional education clinical experiences that pharmacy preceptors provide to PharmD students during the final year of training within five different academic institutions. The focus was on the preceptor's experience and capturing the wholeness of the experience offered to students and its overall essence. The research used horizonalization to equally capture and evaluate every statement provided by the preceptor participants to describe the whole experience (Moustakas, 1994). This chapter discusses the research method, design, and design type. Data were collected via surveys, focused interviews, group sessions, and documents associated with the experience, such as a syllabus. Interview guides containing questions asked are discussed. The setting and participants chosen for this study are reviewed, and the research positionality is justified. Specifically, research questions, philosophical assumptions, and research paradigms are identified. The chapter contains the researcher's role, data analysis and synthesis, trustworthiness, ethical considerations, and summary.

## Research Design

A qualitative research design was chosen to capture data from preceptors precepting the students. The experience offered by preceptors to students was examined, and the goal was to fully capture the essence of the experience, which helped define the essential activities that constitute a clinical interprofessional learning environment (Moustakas, 1994). Crowe et al. (2011) explained that qualitative studies can help explain links and relationships the interprofessional experience may cause and help answer questions, such as what, why, and how, which will further provide the details in defining and identifying the elements in this

interprofessional clinical setting. Quantitative research, with experimental designs, will not provide these details but will be helpful, once the elements are defined, to compare student experiences that claim to be providing an IPE approach but may not deliver.

Preceptors describe the experience, and the research design chosen was phenomenology. Creswell and Poth (2018) further explained that a phenomenological study sets out to find commonalities with participants as the phenomenon is experienced. As described by Creswell and Poth (2018), reduction efforts took place to reach the overall essence. This study used phenomenology to examine the objects that appear in one's consciousness, and it was necessary for the focus to be both on the participants (i.e., the subjects), as well as analyzing the objects (activities, events, etc.) that came to mind that made up the whole interprofessional clinical learning experience. Moustakas (1994) stated that the relationship between these two helps describe the phenomenon and the whole essence of the experience.

Transcendental phenomenology was the focus of this research and collecting data from each preceptor participant involved in the experience. Transcendental was used, as the goal was to capture the descriptions of the participants and less on the primary researchers' interpretations (Moustakas, 1994). As a result, the researchers did not go in with a view of how the experience should be offered, but viewed the experience as if it were the "first time" (Moustakas, 1994, p. 34). Specifically, bracketing, a reduction method, was necessary to ensure that the researcher concentrated entirely on the participants' description of the experience and that the responses were captured naturally while being obtained from participants during interviews and group sessions (Moustakas, 1994). Although this research references Moustakas (1994) for much of the background and framework, Edmund Husserl deserves much credit and has been coined the founder of transcendental phenomenology (Staiti, 2018).

## Research Questions

The following research questions were used to serve as the framework for this study. One central research question and four sub-questions sought to determine activities aligned with the ELM.

### Central Research Question

How do pharmacy preceptors describe the interprofessional clinical learning experience offered to PharmD students during the final year of training?

### Sub-Question One

What are the activities of the clinical learning experience that promote concrete learning to students in an interprofessional setting?

### Sub-Question Two

What activities of the clinical learning experience promote reflection to students in an interprofessional setting?

### Sub-Question Three

What activities help the student make meaning out of the clinical learning experience encountered in an interprofessional setting?

### Sub-Question Four

What activities of the clinical learning experience promote the application of material learned, reiterated, in an interprofessional setting?

## Setting and Participants

This chapter section describes the setting and participants that made up this study. Multiple sites and participants were used, and the participants must have experienced the phenomenon (Moustakas, 1994). Therefore, it was necessary to choose pseudonyms for

participants to allow for anonymity.

**Sites**

Research for this study was conducted by five colleges/schools of pharmacy across the United States who offer a Doctor of Pharmacy (PharmD) program. Three of the five programs were funded publicly as state institutions, while the other two were private, one a for-profit institution and the other not-for-profit. Four of the five programs were four-year programs, while one was a three-year accelerated program. These five programs were conveniently chosen due to an already-established synergy group formed by faculty and administration around IPE. Pseudonyms, otherwise known as fictional names, were used for these institutions/ sites when the research was conducted, noting that this was not a guarantee for anonymity (Surmiak, 2018). The programs were referred to as programs one through five. Allen and Wiles (2015) suggested that researchers allow the participants to be involved in the pseudonym naming due to the psychological meaning. Pseudonyms were initially obtained as part of the demographic survey and were confirmed during the individual and focused group interviews.

A goal of forming the synergy group was to connect and brainstorm ways to work collectively to advance IPE within each institution and across the academy of pharmacy. Each of these programs were structured organizationally, with a dean being the lead figurehead of the school or college. The dean reports to the university's chief academic officer (CAO) or provost, and the provost reports to the president. Within each school or college of pharmacy, there were different office structures. The office of experiential education was the unit that was responsible for assigning students to clinical experiences and selecting the preceptors who serve as adjunct faculty to oversee the students during the learning experience.

Utilizing each institution's experiential office, two to four practice settings were selected,

with a goal to select one in each of the required APPE areas, as defined by ACPE standard 13, including community pharmacy, ambulatory patient care, hospital/health system pharmacy, and inpatient general medicine patient care (ACPE, 2015). This allowed preceptors from various sites to provide information regarding the experience offered to students. All selected sites confirmed that IPE activities were taking place and that students interacted with other learners from two or more different professions. If a community pharmacy site was unavailable, the institution attempted to select another ambulatory or outpatient setting that provided an IPE offering.

Sites were selected by the experiential administrating units of each of these schools/colleges of pharmacy. Sites identified had students placed on a clinical/experiential rotation within the past year, and sites, where full-ranked faculty members served as primary preceptors, were considered and included. Programs one, two, and three had affiliated clinics and hospitals, forming an academic medical center. Programs four and five were stand-alone programs not affiliated with a medical center. One of the significant partners with one of these was a health system that was an academic medical center affiliated with another university, which had academic programs in other health disciplines. This academic medical center utilized two hospitals with associated clinics for student experiential placements. Faculty from the program had established practice sites at this center and offered clinical rotations to students. In addition, other students from various health professions rotated through these sites, guaranteeing interprofessional interaction in some capacity.

When choosing the site (sample) to study, it took much work to avoid sampling error, as the participants only represented part of the entire population of all IPE sites. Non-probabilistic sampling, specifically purposeful sampling, was used as the experiential office personnel at each respective institution selected sites that provided helpful information, as well as ones that met the

WHO definition of IPE and the established definition for an IPE clinical learning experience (Creswell & Poth, 2018; Martínez-Mesa et al., 2016). Knechel (2019) pointed out ways to avoid sampling error, such as performing random sampling or increasing the sample size. If more than one site was identified in a specific area of pharmacy, such as ambulatory care or acute care pharmacy, the researcher randomly selected the site by listing the sites on slips of paper and blindly drawing one piece of paper randomly. The ideal sample size from each school/college of pharmacy was eight, identifying one preceptor in each area of pharmacy practice and having a backup site in the event the primary site selected was not able to proceed with the research study. The overall sample size from all sites was sixteen to maintain the size required by the program and attempt to identify a pharmacy preceptor within each practice setting with most programs. A goal was to obtain another ten or more sites/preceptors chosen as backup sites in case of any emergencies that prevented participation, staying true to the general guideline stated on sample size by Creswell and Poth (2018) "to study a few sites or individuals but also to collect extensive detail about each site or individual studied" (p. 158). When those chosen declined participation, another request was made to the supporting university to identify a backup site.

In choosing the types of sampling strategies to use for purposeful sampling, maximum variation sampling was considered due to its popularity and determining in advance some criteria (in this case, IPE and specific pharmacy practice area). The reason this was not chosen was having to select sites quite different from the criteria, which would go against selecting a site that offers an IPE clinical learning experience (Creswell & Poth, 2018). The convenience sampling strategy was chosen because the researcher could easily access and collect the data from these sites and preceptors (Creswell & Poth, 2018).

Data were only collected once IRB had been approved at respective programs. An email

for participation was sent to all sites that had been identified, inviting them to participate in the research (see Appendix F). The participation was in three phases, described in detail in the data collection section. The three phases were individual interviews, document analysis, and focused group interviews. In addition, a demographic survey (see Appendix C) was sent to participants, via Google Forms, after gaining permission from each to obtain information about the preceptors participating in the site.

**Participants**

Up to 12 participants, otherwise known as preceptors, were chosen and varied in age, experience, gender, and how many years each had served as a preceptor and licensed as a pharmacist. Chapter four of this dissertation provides more details on these participants' demographics. When choosing a sample of participants for a research study, a representative sample will be chosen that could answer the research questions thoroughly, and the characteristics that make up the sample should attempt to match the general population (Knechel, 2019). The preceptors chosen for individual and focus group interviews were selected by each college/school's experiential office. These offices identified, through each respective program's experiential software system, sites offering an IPE experience, as defined in chapter one of this dissertation. The experiential leads of each program have site data that was used to identify the sites chosen conveniently. Creswell and Poth (2018) pointed out that the cases chosen should be accessible cases that are available to the researcher. At this time, only pharmacy preceptors were selected for participation in individual interviews and focused-group interviews. Opportunities to gain information from other preceptors of students in these experiences from different disciplines are needed, as well as information from the students participating in these IPE experiences. This will be a focus for future research.

## Researcher Positionality

The motivation for carrying out this research was multifold. This section describes the interpretive framework the researcher used to guide the research. The three philosophical assumptions, ontological, epistemological, and axiological, are discussed.

### Interpretive Framework

The interpretive framework this study used was social constructivism. With this paradigm, "individuals seek understanding of the world in which they live or work" (Creswell & Poth, 2018, p. 24). This was most appropriate for this transcendental phenomenology study since the focus was on the experience preceptors offered to students. The goal was to ensure that the participants' viewpoints were at the forefront and that the researcher was aware of and highlighted these viewpoints (Creswell & Poth, 2018). The data collection methods and techniques were designed to ask open-ended questions, and it was advised to focus on interactive processes, settings, and backgrounds, cultural and historical, to gain information from participants (Creswell & Poth, 2018). The researcher made sure this recognition of background did not influence how data was interpreted and categorized into themes and other categories.

### Philosophical Assumptions

Creswell and Poth (2018) spoke of philosophical assumptions in qualitative research. These assumptions have significance in the research and were addressed, so those reading understand how the researcher approached the research. Three philosophical assumptions were addressed: *ontological, epistemological, and axiological*.

#### *Ontological Assumption*

Ontology is described by Moon and Blackman (2017) as the study of being. What exists in the world that knowledge can acquire? The ontological assumption I brought to this research

was God created all things. The existence and persistence of things are because of Him. This is the universal reality. Genesis 1:1 states, “In the beginning, God created the heavens and the earth” (*Holy Bible, New International Version,* 1984). Within transcendental phenomenology, the research asks participants to think about the experience beyond reality and the ordinary (Moustakas, 1994). Preceptor participants may be thinking above the physical state. Creswell and Poth (2018) want researchers to embrace the “idea of multiple realities” (p. 21). Bracketing was vital to avoid infusing my ontological assumption on the experience described by the participating preceptors. Since I identify as a Christian and believe in God, this did not necessarily change how I interacted with the participants; proselytizing or infusing my beliefs onto someone did not occur.

***Epistemological Assumption***

The epistemological assumption was essential to address, so an unbiased view was brought to the research, and the overall experience was described fully. Epistemology examines how knowledge is created (Moon & Blackman, 2017). Specifically, the relationship between objects and subjects is studied, and this keens in on the research design chosen (Moon & Blackman, 2017). For this research, I did not physically go out in the field to witness the first-hand experience but was involved in the interviews. Al-Ababneh (2020) stated that the researcher needs to interact with the research to understand it more fully. Knowledge was obtained subjectively from the participants; specifically, the quotes of what was said by these participants were analyzed and used for answering the research questions. I, along with other research assistants, maintained the relationship with the interviewees and used structured interview guides to limit subjectivity in the interview. The focus was on obtaining information from the participants.

### *Axiological Assumption*

As the primary researcher, the axiological assumptions were necessary here, as both the research assistants and I have direct experience in interprofessional settings. Axiology focuses on values, expectations, and emotions that the researcher brings to the study and whether these influence the outcome (Leavy, 2020). Axiology studies the researcher's values, which include having a passion and love for ICP and IPE and having past work experience in these settings. These values help shape the narrative (Creswell & Poth, 2018). Additionally, previous research was conducted by me and others in the field on experiential and interprofessional education. The uniform opinion was that we all are passionate about interprofessional education and collaboration, viewing it as valuable to student learning and providing an opportunity for these students from different health professions to work collectively in the future. Although this study described the experience in total to identify activities that constituted an interprofessional clinical learning experience, it was easy for me and the other assistants to prioritize, at higher levels, statements obtained by participants. Memoing and using software systems to code statements helped ensure this assumption was kept in check throughout the study.

## Researcher's Role

The primary researcher and human instrument of this study was me, since I was the instrument in the interview (Guba & Lincoln, 1981). The participants chosen to participate in this study were pharmacy practice preceptors who precepted students and were affiliated with one of five pharmacy schools/colleges. As a prior experiential administrator of one of the participating programs and a current administrator at one, I knew detailed information about preceptors and practice settings, since I placed students on assigned rotations at these experiential/clinical practice settings. Preceptors chosen from three of the five schools/colleges were unknown to me.

I provided oversight of the data collection from individual interviews, focus group sessions, and document analysis. Experiential administrators at each university helped select sites/preceptors to be involved in the research and serve as point persons for the respective sites.

It is recommended for any study to have multiple sources of evidence. As I served as the primary researcher, it was important not to bring bias into the study. Therefore, it was necessary to journal, memo, and bracket information as it was heard throughout the research process. It was vital for secondary assistants and me to bracket and set aside personal experiences as preceptors and previous work that was completed with building interprofessional teams and assignments to avoid inserting personal opinions. This researcher's reflexivity was crucial for keeping bias in check (Pezalla et al., 2012). Utilizing different approaches to solicit information, and to confirm the information, helped minimize the concern of researcher bias.

## Procedures

The procedures of this research study are explained in this section. Specifically, permissions obtained and the recruitment plan for soliciting participants are outlined to achieve triangulation of data to describe the experience fully. In addition, specific points on reaching saturation, concerning the number of individuals being interviewed, individually and in a group setting, as well as a sampling strategy, are addressed.

