Identification of Desirable Pharmacy Preceptor Characteristics and Behaviors: A Qualitative Content Analysis Approach

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IDENTIFICATION OF DESIRABLE PHARMACY PRECEPTOR CHARACTERISTICS AND BEHAVIORS:
A QUALITATIVE CONTENT ANALYSIS APPROACH

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IDENTIFICATION OF DESIRABLE PHARMACY PRECEPTOR

CHARACTERISTICS AND BEHAVIORS:

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Dissertation supervised by Karen Levitt, Ed.D.

Thirty percent of the doctor of pharmacy degree program, the sole degree recognized by the Accreditation Council for Pharmacy Education (APCE), is dedicated to experiential education. Experiential education is comprised of introductory pharmacy practice experiences (IPPE's), which are interwoven throughout the first three years of the professional curriculum, and advanced pharmacy practice experiences (APPE's), which serve as a capstone in the final year of the degree program. The majority of these experiences are supervised by external pharmacist practitioners or preceptors. Although ACPE mandates adequate preparation and development for preceptors, it does not define the content of such training. Little is understood regarding effective preceptor characteristics and behaviors. The pharmacy literature in this area is scant.
Studies in the medical, nursing, and other health-related professional literature suggest that students and preceptors do not always agree on preceptor characteristics and behaviors that are conducive to student learning. Other studies suggest that students who are more experienced may value preceptor characteristics and behaviors differently than novice students.

This study conducted a qualitative content analysis to identify preceptor characteristics and behaviors that are valued by experiential experts and pharmacy students. It further examined whether there are differences in the value placed on these characteristics and behaviors between experiential experts and students and between the IPPE and APPE students. Preceptor evaluation instruments as developed by experiential experts from 44 schools of pharmacy and open-ended comments derived from preceptor evaluation instruments completed by IPPE and APPE students from Duquesne University Mylan School of Pharmacy over the 2009-2010 and 2010-2011 academic years were analyzed.

Results uncovered four distinct themes: preceptor as professional, instructor, support, and partner. These themes find their roots in transformational leadership theory, adult learning theory, social cognitive theory, and experiential learning models. Results also demonstrated that IPPE and APPE students closely resemble each other in the value they place on desirable preceptor characteristics and behaviors. There was weak correlation between the experiential expert and student voices. Results from this study can be foundational to future research and used to inform preceptor selection criteria, preceptor development programs, and the design of preceptor evaluation instruments.
DEDICATION

This dissertation is dedicated to my father, who believed unwaveringly in the power of education, and who was both of his daughters' biggest cheerleader.
I would like to thank the members of my committee, Drs. Karen Levitt, Joseph Kush, and Susan Meyer, who believed in me and persevered with me; the administration of the School of Pharmacy, Dean J. Douglas Bricker, Drs. Thomas Mattei, and Tom Rihn, who granted me the flexibility to complete the dissertation; my fellow colleagues in the School of Pharmacy Office of Experiential Education, Tom Falcione, Dr. Tracy King, Cindy Fischer, and Dr. Pam Koerner (Team OEE), who cheered me on and "had my back;" my daughter, Melinda Gaus, who provided invaluable technical support and kind critique; my husband, DuWayne, who managed to keep the household running in my "absence;" my mother, Millie Kozar, sister, Linda DuPlessis, and mother-in-law, Laura Astle, who offered many prayers on my behalf; and the rest of my dear co-workers, family, and friends, who provided much needed support and basically "put up with me" during the duration of this project.

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Chapter I

Introduction

An ancient Chinese proverb that admonishes, “tell me and I forget; show me and I remember; involve me and I understand,” as well as other traditional adages such as “experience is the best teacher,” and, “we start as fools but become wise through experience,” underscore the important role that learning through experience holds in the course of human development. Indeed, acquisition of knowledge through hands-on immersion in the field occurred long before the establishment of formal institutions of learning. Most notably, crafts, trades, and other types of skills have been transmitted from generation to generation through apprenticeships, internships, on-the-job training, and other types of modeling behaviors. The health care professions, including pharmacy, are no exception. Originally delivered as a master-apprenticeship model situated wholly in the practice setting, pharmacy education today is a blend of didactic classroom instruction and practical field experiences.

Education Leadership and Instructional Learning Theory as Foundation

Practical field experiences, otherwise known as experiential learning or experiential education, are typically facilitated by an accomplished practitioner in the given field. As such, the practitioner plays a key role in helping students to make the transition from a novice learner to an accomplished professional. Educational leadership and instructional learning theory can provide a foundation for uncovering those important characteristics, skills, and behaviors of master practitioners that assist their students in attaining mastery of their chosen field.
Scholars in leadership theory, such as Burns and Bass, describe this type of transition, which culminates in a shared sense of mission and vision between leader and novice, as transformational in nature. Transformation is much more than the mastery of content knowledge. It also involves the acquisition of skills and behaviors that are inherent to the field. It is, in essence, the becoming of the very persona to which the student is aspiring. Burns (2003) notes that "... to transform cuts much more profoundly. It is to cause a metamorphosis in form or structure, a change in the very condition or nature of a thing . . ." (p. 24).

Burns (1978) alludes to the role of teachers as transformational leaders in altering the attitudes, beliefs, and behaviors of their students. Bass further describes the pivotal role that such leaders play in assisting their followers to realize their full potential (Bass & Riggio, 2006). He purports that transformational leadership is comprised of four main components. The first dimension of transformational leadership is what Bass describes as idealized influence. Such leaders possess high ethical standards and are role models that followers wish to emulate. A second dimension is inspirational motivation. Transformational leaders clearly communicate expectations to their students/followers and provide a sense of meaning to their work. A third dimension of transformational leadership is the ability to offer intellectual stimulation. Such leaders question previously held assumptions and reframe situations to stimulate learning. The fourth and final dimension of transformational leadership is individualized consideration. Transformational leaders act as coach and mentor by providing a supportive learning environment in which students can achieve their highest potential.
A humanistic approach to educational learning theory places the student at the center of the learning experience. A preeminent humanist psychologist and educator, Rogers (1969) held that learning in an experiential environment is most valuable when it is primarily student-directed. Boud (1981) further argued that understanding the learning experience from the perspective of the student is paramount and must be given careful consideration. The work of Knowles (1984) also supported a student-centered approach to adult learning but from a different vantage point. Knowles suggested that experienced learners prefer to be more intimately involved in the design and delivery of their own education, in contrast to early learners who prefer an instructor-driven approach (Knowles, Holton, & Swanson, 1998).

Also known as andragogy, adult learning theory emphasizes a more autonomous and self-directed approach. Adult learners draw heavily on prior experiences as they construct new meaning from current situations. As such, adult learning tends to be problem-centered and contextual in nature with a heavy emphasis on hands-on learning. Self-monitoring and reflection by the adult learner are keys to this process. In an andragogical learning environment, the instructor serves as a guide to the student-centered learning experience by demonstrating its relevance to authentic practice, encouraging student autonomy and self-reflection, identifying "teachable" moments, assisting the learner in making connections to prior experiences, and fostering motivation.

Social cognitive theory, which highlights the importance of instructor as role model and coach, provides another framework for understanding characteristics and behaviors of effective instructors (Bandura, 1986). Instructors who are accomplished and
demonstrate positive outcomes as a result of their actions can have a profound influence on those students who are able to closely identify with them. Through observation and reproduction of the actions of their role model instructors, students begin to assume the desired behaviors. Effective instructors also serve as coach to their students. Coaching behaviors include the following: explaining the instructor's own thinking and reasoning processes; fostering student problem-solving abilities through questioning and reframing of issues; encouraging student reflection both during and after an activity; and providing constructive and timely feedback (Bandura, 1986; Schön, 1987).

Models of experiential learning, as proposed by Kolb and Joplin, build on theoretical frameworks and describe learning that occurs through a series of stages in an iterative cycle. Instructors assist students in the mastery of new concepts and skills by providing support and feedback throughout the learning cycle. Kolb (1984) postulates that learners move from exposure to a concrete experience through subsequent observation and reflection. The formation of new concepts and meanings are a result of the assimilation and/or accommodation of reflections with prior knowledge. Newly formed understandings are then tested by the learner in unique situations. Joplin (1995) underscores the importance of planning, implementing, and reflecting on the experiential activity as the learner progresses from concrete experiences to new understandings. The instructor aids in the orchestration of this process by identifying appropriate experiences, assisting the learner in reflection about the experience, helping the learner draw connections to prior learning, and providing opportunity for the learner to test new understandings in unique situations.
Preparation for and proper sequencing of the practice experiences is supported by other researchers. An early 20th century educator and philosopher, Dewey (1938) was an advocate for progressivism grounded in experience. Dewey held that for learning experiences to be effective, they must be delivered in a planned and sequential fashion. In conjunction with Dewey's philosophy, Mezirow's transformation theory (2000) explains how experiences, when delivered in a sequential fashion, can shape student learning.

Others have addressed the critical role of active reflection on an individual's experiences in the creation of new meaning (Boud, 1981; Schön, 1987). They speak to the total immersion of the student in the learning environment with reflection occurring prior to, during, and following the experience. The role of instructor is to serve as facilitator, guiding the student toward meaningful understanding of a given subject. The expertise and judgment of the instructor in this regard are indispensable.

Concepts such as student-centered learning, role modeling, coaching, reflection, and assimilation/accommodation are derived from instructional learning theory and models. These concepts, in conjunction with transformational leadership theory, can help form an understanding of how the characteristics, skills, and behaviors of accomplished practitioners can move students from novice learners to masters in the field.

**The Role of Experiential Education in the Profession of Pharmacy**

The importance of practical field experience is not lost on the pharmacy profession. The Accreditation Council for Pharmacy Education (ACPE), the organization responsible for the accreditation of pharmacy degree programs across the United States, dictates that a minimum of 30% of the pharmacy curriculum must be situated in authentic practice experiences (Accreditation Council for Pharmacy Education, 2006). Not only
does ACPE require substantive field experience as part of pharmacy education, but state boards of pharmacy (i.e., those agencies responsible for monitoring and regulating professional practice), also require pharmacy internships as a condition for pharmacist licensure. Previously, the issuance of a pharmacist license by a state board of pharmacy required that the candidate graduate from an accredited school of pharmacy, successfully pass a licensure examination, and fulfill a designated number of internship hours outside of the pharmacy curriculum. Today, these same state boards of pharmacy have attached greater importance to those experiential hours earned within the construct and structure of the pharmacy curriculum. The vast majority of state boards now recognize a substantial portion of the hours earned through school of pharmacy practice experiences as satisfying the requisite internship hours for pharmacist licensure (National Association of Boards of Pharmacy, 2011). In many states, internship hours earned outside of the academic arena are no longer mandated.

**The current structure and state of experiential learning.**

Established in 1932, ACPE is recognized by the U.S. Department of Education as the sole agency responsible for the accreditation of pharmacy programs in the United States. Members of its Board of Directors are appointed by the American Association of Colleges of Pharmacy (AACP), the American Pharmacists Association (APhA), the National Association of Boards of Pharmacy (NABP), and the American Council on Education (ACE). The mission of ACPE is “to assure and advance excellence in education for the profession of pharmacy” (ACPE, 2011). Not only is ACPE responsible for monitoring the quality of school of pharmacy programs, but it is also responsible for establishing the standards and guidelines that define the quality of programs leading to
the doctor of pharmacy degree, the sole degree recognized and awarded by the profession to its pharmacist candidates (Travlos & Zarembski, 2003).

On July 1, 2007, ACPE implemented revised accreditation standards and guidelines that place a greater emphasis on experiential education. The current doctor of pharmacy degree curriculum is structured as four academic years of professional coursework, or its equivalent, preceded by a minimum of two academic years of pre-professional college-level coursework. In contrast to earlier standards, which had placed experiential education at the end of the didactic instruction, experiential education must now be integrated throughout the entire four-year professional phase of the program. The types of practice experiences, as well as the amount of time to be spent in those experiences, are more explicitly defined than earlier standards, which had left the length and types of experiences up to the individual schools to determine. Current ACPE standards hold that five percent of the professional curriculum, interpreted as a minimum of 300 hours, must be dedicated to introductory pharmacy practice experiences (IPPE’s) while 25% of the curriculum, interpreted as a minimum of 1440 hours, is to be focused on the advanced pharmacy practice experiences (APPE’s).

Introductory practice experiences, situated primarily in community pharmacy and institutional practice settings, are interwoven throughout the first three professional years of the program in a manner that is both supported by and reinforces the didactic coursework. Advanced practice experiences, situated in a variety of practice settings, serve as a capstone to the curriculum and provide students with the opportunity to hone their professional skills in the final year of the program. Such settings must constitute a breadth of experiences and include community pharmacy practice, hospital/health-system
pharmacy practice, ambulatory care, and inpatient acute care. Additional elective opportunities in settings including, but not limited to, long-term care, hospice, managed care, drug information, home health care, management, and research round out the practice experiences and are selected based on the individual student’s interests (ACPE, 2006).