### Permissions

Before carrying out any research, the first step was obtaining IRB approval through Liberty University (Appendix A). This approval was not acceptable to the other university systems that this research involved, so multiple IRB approvals were obtained or, at minimum, in one case, a statement indicating support for the research. Program one had gained multi-institutional approval, which was a starting point. Next, applications to the respective IRBs were

sent, which detailed the necessary elements of the study, including methods, procedures, participants, and potential risks. Permission, through consent, was obtained from each participant, and data collection took place through individual interviews, a focused group session, and document analysis. Interview and focus group questions were reviewed by the researcher, methodologist, as well as chair of the committee before conducting the interviews and sessions. Questions were modified based on feedback and assurance that the central research question and sub-questions were being answered. The data analysis was completed separately, with all data being synthesized to form the overall description of the experience and answer the proposed research questions. Triangulation was achieved, as multiple data sources and ways of analyzing the data were used to make meaning and understand the phenomena (Moustakas, 1994).

**Recruitment Plan**

Experiential administration targeted sites that met the definitions of an interprofessional clinical learning experience. As previously mentioned, the goal was for each of the five universities to target sites in each of the respective rotation areas defined by ACPE (2015). The targeted number to participate in interviews was at least three to four preceptors per rotation type (i.e., community pharmacy, ambulatory pharmacy, hospital, and acute care), ultimately providing an overall size of minimally twelve and no more than sixteen participants. The goal was to reach saturation, where enough participants were in the study, and collecting and analyzing the data further would not provide any new information (Saunders et al., 2018). Fusch and Ness (2015) stated that quality and validity are impacted when saturation is not reached. Guest et al. (2020) proposed a simple way to reach saturation and sample size estimation. Through bootstrapping analysis, with specific parameters set by the researcher, in a homogeneous sample,

approximately six interviews reached 80% saturation, and 95% can be reached with 11-12 interviews (Guest et al., 2020). Ellis (2022) had reviewed many research textbooks and felt that saturation can be reached in phenomenological studies with sample sizes ranging from six to 20. Since this study had a relatively homogenous population of pharmacy preceptors, 12 participants were enough to reach overall saturation. Informed consent was obtained for each participant. The number of participants recruited to participate in interviews determines the minimum number of participants in the focus groups, which in the best case, is four. Convenience sampling is the best approach here, as the preceptors and sites already had established relationships with the university, and experiential administrators and legal affiliation agreements were in place.

## Data Collection Plan

Collecting data from individual participants was crucial to understanding the phenomenon of pharmacist preceptors' interprofessional clinical learning experience. Data collection for this study took place after receiving IRB approval. Specific demographic information was gathered and conducted in a survey (see Appendix C) and collected upon agreed participation in the study. Additionally, three data collection methods were utilized: individual interviews, a virtual focus group interview, and document analysis reviewing a syllabus, calendar, or other associated experience documents. Creswell and Poth (2018) discussed the advantages of using multiple data methods, which allow triangulation of the data, enhancing credibility. The procedures for collecting data were followed using recommendations referenced in Liberty University's dissertation template (Creswell & Poth, 2018; Lincoln & Guba, 1985; Moustakas, 1994). Therefore, not only is the data collection approach detailed in this section, but the associated data analysis is explained for each method.

### Individual Interviews

Interviews are an excellent method to obtain data from participants and are the primary source for collecting data in a qualitative study (Creswell & Poth, 2018). The end goal was to understand the phenomenon, and the overall interview process included many questions ranging from open-ended to interactive (Moustakas, 1994). Pharmacy preceptors were the individuals contacted to participate in interviews. Interviews are usually semi-structured, lightly structured, or in-depth (Bryman & Burgess, 1994). The semi-structured format was ideal for this research, as it solicited individual information. An interview guide with pre-specified semi-structured questions was necessary to stay on track and on time. The time dedicated to these interviews was an hour. Using a human as the primary instrument to conduct these interviews, going off-script from time to time was needed, which is the advantage of semi-structured. The interviews took place via Zoom, a commonly used video conferencing platform. Creswell and Poth (2018) suggested one-on-one interviews take place "in the same room" (p. 163), virtually via web-based or e-mail platforms. Jamshed (2014) also stated that recording these sessions will be necessary to ensure key points are noted accurately, which will be used to check the validity of handwritten notes. The mp3 audio /video recording files were transcribed, and a "verbatim transcript" (Creswell & Poth, 2018, p. 87) was produced.

### *Individual Interview Questions*

The semi-structured interview questions follow an interview protocol that Creswell and Poth (2018) suggested, where the first questions were used to get the interviewee to relax and start talking, while the end of the interview included questions that invited the participants to provide any additional information. The semi-structured questions included in the research interview guide (see Appendix D) were:

1. For purposes of the recording, please state your name and your practice site. (CQ)

2. Would you tell me a little about yourself? (CQ)
3. What is your area of practice, as defined by ACPE (2015) standard 13, including community pharmacy, ambulatory patient care, hospital/health system pharmacy, and inpatient general medicine patient care? (CQ)
4. What is the pseudonym that you have created for your practice site? (This is a pretend name to protect your identity and promote anonymity in the research and associated publications). (CQ)
5. Please tell me about yourself and how long you have been serving as a preceptor within the College/School of Pharmacy. (CQ)
6. Describe the interprofessional experiences offered to students. (CQ)
7. What other professions (non-students) are represented at this site? (CQ)
8. What other professional students are represented at the site? (CQ)
9. What activities are intentionally designed for IPE that involves shared clinical decision-making? (CQ)
10. Of these noted activities, are there any that you believe are more significant than others? (CQ)
11. What are the ideal time frames that an IPE clinical learning experience should take place daily (morning, afternoon, evening) and yearly basis (summer, fall, winter, spring) or time within the academic year (first quarter of rotations, 2nd quarter, etc.)? (CQ)
12. What activities does the interprofessional education clinical learning experience provide to respective students to promote concrete learning? (CQ) (SQ1)
13. What institutional factors, either site-related or school / college-related, enable or confound the learning experience? (CQ)

14. What other professions are involved in the evaluation of pharmacy students? (CQ)
15. What assessment tool(s) do you use to evaluate the experience? (CQ)
16. We have covered many questions. One final question, what else would you like me to know about this clinical practice experience that makes it an ideal setting for an interprofessional/collaborative experience? (CQ)

Questions one and two were put into the interview guide as icebreaker questions. Question one specifically was asked to guarantee, during transcription, the name and practice site was noted at the beginning of the session. Creswell and Poth (2018) stated that icebreaker questions are needed to start the interview and relax the interviewee.

Questions three through five were other confirmatory demographic questions, as well as a question regarding pseudonyms. As stated earlier, allowing participants to be involved in pseudonym naming has psychological advantages and is participatory (Allen & Wiles, 2015).

The following three questions (six through eight) were created to ensure the site met the established definition of an IPE clinical learning practice site and to note the professions and learners that were most common in the identified practice setting (community pharmacy, hospital, etc.).

The concept of shared clinical decision-making continues to embrace the healthcare institutional environment, promoting ICP and teamwork amongst healthcare providers. Questions nine and ten were essential to answer the central research question and determine if shared clinical decision-making was an activity for IPE, and which activities were viewed more critically than others involving shared clinical decision-making. The IOM's landmark article, *To Err is Human* (1999), revealed that human errors in the healthcare system are the eighth leading cause of death in the United States and that a lack of communication and collaboration between

clinicians and healthcare providers is an underlying cause.

The clinical and experiential years of a program vary from institution to institution. For the five colleges/schools of pharmacy, the academic year may start in July and run consecutively for 12 months. Other programs may run the clinical year over nine months. Most post-graduate training programs that include physicians, pharmacists, and other resident trainees begin programs in July and end programs in June. Question 11 was trying to determine if there is an ideal time of the year for an interprofessional clinical learning experience to occur, as well as an ideal time of day, knowing that most rounding opportunities at academic medical centers occur in the morning hours.

Question 12 allowed interviewees to point out precisely the activities that made up the interprofessional education clinical learning experience. Again, data analysis confirmed if there were noted similarities or differences among individuals and groups of preceptors.

The conceptual framework that has been built for measuring the impact of IPE, the ILPC, was built to identify enabling or interfering factors (IOM, 2015). Question 13 was created to help in identifying these factors.

Questions 14 and 15 established the involvement of other professionals that work with the pharmacy students in the IPE/ICP setting. This helped determine the extent of involvement that other professions take in the learning of all students, not just those who matched up to their own professional identity. Additionally, as noted in Chapter Two, various assessment tools are used for assessing IPE. Again, this question helped determine if one rises to the top among the available validated instruments.

Question 16 was meant to end with participants providing any further information, which was the nature of semi-structured interviewing and met the criteria that Creswell and Poth (2018)

suggested, as well as Patton (2014).

***Individual Interview Data Analysis Plan***

Moustakas (1994) provided detailed information on analyzing the data obtained from the individual interviews. First and foremost, epoché was used to ensure presuppositions about the IPE experience were set aside by the researchers involved in the data collection process. The phenomenon was bracketed and isolated fully. The goal was to describe the overall essence of the phenomenon. "Everything is perceived freshly, as if for the first time" (p. 34). In addition to epoché, open coding, horizonalization, theme clustering, textural description, imaginative variation, and synthesis were steps used to analyze the data comprehensively.

The interviews were recorded, transcription took place, and a document was created outlining the interviews. During the analysis, memoing was used to keep track of emerging themes and ideas from the transcribed interview. This process was similar to looking up core content in a library database, where Medical Search Headings (MESH) terms were used to search quickly on a subject matter. The researcher found keywords or terms and memoing to retrieve or note information moving forward. It was necessary to review the transcript several times to get a sense of the phenomenon and to help with coding the themes (Moustakas, 1994).

Using the modified van Kaam analysis process described in Moustakas (1994), the researcher broke down the transcript to describe the overall essence. Horizonalization was an attempt to treat all data equally and list every expression relevant to the experience. The reduction and elimination techniques identified relevant expressions and coded them into themes. NVivo was used for coding and developing nodes. The researcher focused on repetitive words, providing the basis for textural and structural descriptions. Textural descriptions included narrations of what a member stated to describe what was experienced during the phenomenon

(Alase, 2017). Excerpts from the interview were used, including all words, to provide attention to each equally. At the same time, structural descriptions began classifying and consciously thinking through how the words and terms were organized (Moustakas, 1994). Both textural and structural descriptions helped explain the phenomenon fully and provided an overall depiction of what the participants experienced. Structural descriptions focused more on the context and setting (environment) that influenced how the participants experienced the phenomenon (Alase, 2017; Moustakas, 1994). The researcher used imaginative variation to construct a mental picture of the experience or phenomenon. The structural and textural descriptions needed to rely on each other, and that imaginative variation helped form each (Creswell & Poth, 2018; Moustakas, 1994).

**Document Analysis**

Another method to collect data that described the experience provided by the preceptors to students was the review of the syllabus and schedule (i.e., calendar or date of activities). The preceptors created these documents for the learning experience offered to students. Analyzing documents, in addition to interviews and focus groups, provided another perspective and information, both procedural and factual, to help fill in gaps from the interviews (Biddix et al., 2018). Since the syllabus contained information about the experience and was used to describe the experience, it is considered an ideal document to analyze (Bowen, 2009). Each preceptor was asked to provide the latest copy of the syllabus and schedule corresponding to the practice experience offered. Reviewing the syllabus and schedule provided an opportunity to identify other aspects of the clinical learning experience that was not identified in the individual interviews or group sessions and confirmed other activities, including identifying elements that were brought up in these sessions—examining these provided supplementations to the interviews

(Creswell & Poth, 2018; Patton, 2014). Specific activities were highlighted, analyzed, synthesized, and used in data triangulation.

### *Document Analysis Data Analysis Plan*

Analyzing the document was completed very similarly to analyzing the interview and focus groups. The interview technique treated the document like a human participant (O'Leary, 2021). The individual interview guide asked the same questions, and the researcher (interviewer) highlighted the text in the document that answered the question. This consistent approach helped answer the central research question and sub-questions. A concern was if an answer to the question was identified in the document that corresponded to every question being asked. Bowen (2009) discussed this as the data's sparseness, which may have required the researcher to seek additional information from other documents or resources. Coding took place using NVivo, qualitative research software, and codes were developed and captured in a codebook, to apply consistency among the three data methods. The documents were read multiple times to understand the phenomenon (Moustakas, 1994).

## Focus Groups

The third phase of the research involved attempting to group the individual pharmacy preceptors by common practice site, as described by ACPE standard 13 (2015), to participate in focus group sessions. Eventually, it came down to convenience when the preceptors were available, and the researcher grouped the preceptors based on this factor. Focus groups helped to gain a collective view from preceptors. Focus groups were frequently used to gain more information on social issues (O.Nyumba et al., 2018) and general issues with multiple participants in one setting (Duesbery & Twyman, 2020). These took place via Zoom and followed a semi-structured format, like individual interviews. Focus groups lasted approximately

30 minutes, and these were completed online, due to the varying geographical locations. Participants were asked to log in from a quiet setting that was free of distractions. Members of the groups were labeled using the pseudonym created to preserve the anonymity of participants. The focus group questions intentionally tried to gain more information about the four components of the ELM cycle (Kolb, 1984). In addition, the focus group allowed the individual participants to discuss the experience among other preceptors in a similar practice site and helped define the experience more fully.

The interview guide contained four primary questions to gauge the extent to each stage the ELM was being used. Participants were invited to the focus group to find a time that worked collectively for each participant. The session was recorded to allow for complete transcription after the sessions. Four sessions were planned for each representative practice area of pharmacy, but this changed as the participants came from either inpatient acute care or ambulatory care setting and did not include hospital or community pharmacies. Three sessions were completed. Participants could collectively answer the questions, reflecting and adding information to the answers provided by other participants. Intentional peer interaction took place during the group sessions. Pending the data finding from the individual interviews and document analysis, the focus group questions were to be modified, if needed, to clarify and extract further information from the participants (Creswell & Poth, 2018).

***Focus Group Questions***

The semi-structured questions included in the research-focused-session interview guide (see Appendix E) were:

1. Please confirm that your practice setting is _____(Insert Ambulatory Care, Community Pharmacy, Hospital Setting, Acute Care Setting)? (CQ)

2. What are the interprofessional activities that create concrete learning experiences for students in your experiential practice setting? (CQ) (SQ1)
3. What activities promote reflection in your experiential practice setting? (SQ2)
4. What opportunities are present in the experience that helps students make meaning of the experience in this practice setting? (SQ3)
5. What activities are repeated to allow the reiterative process to take place and the application of knowledge learned from a previous activity in this practice setting? (SQ4)

The first question served as an icebreaker for the group and confirmed to the interviewer which members in the focus group were from a specific experiential/clinical setting. The other four questions asked were to derive what components of the experience fit into each stage of the ELM (Kolb, 1984). The second question provided more details on the overall activities of the experience that were considered concrete learning experiences. The third question asked participants to think about the activities that fostered reflection on the experience, while the fourth question helped determine the activities of the experience that helped make meaning of the experience. Last, the fifth question focused on the activities that provided opportunities to apply what was learned from the previous activities. These questions were explicitly incorporated into an interview guide (Appendix E) to guarantee the questions were standard from group to group and were helpful when transcribing the information from the video/audio file.

***Focus Group Data Analysis Plan***

The focus group analysis followed a similar process as the interview and document analysis. During transcription, it was necessary to note many items, including each participant's pseudonyms, as they responded and added to other participants' responses. Horizonalization was

used to highlight statements in the transcript (Moustakas, 1994). Using the van Kaam method, as noted in Moustakas (1994), individual textural and structural descriptions were developed first. Following composite textural and structural descriptions were composed. These were used in the data synthesis process considering similar data was derived from individual interviews and document analysis.

**Data Synthesis**

After analyzing the data obtained by the different methods, it was essential to synthesize all the data analyses to reveal the overall themes, results, and findings that answered the proposed research questions. Moustakas (1994) refered to this as "intuitively integrating" (p.100) the textural and structural descriptions into one message. It should also be noted that synthesizing the experience structurally and texturally, as described earlier, into an overall essence is for the time studied. Keeping this in mind, it should be noted that changes can occur over time, which is a reason to re-explore the research in the future. Before synthesizing the data into composite descriptions, it was essential to ensure each participant's individual textural descriptions were completed. This step was necessary to capture the overall essence (Neubauer et al., 2019). A statement was created from all composite structural and textural descriptions to capture the essence (Eddles-Hirsch, 2015).

The primary researcher used NVivo to help synthesize the data into themes that helped answer the research questions. Houghton et al. (2017) stated that clear communication is necessary if multiple individuals are working with the data and color-coding data from respective participants is helpful. NVivo aided in the extraction of information and maintained data to ensure that, if the synthesis of information needed to be repeated, it could. Nodes, or themes,

created from the separate data analyses were organized into hierarchical nodes to generate the overall themes from previous analyses done.

## Trustworthiness

The trustworthiness of a research study has also been termed rigor and addresses the confidence in the data by multiple sources (Lincoln & Guba, 1985). This confidence scales down to the interpretation and methods used to ensure data quality. Amankwaa (2016) refered to this as ensuring that protocols and procedures were followed to make the study something worthy for readers, those who are interested in learning about the subject matter being put forth, to read and believe. When the rigor of a study is present, and procedures and policies have been followed, credibility, dependability, transferability, and confirmability are addressed.

### Credibility

Credibility was needed for readers and those critiqued to be confident in the data and results being collected and established. Connelly (2016) stated that this is like internal validity in a quantitative study. One technique used to establish credibility was member checking, which is a crucial step, according to Lincoln and Guba (1985). This technique ensured that what was captured in interviews and observations was accurately recorded and described as reality. I provided the participants with a copy of the interview transcript and asked them to review these and any emerging themes noted so they could check these for accuracy. Data triangulation was also used, as information was gathered from various sources, themes were produced, and elements were identified (Creswell & Poth, 2018).

### Transferability

Transferability is analogous to generalization in quantitative research and can be reader-directed as the reader determines “how applicable the findings are to their situations” (Connelly,

2016, p. 435). Providing “thick descriptions” (Amankwaa, 2016, p. 122) with details outlining connections of data received from different resources created the ideal conditions for transferability. These details helped the reader determine if transferability can occur to other sites and settings.

**Dependability**

When dependability is referenced concerning a study, it refers to data being stable over time, and if the study were repeated, consistent findings would be observed (Amankwaa, 2016; Connelly, 2016; Polit & Beck, 2021). Lincoln and Guba (1985) stated that this provides an external check to the research and increases trustworthiness. Process logs or notes of what the researcher(s) did throughout the study were examined or audited by a peer. This process is called an inquiry audit (Amankwaa, 2016). The primary researcher requested a peer review by someone who was not engaged in the research first-hand.

**Confirmability**

Confirmability means the “neutrality or degree findings are consistent and could be repeated” (Amankwaa, 2016, p. 435). Member checking helped with confirmability, and keeping notes on all procedures and steps taken throughout the study was necessary to ensure confirmability. For example, participants were allowed to review the transcript of the interview and focus group sessions, including any interpretations and coding of themes. Lincoln and Guba (1985) discussed methods for both dependability and confirmability, and an audit is a best practice. For these reasons, the primary researcher kept an audit trail to track events, descriptions, and other research details.

**Ethical Considerations**

Ethical concerns and issues could have arisen at any point in the study, including the periods before conducting the study to finalizing and publishing the study (Creswell & Poth, 2018). Therefore, it was essential to minimize any source of biases that the primary researcher had, along with others involved in selecting sites and preceptors, and methods were in place to limit bias. Since these individuals published articles on IPE in the literature and consisted of experiential education administrators at colleges/schools of pharmacy, avoiding the insertion of opinion and agreeing or not agreeing with participant responses was necessary to avoid an ethical issue. Receiving IRB approval and obtaining permission for the use of any material, informing participants about the study, assuring participation was voluntary, and obtaining appropriate consent were ways stated in Creswell and Poth (2018) to mitigate ethical issues from arising before and at the beginning of a study. Informed consent was obtained from all participants (Appendix B). Although not precisely health information, data collected from participants were kept in a locked faculty office space on a computer, password-protected, and encryption was applied. Encryption was also applied when necessary when emails were sent to participants or research team members. The data from this study will be kept for three years, since future sites will be studied, as well as a separate phenomenological study focusing on the students' experience. Pseudonyms were used to protect the identity of the research sites and interviewers facilitating focus groups and interviews.

The participants chosen for this study did not receive any compensation financially and did not receive any gifts in any form. However, the benefits of participating were evident, as individuals met others in similar roles and gained a sense of pride and accomplishment in a project that helped support the expansion and structure of IPE and ICP learning. This, in turn,

decreases medical and medication errors that have resulted in death, which helped inspire anyone to want to participate.

## Summary

A transcendental phenomenological approach described the interprofessional clinical learning experience preceptors offered to pharmacy students. The research questions were developed to help describe the experience and ensure that a theoretical framework remained intact. The three data collection methods of individual interviews, focus groups, and document analysis were vital in fully describing the experience. Through the processes involving epoché and bracketing, phenomenological reduction, horizonalization, development of individual and composite textural descriptions, and imaginative variation (development of individual and composite structural themes), the overall essence of the phenomenon was captured. In addition, the trustworthiness of the research was maintained, noting any ethical concerns that arose during the research.

# CHAPTER FOUR: FINDINGS

## Overview

The purpose of this transcendental phenomenological study was to describe the interprofessional education clinical experiences that pharmacy preceptors provide to Doctor of Pharmacy (PharmD) students during the final year of training within different academic institutions. The focus was on the preceptor's experience and capturing its wholeness and overall essence. Specifically, this chapter will review the participants' demographics, as collected in the survey, and will highlight themes and subthemes identified during the individual interviews, focused group interviews, and document analysis. Research questions organize the chapter noting any outliers.

## Participants

The sample size desired was between 12 to 15 participants. Thirteen participants filled out the survey and initial consent. Twelve answered *yes* to the question of whether the site met the interprofessional clinical learning environment that involves learners from two or more professions who learn with, about, and from each other to enable effective collaboration, including shared clinical decision-making, influencing the care of the patient, and improving outcomes. In addition, the researcher solicited several other participants based on names provided by the experiential contacts at each university. Unfortunately, they did not respond to emails requesting participation, while others stated there needed to be more time to participate.

Initially, participants were recruited from four specific colleges/schools. To reach saturation, another program was added that provided two of the 12 participants. Four participants were male, and eight were female. Eleven participants indicated white/Caucasian as the associated race/ethnicity, while one identified as Asian. Five participants were adjunct faculty

(AF), while the remaining seven were full-time ranked faculty (FRF) members. Table 1 provides details on the demographics of the participants.

**Table 1**

*Participant Demographics*

| Participant | Age Range | Gender | Role | Race/ Ethnicity | Year graduated from pharmacy school | Total Years Serving as Preceptor | Total Years Serving as Preceptor at this site | Total Number of APPE students taken over past year |
|---|---|---|---|---|---|---|---|---|
| Penny | 46-50 | Female | FRF | White/ Caucasian | 2008 | 11-15yrs | 11-15yrs | 12 |
| Leyla | 31-35 | Female | FRF | Asian | 2012 | 6-10yrs | 6-10yrs | 12 |
| Dr. M | 56-60 | Male | FRF | White/ Caucasian | 1987 | 21-25yrs | 11-15yrs | 6 |
| Sophia Grace | 46-50 | Female | AF | White/ Caucasian | 2006 | 11-15yrs | 11-15yrs | 8 |
| Cone | 51-55 | Male | FRF | White/ Caucasian | 1994 | 26-30yrs | 26-30yrs | 5 |
| Patsy Stokes | 36-40 | Female | FRF | White/ Caucasian | 2009 | 11-15yrs | 6-10yrs | 7 |
| Dr. Awesome | 31-35 | Female | FRF | White/ Caucasian | 2012 | 6-10yrs | 1-2yrs | 12 |
| Emma | 36-40 | Female | FRF | White/ Caucasian | 2010 | 11-15yrs | 6-10yrs | 2 |
| Sasha | 46-50 | Female | AF | White/ Caucasian | 2000 | 21-25yrs | 21-25yrs | 6 |
| BCAT757 | 26-30 | Male | AF | White/ Caucasian | 2020 | 1-2yrs | 1-2yrs | 4 |
| Bailey | 41-45 | Male | AF | White/ Caucasian | 2004 | 16-20yrs | 16-20yrs | 8 |
| Leanne | 36-40 | Female | AF | White/ Caucasian | 2010 | 6-10yrs | 6-10yrs | 2 |

**Penny**

Penny was a full-time, professor who had taught and served as a preceptor for twelve years. She was residency trained and board-certified in infectious diseases. She held a joint appointment with the medical school affiliated with the hospital in which she worked as a clinical infectious disease pharmacist. This joint appointment had allowed her to leverage interprofessional collaboration between pharmacy students and medical learners, and she had been a champion of interprofessional learning at her university. Penny stated, "Students who are with me would have interprofessional experience on inpatient rounds." The experience provided to students was in the inpatient hospital acute care setting focusing on infectious diseases. "My primary role is to provide antibiotic-managed recommendations to the team", she stated. She is 46-to-50 years of age.

**Leyla**

Leyla completed post-graduate year one and post-graduate year two residencies with the academic medical clinic in which she served. She, like Penny, was a full-ranked faculty member at a private university that used the practice site to connect with the associated academic medical center and foster IPE opportunities among the students. Leyla stated, "I have been a preceptor since 2014, ever since I started here at my university." She worked with another pharmacy faculty member in the experiential setting, and both faculty members jointly precepted the students. The practice site was in a shared space within a family medicine clinic with associated family medicine residents and medical learners and was an academic medical center. Leyla stated, "The site consists of both medical residents and their attendings, as well as fellows. It is a teaching hospital!" Leyla was one of the younger female preceptors, indicating her age was between 31-to-35, and she was the only pharmacist with an ethnicity/race of Asian and not White/Caucasian.

**Dr. M**

Beyond being a full-time ranked faculty member with his school of pharmacy, Dr. M held a joint appointment with two other medical schools and trained, not only pharmacy learners, but also medical students and medical and pharmacy residents. Dr. M stated, “I began precepting formally pharmacy students and medical students together at my current site, which I have been doing since 2012.” The practice site was an acute care setting focusing on interprofessional collaboration throughout. He further added, “My site is a fully, intentional interprofessional education opportunity.” Dr. M had been practicing pharmacy longer than any other participant in this study, graduating pharmacy school in 1987, and was the oldest pharmacist of the preceptors, indicating his age was between 56-to-60 years. Dr. M stated, “I began practicing pharmacy after being licensed in 1988.” Additionally, he was involved in administrative duties at the associated school/college of pharmacy. He did not complete any post-graduate residency training.

**Sophia Grace**

Sophia Grace was 46-to-50 years of age. This participant had a practice site that offered students experiences in acute and ambulatory care in a Children’s Hospital setting. The rotation provided was labeled a crucial care experience in an emergency room. Sophia Grace built this experience eight years ago. “I created this position by just kind of forcing my way down here, in the ER”, stated Sophia Grace. She was strategically located in a setting within the emergency room that fosters ICP, and the health system had each unique professional wear a different color of scrubs. She further added, “My rotation is honestly, a split fifty percent over fifty between acute care and ambulatory care, but the university labels it acute care.” Royal blue scrubs identified the pharmacy department at the institution. Sophia was adjunct faculty with her associated school/college of pharmacy.

**Cone**

Cone was one of the older preceptors of the group and had served the longest as a preceptor and the longest at his practice site. He was 51-to-55 years old, the second oldest male preceptor, and was a full-ranked faculty member with his associated school/college of pharmacy. He stated, “I have been serving as a preceptor for 26 years and one month.” His practice setting was ambulatory care, and Cone participated in post-graduate residency training for two years. Over time he had recognized the advantages of working together as an interdisciplinary team. Beyond pharmacy students, medical students and residents comprised the learners on the team at his site. “We have physician residents, twenty-four of them and eight attending physicians at my site”, said Cone. He was specifically involved in many transitions of care activities which, at the heart of it, involved the reconciliation of medications to optimize medication therapy for patients.

**Patsy Stokes**

Patsy had worked primarily in internal medicine settings since 2011. She was 36 to 40 years of age, and, in 2016, she started practicing at her the practice site, at the time of this study, in a joint clinical/academic role, as she was full-ranked faculty with her associated school/college of pharmacy. She participated in a PGY1 and PGY2 residency; the rotation she offered students was considered a general medicine inpatient experience. The site truly offered an interprofessional collaborative setting with other professions, such as nurse practitioners and nurses, physicians, occupational therapy and physical therapy, physician assistants, and social workers. “Typically my site is structured to have an APPE Pharmacy student and PGY1 pharmacy resident each block”, stated Patsy. She and her team provided intentional co-education

where rounds were a primary activity of the experience. She stated, “Rounds is the place the entire team comes together, not just the medical team but also the pharmacy learners.”