**The professional competencies.**

Whereas student interns in the past were simply exposed to whatever activities might be encountered in a given pharmacy environment on any given day, students today are expected to be exposed to, participate in, and demonstrate a developmentally appropriate level of professional competency or proficiency in defined areas of practice. The revised ACPE standards, which include the delineation of professional competencies and outcome expectations for pharmacy school graduates, were developed as a result of information gleaned through past ACPE accreditation audits as well as input from external stakeholders. Consequently, experiential education today is expected to afford students the opportunity to apply their acquired knowledge in authentic practice settings in a manner that allows for the development and subsequent demonstration of mastery of the defined professional competencies.

Reports issued by the Institute of Medicine (IOM) and the American Association of Colleges of Pharmacy (AACP) were particularly instrumental in helping to define and shape the ACPE competency statements. Housed within the National Academy of Sciences, the Institute of Medicine is an organization comprised of volunteer committees of expert scientists. Its purpose is to conduct evidence-based analyses of public health and medical issues so as to provide guidance and advice to policymakers and members of
the health care professions (see http://www.iom.edu). In an endeavor to improve patient outcomes through enhanced medication safety, the IOM released its frequently cited report, To Err is Human (Kohn, Corrigan, & Donaldson, 2000). In this publication, the IOM underscored the importance of the integration of patient-centered care, interdisciplinary teamwork, evidence-based medicine, quality improvement measures, and information technology competencies as part of the educational framework for health care professionals.

Consideration was also given to documents issued by AACP in the development of the ACPE competency statements. An independent entity, the American Association of Colleges of Pharmacy (AACP) is a national organization representing the interests of its member schools and colleges of pharmacy from across the United States (see http://www.aacp.org). In 2004, its Center for the Advancement of Pharmaceutical Education (CAPE) issued a revised Educational Outcomes document defining those learning outcomes, along with their attendant set of sub-competency statements, that all pharmacy students ought to have mastered by the end of a doctor of pharmacy program. These outcomes are organized under three major domains: pharmaceutical care, systems management, and public health. Discipline-specific supplemental educational outcome statements have since been added as an addendum to this document by a task force charged for this purpose (AACP, 2004).

In addition to the IOM and AACP reports, ACPE also solicited input from a variety of other stakeholders including schools of pharmacy, state boards of pharmacy, and professional pharmacy organizations in the development of its revised standards and guidelines. Significant consideration was given to the Joint Commission of Pharmacy
Practitioners (JCPP), an affiliation of seven professional pharmacist associations and its four liaison members (i.e., ACPE, AACP, the National Association of Boards of Pharmacy, and the National Council of State Pharmacy Association Executives). JCPP was responsible for drafting the *Future Vision of Pharmacy Practice 2015* (as cited in ACPE, 2006). This consensus document, which describes the proposed state of future pharmacy practice, embraces the provision of patient-centered care and medication therapy management, the utilization of evidence-based medicine, the application of quality improvement measures, and systems management. The targeted endpoint of ACPE-accredited pharmacy education is to produce a practitioner capable of delivering patient-centered pharmacy care.

Finally, legislation such as the federal Medicare Modernization Act of 2003, as well as the enactment of state laws and regulations allowing for the establishment of collaborative care practice agreements between pharmacists and physicians, has expanded the role for pharmacists as providers of medication therapy management and other cognitive services (Medicare Modernization Act, 2004; NABP, 2011). Legislative activities, the changing health care environment, and the contributions of professional pharmacy organizations and academia have all been instrumental in shaping the 2007 ACPE accreditation standards and guidelines. Pharmacy students today are expected to demonstrate the ability "to provide patient-centered . . . and population-based care . . . manage human, physical, medical, informational and technological resources . . . manage medication use systems . . . and promote the availability of effective health and disease prevention services and health policy . . . " (ACPE, 2006, p. 18-19).
Defining the role of the preceptor.

As described above, substantive consensus exists within the profession as to the competencies that all pharmacy students ought to have mastered upon graduation. To that end, the ACPE competency statements are closely aligned with the vision of other pharmacy stakeholders and are clearly and tightly defined. Accordingly, schools of pharmacy are expected to fashion their curricula to target ACPE student competency and outcome expectations. Standard 12 states that "These competencies must be used to guide the development of stated student learning outcome expectations for the curriculum” (ACPE, 2006, p. 18). ACPE standards further mandate the provision of pharmacy practice experiences that address and support student mastery of such competencies. Standard 14 states the following:

... the college or school must provide a continuum of required and elective pharmacy practice experiences throughout the curriculum, from introductory to advanced, of adequate scope, intensity, and duration to support the achievement of the professional competencies presented in Standard 12. The pharmacy practice experiences must integrate, apply, reinforce, and advance the knowledge, skills, attitudes and values developed through the other components of the curriculum. (ACPE, 2006, p. 21)

Not only do the ACPE standards expressly define competencies that students are expected to achieve, but they also provide guidance on the specific types of activities in which students should participate during the course of the various pharmacy practice experiences in order to achieve these competencies. Appendix C of the ACPE Standards lists 20 activities in which students should be engaged during the course of the
introductory practice experiences and over 35 activities in which students should participate during the course of the advanced practice experiences. Experiential education is no longer random or unsystematic; it is now tightly defined with clearly delineated outcomes and expectations.

To that end, the critical role that the school of pharmacy field instructor, otherwise referred to as the pharmacist preceptor, plays in the development of the student pharmacist cannot be overlooked. Whereas delivery of didactic instruction mostly rests with traditional school of pharmacy faculty, the responsibility for the experiential education component of the curriculum falls on the shoulders of field instructors or pharmacy preceptors. ACPE defines preceptors as “full-time, part-time, or volunteer faculty or practitioners (usually pharmacists) who serve as practitioner-educators and oversee students in pharmacy practice experiences within the curriculum” (ACPE, 2006, p. 3).

With the increasing numbers of students enrolled in schools of pharmacy, as well as the call for additional experiential time in the field, it is not unusual for a school of pharmacy to maintain affiliations or relationships with hundreds of practitioners who serve as pharmacist preceptors. Harralson (2003) reported that 60% of pharmacy practice experiences nationally are taught by adjunct practitioners in the field. Littlefield et al. (2004) noted that schools of pharmacy utilized an average of 250 external preceptors in approximately 150 affiliated sites for the delivery of the advanced pharmacy practice experiences alone. Following the implementation of the 2007 ACPE Accreditation Standards, the average number of affiliated sites per school had more than doubled. A survey conducted by the 2008-2009 AACP Council of Deans Costs of Experiential
Education Task Force revealed that the average number of sites per school had increased to 289 for the advanced practice experiences with the addition of another 167 sites for the introductory practice experiences (Allen et al., 2009). With less than one-third of all pharmacy practice experiences supervised by full-time school of pharmacy faculty (Harraelson, 2003), it is evident that the responsibility for the delivery of the bulk of experiential education lies with external preceptors.

Current ACPE accreditation standards and guidelines call for the adequate preparation and ongoing training and development of these experiential field instructors:

Preceptors should hold full, shared, adjunct, or other defined positions in the college or school and should be well versed in the outcomes expected of students and the pedagogical methods that best enhance learning. In this regard, the college or school must ensure that preceptors receive orientation, especially for first-time preceptors prior to assuming their responsibilities, ongoing training, and development. (ACPE, 2006, p. 21)

Yet, ACPE does not define the content or extent of orientation, the types of pedagogical methods to be employed, or the ongoing training and development for pharmacist preceptors. Although the ACPE standards are explicit in defining areas of student competencies, they provide little direction in terms of how instructors, including pharmacist field instructors or preceptors, ought to help students in the mastery of such competencies. Nor does ACPE define the qualities, skills, and characteristics that preceptors ought to possess and the behaviors that preceptors ought to exhibit that assist students in the achievement of these learning goals and objectives. This level of detail is left up to the schools of pharmacy to determine. With more than 120 ACPE-accredited
pharmacy programs in existence, the type of preceptor development offered by individual schools can vary greatly in content, quality, and delivery (AACP, 2012).

Prior to the release of the updated ACPE Standards and Guidelines, AACP recognized the emerging emphasis on experiential learning. To that end, it charged its Professional Affairs Committee in 2003 with the examination of quality assurance and practice advancement in experiential education. The committee concluded that quality in experiential education was a consequence of preceptor teaching characteristics, the design of the learning experience, and the practice site (Littlefield et al., 2004). Its report called for the training and professional development of preceptors as both educators and practitioners.

Yet, the committee acknowledged that little is understood regarding preceptor teaching effectiveness. In its published report to AACP, the committee stated the following, “Although many factors for a successful APE (advanced practice experience) are important, preceptor teaching effectiveness is arguably the least understood. Despite the fact that experiential directors cite ‘finding, developing, and maintaining both sites and preceptors’ as their most pressing concern, the pharmacy literature in this area is limited” (Campagna as cited in Littlefield et al., 2004, p. 6). The report goes on to say that “... the long-term viability of a preceptor requires an acceptable level of teaching effectiveness. This effectiveness may best be thought of as a set of preceptor characteristics that are most conducive to effective learning” (Littlefield et al., 2004, p. 7).

Although attempts have been made to define preceptor characteristics, a scientific approach to that end appears to be lacking in the pharmacy literature. Delineation of
preceptor characteristics that promote student learning borrows heavily from studies published in the medical and nursing literature. Indeed, Littlefield et al. cite three studies from the medical literature in support of a list of preceptor characteristics that the authors purport are essential in promoting teaching effectiveness in the pharmacy environment.

Moreover, studies in both the nursing and medical literature suggest that those characteristics which field instructors identify as most valuable to the learning process differ to some extent from what students find valuable. In a comparison between those characteristics deemed important by third-year medical residents and primary care preceptors, Riesenberg, Biddle, and Erney (2001) reported that students ranked preceptor skill level as well as the willingness of the preceptor to identify opportunities for student hands-on learning in the top fifth of a list of desirable preceptor characteristics. Preceptors, on the other hand, placed more importance on preceptor role-modeling behaviors than did their students. Byrd, Hood, and Youtsey (1997) found that the rank-order assigned by nursing students and preceptors to a list of factors deemed important to a successful field experience was essentially opposite of one another.

Ullian, Bland, and Simpson (1994) made further note that most studies designed to examine preceptor teaching characteristics were conducted through the utilization of lists generated by researchers and administrators with little consideration given to the discovery of novel attributes as offered by student learners. Riesenberg et al. (2001) also suggested that using characteristics identified by students as conducive to learning should be given due consideration in designing future research rather than relying exclusively on factors identified by experts in the field. Indeed, Knowles (1970) asserted that it is
important for students to have the opportunity to challenge expert assumptions in defining their own learning needs.

Other studies in the medical literature suggest that students place varying importance on those preceptor characteristics and behaviors identified as conducive to learning relative to the students' position in the academic training program. In a content analysis of comments derived from the clinical teaching evaluations of first- and third-year medical residents, Ullian et al. (1994) found that first-year residents placed a higher value on preceptor role modeling, didactic teaching, instructor availability, and feedback. Third-year residents, in contrast, placed a greater emphasis on the types of content and topical areas taught as well as opportunities provided for self-directed learning. Schultz, et al. (2004) also reported that third-year medical students placed more importance on preceptor interaction than medical residents who are further along in the training process. As medical students progressed in the experiential sequence, they tended to place a higher value on the role of preceptor as facilitator rather than teacher. More experienced residents valued the ability of the preceptor to identify an adequate number and variety of patients. Experienced residents found structured clinical encounters and direct teaching of cases by the preceptor to be less valuable than students who are earlier in their development.

**The Academic Practice Partnership Initiative.**

Recognizing the need to enhance understanding of the dynamics of experiential education in the profession of pharmacy, AACP launched the Academic Practice Partnership Initiative (APPI) in 2005. This endeavor was comprised of three significant project areas: the call for a national summit to address the challenges associated with
experiential education, the creation of an on-line resource library for experiential education practitioners and preceptors, and the development of a template for the evaluation of exemplary preceptors and experiential practice sites (AACP, 2005). Two of the five dominant themes that emerged from the national summit addressed the need for the creation and delivery of preceptor development and training tools as well as the need for rigorous accountability and quality improvements that include the development of metrics for experiential education. The final report and proceedings from the summit included recommendations for the creation of a basic training program for all new preceptors as well as development of universal preceptor training. The report also called for a system to recognize best practice preceptors and to utilize quality assurance and assessment tools across all aspects of pharmacy education including experiential education (AACP-APPI, 2005).