**Dr. Awesome**

Dr. Awesome, aged 31-to-35, was practicing at a geriatric-based ambulatory care clinic. She had been a preceptor for her associated pharmacy school for almost ten years and did one year of post-graduate residency training. She was a full-time, ranked faculty member with a school of pharmacy and the site of practice was an academic site associated with a family medicine residency program that used this experience to train family medicine residents. She stated, "The experiences offered to students are clinic-based and involve medication reconciliation and identifying and resolving medication-related problems.” An interesting twist was that the site allowed pharmacy students to participate in home-health visits to either a patient’s home or an assisted or long-term care facility. Dr. Awesome shared the site with another full-time, ranked faculty member, making coordinating duties among each of them easy. She precepted up to 12 students per year. She recognized her roles, as she stated, “Yes, I am a pharmacist, in terms of practice. But, I am also a teacher, and this is a big part of my role.”

**Leanne**

Leanne’s practice setting was ambulatory care, and she had been precepting since 2013. She was between 36 to 40 years of age and was adjunct faculty with her associated college/school of pharmacy, working full-time at the practice site. The practice site was an outpatient clinic within an academic medical center system. There were a variety of professionals and learners at the practice site. The pharmacist and associated learners had scheduled clinic visits to help manage chronic conditions and disease states. In addition, however, there were opportunities to manage conditions, such as hepatitis C and anticoagulation. Leanne stated, “I

have been here in this position for ten years and it has changed as I tend to dabble in many things." Leanne graduated from the school where she took students on these experiences. She was also PGY1 and PGY2 residency trained and stayed at the training institution in this position after her residency.

**Emma**

Emma was a full-ranked faculty member at a college of pharmacy. She was in her late thirties and had been precepting in the six-to-ten-year range at the current practice site. She was double residency trained, and her practice site was in a hospital setting. The experience offered to students was an internal medicine acute care experience, and she split her time with another pharmacist who was a full-time employee of the hospital. "I am at the site at least one day a week, as I spend more time these days teaching at the college", stated Emma. In addition, medical residents and students trained at this site, as the hospital was affiliated with an academic medical center. A primary activity of the experience offered to students was interprofessional rounding.

**Sasha**

Sasha was in her late forties and had been practicing pharmacy longer than other female preceptors in this study. She was adjunct faculty for the school/college of pharmacy and practiced full-time at the site. She offered an experience to students that involveed both the inpatient and outpatient setting, caring for a specialized population of transplant recipients. She participated in two years of residency training and had been precepting at this site since 2000. The site offered an experience both in the outpatient and inpatient areas. Interdisciplinary rounds were the primary activities in the inpatient setting, while on the outpatient side, the pharmacist and learners provided comprehensive medication management services, which often entailed

discharge counseling and transition of care services. In addition, the site trained pharmacy and medical residents and did identify as an academic medical center due to its teaching of many disciplines. Sasha stated, “I am also the residency director for a post-graduate year two pharmacy residency in solid organ transplant.” Teaching students and residents make the experience offered an ideal place for collaboration among, not only other professions, but also between the level of pharmacy learners within her institution.

**BCAT757**

BCAT757 was the youngest pharmacist and graduated in 2020. His practice site was inpatient acute care medicine, specifically pediatrics. He had precepted for three years, but the first two years were during his residency training years. BCAT757 stated, “I work with onboarding procedures, making sure that new pharmacists meet a minimum competency to practice at our site.” For students, the primary activity of the experience offered during the rotation was multidisciplinary rounds. The site was an academic medical center and trained residents, both first- and second-year pharmacy residents, as well as medical residents. A pediatric intensive care fellow, a physician, was also a part of the team. One activity that was considered a favorite one by many students was a simulated mock code scenario. BCAT was adjunct faculty with his associated school/college of pharmacy and was full-time at the practice site.

**Bailey**

Bailey was a 41-to-45-year-old male who served as adjunct faculty with the associated school/college of pharmacy. He offered inpatient general medicine experience to students while also providing some expertise in an outpatient setting, where most of the work was in a family medicine clinic. He was residency trained, had one year of ambulatory care experience, and had

been practicing at the site since the residency year. The site was considered an academic medical center, as medical residents were trained there. PGY1 and PGY2 pharmacy residents were also at the site, with a focus on specialized training in ambulatory care and geriatrics.

## Results

The individual interviews, analysis of documents, and focus groups provided enough information to allow themes and subthemes to emerge. In addition, these various data sources allowed for the triangulation of the data and for themes to become apparent and identifiable. Interviews were transcribed using the Zoom software. Once the researcher developed these transcripts, NVivo was used to examine each, and words, phrases, and overall responses that were similar among the interviewees were highlighted and coded. The highlighting and coding of specific words and passages led to the overall theme development, making sure that irrelevant information was discarded or overlooked. Moustakas (1994) pointed out that the researcher must be mindful of bracketing biases and personal experiences from data collection. Much data was retrieved from all sources, and it was the researcher who then had to begin using qualitative analysis methodology to arrive at the common themes. This methodology included techniques, such as reducing, clustering, grouping, and reducing, with an overall goal of validating the themes. Overall, the researcher identified the themes based on the interview questions, the central question, and the associated sub-questions. Table 2 provides all the codes centered under each theme, while Table 3 breaks down the themes into subthemes after utilizing the techniques described above.

**Table 2**

*Themes and Related Codes*

| Themes | Codes |
|---|---|
| Theme 1 | *Case Presentation* |

| | |
|---|---|
| Activities | *Co-Provider Visits*<br>*Codes*<br>*Consulting*<br>*Didactic Sessions*<br>*Formulary (P&T)*<br>*Grand Rounds*<br>*Home Visits*<br>*Journal Club*<br>*Medication Access*<br>*Medication History*<br>*Medication Initiation*<br>*Medication Monitoring*<br>*Medication Optimization*<br>*Medication Reconciliation*<br>*Medication-Related Problem Identification and Resolution*<br>*Provider education*<br>*Rounds (sitting and standing/walking and grand rounds)*<br>*Shadow*<br>*Shared Project or Research Project*<br>*Simulated scenarios (Codes)*<br>*Talk to another profession*<br>*Team Night*<br>*Transitions of Care*<br>*Topic Discussions* |
| Theme 2<br>Time | *Time- All APPEs*<br>*Time-Evening*<br>*Time-General*<br>*Time-Later in APPE year*<br>*Time-Midday*<br>*Time-Spring*<br>*Time-Weekdays* |
| Theme 3<br>Assessments | *Attending Feedback*<br>*Daily Debriefs*<br>*Feedback Fridays*<br>*Midpoint and Final*<br>*Wednesday Wins*<br>*SPICE Assessment*<br>*Team Skilled-Scale Assessment* |
| Theme 4<br>Other Healthcare Professionals | *Medical Assistant*<br>*Behavioral Health Faculty*<br>*Chaplain*<br>*Child-Life Workers*<br>*Dietitian/Nutritionist*<br>*Financial Coordinators* |

| | |
|---|---|
| | *Medical Residents and Fellows*<br>*Nurse*<br>*Nurse Practitioner*<br>*Occupational Therapy*<br>*Other Pharmacist preceptors*<br>*Pharmacy Residents*<br>*Pharmacy Technicians*<br>*Physician Assistant*<br>*Physician-Family Medicine*<br>*Physician-Internal Medicine*<br>*Physician-Podiatry*<br>*Physical Therapy*<br>*Social Worker* |
| Theme 5 Other Learners | *Dietitian Students*<br>*Medical students*<br>*Nurse Practitioner students*<br>*Occupational Therapy students*<br>*Physical Therapy students*<br>*Physician Assistant students*<br>*Social Worker students* |
| Theme 6 Enablers of IPE | *Academic Medical Center*<br>*Agreements that outline activities*<br>*Culture of Learning*<br>*Electronic Health Record*<br>*Established Relationships*<br>*Experienced Preceptors*<br>*Interprofessional Teams*<br>*Non-Conflicting priorities*<br>*Shared Space/Space*<br>*Student Support Services*<br>*Supportive institutions* |
| Theme 7 Confounders of IPE | *Distance*<br>*Lack of Staffing*<br>*New Faculty*<br>*Onboarding Time*<br>*Space* |

**Table 3**

*Themes and Subthemes*

| Theme 1<br>Activities | Theme 2<br>Time | Theme 3<br>Assessments | Theme 4<br>Other HC Professionals |
|---|---|---|---|
| -Med Optimization | -General | -Midpoint & Final | -Physicians |

| | | | |
|---|---|---|---|
| -MRPs identification & resolution | -Season and year | -Inter-professional | -Non-Physician prescribers |
| -Provider education | -Week and day | -Daily and weekly | -Nurses |
| -Rounds | | | -Other HC workers |
| -Journal Club | | | -Other pharmacy personnel |
| -Co-provider visits | | | |
| -Other | | | |

| Theme 5 Other Learners | Themes 6 Enablers of IPE | Theme 7 Confounders of IPE |
|---|---|---|
| -Medical | -Culture of learning | -Distance |
| -NP and PA | -Established and experienced teams | -Staffing and faculty |
| -Other Learners | -EHR | -Space |
| | -Space | -Onboarding |
| | -Student support services | |

**Theme 1: Activities**

Many subthemes emerged under the theme activities. Specifically, this theme involves pharmacy students' activities during the advanced pharmacy practice experience. There are a wide variety of activities and natural subthemes formed. During the interviews, these activities were identified as ones, in that the pharmacy preceptors indicated there were students from more than one profession involved, meeting the definition outlined for shared-clinical decision-making. For these activities to be completed, the student needed to talk to another healthcare professional. Leyla noted that the students must "demonstrate an ability to speak with physicians concerning patient issues/concerns" and "provide recommendations to the primary care provider." In addition, they must "engage with an interprofessional team in shared decision-making therapy," said BCAT 757. The subthemes listed here have two or more references among participants and associated artifacts.

### *Medication Optimization*

Twenty-one references to medication optimization were identified during the coding process. Cone referred to medication optimization when he said students are involved in "fixing the patients and optimizing the drug therapy regimen." Additionally, BCAT 757 specifically stated that pharmacy students, during time with other students and providers, try to "optimize pharmacotherapy specific to the patient based on evidence-based medicine." Therefore, optimizing medications seems to be a natural place where the pharmacy student would maximize efforts, as they continue working with other healthcare providers to ensure a safe and efficacious therapeutic plan for the patient.

Consulting, medication reconciliation, and medication history are other noted activities that fall under the sub-theme of medication optimization. These activities often involve talking to the patient and the provider to optimize medication use. Leyla mentioned that her students "consult and provide recommendations to the primary care provider." Patsy Stokes also said that a specific activity is "to provide effective communication with the patient and other health care providers." Emma noted that her students are "completing medication reconciliation and assisting with medication discharge planning," both activities which involve consulting with the patient and healthcare provider to optimize the medications before being discharged from the hospital or, in many cases, the acute care floor as the patient transitions to a step-down unit. Bailey, Penny, and Sasha indicated that discharge teaching and planning involved pharmacy students working collectively with medicine counterparts to ensure the medications were optimized during the transition.

### *Medication-related problems identification and resolution*

Identifying and resolving medication-related problems (MRPs) is similar, and perhaps there is an overlap with medication optimization. Within many interviews and document analyses, this was explicitly noted as activities that the pharmacy learners were involved in during the experience, which involved interacting with other healthcare providers. Dr. M. indicated that pharmacy learners are specifically engaged in activities that look at whether or not what the patient experienced during the visit is "drug-related or allergy-related or adverse effects related to the medications, and that is where the pharmacy team has a large part of the contribution." Leyla noted, "The pharmacy team is working alongside them to look at all the patients, identify interventions, and then present those recommendations to the physicians."

In general, Bailey stated as a part of identifying and resolving MRPs; the students are involved in "providing pharmacotherapy recommendations to the patients for the team." The recommendations are often "changes to the patient's medication therapy" that involve the student talking to the providers. Part of the duties of the pharmacy team is to "monitor response to medication therapy," said Leanne, or "provide therapeutic drug monitoring," said Patsy Stokes. This detailed monitoring is important in many subpopulations, such as post-transplant patients or patients on antibiotics that require adjustment in dosing based on the patient's lab values. Sasha noted that it is necessary to "utilize population and patient-specific pharmacokinetic approaches to design rational drug regimens for transplant patients."

### *Provider Education*

Provider education was a common activity in which student pharmacists and the pharmacy team worked collaboratively with other providers. Much of the education provided was used to reinforce evidence-based treatment guidelines or standards in medication dosing and

suggest revisions in treatment to resolve the identified medication-related problem and optimize drug therapy. “In-services” were noted by Leyla, Patsy Stokes, Cone, and others to deliver the provider education. Penny stated:

> It is significant here when a pharmacy student is asked a question about a drug, being able to answer the question about the drug in a meaningful way, and not just what they know about the drug, but answer the question about the drug that is specific to the patient that the provider is referencing during rounds. So, they go into the knowledge of the drug and not just the surface of it.

There were specific ways that individual preceptors involved students in the activity of provider education. For example, Leyla had each student participate in a topic discussion, and so did Patsy Stokes and Penny. Emma noted in her syllabus that students “present one team and talk to the medical team” during the rotation. Sometimes, the provider education comes in the form of a case presentation that students present. Sophia Grace also noted in her syllabus that each student participates in a “case presentation.” In some occurrences, it must be pointed out whether the activity occurs among the whole team or between the pharmacy preceptor and student. However, in the abovementioned cases, it is a joint activity.

***Rounds***

Participation in rounds is an activity that came up as a common one that brought the students together. During the interviews, the participants referenced walking, standing, and sitting rounds as activities. Sitting rounds emerged as an activity, specifically during the pandemic, to limit exposure to COVID-19 patients. Sasha said that, during the week, “table rounds allow for a larger group discussion on the patient’s care.” BCAT 757 noted, “Every student is involved in multidisciplinary rounds,” and Patsy Stokes said that “interdisciplinary

rounds are the most significant activity that students participate in for shared clinical decision-making." Additionally, grand rounds were an activity that provided an opportunity to be involved in interdisciplinary discussions of a patient's care and how to improve moving forward.

### *Journal Club*

Ten references to this activity were noted in the interviews and document analysis. Although the activity is not directly related to patient care, it involves bringing the learners and preceptors together to discuss guidelines, therapeutic options, and concerns that may be noted with one therapy over another. Patsy Stokes stated that "journal clubs and associated presentations" were routine activities that her students participated in during the experience. Sophia Grace, Dr. M., Dr. Awesome, Emma, Leyla, Penny, and Sasha all had the journal club as a noted activity. Sophia Grace specifically stated the journal club must be "a peer-reviewed journal, published in the last three years" for it to be a reputable journal to reference. This activity is a way to engage the participants and to ensure relevant and up-to-date information is considered in the care of the patients.