An outgrowth of the APPI initiative was the development of the Advanced Practice Experience Site Profiling System (APESPS). Designed to identify best experiential models of practice as recommended in the final APPI summit report, the APESPS can be utilized by experiential directors, preceptors, and students to assess both preceptor and site-specific criteria of excellence. The intent of the APESPS, however, is to identify exemplary practice settings and preceptors for purposes of recognition and not specifically for the intent of discerning desirable preceptor characteristics, skills, and behaviors. The developers of the profiling tool note the Institute of Medicine report, the CAPE Educational Outcomes, and the 2005 draft revisions to the ACPE Accreditation Standards and Guidelines as the basis for defining preceptor criteria (Smith, Byrd, Olin, & Staton, 2005).
As previously described, however, these guiding documents as cited by Smith et al. focused primarily on student learning outcomes and terminal competencies. They provide little direction in identifying preceptor characteristics and behaviors that promote student learning. Two additional references noted by the authors include publications that are based in health-system pharmacy settings. Such settings, however, represent just one segment of experiential education and cannot be generalized to all pharmacy practice experience settings (American Society of Health-System Pharmacists, 1988; Erstad, 1993).

Perhaps the documents that are the most explicit in defining desirable preceptor characteristics and behaviors, as cited by the authors of the APESPS, are publications by Boh, Pitterle, Schneider, and Collins (1991) and Campagna et al. (1994). Campagna lists the types of qualifications that preceptors ought to possess in its published standards and guidelines for pharmacy practice experiences. In doing so, it utilizes the 1993 proposed revision of the ACPE standards and guidelines as a template for defining minimum standards for preceptors and sites. However, very limited discussion of those preceptor skills and behaviors that assist students in learning is included.

The Campagna document further draws from an internship experience manual printed by the National Association of Boards of Pharmacy (1989) in determining its list of desirable preceptor characteristics as well as from Boh et al. The Boh study was a nationally administered survey of experiential programs that sought to determine the approaches that schools used to select, train, and evaluate preceptors. The questionnaire, which was drafted by the authors, was piloted at three schools then forwarded to either experiential education directors or deans at all schools of pharmacy for completion. Study
participants were asked to indicate whether a listed preceptor characteristic was required, optional, or not used by their particular school. Of the twelve listed preceptor characteristics, only five are associated with what could be considered a skill or behavior that is conducive to student learning. Not only are the Boh study and the NABP internship manual somewhat dated, but they were also published well before updated ACPE requirements for expanded experiential education in both introductory and advanced practice experience settings. Moreover, the NABP manual is not part of the published scientific literature and is no longer in print.

Additionally, it does not appear that input from students was actively solicited or critically analyzed in any of the aforementioned studies or manuals. Lists of desirable preceptor characteristics, skills, and behaviors were typically generated and reviewed by the authors and/or experiential education administrators. Accordingly, questions still remain as to whether students and experiential experts place similar value on those preceptor characteristics, skills, and behaviors that help students acquire professional behaviors and master the competencies. Some attempts at establishing the validity of the APESPS instrument have been made by piloting the tool at eleven schools of pharmacy (AACP, 2006). However, widespread testing guided by scientific sampling and methodology has not occurred. Nor have any findings or results been published in the peer-reviewed literature.

A search of the literature as discussed above indicates that efforts to identify desirable preceptor characteristics, skills, and behaviors are dated. Adoption of the 2004 CAPE Educational Outcomes along with implementation of the 2007 ACPE Accreditation Standards and Guidelines, with its substantive changes to the structure of
experiential education, would call for a re-examination of such factors. In particular, the requirement for incorporation of the introductory practice experiences throughout the first three years of the doctor of pharmacy curriculum presents a new practice experience modality worthy of investigation.

**Rationale for the Study**

Currently, many schools of pharmacy use self-developed instruments to assess preceptor effectiveness by student rotation participants and/or by experiential education administrators. To-date, a nationally recognized and validated instrument does not exist. Additionally, a wealth of preceptor training programs have been developed with the intent of enhancing the teaching effectiveness of preceptors (APhA-NACDS, 2007; Kleffner, 2007; McAllister & Boesen, 2005; O'Sullivan, Bray, Morrison, Woodard, & Fuller, 2001; FIPSE Project Group, 1998). Most of these tools and programs, however, are modeled after elements, tools, and programs derived from other health care professions. A compelling need exists, therefore, to conduct valid and reliable scientific research that can identify those qualities, skills, and characteristics that pharmacy preceptors possess and behaviors that pharmacy preceptors exhibit that assist students in mastering the professional competencies.

A report of the AACP Council of Faculties Faculty Affairs Committee identified the need for standardization of preceptor evaluation tools as well as collaborative delivery of preceptor development programs as emerging issues (Scott et al., 2009). More recently, the strategic plan adopted by the Experiential Education Section of AACP at its 2010 Annual Meeting calls for the development and validation of a tool that can be used by students to evaluate sites and/or preceptors:
11.0 Goal: To develop, assess and validate a nationally defined core of preceptor criteria (based on pharmacy practice experience competencies) that would be used by each student to evaluate each site and/or preceptor.

Objective 11.1: Create a task force to examine existing literature to develop core criteria for individual school of pharmacy/college of pharmacy use in evaluating sites and preceptors. (Timeline—4+ years) (AACP Experiential Education Section, 2010)

A review of the extant literature indicates that there are no published studies that demonstrate whether pharmacy students engaged in the introductory practice experiences differ from pharmacy students engaged in the advanced practice experiences in the identification of and value placed upon preceptor characteristics, skills, and behaviors conducive to learning. Nor is there a body of information that discerns whether students and experiential education experts value the same preceptor characteristics and behaviors in the learning process. There is a gap, therefore, in understanding important preceptor characteristics, skills, and behaviors that facilitate the transformation of student pharmacists from novice learners to accomplished practitioners. Information gleaned from such research can be used to shape the construction of valid and reliable metrics for the assessment of preceptor effectiveness in both the introductory and advanced pharmacy practice experiences. Identification of important preceptor characteristics can also be used in the selection of suitable candidates to serve as experiential educators. Finally, the elucidation of desirable preceptor skills and behaviors can be instrumental in the design and delivery of effective preceptor development programs that are appropriately targeted to the students' position in the curricular sequence.
The research questions.

The intent of this study is to address the following:

What qualities, skills, and characteristics do preceptors possess and what behaviors do preceptors exhibit that students and experiential education experts perceive as being valuable in helping students to acquire professional behaviors and attain the competencies expected of a pharmacist?

Are there differences in these perceptions between students and experiential education experts?

Are there differences in these perceptions between students participating in the introductory and advanced pharmacy practice experiences?

Comparable to the methodology utilized by Ullian et al. (1994), a foundational approach in discerning student perceptions regarding effective preceptor characteristics and behaviors is to conduct a qualitative content analysis of student comments pertaining to their practice experiences. Comments can be derived from evaluative instruments that students complete upon conclusion of each practice experience. The information derived from students completing the introductory practice experiences can then be compared to that obtained from students completing the advanced practice experiences to determine if there are differences in student perceptions of effective preceptor characteristics and behaviors.

A qualitative content analysis can also be conducted on the individual elements contained within a sample of self-developed school of pharmacy preceptor evaluation instruments. These instruments were created and are administered by experiential education faculty and administrators who are, for the most part, licensed pharmacist
practitioners and represent the expert voice in this study. The self-developed evaluation instruments are utilized by each school's respective students in the evaluation of rotation experiences and preceptor effectiveness. The elements incorporated in the instruments represent those preceptor characteristics and behaviors deemed by the experts to be important in student learning.

Results of the content analyses of the student comments and the school of pharmacy evaluation instruments can be compared to one other as well as to the APPI pharmacy instrument and the health professional literature to identify areas of convergence and divergence. Qualitative analysis as achieved through content analysis allows for depth of discovery. This discovery can provide the data necessary for the development of future quantitative studies that can lend generalizability and external validity to the results. The resultant information gathered from these additional studies can be used to drive the development of evaluative tools, formulate criteria for preceptor selection, and foster the creation of effective preceptor development programs.

Summary

The instruction of future pharmacists is based on a history steeped in experiential education. Originally delivered as an apprenticeship model, pharmacy education today is a blend of didactic classroom instruction and authentic practice in the field. The importance of such experience is not lost on the profession. The organization responsible for the accreditation of pharmacy degree programs mandates that nearly one-third of the pharmacy curriculum be dedicated to field experiences. Moreover, state boards of pharmacy, the agencies responsible for pharmacist licensure, require some component of internship training and/or experiential education as part of the licensure process.
Pharmacist preceptors, or field instructors, play an important role in this process. As preceptors, these practitioners are responsible for ensuring that student pharmacists demonstrate mastery of the defined competencies. Moreover, it is the role of the preceptor to assist students not only in the acquisition and application of content knowledge, but also in the development of professional skills, attitudes, and behaviors.

To that end, the profession has made an attempt to define those qualities, skills, and characteristics that preceptors ought to possess and behaviors that preceptors ought to exhibit that assist students in the learning process. Yet, it is unclear whether students and experiential education experts concur as to which characteristics are most valuable. Nor is it clear whether students participating in the introductory practice experiences value the same preceptor attributes as students enrolled in the advanced practice experiences.

A better understanding of these important characteristics and behaviors may be useful in preceptor selection, the design and delivery of preceptor development programs, and the design and delivery of practice experiences that are most conducive to student learning. Elucidation of this information would also be the first step toward the development of a valid and reliable instrument to measure preceptor effectiveness. Such an instrument would allow for assessment of individual preceptors, evaluation of experiential programs as a whole, identification of future preceptor development needs, and program benchmarking. Contributions from leadership theory, instructional learning theory, and experiential learning models can inform our understanding and discernment of these important preceptor characteristics, skills, and behaviors.
Chapter II

Literature Review

What qualities and characteristics do preceptors possess and what behaviors do preceptors exhibit that assist students in the attainment of the competencies expected of a pharmacist and the development of professional behaviors? Do these characteristics and behaviors vary, and are they valued differently depending on the academic level of the student and by the perspective of the student or the expert? Leadership theory, instructional learning theory, models for experiential learning, and the extant literature can provide a background to enhance our interpretation and understanding of such factors.

Theory

Transformational leadership theory.

The concept of transforming leadership was introduced as a construct to describe individuals who are successful in facilitating positive and enduring change (Burns, 1978). Referred to as transformational leadership in later confirmatory work by Bass and Riggio (2006), the theory of transforming leadership attempts to identify the qualities, characteristics, and behaviors of leaders that fashion significant and enduring change.

A parallel can be drawn between what constitutes an effective leader and an effective teacher. Burns contends that the relationship between teacher and student is indistinct from the relationship between leader and follower. "Persons are taught by shared experiences and interacting motivations. Ultimately, education and leadership shade into each other to become almost inseparable" (Burns, 1978, p. 448).
According to transforming leadership theory, transformational leaders are, first and foremost, ethical in nature with a firmly entrenched value system that is foundational to all other goals and objectives. Leadership is not a neutral term, but rather is inherently good. "I believe leadership is not only a descriptive term, but a prescriptive one, embracing a moral, even a passionate dimension . . . 'Bad' leadership implies no leadership. I contend there is nothing neutral about leadership; it is valued as a moral necessity" (Burns, 2003, p. 2).

Transformational change is further described as being profound and enduring in nature, altering the very nature and essence of a thing. Transforming leaders effect much more than the negotiation of transactions or the brokering of deals. Transforming leaders effect root changes that are significant, enduring, and grounded in values. In other words, transforming leadership alters the status quo.

. . . to transform something cuts much more profoundly. It is to cause a metamorphosis in form or structure, a change in the very condition or nature of a thing, a change into another substance, a radical change in outward form or inner character . . . It is change of this breadth and depth that is fostered by transforming leadership. (Burns, 2003, p. 24)

Such a change, according to Burns, is analogous to the transformation that occurs when boiling water converts to steam. Unlike the incremental changes that occur in the temperature of water as it heats, transformational change results in the alteration of the nature of the substance itself. Transformational change is much more than the acquisition of new knowledge. It is a change in being, a change in persona.
How does a leader move followers through this transformational change? The first and most crucial step is for the leader to be able to identify with and articulate the wants and needs of the group in a sense of actualization. Burns' contention is grounded in the work of Maslow (1970). According to Maslow's hierarchy of needs, individuals move through a series of stages culminating in self-actualization or realization of their highest potential. To achieve this pinnacle, the most fundamental physiological needs (e.g., food and water) must first be met. Once satisfied, individuals progress through the need for safety and security, belongingness, and self-esteem. It is only then that individuals can attain self-actualization or "developing to the full stature of which they are capable" (Maslow, 1970, p. 150).

Burns expanded this model by suggesting that effective leadership has the ability to coalesce individual wants and needs into a collective vision of actualization or collective efficacy. "Leadership self-actualization is pursued through a process of mutual actualization with others . . . by commitment 'to a value or a purpose that stands higher than the person'" (Burns, 2003, p. 143). Transforming leaders inspire followers to action by aligning the goals and objectives of the leader, individuals, group, and organization into a common and shared vision. Transforming leaders and their followers co-jointly search for truth (Bass & Riggio, 2006; Burns, 1978). Accordingly, education consists of much more than the conveyance of facts and skills by an instructor and the acquisition of the same by a learner. Education shapes the mutual future of the group by fully sharing the motivations and values of teacher and learner as they jointly search for knowledge and understanding through interaction with their environment.
Transforming leaders are creative. Such leaders are proactive rather than reactive (Bass, 1985; Burns, 2003). Cognitive dissonance and the inability to reconcile emerging needs and new paradigms with previous understandings can spur creative solutions. Transforming leaders are able to work with followers to create a collective vision and a means to attain that vision. Such leaders also are able to empower their followers by instilling the belief that the shared vision and goals are attainable. Transforming leaders provide the means to effectuate change.

Finally, transforming leaders become part of the complex interplay between leader and follower. Followers are true participants in defining the collective vision, identifying the means to achieve that vision, and putting it into action. "Planning leadership is inevitably collective, 'combinations' whose leaders move and empower followers, who in turn empower and impel their leaders - become leaders themselves - in the complex, far-reaching dynamic of transforming action" (Burns, 2003, p. 71).

Transformation occurs through the interaction of creative people, the cross-fertilization of ideas, and the collegiality and collaboration that is spurred by the desire to reconcile cognitive dissonance and meet needs. Through this interplay, followers develop their own leadership potential. Instructors transform students while, at the same time, students transform instructors. The relationship is wholly and entirely symbiotic.

Bass further expanded the conceptual work of Burns by attempting to tease out and define specific factors inherent to transformational leadership. Factor analytic studies, which led to the development of the Multifactor Leadership Questionnaire or MLQ, suggest the existence of four factors that are characteristic of transformational leaders and confirm the theoretical framework espoused by Burns (Bass, 1985; Bass &
Avolio, 2000). These include idealized influence, inspirational motivation (which were originally combined as charismatic leadership), intellectual stimulation, and individualized consideration.

Idealized influence describes a factor of transformational leadership that alludes to leader as role model. Such leaders wish to be emulated by followers by inspiring their admiration and trust. Transformational leaders demonstrate ethical behavior and integrity, are able to define a collective vision, exhibit determination and purpose, and are willing to take risks. "... it is the transformational leader who raises consciousness about higher considerations through articulation and role modeling" (Bass, 1981, p. 20). Actions are not arbitrary in nature but rather congruent with the values and vision of the leader. The relationship between leader and follower is highly interactive with the followers identifying and aligning themselves with the goals of the leader.

The second factor of transformational leadership is inspirational motivation. Such leaders inspire followers towards the achievement of a commonly defined vision and goals that are clearly defined and articulated. Followers are motivated to transcend their own self-interests to attain the collective vision, which they helped to shape and define. Transformational leaders are further able to spark enthusiasm and excitement. Most importantly, they provide meaning to the work of their followers. Followers work towards the achievement of the shared vision and mission because they have the desire to do so, not because of some sense of duty or obligation. Transformational leaders motivate their followers by challenging them to attain the shared vision and goals.

Intellectual stimulation is the third factor identified by Bass. Transformational leaders spark creativity. They challenge the previously held assumptions of their
followers by encouraging them to examine problems and situations in new ways. By reframing situations, followers are compelled to identify novel solutions. New understandings and meanings emerge as the accommodation of recently acquired information results in a shift in previously held beliefs. The leader helps to shape the identification of this new knowledge in a constructive manner that is devoid of public criticism and humiliation. Leader and followers jointly share in successes.

The fourth and final factor of transformational leadership is individualized consideration. Transformational leaders acknowledge the value and human dignity of each individual. They recognize the differences in the needs, wants, strengths, and weaknesses of each of their followers through active listening and engagement. Transformational leaders have the ability to tailor their approach in assisting each of their followers in realizing their full potential. Such leaders do so by challenging their followers in the attainment of successive stages of development. Transformational leaders delegate tasks not as a way of distributing work, but rather as a means of developing the character and potential of their followers. In terms of the fulfillment of their developmental needs, followers view transformational leaders as coach and mentor.

The work of Burns and Bass suggest that transforming (or transformational) leaders/instructors possess a number of important characteristics and exhibit specific behaviors. Transformational leaders/instructors:

- are ethical in nature
- serve as optimal role models
- inspire the admiration and trust of their students
- articulate the needs of their students and craft a shared vision
• empower their students towards collective actualization and efficacy
• motivate students through enthusiasm
• provide meaning to their collective work
• are creative in their ability to assist students in the identification of novel solutions
• help students accommodate new information in the shaping of novel understandings and beliefs
• recognize the value and dignity of their students
• assist students in achieving their full potential

The play between transformational leader/instructor and follower/student is highly interactive. Leader and follower are fully engaged with one another defining a collective vision, goals, and means to achieve those goals. This interplay results in the inculcation of leadership skills and the eventual transition of follower to leader, student to practitioner. Both leader and follower transcend to levels greater than that attained prior to their interaction (Bass, 1981). Transformational leadership theory suggests that effective instructors or preceptors, serving as transforming educational leaders, possess the qualities and characteristics and exhibit the behaviors as described above.

Adult education theory.

Adult education theory can also provide a lens through which the interaction between student and instructor can be viewed. Andragogy, or the study of adult learning, purports that mature, experienced individuals learn differently than younger, less experienced students (Knowles 1970; 1978). Early conceptualizations of andragogy differentiated approaches to teaching based on age. In later work, Knowles moved away
from a chronological perspective to one that examined teaching and learning behaviors based on the differences between novice and more experienced learners (Merriam, Caffarella, & Baumgartner, 2007).

**Pedagogy.**

Traditional learning theory, or pedagogy, is predicated on principles that are applicable to the younger, more inexperienced learner. Pedagogical theory operates on the premise that inexperienced learners do not have an adequate sense of what knowledge and skills they need to possess. Moreover, they have fewer life experiences from which they can draw and link to new understandings.

Consequently, novice learners are heavily dependent on the instructor to identify appropriate content matter and provide significant guidance. Pedagogy, therefore, tends to be broad-based, subject-oriented, and teacher-directed with the application of acquired knowledge and skills realized only in the future. Learners with few prior life experiences tend to be more passive and learn through imitation. With minimal life responsibilities and more rudimentary skill development, less experienced learners lack the confidence and ability to engage in substantive decision-making. They tend to be more focused on self-interests rather than the larger learning community. With less knowledge and awareness of the larger universe, the interests of the less experienced learner tend to be more narrow and subjective in nature (Knowles, 1970).

Two distinct patterns characterize a pedagogical approach to the instructor-student relationship (Houle, 1972). In the first pattern, the instructor demonstrates a skill or behavior that the student replicates. Over time, more complex activities are introduced and emulated. As the student gains expertise and confidence, instructor supervision
diminishes. In the second pattern, the same schema of instructor demonstration followed by student replication is utilized, but in a much more formal and lockstep fashion. Clear objectives are established. Student mastery of competence is assessed prior to progression to the next level.

Characteristics of a pedagogical teaching model can be summarized as follows:

Inexperienced learners

- are dependent upon the instructor for instruction and guidance
- possess little experience that can be used as a resource for learning
- exhibit readiness to learn that is driven by the instructor
- are oriented to learning by following a prescribed sequence of subject matter (Knowles, 1984).

In a pedagogical model, instructors make decisions about what should be learned, how and when that is best achieved, and whether or not learning has occurred through instructor-driven assessments. Transmission of knowledge is best delivered through lectures, readings, and instructor-provided presentations. Information is delivered in a prescribed sequence that is pre-determined by instructors or "experts" in the field. The instructor determines when students are ready to take the next steps. Motivation to learn is typically driven by external forces such as competition for grades or consequences for failure. A pedagogical approach to education can be summarized as follows:

The traditional scheme is, in essence, one of imposition from above and from outside. It imposes adult standards, subject-matter, and methods upon those who are only growing slowly toward maturity. The gap is so great that the required subject-matter, the methods of learning and of behaving are foreign to the existing
capacities of the young. They are beyond the reach of the experience the young learners already possess. Consequently, they must be imposed. (Dewey, 1938, pp. 18-19)

Andragogy.

Mature learners, on the other hand, are more independent and autonomous in nature as a consequence of their life experiences. Whereas less mature learners view experiences as events that happen to them, more seasoned learners are defined by their accumulated experiences. "An adult is what he has done" (Knowles, 1970, p. 44). Accustomed to making their own decisions, Knowles contends that experienced learners desire to take responsibility for their own learning, preferring an approach that fosters mutual inquiry among fellow learners and instructor. "Education is a cooperative rather than an operative art" (Houle, 1972, p. 34).

Andragogy, in this regard, is similar to the transformational leadership theory of Burns and Bass, which identifies the identification and alignment of common goals as fundamental to profound change and growth. Both theories borrow heavily from Maslow's hierarchy of needs in underscoring the human yearning for self-actualization as the ultimate need (Maslow, 1970). Both approaches contend that the needs and goals of individuals must be aligned with the needs and goals of the teacher, institution, and society at large. However, there is a difference. Whereas transformational leadership theory views this as primarily a collective effort (i.e., mutual actualization), andragogy focuses on the self-actualization of the individual as a consequence of mutual inquiry.

Andragogy further operates on the premise that knowledge is not bounded or discrete. Rather, collective understandings and working knowledge continue to grow
exponentially. The knowledge and skills acquired by today's learners will not serve them throughout a lifetime. Therefore, it is far more important to inculcate individuals with the attitude that learning is a life-long process. Students must know how to ask the right questions and find answers for themselves.

Facts learned in youth have become insufficient and in many instances actually untrue; and skills learned in youth have become outmoded by new technologies . . . One mission of the adult educator, then, can be stated positively as helping individuals to develop the attitude that learning is a lifelong process and to acquire the skills of self-directed learning. In this sense, one of the tests of everything the adult educator does . . . is the extent to which the participants leave a given experience with heightened curiosity and with increased ability to carry on their own learning. (Knowles, 1970, p.23)

In this regard, the instructor serves a role as facilitator, consultant, resource, and motivator.

The work of Rogers provides an important backdrop for the evolution of adult learning theory. A psychologist and proponent of humanism and student-centered learning, Rogers maintained that individuals cannot be taught by an instructor. Rather, learning is the responsibility of the individual. The role of the instructor is to facilitate that learning. Significant learning, grounded in experience, is best achieved when the student is personally involved; the sense of discovery is internally-driven, even though the stage for learning may be externally set; the results of the learning make a difference for the individual; evaluation of the mastery of learning is conducted by the student; and the learning is meaningful (Rogers, 1969).
Two distinct patterns characterize an andragogical approach to learning (Houle, 1972). Inherent to the coaching approach, the instructor serves to assist learners in working their way through unfamiliar situations designed by the instructor. Students, with guidance, learn by virtue of the struggle. In a second pattern, characterized by a nondirective approach, the learner takes on the role of active inquirer by seeking guidance and help from the instructor as needed.

Four primary assumptions, which differentiate mature learners from novice learners, can be made relative to andragogy. In this regard, experienced learners

- move towards independence (self-directed learning)
- possess a reservoir of experience from which they can draw
- exhibit a readiness to learn that is driven by the roles they need to assume
- are oriented to the immediacy of knowledge and skills application (Knowles, 1970, 1978).

*Self-directed learning.*

Self-directed learning can be further sub-characterized by five factors: the learning climate, self-diagnosis of current level of mastery, planning for the learning experience, participating in the learning experience, and self-evaluation of learning mastery.

A friendly and informal learning climate that allows for freedom of expression and is conducive to interaction supports an andragogical approach. Consistent with the view that an individual's fundamental need for safety and security is a prerequisite to learning (Maslow, 1970), Rogers hypothesized that deep learning could only occur if the student's boundaries of self are relaxed and free of threat. "... when threat to the self is
minimized, the individual makes use of opportunities to learn in order to enhance himself” (Rogers, 1969, p. 162). New experiences that are perceived as being inconsistent with a student's previous understandings can only be assimilated if the student feels secure. Effective facilitators are genuine, value their students, are accepting and trusting, and demonstrate empathy.

Once threats are reduced, defensiveness, anxiety, and hostility, which create barriers to learning, disappear. The absence of authoritarianism, superiority, and a climate of artificial dignity on the part of the instructor can create an environment that supports learning (Maslow, 1970). The instructor can facilitate a safe and secure learning environment by being respectful of students, engaging in active listening, fostering cooperation instead of competition, and encouraging a spirit of mutual inquiry. A comfortable physical environment lends itself to a positive disposition towards learning as does an orientation to the setting (Knowles, 1970).

The self-diagnosis of learning needs is a second factor that comprises self-directed learning. Learning is essentially an internal process. Students must feel the need to learn. Individuals only achieve significant learning when the content, skills, and/or behaviors are perceived as being necessary for the maintenance or enhancement of self. Learners who can identify and recognize their learning needs are more likely to be actively engaged in the process and motivated to achieve the desired outcomes (Rogers, 1951).

Instructors can facilitate this recognition by modeling the competencies to which the learner needs to aspire; providing experiences in which learners can identify their own strengths and weaknesses; and helping learners to measure gaps between where they
are now and where they need to be. Such diagnostic measures can include assessments of aptitude, content area knowledge, skills, and behaviors. Constructive feedback on the part of the instructor is crucial to this process. Students are given a voice by comparing their defined learning goals against a set of competencies as defined by experts in the field. Students must have the opportunity to challenge and/or modify expert assumptions in defining their own learning needs (Knowles, 1970).