### *Co-Provider Visits*

Many ambulatory care sites discussed co-provider visits as a significant activity that brought learners and providers together for IPE/ICP. Some of these scenarios were specific to managing a disease or condition, like diabetes. Leanne discussed her students being involved in an "interdisciplinary diabetes clinic." These co-provider visits provide an opportunity to give recommendations, identify MRPs, and optimize medications. Leyla specifically discussed how these co-visits involve "the pharmacy team working alongside the providers in terms of looking at all the patients, identifying interventions, and then presenting these to the physicians." Dr. Awesome stated these co-visits allow the "students to establish patient-centered goals and create

a plan in collaboration with the patient, caregiver(s), and other healthcare professionals that are evidence-based and cost-effective."

Dr. Awesome also mentioned that home visits are a specific activity the students participate in with the providers. She stated, "The students go out with Isaiah, one of the nurse practitioners, and they are rounding and doing home visits together." Bailey also introduced that team night is another venue where providers are brought together with learners to see patients at the clinic and "discuss therapeutic options collectively" before prescriptions are written. These two activities are specific ways that unique preceptors are getting learners together with providers and intentionally sharing the clinical decision-making needed for the patient.

***Other***

The last sub-theme is a collection of other activities that did not necessarily merge under a specific heading. Shadowing activities, shared projects, research projects, and simulated scenarios were noted. Cardiac arrest codes were an activity noted that learners participated in during the experience. Sophia Grace noted in the syllabus students "participate in trauma, codes, and intubations, as directed." BCAT757 stated that "mock codes are intended to have shared decision-making with physicians helping with what medications may need to be given by pharmacy." He said these "mock codes" are a "highlight of the experience" and get a lot of positive feedback on course evaluations from students.

Students also get to attend Pharmacy & Therapeutic (P&T) committee meetings, which are interprofessional meetings that healthcare institutions hold to decide how to select which medications they will use as first-line or agents of choice when caring for patients with specific disease states. Penny stated these meetings provide students "with experience with policy making by going through a committee which has members, not only providers, but information

technology, microbiology, nurse practitioners, and someone from quality." These committees provide the opportunity to "contribute evidence-based medicine recommendations, such as drug therapy, formulary decisions, third-party payer considerations," stated BCAT757.

Lastly, students also get to shadow other providers with whom they have little interaction during the experience. BCAT757 allowed students to "shadow within other hospital units." Sophia Grace enabled the learners to "shadow Angel One, our official hospital transport team." Additionally, Sophia Grace provided an opportunity for the students to shadow a "respiratory therapist for a couple of hours down here in the ER because I feel it is very easy in pharmacy school to learn respiratory agents and counsel patients a specific way, but when the students are with a respiratory therapist, they get to hear how differently respiratory therapists go over the medications with patients and how vastly different this is due to the way the respiratory therapist is trained compared to the pharmacist."

**Theme 2: Time**

The ideal time for interprofessional education and collaboration within any given institution varies. Is it best to have students participate in these experiences during the week or on the weekend? Do preceptors prefer to take students at the beginning part of the academic year or later? The analysis here does indicate the most popular time is anytime with eight specific references.

***Time in General***

Time, in general, is the sub-theme used when there was no specific answer to the question posed around the time of day, year, or sequence of rotation/APPE. Dr. Awesome stated, "The best time is as close to the patient appointment as possible." She also stated, "In terms of spring, winter, summer, or fall, I do not think that makes a difference if you see patients year-

round." Emma concurred that "throughout the year" is when learning should occur in an interprofessional experience. Sophia Grace was specific in her remarks when she stated:

> It does not really seem to matter that much of a difference in our ability to have interprofessional education because the same things are happening throughout the year. We are still doing journal club. We're shadowing a respiratory therapist. In the summertime, we are still shadowing Angel One. The best time for interprofessional education and collaboration is twenty-four-seven!

Many of the other participants concurred.

***Timing of IPE in Season/Year***

The timing of the APPE was noted in two interviews. Cone referenced that, "If a student who had done a direct inpatient care as an early experience, when they were a second- or third-year student, they are more experienced and ready to take on the APPE than other students who have not had a direct clinical and this is the first experience with other healthcare providers." "They will be more reserved." Leyla stated that anyone participating in an interprofessional APPE should do it "at the beginning of the year" and not wait till later in the APPE sequence.

Additionally, some believe IPE is best in the spring and early summer compared to the late summer and fall, avoiding July and August when medical and pharmacy residents are onboarding. BCAT757 saidys that IPE is best "in the latter half of the APPE year." Dr. M. also stated that an APPE IPE is best "toward the end of the academic year." This could be argued though, as this time could provide the ultimate opportunity for pharmacy students and pharmacists to make a greater impact with recommendations and optimizing medication regimens.

### *Timing of IPE in week/day*

Although not a common theme, a few participants noted that the APPE should take place on weekdays and that middays are preferred. BCAT757 stated that "midday is the best time for IPE," and Sasha noted that, "There is more action happening during the day, so I think the day is better for the learner in that aspect." Dr. Awesome also noted that "Monday through Friday is good for an ambulatory-based clinic since that is the clinic's hours." Sasha had a different train of thought when she stated, "I think there are some situations where the evening shift, where it is slower, provides the ability to get some deep understanding of logistics, verification of orders, and different things like that." Sophia Grace also stated that, "The afternoons tend to be better because there are more patients, there are more interactions, and there is just more going on in an emergency setting."

## Theme 3: Assessments

It is essential that students are provided feedback throughout the learning experience. Although it was asked, the pharmacist preceptor was the primary individual that provided the student feedback throughout the experience. Other providers and team members did give input to the pharmacy preceptor, who communicated the feedback in the individual assessments. Bailey noted this in his interview, stating, "We do take feedback from the attending physicians regarding pharmacy student interactions and encounters."

### *Midpoint and Final Assessments*

All the sites referenced performing midpoint and final assessments on students. There were 19 references coded for midpoint and final evaluation. These assessments are structured and follow a rubric provided by the experiential learning management system (LMS). Dr. M. stateds, "At the midpoint is when I am sitting down one on one with the student and will give

them feedback that other team members have provided during the experience thus far." Patsy Stokes referenced that, "The actual evaluations come from the college or school of pharmacy, and the LMS generates it, and the primary pharmacy preceptor is the one who fills out the evaluation." Leyla stated that, as part of the assessment, "There are standard questions that ask about the student's interaction with other providers and professionals." Other participants did not reference this in the interviews, but this would be something to note due to the connection to IPE/ICP and the interprofessional assessment sub-theme identified.

***Interprofessional Assessments***

Only two sites use interprofessional assessments to provide feedback to the students, at the time of this study. Dr. Awesome used the SPICE tool and Team Skills as pre-rotation and post-rotation assessments. Dr. M used the Team Skills Scale and stated, "I have used the instrument since 2016, and before this, I was using another tool, the Attitudes Towards Healthcare Teams (ATHCT)." No other IP assessments were brought out during the individual interviews. However, Dr. M. did discuss a reflection activity that his students did that will have the students select an IPEC domain and self-reflect on the experiences within the rotation that aligns with this domain. This is discussed later under responses to research questions, specifically sub-question two.

***Daily or Weekly Assessments***

Preceptors have developed unique ways to provide students feedback either weekly or daily. "Feedback Fridays" are used by Bailey and Patsy Stokes. Bailey noted that these are used to answer questions and provide an opportunity for students to reflect. For example, "What did not go well this week?" and "What are your goals for next week?"

Daily debriefs are ways to connect with students on a day-to-day basis. Cone referenced that the debriefs happen with his students "per encounter per half day." Both BCAT757 and Sasha also used daily debriefs in the learning process to help students solidly connect with the material. Lastly, Sophia Grace also operated a weekly way to assess students. "Wednesday wins," like "Feedback Fridays," were set aside for evaluating the experience.

**Theme 4: Other healthcare professionals**

For collaboration to occur in general, more than one party or individual needs to be involved. Remember the definition of IPE, "when students from two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes" (WHO, 2010, p. 13). This research identified many healthcare professionals interacting with each other during this experience. Recognized professionals went beyond those that prescribe medication, such as physicians, nurse practitioners, or physician assistants.

***Physicians***

Physicians were the one healthcare professional that was the common thread with all sites. Therefore, it would be essential to have this provider as a necessary element of the experience. These physicians varied in training and often aligned with the practice setting. For example, Penny was in an acute setting focusing on infectious diseases. She stated, "We have an infectious disease attending physician as the primary provider." Sasha's site, which involved transplant, had "surgeons and nephrologists" engaged in the experience. Overall, family medicine was the most frequent specialty of the providers. Still, others involved were in internal medicine, podiatry, behavioral health, and fellow and residents in these specialties.

### *Non-physician Prescribers*

Both nurse practitioners and physician assistants (PAs) were coded under other prescribers. Sophia Grace pointed out that, “Nurse practitioners are involved in many capacities in our clinic.” Bailey, BCAT757, Dr. Awesome, Dr. M, Patsy Stokes, Leanne, Penny, and Sasha all referenced nurse practitioners as the other team members of the experience. Compare this to PAs; only three pharmacy preceptors referenced these providers. Patsy Stokes stated, “PAs are used within our area, with some of them bringing specialty experience.”

### *Nurses*

Nurses also made up a significant group of individuals that the pharmacy preceptors noted. Seven of the 12 sites reported nurses as another healthcare professional. Penny stated, “Floor nurses are a part of the experience, especially when we are rounding on the floors.” Broadly, *nurse* was the word used, and any participants brought forward no delineation of training between these individuals. For example, it was not noted if these nurses were bachelors-trained nurses (BSN) or those who obtained an Associate’s degree (ADN).

### *Other healthcare workers*

A few other healthcare personnel were noted as being involved in the experience. These, in general, were not common across the board and, in some cases, were only indicated by one pharmacist preceptor as a part of the experience. Medical assistants, chaplains, child-life workers, dietitians/nutritionists, occupational therapists, physical therapists, financial coordinators, and social workers were noted. Bailey shared that, “There are social workers that are helping think through cases and helping with other social elements in the care of patients.”

***Other pharmacy personnel***

A few sites noted other pharmacist preceptors as co-precepting model sites. For example, Dr. M., Dr. Awesome, Emma, and Bailey said another pharmacist team member would interact with students and often attend specific events, such as journal clubs or presentations. Pharmacy residents often made up the list of other individuals involved in the learning experience, as these individuals could have been classified as learners, too, due to being in post-graduate training programs. Five of the twelve sites referenced pharmacy residents. BCAT757 stated he had "both post-graduate year one (PGY-1) and post-graduate year two (PGY-2) residents, and the PGY-2 residents are pediatric residents." Emma had "three residents involved in the experience as each resident has to complete an internal medicine rotation." Dr. M. had "two pharmacy residents are present, and interactions do take place, although they are managed and precepted by the health system and the pharmacist who works in the overall healthcare institution."

Additionally, pharmacy technicians were noted by two sites. First, Sasha stated, "There are pharmacy technicians that we collaborate with in a specialty pharmacy that does our transplant prescriptions for outpatient discharge fill." Although these were mentioned, Sasha also noted, "These technicians are not embedded within the clinic where they would be working elbow to elbow with the students and other providers."

**Theme 5: Other learners**

Just as it is noted which providers or healthcare professionals make up these interprofessional experiences beyond the pharmacist preceptor, it is essential to know what other learners are most familiar with the IPE/ICP environment. So, naturally, the sub-themes identified here follow the ones for theme four, as these learners are associated with their primary discipline and the provider/professional who oversees the learning experience.

***Medical students***

All twelve sites identified medical learners as a part of the experience. BCAT757 noted that, "Medical students come from allopathic and osteopathic programs." Sophia Grace pointed out that in the ER, "These students are situated right by my desk, which is in the middle of the residents' space, and I include these learners in the daily discussions with the pharmacy learners." It is also noted that these learners are more than just those in the fourth year of training. Emma stated, "We almost always have a third and a fourth-year medical student on our service."

***Nurse Practitioner and Physician Assistant students***

Only three sites identified either physician assistant or nurse practitioner students as part of the experience. Pasty Stokes recalled that she had "mid-level provider students, both nurse practitioner, and physician assistant," involved in the clinical learning experience. She further explained, "These students often work collectively with the pharmacy students to produce a reasonable therapeutic plan for the patients." BCAT757 also referenced nurse practitioner students and further noted that he was "unsure of the specialty" of these students. In essence, these students could be family nurse practitioner students or training to be involved in pediatrics, psychiatry, etc. Dr. M was the only site that referenced physician assistant learners as part of the experience.

For collaboration to occur in general, more than one party or individual needs to be involved. Remember the definition of IPE, "when students from two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes" (WHO, 2010, p. 13). This research identified many healthcare professionals interacting with each

other during this experience. Recognized professionals went beyond those that can prescribe, such as physicians, nurse practitioners, or physician assistants.

### *Other learners*

The other learners noted by specific sites, not all, are social workers, physical therapists, occupational therapists, and dietitian students. BCAT757 and Sasha both noted dietitian students as part of the learning experience. Patsy Stokes identified that "occupational and physical therapy students are sometimes onsite but not always." Leanne was the last site that referenced "physical therapy students are also a part of the experience when the physical therapist interacts with our providers and learners."

## Theme 6: Enablers of IPE

The interview specifically asked participants about both enablers of the IPE experience and confounders. Like other themes, subthemes were identified when noted by multiple preceptors as an enabler. Those only recorded once were generally lumped under a subtheme named other, although none were pointed out in this research.

### *Culture of Learning*

Ironically, seeing this study is about identifying the specific elements of an interprofessional experience, the fact that the experience and the institution embrace interprofessional teams and learning was heavily referenced among the twelve participants. BCAT757 stated, "the fact that every one of our units is made up of interprofessional teams" enables the site and providers to embrace IPE and ICP.

### *Established and Experienced Teams*

Established relationships with experienced professionals and preceptors involved in the learning was an identified enabler of IPE. Patsy Stokes mentioned that it is crucial to "have a

pharmacist preceptor that is experienced." In addition, the pharmacist preceptors "need to have established relationships with the medical team." Leyla also reiterated the importance of this "relationship with the providers already," and this is how trust has been built. BCAT757 also stated, "the fact that every one of our units is made of experienced interprofessional team lends to the overall support and culture of the institution for ICP/IPE."

***Electronic Health Record***

The electronic health record (EHR) is the primary means to communicate what is going on with any given patient. An EHR that promotes team collaboration was also identified as an enabler for IPE/ICP. Leanne referenced this in her interview stating, "The institution's EHR can be a major promoter of collaboration. My clinic's EHR has been in place since 2012, and it is fabulous once you set up templates and work through security issues at the institutional level."