Self-directed learning also requires learner involvement in the mutual planning of the experience with the instructor. Greater involvement of the learner in the planning process, which includes the delineation of learning goals and objectives, leads to greater learner commitment and motivation to learn. "... people tend to feel committed to any decision in proportion to the extent to which they have participated in making it" (Knowles, 1984, p. 17). The instructor plays a key role in ensuring that the needs of the student, teacher, institution, and society are all taken into account and properly aligned.

The instructor can offer methods, materials, and options for learning that assist in the mutual design of the learning experience to meet the necessary objectives. The effective and artful instructor can organize the learning experience around a conceptual theme or framework (e.g., operational steps, role assumption, or focus area). The instructor further plays a salient role in ensuring the continuity of the learning experience (i.e., the reinforcement of essential concepts over time); proper sequencing (i.e., deeper treatment of the subject matter in subsequent experiences); and integration (i.e., establishing relationships with other areas to provide a broad and unified sense) (Dewey, 1938; Tyler, 1950).
Participation in the learning experience as a manner of mutual inquiry is a fourth factor instrumental to self-directed learning. The instructor serves as catalyst, resource, and co-inquirer rather than director, transmitter, or preacher:

The andragogical model assumes that there are many resources other than the teacher, including peers, individuals with specialized knowledge and skill in the community, a wide variety of material and media resources, and field experiences. One of the principal responsibilities of the andragogue is to know about all these resources and to link learners with them. (Knowles, 1984, p. 14)

The instructor further fosters this process by helping students relate new experiences to previous understandings in the creation of new meanings. Although effective learning methods can vary widely depending on the students, instructor, and setting, Knowles (1970) asserts, "Given a choice between two techniques, choose the one involving the students in the most active participation" (p. 294).

Consistent with the symbiotic role of leader and follower as described by Burns (1978) and Bass (1981), the ultimate role and goal of the teacher facilitator is to join students in the quest for new knowledge and understandings as co-learners. "As the acceptant . . . climate becomes established, the facilitator is able increasingly to become a participant learner, a member of the group, expressing his views as those of one individual only" (Rogers, 1969, p. 165). Such an approach "has reframed teaching in a way that gives central importance to his own role as a learner" (Schön, 1987, p. 92).

Finally, self-directed learning requires self-evaluation to complete the learning cycle. Autonomous learners gather evidence of their learning to assess progress towards educational goals and objectives. The instructor can aid in this process by involving
students in the establishment of criteria to assess their own learning progress.

Comparison of student achievement against initial diagnostic learning needs closes the loop (Knowles, 1970).

_Experience._

The second fundamental assumption made by andragogy is that the wealth of past experiences possessed by adult learners can be used to inform new learning. Such experiences, both in terms of volume and diversity, serve as a resource that provide a rich foundation for future learning. New meanings emerge as students connect current experiences with prior understandings.

Instructors can assist students in dislodging previously held misconceptions and/or expanding upon prior knowledge and skills by providing appropriate encounters for learning, offering immediate feedback, and identifying opportunities for students to apply and rehearse newly acquired understandings. Methods grounded in experiential activities that engage the learner such as cases, group discussions, authentic practice-setting based projects, role-playing, and applied skills can be effectively utilized by the instructor to build upon prior experiences and enhance the learning process (Knowles, 1970, 1978).

_Readiness to Learn._

Andragogy further contends that learning is best achieved when the student has a proper disposition towards learning. Such a disposition or readiness to learn is best achieved when the skill or concept is introduced at the appropriate stage of a developmental sequence. Walking, for example, does not occur in the developmental sequence until the child has mastered standing upright. Likewise, introduction of a
concept or skill too early in a developmental sequence leads to frustration and the inability of the student to master the intended learning outcomes. The learning opportunity is lost.

Defining this readiness to learn requires skillful recognition on the part of the instructor. The learning event or experience must be matched to the cognitive development of the student. Piaget recognized cognitive development as the progression from concrete, operational thinking to more abstract, symbolic reasoning over a series of stages (Piaget, 1977; Pulaski, 1980). The inability of the instructor to match the learning experience to the developmental learning stage of the student can lead to marked frustration and failure. Challenging students substantively beyond their current capabilities thwarts the learning process. Rather, to be effective, experiences must build upon one another in increasing complexity according to the student's readiness to respond and act upon the situation.

Vygotsky refers to the proper anticipation of this next level of learning as the zone of proximal development (Daniels, Cole, & Wertsch, 2007). The zone of proximal development is that frontier area where the learner must stretch a bit to master the learning concept, skill, or ability:

It is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers. . . . The actual developmental level characterizes mental development retrospectively, while the zone of proximal development characterizes mental development prospectively. (Vygotsky, 1978, pp. 86-87)
An effective instructor is expert in identifying and defining this zone. Likewise, an effective instructor is pivotal in recognizing the proper timing for introduction of new skills and concepts. In andragogy, developmental sequence as it relates to real-life applications drives the structuring of the learning sequence (Knowles, 1970, 1978).

**Orientation to Learning.**

The fourth and final assumption of andragogy is the premise that adult learners need to understand the immediacy of their learning. Whereas younger learners are content to assimilate subject matter knowledge for some yet-to-be-known future application, adult learners want to understand how and in what way mastery of certain knowledge or skills are necessary for achievement of their ultimate goals and objectives. Having an appreciation for this link leads to a positive orientation towards learning. Experienced learners have a more practical, problem-centered approach to learning than do novice students.

Instructors can address the needs of more experienced students by organizing learning content around problem areas rather than subjects.

Using the facilitating approach, as contrasted with the didactic, the tutor attempts to assist the student in his learning progress. This includes encouraging, reinforcing, shaping, and hinting and may involve the use of parallel examples, of schema, of diagrams, and of logical approaches. The facilitator utilizes the principle of ‘guided discovery,’ allowing the student to learn from his own mistakes but not letting him become totally frustrated by lack of progress. (Neufeld & Barrows, 1984, p. 216).
Effective instructors can also facilitate the learning process by providing orientation activities or exercises that assist the learner in identifying needs and problem areas of interest. Such information can be used by the instructor to design an effective learning experience (Knowles, 1970, 1978).

Alternate views.

Critics of Knowles contend that andragogy is not a theory at all but, rather, a set of assumptions regarding desirable teaching practices (Merriam et al., 2007; Taylor & Kroth, 2009). Unlike transformational leadership theory, which has been validated by the MLQ, critics purport that andragogy lacks significant empirical evidence of both the validity of its assumptions and ability to predict adult learning behavior. "We cannot say, with any confidence, that andragogy has been tested and found to be, as so many have hoped, either the basis for a theory of adult learning or a unifying concept for adult education" (Pratt, 1993, p. 21).

Nonetheless, some studies do exist that have attempted to validate Knowles' contentions. Most have examined the effectiveness of an andragogical versus pedagogical teaching approach (Rachal, 2002). Differences in methodologies and outcome measures, however, limit the comparability of the study results. The Self-Directed Learning Readiness Scale was developed by Guglielmino as a valid and reliable instrument for measuring the self-concept dimension of andragogy (as cited in Taylor & Kroth, 2009). Other researchers have proposed methods for developing an instrument to test the comprehensiveness of andragogy as a unified theory (Taylor & Kroth, 2009).

Despite its critics, Merriam et al. (2007) conclude that andragogy remains an important framework for understanding effective instructional approaches. Indeed,
Knowles remains one of the most frequently cited authors in the Social Sciences Citation Index (Rachal, 2002).

Despite some writers grim predictions of andragogy's demise, practitioners who work with adult learners continue to find Knowles's andragogy, with its characteristics of adult learners, to be a helpful rubric for better understanding adults as learners. . . . Thus, we see andragogy as an enduring model for understanding certain aspects of adult learning (Merriam et al., 2007, Chapter 4, para. 24).

The commonalities identified between transformational leadership theory and andragogy support its credibility, applicability, and usefulness in understanding the dynamics between instructor and student in the professional practice setting. Adult learning theory can also help to illuminate the differences between novice and advanced learner in the identification of instructional practices best suited to each type of student.

**Summary.**

In summary, adult education theory contends that effective instructors possess the following qualities, skills, and characteristics:

- expert knowledge in the subject matter
- success as practitioner in the field
- enthusiasm for area of expertise
- enthusiasm for teaching
- creativity in thinking and approaches to teaching
- possession of personality traits that are conducive to interaction with others (e.g., understanding, friendliness, humor, humility, and human interest)
• respect for students as adults

• concern for the personal growth of students (Knowles, 1970, 1978).

Students move along a continuum from dependence to autonomy based on their maturity and experience. Whereas less experienced learners may favor a pedagogical model, more mature and experienced learners benefit from an andragogical approach. Pedagogical methods, therefore, may be more appropriate for students exposed to a brand new situation that is totally unfamiliar to them. Such students are truly dependent on an instructor for guidance. Inexperienced students may value instructors who unilaterally engage in the following:

• formulate learning goals and objectives

• determine information content

• cluster information in manageable units

• provide a logical sequence of information delivery (i.e., simple to complex)

• determine delivery methods that are primarily transmission-based

• model performance-based skills

• guide students through repetition and drill

• offer external means of motivation

• identify and deliver assessment measures

As learners become more experienced, they benefit from instructors who promote self-directed learning. Instructors who facilitate self-directed student learning engage in the following behaviors:

• assist students in diagnosing their own learning needs
• formulate learning goals and objectives in concert with their students
• plan a sequence of experiences in conjunction with their students to achieve such objectives
• create an environment that motivates students to learn
• select the most effective methods to achieve learning
• provide the necessary resources
• demonstrate relevance
• help students make connections with prior experiences
• identify teachable moments
• employ a problem-centered approach
• offer immediate feedback
• help students to measure their learning outcomes
• model exemplary behavior
• seek attainment of goals through mutual inquiry

Pedagogical approaches favor teacher as expert in determining the content, delivery, and assessment of learning. The student in the pedagogical model assumes a dependent and passive role. In contrast, andragogical approaches favor the mutual inquiry of teacher and student, leader and follower, that ultimately facilitate shared learning. Andragogical instructors serve as guides, resource consultants, and motivators rather than disciplinarians, lecturers, or authoritarians.
Social cognitive theory: Instructor as role model and coach.

Social cognitive theory deals with the notion that learning is not isolated nor does it occur in a vacuum. It contends that learning is much more complex than a simple stimulus-and-response paradigm. Rather, learning is contextual in nature and occurs in a social environment. Role modeling and coaching behaviors, including the self-efficacy and confidence of instructors, are fundamental to this process (Bandura, 1986; Schunk, 2004).

Role modeling.

Social cognitive theory calls attention to the importance of learning through the observation of accomplished practitioners. "... modeling has always been acknowledged to be one of the most powerful means of transmitting values, attitudes, and patterns of thought and behavior" (Bandura, 1986, p. 47). At its simplest level, observational learning constitutes imitation or reproduction of an action or behavior. At its more complex level, observational learning results in the inculcation of patterns and behavior.

Learning by observation can result in the following: acquisition of new skills and behaviors; cues for the performance of previously learned (didactic) behaviors that were never employed; strengthening of learned behaviors when the student views positive outcomes as a result of the modeler's actions; and, conversely, inhibition of learned behaviors when the student views negative consequences as a result of the modeler's actions.

Social cognitive theory contends that learners are more attentive to role models who are accomplished, have a history of past successes, and continue to demonstrate
positive outcomes as a result of their performance. Moreover, students are more apt to acquire modeled behaviors when they can closely identify with the instructor. When identification is poorly aligned, students have difficulty assessing whether similar behaviors would result in the same outcomes as demonstrated by the instructor. Consequently, learning tends to be more shallow and lack permanence. Conversely, close identification with the instructor results in deeper and more enduring learning. Exposure to multiple models further enhances learning by providing students with exposure to various methods of problem-solving behaviors (Bandura, 1986).

As role models, instructors can assist in enhancing the observational learning of their students through approaches that help students attend to the behavior at hand. Instructors can call attention to the behavior they are modeling by ensuring that it is salient, relevant to the learner, and constitutes a level of complexity that is appropriate to the cognitive capabilities of the learner (Knowles, 1970; Piaget, 1977). Overly complex activities can be subdivided into components that are more readily mastered by the student. Instructors can further coach students in mastering the desired behavior by allowing for a sufficient amount of student repetition and practice, providing incentives, and offering immediate and specific feedback (Bandura, 1986).

Links to prior learning are important in the acquisition of new skills and behaviors. However, it does not preclude learning. "Although acquisition of modeled information is expedited by drawing on existing knowledge, it is not reducible to it" (Bandura, 1986, p. 60). Social cognitive theory offers approaches to addressing the needs of the novice versus mature learner in a manner similar to that advocated by adult learning theory (Knowles, 1970, 1984). With fewer prior links and experiences, novice
learners benefit from instructors who can break down activities into simpler components, provide multiple opportunities for repetition, and emphasize the more significant aspects and positive outcomes of the learning activity.

General cognitive skills are best mastered when rules of thought are supplemented with demonstrations of specific concrete application. This is especially true when the level of abstraction is greater and/or the level of experience of the learner is more limited. Demonstration of the application of knowledge, skills, and problem-solving behaviors to specific situations is especially critical when dealing with complex knowledge and cognitions. Adult education theory refers to this need for relevancy as possessing a proper orientation to learning (Knowles, 1970). Instructor modeling that demonstrates inquisitiveness and fresh approaches to problem-solving, identified by Bass (1985) as "intellectual stimulation," fosters learner creativity and innovative thinking.

Support for the importance of role modeling in significant learning has been captured by multiple studies conducted by Bandura and subsequent researchers:

Of the . . . theorists, Bandura has developed the most experimentally rigorous empirical research program. . . . Most social cognitive researchers influenced by Bandura have explored the ways in which models . . . affect the behavior of observers . . . in an experimental setting. In general, the findings support the contention that modeling has a clear impact on development. (Tudge & Winterhoff, 1993, p. 74)

**Coaching.**

In addition to role modeling, effective instructors serve as coach. Experiential education under the guidance of an instructor can offer students
. . . freedom to learn by doing in a setting relatively low in risk, with access to coaches who initiate students into the 'traditions of the calling' and help them by 'the right kind of telling,' to see on their own behalf and in their own way what they need most to see. (Schön, 1987, p. 17)

As coach, the role of the instructor is to demonstrate, advise, question, and criticize throughout the course of the student experience. Instructors simultaneously serve as role model and coach.

Thinking-out-loud can be one of the most effective means of assisting the learner in the transition from student to practitioner. The instructor explains his thinking and reasoning processes as they unfold. With such an approach, "covert thoughts guiding the actions are thus made observable through overt representation" (Bandura, 1986, p. 74). Students begin to understand how the instructor organizes and processes information. Students learn forms of inquiry (i.e., schema) that can assist them in future problem-solving.

Instructors as coaches can also assist students in reframing problems when solutions are not apparent. Redefining the issues can help students in arriving at their own resolutions. "Telling and listening" approaches can reframe issues, shape student behavior in a step-wise sequence, and provide students with insight into the instructor's thought processes as they occur in the context of the experience (Schön, 1987, p. 102). Prompting by the instructor, in contrast to simply providing the answers, assists students in arriving at viable solutions for the types of situations that are encountered in authentic practice settings. Nurturing problem-solving abilities and cultivating forms of inquiry (i.e., schema associated with research) are essential to the development of a master
practitioner who must acquire the ability to solve unique and complex problems that do not neatly fit textbook scenarios. Student learners evolve into master practitioners when they have acquired the ability to deal with these "zones of indeterminacy," that is, when they have learned how to think on their feet (Schön, 1987, p. 303). Through "coping modeling," learners have the opportunity to observe how the instructor-practitioner deals with stressors, conflict, and errors through analysis, corrective actions, and alternative solutions (Bandura, 1986, p. 320).

"Demonstrating and imitating" also occurs in the context of instructor and student dialogue and exchange (Schön, 1987, p. 107). In this approach, the instructor demonstrates a behavior encouraging the student to follow suit. Once again, role modeling and coaching are intertwined as the student first observes, then imitates, and finally continues to evolve through instructor guidance and encouragement. This reflective imitation is "a willingness to do as the . . . master is doing and, at the same time, reflect on what one does" (Schön, 1987, p. 121). Modeled behavior is best mastered when the student either observes or experiences favorable outcomes. Self-satisfaction with performance and a sense of self-efficacy are powerful reinforcers (Bandura, 1986).

The expertise of the instructor-coach is to determine the rate, extent, and proper sequence of the interchange that best matches the needs of the student at a given point in the learning process (Schön, 1987). Favorable attitudes and disposition to learning as exhibited by the instructor contribute to motivation, readiness to learn, and subsequent student mastery of the desired behaviors, not unlike those identified by andragogy (Bandura, 1986; Knowles, 1970, 1984).
Support for the theory.

Social cognitive theory has withstood the test of time. It is lauded for its ability to describe the cognitive functions that serve as mediating links between the original experience and the consequential learner response (Tudge & Winterhoff, 1993). Subsequent researchers attest to the scores of studies that have been conducted supporting the theory. "Empirical support for the model is impressive" (McCormick & Martinko, 2004, pp. 2-3). Other scholars concur that the construction of the theory is based on sound scientific principles:

I consider Albert Bandura's Social-Cognitive Theory to be one of the greatest achievements in the history of psychology. . . . Bandura does everything that an inductive theory builder should do . . . Bandura grasps that theory-building is an inductive process and takes many years and hundreds of studies and also requires not just summation but integration. (Locke, 1997, pp. 801-803)

More recent work has employed social cognitive theory as a foundation for understanding the dynamics of effective leadership (McCormick & Martinko, 2004). Social cognitive theory forms the basis for viewing the three most salient components of leadership: 1) leader behaviors; 2) characteristics of the situation; and 3) the social cognitions of the leader. Social cognitions include the ability of the leader to apply attentional and attribution reasoning processes to the experiential environment. Leaders with a high level of self-efficacy are able to conduct an unbiased analysis of external factors. An optimistic perspective allows such leaders to attribute successes to internal factors, such as personal ability, and failures to external factors in the environment that can be subsequently modified (Martinko, 1995). Effective leaders also set goals and
develop action plans that guide behavior in the environment. They are able to facilitate the task at hand by effectively monitoring conditions, diagnosing any learning gaps or deficiencies, identifying the changes that need to take place, and taking action. Effective leaders are flexible, adaptable, and responsive to change (McCormick & Martinko, 2004; Wofford, Goodwin, & Whittington, 1998). Above all, effective leaders are confident in their abilities to guide their followers and attain positive outcomes. As such, self-efficacious leaders serve as positive role models and coaches.

**Summary.**

In summary, effective role models and coaches possess the following characteristics and skills and exhibit the following behaviors:

- are accomplished with a history of success and positive outcomes
- possess a high level of self-efficacy
- are readily identifiable by their students
- model behavior that is relevant to their students
- subdivide complex behaviors into manageable components
- allow for student repetition and practice
- provide incentives
- monitor conditions
- diagnose gaps or deficiencies
- identify the changes that need to take place
- take action as needed
- offer feedback in a timely fashion
demonstrate inquisitiveness and problem-solving

• explain their thinking and reasoning processes

• employ a problem-solving approach

• prompt students through inquiry, reframing problems when necessary

• determine the rate, extent, and proper sequencing of interchange

• possess a favorable attitude and disposition toward learning

• are flexible and adaptable to changing conditions

• model coping behaviors

Social cognitive theory can provide a foundation for understanding the characteristics and behaviors of effective instructors. Role modeling and coaching are important methods not only for the demonstration of critical skills that students need to acquire, but also in the transmission of values, attitudes, and behaviors that are integral to professional socialization.

**Experiential learning models.**

Experiential learning models can also provide a framework upon which the qualities, characteristics, skills, and behaviors of preceptor instructors that contribute to learning can be discerned. Models of experiential learning are iterative in nature (Kolb, 1984; Joplin, 1995). Grounded in learning theory, these models reveal the critical role that instructors play in facilitating the learning cycle.

Experiential learning is defined as "the process whereby knowledge is created through the transformation of experience" (Kolb, 1984, p. 38). An inextricable link exists between experience and learning. "... learning is described as a process whereby
concepts are derived from and continuously modified by experience. No two thoughts are ever the same, since experience always intervenes. . . Learning is an emergent process . . ." (Kolb, 1984, p. 26).

Field theory, which contends that learning and behaviors are influenced by the totality of an individual's life space or field, is foundational to experiential learning models (Lewin, 1951). A learning field includes not only the individual's needs, goals, and cognitive structures but also social influences and the surrounding environment. Environment, or the field, plays a significant role in cognitive development and cannot be considered independently. Field theory, as well as the iterative nature of Lewin's action research model, contributed extensively to the development of Kolb's experiential learning model.

The experiential learning model consists of four elements: the concrete experience, reflective observation, abstract conceptualization, and active experimentation. A concrete experience (stage one) situated in an authentic learning environment gives way to observation and reflection by the learner as to the meaning and significance of the encounter. Reflection (stage two) provides the opportunity for the learner to relate the experience to existing cognitive structures and meanings. This abstract conceptualization (stage three) results in the construction of new meanings as a consequence of the assimilation and/or accommodation of the new experience to existing internal cognitive structures. The learner can thereupon test the implications of these newly formed concepts in unique and novel situations (stage four).

Kolb's experiential model is strikingly similar to the four stages of observational learning described by social cognitive theory: attention to the modeling behavior of the
instructor; retention, or the ability of the learner to reflect upon and remember what was modeled; production, or integration, of the observed behavior into existing cognitive structures; and motivation of the student to enact the newly learned behaviors (Bandura, 1986). Likewise, Kolb's model is strikingly similar to the four main components of transformative learning theory that describe significant learning: experience, critical reflection, reflective discourse (i.e., the attempt to build new understandings), and action (Merriam et al., 2007; Mezirow, 1981, 2000). These commonalities lend support to the model.

Joplin (1995) expands upon Kolb's earlier experiential learning cycle by introducing additional social elements to its composition. Joplin's cycle consists of five phases: focus, action, support, feedback, and debrief. Whereas Kolb's model is sequential in nature, Joplin contends that learners can inhabit multiple stages simultaneously. The Joplin model begins with a focus activity prior to the concrete experience with the intention of preparing the learner for the action phase. Support and feedback as provided by the instructor serve to assist in the learner throughout the concrete experience and subsequent reflections. "Educators serve as facilitators of reflection and encourage learners to discuss and reflect on concrete experiences in a trusting, open environment" (Merriam et al., 2007, Chapter 7, para. 29). Debriefing, as led by the instructor, assists the learner in further reflection on the experience, making connections to previously held meanings, and creating new understandings (i.e., abstract conceptualization). The cycle begins again as new understandings set the stage for increasingly complex experiences.
**Foundations to the model.**

Kolb attributes the basis for his model to the contributions of traditional learning theorists (Dewey, 1938; Lewin, 1951; Maslow, 1970; Piaget, 1977; Rogers, 1951, 1969). The work of contemporary scholars provide additional support to the model (Argyris, 1982; Argyris & Schön, 1974; Houle, 1972; Mezirow, 1981, 2000). The role of the instructor in facilitating student learning through experiential learning cycles can be further elucidated and understood through the lens that these foundations to the models provide.

**Preparing for and defining the experience.**

The first steps in the Kolb and Joplin models are the preparation for (focus) and participation in the concrete experience (action phase). This experience creates the foundation for learning. Without it, learning falters. "...there is an intimate and necessary relation between the processes of actual experience and education" (Dewey, 1938, p. 20). However, Dewey did not support haphazard or impromptu learning experiences that he described as aimless. Rather, he believed experiences must be organized and shaped in a progressive continuum that continue to build upon one another. "...the principle of continuity of experience means that every experience both takes up something from those which have gone before and modifies in some way the quality of those which come after" (Dewey, 1938, p. 35).

Consistent with transformational leadership and adult learning theories, the shared experiences of student and instructors are crucial to the learning process.

The principle that development of experience comes about through interaction means that education is essentially a social process. . . . As the most mature
member of the group he (the teacher) has a peculiar responsibility for the conduct of the interactions and intercommunications which are the very life of the group as a community. . . . When education is based upon experience and educative experience is seen to be a social process . . . the teacher loses the position of external boss or dictator but takes on that of leader of group activities. (Dewey, 1938, pp. 58-59)

The expertise of the instructor is essential in identifying learning experiences that are delivered in a planned and sequential fashion and are grounded in authentic practice settings (i.e., concrete experience or action phase). "Learning is rooted in the situation in which the person participates" (Fenwick, 2003, p. 25). Knowledge and skills gained in one experience serve as a starting point for the next (i.e., active experimentation). As such, it is incumbent on the instructor to understand the learning needs as well as the capacity of the individual student to participate in and gain from the current experience.

Another dimension to the planning process is the preparation for the experience. Joplin defines this as the focus part of the learning cycle. The instructor's role in the focus phase includes the negotiation of learning needs and expectations. Negotiation of learning needs and expectations is consistent with the mutual goal-setting processes as described by the transformational learning theory of Burns and Bass and the adult learning theory of Knowles. Preparatory work defined by the instructor can include advanced reading activities, discussions, and explanations that help set the stage for the activity or concrete experience. "Focus includes presenting the task and isolating the attention of the learner for concentration. It defines the subject of study and prepares the student for encountering
the challenging action that is to follow. A good focusing stage is specific enough to orient the student, but not too specific so as to rule out unplanned learning" (Joplin, 1995, p. 17). The ability of the instructor to adapt to ever emerging and fluid situations is critical to the learning process. "He must constantly reshape his plans and procedures in order to come to terms with changes brought about by the desires and abilities of other people or the specific instructional resources he finds available" (Houle, 1972, p. 33).