***Space***

Space was identified as an enabler and confounder to IPE/ICP. Sophia Grace mentioned this dichotomous thought in her response to this question. She stated explicitly about space as an enabler from the standpoint that, "My desk is located amidst medical residents and medical students, and this allows a great opportunity for interaction and collaboration." Leyla also referenced that "the proximity of being right next to the providers all day long" sets up IPE /ICP to be successful.

***Student Support Services***

Lastly, the university's student support services were identified as an enabler of IPE/ICP. Students struggle with performing activities well while interacting with patients and providers. Specifically, students need services to deal with anxiety and other mental health issues that may have contributed to their performance during any of the activities of the experience. Leanne

mentioned that “There are mechanisms in place for when a student is struggling, and we can refer them to resources.”

**Theme 7: Confounders of IPE.**

Unfortunately, some confounders prevent interprofessional learning and collaboration. Noting these offers any institution an opportunity to improve and mitigate barriers. These barriers can lead to decreased interactions between providers and students taking place, therefore, increasing the likelihood of medical errors and other negative outcomes.

***Distance***

Two participants noted that distance was a confounder of IPE. as the clinical sites for these two individuals were not near the university. Dr. Awesome stated, “Distance is a factor, as my site is 80 miles from campus.” This long-distance provides not only the challenge to students who need to commute from campus to these other locations but also to the faculty, who are often being pulled from the clinical learning site to go to campus and teach in the classroom, advise students, and perform other duties noted in the faculty job description.

***Staffing and Faculty***

BCAT757 stated that “lack of staffing” is a confounder of IPE. If you do not have individuals present or a vital role of the team is missing, then a shared clinical decision cannot be made. Dr. M also stated, “We have had new faculty join the team, which is a relationship-building concern.” He expanded further that “Interprofessional education has to take place when trust is built, and building trust takes time.”

***Space***

As mentioned above, space is both an enabler and confounder of IPE/ICP. Sophia Grace discussed her dilemma with space and stated, “There is not enough space, computers, or chairs

for all the people working within the dedicated unit." Penny mentioned that within her clinic, "the office is shared among the pharmacy team and with physicians, and the space gets crowded."

### *Onboarding*

The last confounder mentioned is onboarding and how long it takes for a student or provider to onboard with the team and to start collaborating and communicating with each other. Penny stated, "It can take days to weeks to get the student into all of the computer platforms." This lag of time is detrimental to patient care, especially if the individual who does not have access cannot order labs, write notes, refer, etc.

## Research Question Responses

The central question of this research explicitly centered on the experience offered to Doctor of Pharmacy (PharmD) students, deriving from the activities the students participate in during the experience. What activities make up an interprofessional clinical learning experience? The four sub-questions focused on the theory that guided this research. Responses to these questions are offered below based on the findings from the individual interviews, focused interviews, and the analysis of documents provided by each participant.

### Central Research Question

How do pharmacy preceptors describe the interprofessional clinical learning experience offered to PharmD students during the final year of training?

The participants described the interprofessional clinical learning experience by sharing the activities that these students are involved in during the experience, the individuals who interact with the students, student assessment, the ideal time, and identification of enablers and confounders of the experience. Seven themes were established to help in understanding the

experience offered to students. These themes varied, and the structured interview questions helped in more easily forming these.

Overall, activities promoting shared clinical decision-making were the focus, especially those activities centered around optimizing medications. Activities, such as obtaining the medication history from a patient and the reconciliation of the medications as patients transition care out of the healthcare setting or between healthcare settings, were top of the list. Closely following were activities that helped identify medication-related problems and the ultimate resolution of these problems. Purposefully, the pharmacy preceptors have set up the experience to put the pharmacist in the middle of a team to focus on all things related to medications. Improving medication access, initiating and discontinuing medications when needed, and monitoring these medications were also noted.

The experience was further described by whom the students were interacting with daily. As noted previously, the physician and medical students were the other healthcare professionals and learners necessary for the experience to occur. These individuals are the ones who are ultimately responsible for deciding on which treatments, both pharmacologically and non-pharmacologically, the patient would receive. These providers and students are necessary for shared clinical decision-making to take place.

An exciting finding was noting that the experience can occur at any time and throughout the year. Specifically, these experiences can occur at different seasons or months of the year, and the beginning or end of the academic year. Penny stated, “It occurs twenty-four, seven.” Also, students are assessed primarily at the midpoint of the experience and the final. The pharmacy preceptors are the individuals responsible for completing these evaluations of the pharmacy learners, and most seek input from the other healthcare team members. In some unique settings,

additional assessments help provide a more structured experience and a place for students to receive feedback, change behaviors, or continue to excel at specific tasks. Only two sites were using formal IPE assessment tools to assess students.

Enablers and confounders of the experience also helped in describing the experience and what enhances it for the student or the preceptor or what hinders it. For example, many sites were affiliated with an academic medical center or an institution that values interprofessional teams. Specific tools, such as an EHR used among team members to work collaboratively, were noted. In all cases, the clinical learning experience only lasted four to six weeks. Therefore, it is necessary to streamline and improve efficiency and processes to get new team members onboarded more quickly.

**Sub-Question One**

What are the clinical learning activities of the experience that promote concrete learning to students in an interprofessional setting?

The general theme of activities discussed among the participants brought the students together to discuss the patient and offer recommendations regarding treatment. These activities occurred in both the inpatient and outpatient settings. The primary activity common among all inpatient settings was interdisciplinary rounds, while the outpatient setting was jointly seeing a patient in a clinical setting or a home visit. The rounds and clinic visits allowed the pharmacy students to utilize their knowledge and skills to optimize medication regimens, identify medication problems, and resolve them collectively as a team. Additionally, when the learners were assigned patients, they needed to be accountable for monitoring, suggesting recommendations, and discussing the patient during rounds; this further intensified concrete learning. Dr. M stated:

> They have a panel of patients, and we make decisions together. We see patients, we hear patient assessments from the physician and medical students, and there are opportunities for the pharmacist and pharmacy learners to answer drug information questions or suggest a therapeutic plan with monitoring and follow-up.

BCAT757 noted that rounds with real-life patients promoted concrete learning and simulated environments, which are used extensively. She stated:

> One of the major things we use for concrete learning that is relatively unique is we have the students participate in many simulations during the experience. For example, these scenarios may simulate a bedside interaction with a nurse or a mock code.

Dr. M further shared:

> My experience specifically has students participate in a shared didactic experience, where a team of learners, such as pharmacy students, medical students, and other learners will present a patient case. The medical student will present the general assessment. The pharmacy students will discuss medication, drug information, etc.

**Sub-Question Two**

What are the clinical learning activities of the experience that promote reflection to students in an interprofessional setting?

As pointed out, part of the interprofessional clinical learning experience is devoted to assessing and evaluating the student. All the sites have evaluations of students that are completed at the midpoint and final timeframes. Concerning specific activities that promote reflection, it is generally the day-to-day activities in which the students participate during the experience and provide structured periods for the students to reflect on these activities. Leanne stated, “The students reflect instantaneously after a visit or rounding with a team, especially with challenging

visits." Other participants also discussed that providing time for daily or weekly reflections helped students understand where they may not have met expectations and how to move forward. Penny noted, "Sometimes you have to have multiple experiences and reflect on those before you can learn where to go from it in the future because an isolated experience might not give you a well-rounded approach to change behaviors for a future experience." In essence, providing multiple interactions, cases, and opportunities for students to use their knowledge and skills while also making space and time to discuss how the student did and how they should improve. Patsy Stokes said that, "Going over the list of patients with students after rounds helps students reflect fully. If there was something the team disagreed with, or the student did not do well articulating the recommendations, the time after rounds provides that space."

Only one site noted activities of reflection that centered around the IPEC domains and competencies of values and ethics, roles and responsibilities, interprofessional communication, and teamwork and team-based care (IPEC, 2016). In this experience, students must provide three reflections during the six-week rotation. Dr. M shared, "They pick any of the four competencies, recall an experience related to their learning in that area, and write a one-page reflection based on the learning." Additionally, he also noted that "Students get the 'so what' in writing assignments where they reflect what was meaningful, especially with the interprofessional activities they are doing with other learners."

**Sub-Question Three**

What are the clinical learning activities that help the student make meaning out of the experience encountered in an interprofessional setting?

In general, the pharmacy preceptors discussed that students make meaning out of their performance in the takeaways they have gathered from doing the activities within the experience.

As mentioned previously, the primary activities students are involved in are centered around medication optimization, including medication recommendations, identification of problems, and resolution of issues. Recalling Kolb's ELM (1984), this is the stage where conceptualization occurs, where students analyze thoughts, and conclude with how they will change moving forward. This equivalates to the "now what" in Rolfe's model (2011). As several activities throughout the experience provided opportunities to promote concrete learning and reflection, students have the opportunity to take the feedback received and thoughts from self-reflecting to re-arrange or re-adjust how they will go about doing the activities again in the future. Penny stated, "When a pharmacy student is asked about a drug, they may formulate a response and provide this response to the individual who asked the question." When the pharmacy faculty provides feedback and the student self-reflects, the student can now reformulate and provide a more thorough written response that can then be conveyed to the medical team either later during the day or during the next day on rounds. Dr. Awesome stated, "The student is able to continue to educate colleagues and patients regarding the appropriate use of medications, often linking the original response to guidelines or best practices."

**Sub-Question Four**

What are the activities of the clinical learning experience that promote the application of material learned, reiterated, in an interprofessional setting?

As the students continue throughout the experience, the more patient care activities are repeated, the more chances they can improve and continue to learn how to engage better with the team and patients. Cone noted, "A site that can provide a layered-learning model, which uses residents and fellows in the learning process, will provide opportunities for students to apply knowledge and skills." He shared, "It is observational, to a point." He further explained, "It is the

classic, sees one, does one approach. They watch a resident, then they do it, and they continue to improve and do it better after watching. This observational and practice approach is what leads towards perfection." Overall, learners see a best practice from someone else and work on improving incrementally through re-iteration of the activities centered around medication optimization. Dr. Awesome concured that the students "are trying out activities, whether medication reconciliation or vaccine administration. They do it once under my supervision and gain feedback and then continue to do it again to apply what they learned from the first time being observed." This reiteration also adds to improved confidence. Sasha said that "confidence" is critical, and "we really emphasize that confidence comes from the ability to self-reflect, and then be able to collect your evidence to be more confident at what you are doing." She stated, "When students see that they know the answer to the question posed during rounds, they see the response provided to the team helps the patient, and they are independently helping the patient, and understand they are making a difference." When the student has the opportunity to modify their response further and be provided another opportunity to answer questions or perform the activities, the full use of the ELM cycle has been achieved and, according to Kolb (1984), transformation occurs.

## Summary

Pharmacy preceptors described the interprofessional learning experience through individual interviews, focused group interviews, and providing syllabi outlining the description, schedule, and general activities of the experience. Specifically, activities were identified that solidified the essential elements of the IP experience. For example, activities centered around optimizing medications and identifying medication-related problems were the primary core activities of the experience, and these were often carried out through rounds and co-provider

visits. Other activities also contributed to the experience and concrete learning, such as journal clubs, topic discussions, and presentations of a case by the team of learners to the associated preceptors.

The experiences provide interaction with a variety of other learners and health care professionals, identifying the physician and medical learners as essential. The common denominator for all these experiences was caring for the patient. It does not matter the time or season when the experience takes place as IPE/ICP and shared clinical decision-making can happen anytime, throughout the day and year. As predicted, there are enablers and confounders to the learning; overall, space was a common sub-theme for both. The overall culture of the institution impacts the understanding of the experience, as those institutions that value learning and are academic centers embrace the opportunities for IPE/ICP.

The central question and sub-questions were answered that highlighted the activities that promoted the Experiential Learning Model. Medication optimization and identifying medication-related problems were top activities when done in the context of rounds and co-provider visits. The frequency of these activities led to the students making meaning of the experience and the ability to assess performance through reflection continuously. Daily or weekly structured reflective times allow student behavior to change, improving performance, confidence, and learning from the experience.

# CHAPTER FIVE: CONCLUSION

## Overview

The purpose of this transcendental phenomenological study was to describe the interprofessional education clinical experiences that pharmacy preceptors provide to Doctor of Pharmacy (PharmD) students during the final year of training within five different academic institutions. The focus was on the preceptor's experience and capturing the wholeness of the experience offered to students and its overall essence. Communication between healthcare providers is essential to prevent medical errors. Interprofessional Collaborative Practice (ICP) is needed to increase communication and minimize errors. Understanding the critical elements that make up an interprofessional clinical education experience is essential to continuing to build ICP teams and enhance patient care. This chapter discusses the findings of this study, the interpretation of these findings, and the implications for policy and practice. Additionally, a discussion is centered around theoretical and methodological implications, limitations and delimitations, and recommendations for future research. This study used the Experiential Learning Model (ELM) as a theoretical framework.

## Discussion

In Chapter Two of this research, theoretical and empirical literature was identified and served as the background and basis of this research. This section discusses the study's findings and the themes developed. The findings provide details of the clinical learning experience preceptors provide to pharmacy students. The activities that involve shared clinical decision-making will continue to promote a full interprofessional experience (IPE) leading to interprofessional collaboration (ICP). This collaboration involves interacting and communicating with other healthcare professionals, for which lack of communication has consistently led to an

increase in medical errors (Manias, 2018; Rodziewicz et al., 2021). Activities can also be linked to the four stages of the Experiential Learning Model (ELM), indicating compliance with the learning cycle (Kolb, 1984). The discussion highlights the interpretation of findings, implications for policy or practice, theoretical and empirical implications, limitations and delimitations, and recommendations for future research.

## Interpretation of Findings

The themes identified in this research provide infrastructure on how to organize a clinical learning experience for students and when to offer these experiences throughout the year. Specific activities that preceptors have identified can be set as requirements to standardize a clinical offering providing a complete experience for students. Assessments should be structured throughout the experience providing learners feedback and pointing out when reflection is constructed into the clinical rotation to promote abstract conceptualization and active experimentation. Preceptors should be cognizant of enablers and confounders that could prevent the experience from altogether taking place or allow it to flourish and provide an enriching opportunity to students. Finally, healthcare institutions should continue working with higher education to promote a learning culture with established healthcare team members that support learning and provide tools and space to work collaboratively.

### *Summary of Thematic Findings*

Several themes and associated subthemes comprised the elements and considerations for a clinical learning experience. For example, activities, time, and assessments were themes that helped structure the experience and answered the question of when and what the experience was. Who is involved in the shared clinical decision-making of a patient's care, involving a prescriber,

and specific items that enable or confound the experience were additional themes noted. Specifically, the culture of an organization was important to enabling IPE to take place.

**Prescribers and Collaboration.** All participating sites had pharmacy students and pharmacists interacting with physicians and medical students. Even though the interprofessional learning experience promotes collaboration among all involved in the care of the patient, at the end of the day, an order needs to be created and signed, a diagnosis needs to be made for a treatment plan to be created and followed, and a prescriber is needed to care for the patient effectively. This required part of the patient's care could serve as one of the reasons PharmD programs are required, per Standard 11 Interprofessional Education of the Accreditation Standards (2016), to have students "participate in experiential education activities with prescribers/student prescribers" to not only "advance interprofessional team effectiveness" but to engage in "shared therapeutic decision-making fully" (p. 8). Zoning in specifically on prescribing providers in no way discounts the interactions and collaboration with other healthcare team members, as these individuals are valuable members. It is important to continue fostering collaboration with all to promote safety, increase the quality of care, improve communication, and decrease medical errors. Providing planned activities that support students and other professionals to work together and increase communication and collaboration, which lack of communication between members of the patient care team has been identified as a primary cause of medical errors (Manias, 2018; Rodziewicz et al., 2021).

**Culture.** For these experiences to be offered and to provide an environment for learning, there must be a culture for learning set both at the institution level and with associated schools/colleges of pharmacy. The schools and colleges are a part of an institution of higher learning that invests in the learning process and wants to see a qualitative experience offered to

students that is rich in learning and helps prepare students to become competent practicing pharmacists. The hospitals and health systems would naturally focus on providing patient care and putting the patient front and center. Along with this, the common thread among these sites was the promotion of learning, teaching, and an overall collaborative environment. All sites were either an academic medical center or affiliated with an academic medical center or medical residency training program. These institutions provide an environment where other disciplines and learners, besides pharmacy, are present on site and lead to a natural collaboration. Additionally, the colleges and schools of pharmacy well equip and support either full-time faculty members to practice in these settings or those pharmacists employed by the health system or hospital serving as adjunct faculty.

**Complete experiential learning cycle.** The ELM will be discussed further with theoretical implications, but these experiences must provide a complete experience that allows students to participate in each phase of the model. Activities are essential that provide a substantial experience where students apply knowledge in a clinical setting. Several activities identified as crucial components of the experience provide this opportunity to students. Additionally, preceptors must find dedicated space and time within the experience for the student to reflect purposefully on activities and how improvement and adjustments can be made. The reflection should be structured and provide a format to ensure students purposefully reflect and develop strategies for moving forward.

The third phase of abstract conceptualization is vital for the students to move forward with a plan to change the experience by utilizing a different approach or method, specifically when interacting with patients and other providers. The third phase is needed to lead into the last stage of actively experimenting with the new approaches or changes, as the student participates

in the activity again or similar activities with different patients or providers. Preceptor participants noted that continued immersion in the activities, providing opportunities for improvement, would provide full use of all the domains of the ELM, leading to transformation.

**Assessments.** Providing feedback throughout the experience is essential so students can use this information in both the ELM's reflection and abstract conceptualization stages. All the sites in this study provided midpoint and final assessments of students as a mechanism to give formative and summative feedback within the experience. It is necessary to find ways to provide feedback and assessment more regularly, after specific activities, at the end of the day, or weekly. These touchpoints should be incorporated and structured into the experience. Only two sites referenced using formal IPE assessments within the learning experience to understand how well the team members genuinely collaborate, linking to the IPEC domains and competencies (IPEC, 2016). Many of these tools could be required assessments for clinical interprofessional learning experiences.

As mentioned in Chapter Two, readiness and perception tools are widely used, such as SPICE-R and ICAR. Dr. M referenced using the Attitudes Towards Health Care Teams Scale (ATHCT), which measures the attitudes of the learner and the preceptors toward working in interprofessional teams (Heinemann et al., 1999; Kim & Ko, 2013). Additionally, the Team Skills Scale was referenced as another tool used, which measures interpersonal skills, discipline-specific skills, and geriatric care skills (Grymonpre et al., 2010). These tools allow other disciplines to assess students in general, eliminating the need for the pharmacist preceptor to assess the pharmacy student continually. The Kirkpatrick Model (Barr et al., 2005; Hammick et al., 2007), as described in Chapter Two, was not used by any participant or site.

## Implications for Policy or Practice

The details of the experience provided by pharmacy preceptors offer an opportunity to change policies and practices. Having a dedicated pharmacy team member, including learners, within specific areas of the health system to collaborate and be involved in shared clinical decision-making could change the practice model. In this section, the implications for policy and practice are discussed.

### *Implications for Policy*

This study has specific implications for policy change or initiating new policies. Since most of these sites believe the experiences are valuable and the overall institution supports the endeavors, suggesting mandatory experiences at each institution where team members work collaboratively might be a proposed change moving forward. Comprising multidisciplinary teams that consist of a prescriber, a pharmacist, and other supportive disciplines with associated learners should be required in all acute and ambulatory settings to optimize medication therapy and improve communication. Hospitals should provide the necessary infrastructure that supports these collaborative teams during all shifts, including weekend and after-hour coverage.

An additional implication could be the ultimate signing of the orders once collaborative clinical shared decision-making has occurred. To promote the enforcement of shared clinical decision-making, all primary collaborators should be required to sign off on orders in the patient's chart to indicate that communication has taken place. Although this could increase the liability of some involved, it sets an equal field of responsibility that documents collaboration and communication. Promotion of this practice could also lead to a different process and procedure for billing, as much is centered around the services offered by the primary care provider, while others involved in the care need to be measured and accounted for in the current billing process. An opportunity for a policy change would appear specifically defining

pharmacists as providers, just as equally as physicians, nurse practitioners, and physician assistants. Presently, not all healthcare team members providing care to the patient have been granted provider designation by the Centers for Medicaid and Medicare Services (CMS) (*Conditions for Medicare Payment*, 2022). Not having this status limits who can bill and be reimbursed for services rendered to the patient. Professional pharmacy organizations are heavily advocating for pharmacists to be added to the list of providers to be compensated for the services provided to patients, such as H.R. 2759, otherwise known as the Pharmacy and Medically Underserved Areas Enhancement Act (H.R. 2759, 2021).

### *Implications for Practice*

Defining an experience with suggested activities that students can participate in while going through a clinical learning experience could help interprofessional teams train students to practice in these environments after completing the program of study. The activities may also serve as a guide to preceptors when planning the experience and ensure students are focused on providing care to the patient with minimal errors. Humans are not without error; mistakes can be made daily, despite regulations or changes in practice. The overall incidence and prevalence of mistakes may be lowered by creating an experience where every team member feels valued and contributes to the discussion and care of the patient.

Within an inpatient hospital or an outpatient clinic setting, work areas must be re-designed and re-configured to promote shared clinical decision-making. Changing the design of a clinic or workstation within a designated area to promote the shared model will be needed to standardize the delivery of care and provide a natural setting that embraces a collaborative model. Central areas or conference rooms should be in place that will allow the healthcare team to review a patient's treatment plan, discuss barriers moving forward, and, most importantly,

focus on what matters most to the patient. The 4M's model, a multi-partnership initiative led by the Hartford Foundation and Institute for Healthcare Improvement, provides a scaffold where medications are a primary focus while continuing to focus on what matters most to the patient, mobility, and mentation (Cacchione, 2020; Fulmer et al., 2022). This framework could be used to ensure a consistent approach.

Presently, there are no accreditation requirements that exist for pharmacy students to participate in an IPE clinical learning setting during the final year of training. Since all students need to complete an ambulatory care and acute care experience, a requirement could be put in place that would embrace students completing at minimum one experience that promotes shared clinical decision-making with a healthcare team. Upon recruitment of sites with different schools/colleges of pharmacy, it was quite noticeable that many sites were labeled as an IPE experience, but when asked the question regarding having two or more students from different professions that worked collectively together, the answer was no. The Accreditation Council for Pharmacy Education (ACPE) could implement this as a standard for all programs to meet and reach compliance. Other required elements that support medication optimization and identifying and resolving medication-related problems could be emphasized more directly and put in place for programs to reach a minimum standard.

**Theoretical Implications**

This study confirms that the experiential learning theory, embracing all four elements of the ELM, is needed for students to learn and improve as they focus on activities that embrace concrete learning. These activities center around optimizing patient medication therapy and are ideal for shared clinical decision-making. Although all four stages of the ELM are needed, reflection is key to providing time to pause and make meaning from experience. Many of the

sites involved in this study were creative and carved out specific times (Feedback Fridays, Wednesdays, etc.) for students to reflect. This study confirmed that there is no stage more critical than another. However, the struggle still occurs to ensure that reflection is meaningful and that students can actively experiment with ways they want to move forward in a safe learning environment.

As discussed in earlier chapters of this research, other theories could be used as the theoretical backbone of this research. Beyond this being an experiential opportunity that students participate in as part of the program of study, collaborating and interacting with various team members is social and involves bonding and building relationships. Theories that focus on group development could be suggested in the future. Tuckman's (1965) five-stage team development model could be considered, especially after interprofessional groups of students come together on an experiential rotation at the same time.

**Empirical Implications**

This study had several empirical implications that resurfaced from the background review in chapter two. Entrustable professional activities (EPAs), Electronic health records (EHRs), COVID-19, enablers and confounders of IPE, and simulation are noted. Interestingly, EPAs and COVID-19 modifications were not necessarily brought up in the description of the experiences by the preceptors. EHRs, simulation, and enablers and confounders were discussed. Sites also did not maximize co-precepting models amongst the healthcare team.

***Entrustable Professional Activities (EPAs)***

None of the sites referenced the Entrustable Professional Activities (EPAs) during the interviews or focused group sessions. The EPAs continue to be discussed, as there is no general way to proceed other than ensuring activities and curriculum are mapped accordingly. Since the

EPAs would require a reiterative cycle of activities to show competence, this research solidified that these would be ideal for assessing students, especially as it relates to the interprofessional domain. The interviews did demonstrate that students need to continually be exposed to the activities to allow the student to learn and reflect, ensuring an opportunity exists for improving and becoming more competent in the given areas of practice. The level of entrustment is to increase over time, where the supervising preceptor would eventually be able to confidently state that the learner is competent in any given area of practice and is ready for practice without supervision.

***Electronic Health Records (EHRs)***

Electronic Health Records (EHRs) could be re-designed to provide not only a place to continue to document interventions made by members of the team but also a communication tool that would require each member to input a progress note and details regarding the rounding experience. The EHR could be set up in a way that would value all contributions from each team member requiring each member to review orders and generally provide an impression or plan to ensure patients' regimens are solid and therapeutically sound. All contributing members would also sign the orders, as previously noted in policy implications. All preceptors interviewed work at institutions that use an EHR.

***COVID-19***

None of the participants or sites identified any adjustments made in the learning experience during COVID-19 for the experience that is still in place today. Rounds, which is an activity identified, were offered in a variety of formats, including sit-down rounds. Many sites did implement sit-down rounds in a response to limiting exposure to patients who are in the hospital due to being infected with COVID-19. It is important to lay eyes on the patient, to

inspect, visualize, and examine the patient, so an accurate diagnosis and treatment plan can be put in place, accounting for both subjective and objective findings. None of the sites listed teleservices specifically concerning primary general medication optimization activities, but there could be other activities that could lend to providing these services to patients once discharged from the hospital.

### *Co-Precepting*

One site discussed having some intentional interprofessional precepting amongst the students, where intentional interprofessional assessments were being conducted. Until future research identifies the key activities of other learners beyond pharmacy students, co-precepting students from other professions remain challenging and limits the involvement in assessing the knowledge and skills of the learners. Having the learners involved in activities, such as case presentations, dedicated functions on rounds, and journal club discussions, do provide a platform for assessing students collectively, especially in a team environment.

### *Enablers and Confounders*

Enablers and confounders identified in this study were consistent with previous studies concerning time and space. Creating a culture of learning that embraces the interdisciplinary approach and valuing all team members were new enablers of IPE identified in this research. Finding ways to work together extensively to care for the patient is a top priority in improving communication, therefore, improving the quality of life for patients.

Student support services, as an enabler of IPE, were also a new finding. During the didactic years of training, while students are on campus, is often where support services have been highly utilized. These services encompass tutoring, time management, disability, and accommodations for learning. Having dedicated mechanisms to work with students who might

be challenged in keeping up with the work and challenges of managing complex patients was noted as a successful enabler of the experience.

### *Simulation*

Simulation was noted to be an activity that could be utilized in the practical setting during the final year of training, to reinforce activities and promote an opportunity for students to reiterate an experience. As noted, students can continue to practice specific skills and rehearse new ways of interacting and performing in more urgent situations, such as responding to codes, as well as bedside interactions with both the patient and other providers. Providing an experience where students can engage in real-life encounters, reflect on these encounters, think through abstract conceptualization, and active experimenting in a simulation to prepare for another real-life encounter can build confidence and overall reduce the chance for errors.

## Limitations

Although a potential perceived weakness of this study was limiting participants who could answer yes to an experience involving students in a team of two or more individuals from different professions sharing clinical decision-making of the patient, it was needed to truly ensure the experiences being targeted were ones that had students involved in decisions and working together collaboratively in the care of the patient. An initial effort was to obtain participants from the four required advanced pharmacy practice experiences set by the Accreditation Council for Pharmacy Education (ACPE). These were acute care, community, ambulatory care, and hospital. In hindsight, the chances of obtaining hospital and community sites were unlikely, since these typically need learners to engage with other professions consistently throughout the experience, and pharmacy students have limited involvement with

other learners in the shared clinical decision-making of the patient. This limitation is why only preceptors from acute care or ambulatory care experiences participated in the study.

Another limitation was the number of sites that declined to participate. Since the experiential administration team from each university targeted specific preceptors who had been identified in the experiential software, the researcher needed a better sense of how many sites were available to solicit participation from each college/school of pharmacy. Only after the experiential administrator identified a site was contact information sent to the researcher and emails sent to solicit participation. As a result, the researcher only had three sites that declined to participate, which would have led to reaching full saturation.

Compositionally, the individuals who participated in this research study were diverse in years of experience, gender, and even roles. Only one of the twelve participants identified as Asian and none identified as Black, African American, Hispanic, or Latino. This is a limitation of the research and having a more diverse panel of participants may provide different results.