Reflection on the experience.

Reflection helps the learner to organize and make sense of the experience. Identified as a discrete stage in Kolb's model, reflection is integrated throughout Joplin's model through the mechanism of instructor support and feedback. Group dynamics are essential. Strategies such as feedback, active listening, and group discussion all contribute to students' reflection on the experience with the instructor serving as catalyst (Lewin, 1951).

The practice of reflection fosters development of a true master, that is, a practitioner who can respond to an event that has no clear textbook answer. The importance of reflection in the development of a professional, where practice is as much of an art as it is a science, cannot be underestimated (Schön, 1987). Reflection on past activities (i.e., reflection-on-action), as well as in the midst of an experience (i.e., reflection-in-action), assists in developing the problem-solving aptitude of the student. Dialogue between student and instructor, as they concomitantly work towards a solution, assists the student in learning how to deal with indeterminate situations that follow no clear algorithm. This reciprocal reflection-in and -on action creates true "partners in
inquiry" (Schön, 1987, p. 181). Joint problem-solving resonates with the concepts purported by both transformational and adult learning theories.

The instructor further serves as coach in leading the student through reflection on a given activity or experience that may have challenged the student's current beliefs or understandings (Fenwick, 2003; Merriam et al., 2007). This reflection-on-action is "thinking back on what we have done in order to discover how our . . . action may have contributed to an unexpected outcome" (Schön, 1987, p. 26). Reflection is the first step towards the alteration of old belief systems and the construction of new understandings as described in Kolb's stage of abstract conceptualization. Reflection leads the student through a contemplative and critical inquiry of the experience or event.

Even greater value can be attributed to the process of reflection-in-action. This type of reflection occurs in the midst of the activity. During reflection-in-action "our thinking serves to reshape what we are doing while we are doing it" (Schön, 1987, p. 26). Reflection-in-action, in reality, constitutes a cycle within a cycle. As the event unfolds (i.e., the concrete experience), the participants reflect on what is happening (i.e., reflection), link it to prior knowledge in the creation of new meanings (i.e., abstract conceptualization), and re-test the new understanding in the midst of the activity (i.e., active experimentation). This cycle is repeated in an iterative fashion until the problem is resolved. It is a spiral-like cycle of learning that continues to evolve within the larger context of the Kolb model. The instructor spurs the student to discovery through questioning, prompting, dialogue, and discourse even as the activity itself unfolds.
Linkage to prior learning and abstract conceptualizations.

Instructors must assist students in understanding the interconnectedness of learning both longitudinally (past, present, and future) and laterally (across subjects) (Dewey, 1938). This interconnectedness forms the basis for the abstract conceptualization stage in Kolb's model as well as the outcome of reflection as initiated in the debriefing stage for Joplin. "A growing body of knowledge, in turn, accelerates subsequent learning" (Bandura, 1986, p. 60).

Student learners begin to integrate their experiences with previously held knowledge and beliefs resulting in the creation of new understandings. Integration of knowledge and the creation of new meanings occurs through the cognitive processes of assimilation and accommodation (Piaget, 1952; Piaget & Inhelder, 1973). Assimilation refers to the mechanism whereby the learner fits newly acquired information into already developed cognitive frameworks or schema. Accommodation refers to the process that occurs when previous understandings are altered or adapted to make sense of the environment.

This phenomena was described as single-loop (assimilation) and double-loop learning (accommodation) by subsequent researchers (Argyris, 1982; Argyris & Schön, 1974). Single-loop learning allows integration of new experiences into current cognitive "theories-in-use" or schema (Argyris & Schön, 1974, p. 6). Fine-tuning of current understandings result. Double-loop learning, on the other hand, requires significant alterations of current understandings when new experiences do not fit the current schema. "Double-loop learning changes the governing variables (the 'settings') of one's programs
and causes ripples of change to fan out over one's whole system of theories-in-use" (Argyris & Schön, 1974, p. 19). As a result, great leaps in learning can occur.

Analogous to accommodation and double-loop learning, transformative learning theory attempts to explain the process of professional socialization (Mezirow, 2000). Personal transformation, which can embody professional socialization, occurs when significant alterations in attitudes, beliefs, and perspectives take place as learners attempt to make sense of their experiences. It is, the process by which we transform our taken-for-granted frames of reference (meaning schemes, habits of mind, mindsets) to make them more inclusive, discriminating, open, emotionally capable of change, and reflective so that they may generate beliefs and opinions that will prove more true or justified to guide action. (Mezirow, 2000, p. 8)

Learning, however, is not always transformative in nature. At times, new knowledge is simply added to existing meaning schemes in a manner similar to that described by the processes of assimilation and single-loop learning. Transformative learning theory acknowledges this alternate pathway. Its perspective on both transformative and non-transformative learning provides further corroboration for and expands our understanding of the concepts of assimilation and accommodation (Piaget) and single-loop and double-loop learning (Argyris and Schön).

The role of the educator is to assist students in the assimilation and accommodation of new knowledge, ideas, and beliefs resulting in personal transformation. "Here, the learning is recognized, articulated, and evaluated. The teacher is responsible for seeing that the actions previously taken do not drift along unquestioned,
unrealized, unintegrated, or unorganized. Debrief helps the student learn from experience" (Joplin, 1995, p. 19). The instructor serves to assist students in the creation of new meaning and new understandings.

At times, this may require the more difficult process of accommodation or double-loop learning. Alteration of prior belief systems can be challenging. It is when tension exists, however, between experience and abstract conceptualization; reflection and active experimentation; that significant and transformative learning occurs. New experiences must be resolved with abstract conceptualizations. Reflection must be resolved with active experimentation.

Thus, one's job as educator is not only to implant new ideas but also to dispose of or modify old ones. In many cases, resistance to new ideas stems from their conflict with old beliefs that are inconsistent with them. If the education process begins by bringing out the learner's beliefs and theories, examining and testing them, and then integrating the new, more refined ideas into the person's belief systems, the learning process will be facilitated. (Kolb, 1984, p. 28)

The instructor can foster this process through the use of probing questions "that challenge . . . foundations" (Argyris & Schön, 1974, p. 105). The student "is expected to experience confusion and puzzlement" particularly when presented with novel situations (Schön, 1987, p. 120). Instructor support and feedback, as advocated by Joplin, are critical throughout this transformative process.

*Problem-solving and active experimentation.*

Instructors can further assist students in the application of learned knowledge and skills to new settings and circumstances (i.e., active experimentation). The act of active
experimentation allows the student to test "new methods of reasoning . . . constructing and testing new categories of understanding, strategies of action, and ways of framing problems (Schön, 1987, p. 39). "His [student] success is judged by himself and others not by how much he knows but by his competence in using that knowledge to deal with the situation at hand" (Houle, 1972, p. 34).

Instructor modeling added to active experimentation results in great leaps in conceptual learning, far exceeding that achieved by student experimentation alone (Bandura, 1986). Observation of behavior modeled by the instructor, reflection on that experience as prompted by the instructor, and subsequent active experimentation co-jointly explored by student and instructor can result in learning that is enduring and readily translatable to new situations. The ability of the instructor to actively engage students and evoke curiosity is critical in ensuring that students are left with the desire to participate in additional learning experiences.

Alternate views.

In an attempt to empirically test his experiential learning model, Kolb developed a Learning Style Inventory (LSI), which has undergone subsequent revisions since its inception (Kayes, 2005). The LSI attempts to identify an individual's preferential learning style. Divergent learners prefer learning through concrete experiences and reflection; assimilators tend towards reflection and organization of learning by drawing on multiple sources; convergers learn through problem-solving and active experimentation; and accommodators prefer action and situational learning.

However, there are significant questions regarding the reliability and validity of the instrument based on a number of research studies (Garner, 2000). Garner argues that
the very flexibility that is inherent in Kolb's theoretical model is stymied by the limited nature of the four fixed learning styles identified by the instrument. In other words, the instrument is an inadequate representation of the model. Nonetheless, there is agreement among some scholars that the model itself is useful in understanding the processes of experiential learning (Abbey, Hunt, & Weiser, 1985; Kruzich, Friesen, & Van Soest, 1986; Nulty & Barrett, 1996; Raschick, Maypole, & Day, 1998). Despite his criticism of theoretical aspects of Kolb's model and the Learning Style Inventory, Garner does allow that "Kolb's learning cycle has a positive role to play in informing students about the learning processes" (Garner, 2000, p. 347).

Other critics of Kolb's model speak to its over-simplification of the learning process and minimization of social context (Fenwick, 2003; Merriam et al., 2007). "...the belief in an individual's capabilities and his individual learning experience leads us away from the analysis of cultural and social conditions of learning that are essential to any serious enterprise of fostering change and learning in real life" (Miettinen, 2000, p. 71). There is further contention that the Kolb model does not adequately address the importance of emotional factors such as learner affect and instructor disposition to teaching, all of which may have a positive or negative impact on learning (Beard & Wilson, 2002; Dirkx, 2001; Fenwick, 2003). "In order for people to interpret experiences positively and to learn effectively they need to have confidence in their abilities, good self-esteem, support from others, and trust in others" (Merriam et al., 2007, Chapter 7).

Although Kolb's model may be inadequate in its treatment of social context, Joplin's expanded version addresses these shortcomings with its emphasis on social
interaction, instructor support, and continuous positive and constructive feedback throughout the learning process.

**Summary.**

Experiential learning models are useful in elucidating preceptor qualities, characteristics, and behaviors that are conducive to learning. The Kolb model, which has been subsequently expanded by Joplin's greater attentiveness to social elements, is helpful in uncovering the following preceptor behaviors that are important to experiential learning:

- joint negotiation of students needs and expectations
- identification of meaningful experiences appropriate to the level of the student
- organization of experiences in a progressive continuum with increasing rigor
- identification of appropriate student preparatory work
- provision of support to students throughout the learning process
- flexibility to adapt or change as the experience unfolds
- provision of meaningful feedback
- encouragement of student reflection both during and following the learning experience
- employment of probing questions
- assistance in helping students to make connections to prior and future learning
- guidance in student creation of new understandings
- provision of novel situations in which students can test new knowledge
Experiential learning models demonstrate an approach whereby the instructor facilitates or guides the student through the learning experience. By providing support and feedback throughout the cycle, the instructor assists in defining the experience, engaging the student in meaningful reflection in- and on-action, assisting the student in the creation of new understandings through meaningful connections, and prodding the student to active experimentation in new situations.

**Themes.**

Several themes relevant to the role of preceptors in experiential learning run throughout the literature pertaining to educational learning theory and models of experiential learning. First of all, preceptor instructors serve as important role models to their students. Role modeling consists not only of the demonstration of requisite skills and behaviors, but also by coaching students through the discovery and learning process. Coaching is best accomplished by providing opportunities for repetition and practice, engaging students in reflection, prompting through inquiry, and offering feedback. Role modeling, however, results in much more than the acquisition of professional skills by students. Effective role modeling results in the inculcation of patterns and behaviors. That is, role modeling by exemplary preceptor instructors assists in the professional socialization of their students. Social cognitive learning theory forms a foundation to this understanding.

Secondly, as students move from a position of novice to experienced learner, they move from a level of dependence on an instructor to increasingly more independence, or self-directed learning. Correspondingly, the instructor moves from a position of director to that of facilitator. With novice students, effective instructors are necessarily more
involved in structuring the learning experience, filtering and identifying the most salient information or content to be learned, and assessing student mastery. More accomplished students are best served by instructors who assist the students in identifying their own learning needs, offer an environment conducive to learning, mutually plan for and participate in the experience with the student, and aid the students in self-evaluation. The instructor as facilitator can also assist in the learning process by demonstrating the relevance of the learning experience to future application. Adult education theory provides this perspective.

Finally, experiential learning is best achieved when instructor and student have a shared vision, craft a shared plan, and participate in a shared experience. The play between instructor and student is highly interactive resulting in a transformational learning experience for both. Instructor and student become co-inquirers in the search for new meanings and novel solutions. Effective preceptor instructors recognize the value and dignity of their students and assist them in achieving their full potential. Transformational leadership theory facilitates our understanding of this dynamic.

Experiential education is an interactive, socially-based type of learning. Not all learning theories are useful in understanding the dynamic between instructor and student situated in a complex practice environment. Behavioral theories, for example, focus on specific stimulus-response type interactions. They fail to take into account the social construct of learning as well as complex cognitive functions, such as reflection, assimilation, and accommodation, that occur during learning. Behavioral theories including cause-and-effect (Pavlov), operant conditioning (Skinner), and trial and error
(Thorndike) fail to capture the important dynamic of professional socialization that occurs as part of experiential learning (Schunk, 2004).

Likewise, information processing theories are insufficient in providing the insight necessary to understand experiential learning. Although information processing theories can describe complex cognitive processes that assist individuals in encoding new information, they fail to describe the important role that instructors play in facilitating this process. Information processing theories tend to reduce learning to a single-player devoid of social interaction. "... human processing is analogous to computer processing, at least metaphorically. The human system functions similar to a computer: It receives information, stores it in memory, and retrieves it as necessary" (Schunk, 2004, p. 137). As is the case with behavioral theories, information processing theories neglect to explain the important processes of professional socialization that occur during experiential learning.