**Delimitations**

A transcendental phenomenological design was chosen for this study in an attempt to reach the entire essence of the experience. Unfortunately, this is an area that can be interpreted in different ways based on the view of the beholder. Was the entire essence of the learning experience reached? The researcher's design and structured interview questions naturally provided a thematic framework, perhaps limiting other critical themes from arising. In addition, the questions asked may have limited the researcher from being free of bias, therefore, posing the question of whether a hermeneutic phenomenological study should have been chosen over a transcendental one. Did the constructed questions allow the researcher to bracket and use phenomenological epoché, ignoring pre-conceived ideas?

**Recommendations for Future Research**

Further research is warranted to gain a sense of the clinical learning experience offered to students by preceptors other than from the pharmacy profession. In addition, it is essential to gain more perspective on the experience through the viewpoint of students from other disciplines, such as medicine and nursing, especially those involved in shared clinical decision-making. Specifically, with medical students, it may be necessary to interview both third and fourth-year students, since each of these cohorts is represented. Additionally, since medical students are trained differently, either via an allopathic or osteopathic program, are there any differences or comparisons to make between these students? Would gaining information specifically from medical residents and fellows, who are also being trained in formal academic programs, provide other insights?

Preceptors beyond pharmacy would also be members to include in research. The activities identified as essential to medical or nursing students during the experience would be worth noting and comparing to the activities identified by pharmacy preceptors in this study. Since these activities should be involved in shared clinical decision-making, it would be interesting to determine if there would be any alignment.

This study was a transcendental phenomenological qualitative study that focused on the experience offered to students. The preceptors provided information to the researcher via a question-and-answer interview format which was necessary to gain a better understanding of the experience and to drill down further at the themes and subthemes of the research. Future studies could become quantitative, especially as core key activities have been identified. A standardized, validated tool, such as a questionnaire or survey, could be administered to participants. The methodological approach could also be changed from a phenomenological to a

case study format or even a narrative. Creswell and Poth (2018) pointed out that the defining feature of a case study is the "identification of a specific case that will be described and analyzed"(p. 97). These are also "bounded," and the intent for conducting can be clearly explained, as well as "presenting an in-depth understanding of the case" (p. 98).

Future long-term studies could also be conducted that track the effectiveness of the recommendations and treatment of patients that benefit from enhanced communication and clinical shared decision-making. Does this model help enhance patients' overall quality of life and minimize medication errors consistently and sustainably? Use of an assessment tool, such as the Kirkpatrick Model, might also be used as a more comprehensive assessment to measure attitudes, perceptions, knowledge, and skills (Barr et al., 2005; Hammick et al., 2007). An enabler and confounder noted in the research was the team members' experience and the decrease in the time it takes to train individuals during an onboarding timeframe. Are error rates any different between the established teams working together over a longer time compared to newly formed teams where the lack of trust and forming the team is still in process? Are error rates different from those newly graduated preceptors versus those that precept learners for longer periods? What other demographic differences, either gender, training, credentials, or certifications, could impact the error rate?

Lastly, the noted limitation of not having any participants who identify their race/ethnicity as Black or African American or Hispanic, or Latino could be an area to expand upon in future research. This will be important to keep in mind when studies are completed with other preceptors from other disciplines, as well as students across all health professions. Does culture or race alter the experience and impact the activities performed during an IP clinical learning experience?

## Conclusion

This study intentionally wanted to gain insight from pharmacy preceptors describing the experience offered to students training to become pharmacists. Specifically, for the site to qualify, there must have been interaction with students from two or more professions involved in the shared clinical decision-making of a patient's care. The other profession should be a prescribing physician and associated learners. This study was limited in that it only took in the perspective of the pharmacy preceptor, as future studies should focus on gaining insight from other preceptors from different disciplines and how these individuals describe the experience being offered to learners within these respective fields of training.

Specific activities were essential for pharmacy learners to contribute to the team focus on optimizing medications, including identifying medication-related problems and resolving these problems collectively with the team. Configuring workspaces and performing these activities during planned times, such as rounds, will structurally scaffold an experience that will help provide a natural place to discuss patient care and treatment. In addition, the healthcare institution and the school/college training students, and in many cases providing a faculty member an opportunity to practice within an area of expertise, should embrace the culture of working together collectively in a shared model. This embracing of a culture of collaboration is a crucial ingredient to the success of the experience overall, increasing communication with the hope of decreasing medical and medication errors.

The experiential learning model (ELM) must play out fully, ensuring all stages are utilized, including purposeful reflection and active experimentation. In addition, practice and policy changes should be implemented that emphasize that a pharmacist should be a team member and that shared clinical decision-making is happening, as EHRs and billing platforms

can be structured to promote equality in the care process. Finally, long-term studies will need to continue to take place that will determine how many adverse events were prevented, improving the quality of life of a patient.

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# Appendix A

# IRB Approval

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

July 1, 2022

James Nash
Shanna Akers

Re: IRB Exemption - IRB-FY21-22-1073 A TRANSCENDENTAL PHENOMENOLOGICAL STUDY: EXAMINING INTERPROFESSIONAL CLINICAL LEARNING EXPERIENCES TO DEFINE THE ESSENTIAL ACTIVITIES THAT WILL PROVIDE STUDENT TRANSFORMATION

Dear James Nash, Shanna Akers,

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

## Informed Consent

**Title of the Project:** A Transcendental Phenomenological Study: Examining Interprofessional Clinical Learning Experiences to Define the Essential Activities That Will Provide Student Transformation
**Principle Investigator:** James D. Nash, Doctoral Candidate, Liberty University
School of Education

### Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, you must be a practicing pharmacist serving as a preceptor while providing an interprofessional clinical learning experience in one of the following areas: community pharmacy, ambulatory care, hospital pharmacy, or an acute care setting. 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 this study is to describe the interprofessional education clinical experiences that pharmacy preceptors provide to Doctor of Pharmacy students during the final year of training. The central question to be answered is centered around how you describe the experience offered. Other questions will focus on activities that promote learning, reflecting, and applying what was learned during the experience.

### What will happen if you take part in this study?

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

1. Participate in a one-hour individual interview via Google Meet or MS Teams on a day/time that is convenient to you and me.
2. Participate in a 60-minute focus group involving preceptors in similar practice sites in other regions of the country on a day/time that is convenient to you, the other participants, and me.
3. Submit an updated syllabus/calendar that has been updated to reflect the current learning experiences offered to students.

### How could you or others benefit from this study?

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

Benefits to society include a more detailed description of what these experiences entail and how these experiences can become more standardized in the future.

### What risks might you experience from being in this study?

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

**How will personal information be protected?**

The records of this study will be kept private. In any sort of report, I might publish, I will not include any information that will make it possible to identify you as a subject. Research records will be stored securely, and only the researcher will have access to the records. I may share the data I collect from you for use in future research studies or with other researchers; if I share the data that I collect about you, I will remove any information that could identify you, if applicable, before I share the data.

Additionally, the following will apply:

- Participants will be assigned a pseudonym to maintain confidentiality. I will conduct the interviews in a location where others will not easily overhear the conversation.
- Data will be stored on a password-locked computer and may be used in future presentations. A
- Interviews will be recorded and transcribed. Recordings will be stored on a password-locked computer for three years and then erased. Only the researcher will have access to these recordings.
- 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.

**How will you be compensated for being part of the study?**

Participants will not be compensated for participating in this study.

**Is study participation voluntary?**

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University or your home affiliated institution. 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/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 primary researcher conducting this study is James D. Nash. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact him at [redacted] and [redacted]. You may also contact the researcher's faculty sponsor, Dr. Shanna Akers at the following email: [redacted]

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

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or email at 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/video-record me via Google Meet or MS Teams as part of my participation in this study.

_____
Printed Subject Name

_____
Signature & Date

## Appendix C

## Demographics Survey

**Name:**_____

**Contact information:**

Address:_____

Best phone number to reach you:(____)-_____

Best email to reach you, if different than one use for survey:_____

**Preferred pseudonym** (If you meet the study criteria and are chosen to participate, please provide a pseudonym for me to use when I describe you in the dissertation):_____

**Age** (Choose years category below):

| | | | | | |
|---|---|---|---|---|---|
| 18-25 | 31-35 | 41-45 | 51-55 | 61-65 | 71-75 |
| 26-30 | 36-40 | 46-50 | 56-60 | 66-70 | 76 or greater |

**Gender (please check one):**
_____Male ____Non-binary _____Female
_____Prefer to self-describe_____

**Race/ethnicity (please check one):**

____Native Hawaiian or Pacific Islander ____Black or African American ____Asian
_____Native American or Alaskan Native_____White or Caucasian _____Multiracial or Biracial _____Hispanic or Latino

**Role (please check one):**

____Full-ranked Faculty/Preceptor ____Adjunct Faculty/Preceptor

Y**ear graduated from pharmacy school:**_____(fill in blank)

**Professional Program of Study/Practice:**
___. Medicine _____Pharmacy _____Nursing _____Other _____
Specify

**Institutional Affiliation (a pseudonym will be provided for this in the data write-up):**
_____ **(fill in blank)**

**Specific questions for preceptors:**

**Total Years serving as a preceptor (if applicable):**

| | | | | |
|---|---|---|---|---|
| 1-2 | 6-10 | 16-20 | 25-30 | 36-40 |
| 3-5 | 11-15 | 21-25 | 31-35 | >than 40 |

**Total Years serving as a preceptor at this site (if applicable):**

| | | | | |
|---|---|---|---|---|
| 1-2 | 6-10 | 16-20 | 25-30 | 36-40 |
| 3-5 | 11-15 | 21-25 | 31-35 | >than 40 |

**Total number of APPE students taken /taught on rotation over the past year?**
**_____ (fill in blank)**

**My experience meets the definition defined for this research?**
Interprofessional clinical learning experience will be generally defined as an experience taking place in a clinical learning environment that involves learners from two or more professions who learn with, about, and from each other to enable effective collaboration, including shared clinical decision making, influencing the care of a patient and improving health outcomes.

_____Yes _____No

## Appendix D

## Individual Interview Guide

1. For purposes of the recording, please state your name and your practice site.
2. Would you tell me a little about yourself?
3. What is your area of practice as defined by ACPE (2015) standard 13, including community pharmacy, ambulatory patient care, hospital/health system pharmacy, and inpatient general medicine patient care?
4. What is the pseudonym that you have created for your practice site? (This is a pretend name to protect your identity and promote confidentiality in the research and associated publications).
5. Please tell me about yourself and how long you have been serving as a preceptor within the College/School of Pharmacy.
6. Describe the interprofessional experiences offered to students.
7. What other professions (non-students) are represented at this site?
8. What other professional students are represented at the site?
9. What activities are intentionally designed for IPE that involve shared clinical decision-making?
10. Of these noted activities, are there any that you believe are more significant than others?
11. What are the ideal times when an IPE clinical learning experience should take place daily (morning, afternoon, evening), on a yearly basis (summer, fall, winter, spring), or within the academic year (first quarter of rotations, 2nd quarter, etc.)?
12. What activities does the interprofessional education clinical learning experience provide to respective students to promote concrete learning?

13. What institutional factors, either site-related or school / college-related, enable or confound the learning experience?
14. What other professions are involved in the evaluation of pharmacy students?
15. What assessment tool(s) do you use to evaluate the experience?
16. We have covered many questions, but I have one final question: What else would you like me to know about this clinical practice experience that makes it an ideal setting for an interprofessional/collaborative experience?

## Appendix E

## Focus-Group Interview Guide

1. Please confirm that your practice setting is _____(Insert Ambulatory Care, Community Pharmacy, Hospital Setting, or Acute Care Setting.).
2. What are the interprofessional activities that create concrete learning experiences for students in your experiential practice setting?
3. What activities promote reflection in your experiential practice setting?
4. What opportunities are present in the experience that help students make meaning of the experience in this practice setting?
5. What activities are repeated to allow the reiterative process to take place and the application of knowledge learned from a previous activity in this practice setting?

## Appendix F

## Recruitment Email

Dear [Recipient]:

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 (PhD) degree. The purpose of my research is to describe the interprofessional education clinical experience that pharmacy preceptors provide to PharmD students during the final year of training, and I am writing to invite eligible participants to join my study.

Participants must be serving as a pharmacist preceptor of an interprofessional clinical learning experience for Doctor of Pharmacy students. Practice sites should be in one of the following: ambulatory care, community, acute care, and hospital environments. For purposes of this research, an interprofessional clinical learning experience will be generally defined as an experience taking place in a clinical learning environment that involves learners from two or more professions who learn with, about, and from each other to enable effective collaboration, including shared clinical decision-making influencing the care of a patient and improving health outcomes. Participants, if willing, will be asked 16 questions in a one-on-one interview and 5 questions in a focus-group session with two or three other preceptors that work in a similar practice setting. It should take approximately 60 minutes to complete the individual interview and 60 minutes for the focus group session. Additionally, you will agree to submit a syllabus and calendar of activities for the experience provided to students. These documents will be analyzed and compared to peer preceptors and sites for common themes and sub-themes. Names and other identifying information will be requested as part of this study, but the information will remain confidential.

To participate, please click here https://forms.gle/GP61Bb6JEzSBJPVLA to complete the screening/demographic survey. Contact me by phone [redacted] or email [redacted] for more information.

A consent form is attached to this email. The consent document contains additional information about my research. If you choose to participate, you will need to sign the consent document and return it to me by email before an interview is scheduled.

Sincerely,

James D. Nash
Graduate Student Liberty University School of Education
Phone: [redacted] | Email: [redacted]

## Appendix G

## Document Analysis

The research participant will analyze the documents (Calendar and syllabus) provided for the following:

1. The description the interprofessional experiences offered to students.
2. Verification of other professions (non-students) are represented at this site.
3. Verification of other professional students represented at the site.
4. Activities that are intentionally designed for IPE that involves shared clinical decision-making.
5. Time frames that the IPE clinical learning experience is taking place daily (morning, afternoon, evening) and yearly basis (summer, fall, winter, spring) or time within the academic year (first quarter of rotations, 2nd quarter, etc.).
6. List of activities the interprofessional education clinical learning experience provide to respective students to promote concrete learning.
7. Institutional factors, either site-related or school / college-related, enable or confound the learning experience.
8. Other professions that are involved in the evaluation of pharmacy students.
9. Assessments used use to evaluate the experience.
10. Interprofessional activities noted to create concrete learning experiences for students in the experiential practice setting.
11. Activities noted to promote reflection in the experiential practice setting.
12. Opportunities present in the experience that are noted to help students make meaning of the experience in this practice setting.

13. Activities that are repeated to allow the reiterative process to take place and the application of knowledge learned from a previous activity in this practice setting.