Transformational leadership, adult learning, and social cognitive learning theory all provide important foundations to our understanding of experiential learning. Experiential learning models operationalize these theories. The parallels drawn among transformational leadership, adult learning, and social cognitive theory corroborate and lend strength and support to each of the theoretical frameworks. Identification of similar themes further substantiates their validity.

The Extant Literature

It is important to gain a sense of our understanding of the role that preceptors play in experiential education. Moreover, it is essential to appreciate how educational learning theory and models of experiential learning can enhance this understanding. A number of
studies in the medical and nursing literature have attempted to identify the qualities and characteristics that preceptors possess and behaviors that preceptors exhibit that enhance student learning. Additional, albeit minimal, contributions to the literature have been made by the allied health professions. Little original research regarding effective preceptor characteristics and behaviors has been conducted in the pharmacy field. Virtually nonexistent in any of the extant literature is the attempt to discern links between preceptor characteristics/behaviors and student attainment of the competencies inherent to the discipline.

Pharmacy preceptor recruitment, creation of pharmacy preceptor training programs, and utilization of non-validated instruments to assess pharmacy preceptor performance are based on assumptions that desirable preceptor characteristics and behaviors are translatable from medicine and nursing. It is only by examining the current state of affairs as derived from the extant literature that we can begin to determine how educational learning theory and experiential learning models can enhance our understanding of the dynamic between instructor and student. Appropriately designed research based on this understanding can begin to uncover desirable preceptor characteristics and behaviors that assist pharmacy students in the attainment of the professional competencies.

**Preceptor development programs and experiential manuals.**

The pharmacy literature yields little in the way of research that examines preceptor characteristics, skills, and behaviors that foster experiential student learning. Indeed, many pharmacy preceptor development programs cite the medical literature when describing the attributes of exemplary preceptors. When experiential education program
manuals of individual pharmacy schools do cite resources that address preceptor characteristics, they are predominantly based in the medical and nursing literature.

For example, the pharmacy experiential program manual utilized by the University of Washington and Washington State cites five studies from the medical literature and one study from the nursing literature in its discussion of the characteristics of highly effective preceptors (O'Sullivan et al., 2001). In addition to exploring the works of educational theorists such as Rogers and Schön, the experiential manual utilized by the Texas schools of pharmacy cites three articles in the medical literature and one article in the optometry literature that describe preceptor effectiveness (Kleffner, 2007).

Many pharmacy preceptor development programs, such as the University of Arizona College of Pharmacy (McAllister & Boesen, 2005), utilize a microskills or "one-minute preceptor" teaching model that was pioneered by academicians in the medical field (Neher, Gordon, Meyer, & Stevens, 1992). This approach to experiential teaching is employed by medicine and nursing alike (Kertis, 2007; Raskind, 2001). The Expert Preceptor Interactive Curriculum (EPIC) is a preceptor development program housed on the University of North Carolina Medical School website (FIPSE Project Group, 1998). Designated primarily for medical practitioners, it is also available as training for preceptors in any of the health care professions and is a recommended resource for pharmacist preceptors by AACP.

Preceptor attributes: Medical and health professions literature.

Medical Literature.

What then does the medical, nursing, and ancillary health care professions literature reveal regarding desirable preceptor characteristics? A number of descriptive
studies, as reported in the medical literature, have examined preceptor characteristics, skills, and behaviors that are most conducive to learning from the perspective of the medical preceptor, student, and/or both. A content analysis of fifteen peer-reviewed research studies between 1980 and 1994 conducted by Irby (1995), as well as a review of thirteen additional studies from 1995 to 2010, uncovered such attributes (Althouse, Stritter, & Steiner, 1999; Delva, Schultz, Kirby, & Godwin, 2005; Elnicki, Kolarik, & Bardella, 2003; Epstein, Cole, Gawinski, Piotrowski-Lee, & Ruddy, 1998; Goertzen, Stewart, & Weston, 1995; Huang & Monteiro, 2000; Irby, 1986, 1995; Kernan, Lee, Stone, Freudigman, & O'Connor, 2000; Kernan et al., 2008; Leone-Perkins, Schnuth, & Lipsky, 1999; Mann, Holmes, Hayes, Burge, & Viscount, 2001; Manyon, Shipengrover, McGuigan, Haggerty, James, & Danzo, 2003; Ottolini, Ozuah, Mirza, & Greenberg, 2010). Survey methodology was most frequently employed by the studies. Other research methods included observational studies, interviews, and focus groups.

The most frequently identified preceptor characteristics, skills, and behaviors cited by approximately 50% or greater of the aforementioned studies in the medical literature included role modeling, interactive preceptor-student teaching behaviors, and the personality traits of the preceptor. The most frequently cited teaching behaviors included the provision of constructive feedback and involvement of the student in the learning process.

**Role modeling.**

The role modeling behavior most frequently cited by the studies in the medical literature was the ability of the preceptor to provide patient care. The level of preceptor clinical competence or expertise was also predominant. Other role modeling behaviors
that were identified included the preceptor attitude and disposition towards the patient, preceptor advocacy on behalf of the patient, and preceptor professionalism. The ability of the preceptor to balance the love of teaching with clinical responsibilities was identified as a behavior valued by preceptors and students. " . . . for most preceptors, the role of teacher was not separate from that of the physician. Goals for the patient and the learner were integrated, sometimes seamlessly" (Mann et al., 2001, p. 283). The ethical behavior of the preceptor, leadership skills, enjoyment of the profession, and modeling of external lifestyle roles (e.g., balancing a career and personal life) were less frequently identified (Elnicki et al., 2003; Irby, 1986; Mann et al., 2001).

The importance of role modeling behaviors to the learning process in the medical environment cannot be underestimated:

The modeling process should be a purposeful activity that demonstrates the knowledge, skills, attitudes, and ethical behaviors that students should acquire. Students need opportunities to observe role models in action and to study the behaviors that constitute their effectiveness. Role-modeling is a powerful teaching technique and one especially well suited to the apprenticeship system of instruction in medicine. (Irby, 1986, p. 38)

Teaching skills.

Interpersonal communication and one-on-one interaction between preceptor and student were also cited by the majority of the studies as essential to the learning process. Communication as a construct served as a foundation to preceptor teaching skills. The most frequently identified teaching characteristics included the provision of regular and
specific constructive feedback to the student as well as involvement of the student in the learning process.

Although the majority of the studies indicated that effective learning was achieved when students were responsible for their own learning, ironically, it was the preceptor who was primarily identified as the individual responsible for setting goals and communicating expectations for the experience. The plurality of the studies also spoke to the need of the preceptor to conduct a prior assessment of student learning in an effort to appropriately tailor the experience to the needs of the student. Huang and Montiero (2000) and Ottolini et al. (2010) were two of the minority of studies that lent importance to the identification of learning gaps and experiential goals by the student. Only Mann et al. (2001) emphasized the importance of joint goal setting.

A structured approach to the learning experience by the preceptor, as identified by the plurality of studies, included the selection of patient cases to match the knowledge and skill level of the student as well as the advance preparation of students for patient encounters. Effective preceptor coaching behaviors included rehearsal for the patient encounter through the advance provision of patient care directions, attendance by the preceptor during the patient-student encounter, and debriefing afterwards. Case summation and formative feedback were further identified as crucial to this process.

This structured approach to the learning experience was in sharp contrast to the findings of several other studies in the medical literature. Althouse et al. (1999) found no link between the active preceptor selection of patient cases and perceived learning effectiveness. Indeed, Epstein et al. (1998), Loftus, (as cited in Irby 1995), and Ottolini et al. (2010) actually identified value in the unplanned moment-to-moment identification of
student learning needs in the midst of the patient encounter. The value of fresh learning experiences, new insights, and emotional connections to learning were addressed by others (Epstein et al., 1998; Leone-Perkins et al., 1999; Mann et al., 2001). Singularly, Manyon et al. (2003) reported that overly-structured experiences tightly bound to curricular objectives, with student exposure to select patients as identified by the preceptor, were less valued.

One-third of the studies identified a problem-solving approach by the preceptor as being conducive to learning. Some of the methods recognized as being effective included Socratic questioning, an emphasis on general medical principles, pushing students beyond their comfort zone, and an explanation of the thinking processes, critical analysis, and decision-making employed by the preceptor as it pertained to patient cases. Conversely, Manyon et al. (2003) reported that students found the Socratic method of questioning to be overly teacher-centered. Instead, students in this study found a facilitative and listening style that encouraged student reflection to be more conducive to learning.

Overall, there was an appreciation of the opportunity for students to independently identify patient problems and construct their own patient care plans prior to comparison with preceptor solutions. A minority of the studies identified the ability of the preceptor to bridge the didactic and experiential environments through the establishment of links to prior understandings as conducive to learning (Althouse et al., 1999; Kernan et al., 2000; Mann et al., 2001).

A minority of the examined studies identified the importance of reflection in the learning process. Effective preceptor behaviors included the encouragement of student
reflection on what was learned and how that learning translates to future practice (Epstein et al., 1998; Irby, 1986; Mann et al., 2001). Although not explicitly defined, this preceptor behavior may have been implied or subsumed, however, in the larger construct of problem-solving approaches to learning in other studies. Also, there was little identification of joint preceptor-student goal setting or problem-solving. Mann et al. (2001) constitutes the sole study that identified the role of preceptor as co-learner, "Some identified themselves as learners with the student, as well as teachers. One noted, 'I never stop. I am still a student'" (p. 282).

The provision of a safe learning environment by the preceptor with adequate supervision of both the student and the patient was expressed by more than one-fourth of the studies. In contrast, one-third of the studies identified the need for preceptor delegation of an appropriate level of student autonomy in the patient interaction and learning process. The presence of an adequate number of patient cases and the opportunity for student practice and repetition of skills was identified by nearly one-third of the studies.

*Personality attributes.*

The most frequently cited personal attribute of a preceptor was the level of enthusiasm for teaching and the profession. Enthusiasm translated into stimulation of interest and motivation for learning by the student. One-fourth of the studies also identified respect for students and correction without humiliation as being instrumental to the learning process. Caring, friendliness, the desire to help, and acceptance were also identified as important personal characteristics of preceptors.
**Instrument to measure teaching effectiveness of medical instructors.**

The overwhelming majority of the studies in the extant literature are descriptive in nature. "Few aspects of clinical teaching have been investigated empirically, let alone validated" (Krichbaum, 1994, p. 314). Litzelman, Stratos, Marriott, and Skeff (1998) constitute one of the few studies in the literature that has attempted to develop a scientifically validated instrument to evaluate clinical teaching effectiveness in the medical field. Creation of this instrument was based on categories emanating from the Stanford Faculty Development Program (SFDP), a preceptor training program for medical instructors. Factor analysis identified seven distinct categories or characteristics/behaviors displayed by effective medical instructors: learning climate, control of the teaching session, communication of goals by the instructor, promotion of understanding and retention (i.e., teaching methods), evaluation, feedback, and self-directed learning/knowledge. The reported overall internal consistency or Cronbach's alpha for the instrument was 0.97.

Although many of the factors are consistent with those identified by other studies in the medical literature, role modeling, which was otherwise predominant, is noticeably absent as a distinct factor. The authors also discovered that students did not discern between the instructors' content knowledge and the instructors' ability to promote self-directed learning. These loaded onto the same factor. The authors postulate that this inability to distinguish between the two elements suggests that effective instructors are co-learners with their students. Dimensions of content knowledge and self-directed learning cannot be differentiated by the student. One builds upon the other. Instructor
demonstration of methods to address their own knowledge gaps prompts students to engage in similar self-directed learning behaviors.

**Other healthcare professions.**

An examination of the literature in nursing and other health-care related professions relative to preceptor characteristics, skills, and behaviors that are conducive to student learning was conducted to determine the level of agreement with the medical literature. Studies in nursing (Andersen, 1991; Happell, 2009; Letizia & Jennrich, 1998; Myrick & Barrett, 1994; Myrick & Yonge, 2002a, 2002b, 2004), physical therapy (Jarski, Kulig, & Olson, 1990), and the dietetic literature (Kruzich, Anderson, Litchfield, Wohlsdorf-Arendt, & Oakland, 2003; Wilson, 2002) were identified.

The most frequently cited preceptor characteristics, skills, and behaviors identified as being instrumental in student learning were similar to preceptor characteristics and behaviors reported in the medical literature: role modeling, interpersonal communication between the preceptor and student, provision of constructive feedback, and involvement of the student in the learning process. In terms of role modeling, the clinical expertise, competence, and professionalism of the preceptor were consistently valued. The ability of the preceptor to balance love for teaching with clinical responsibilities was identified by Jarski et al. (1990) and Kruzich et al. (2003).

Communication and one-on-one preceptor/student interaction was inherent to nearly every study. However, there was a greater emphasis on structured learning in nursing and the allied health professions in contrast to the medical literature. Only Wilson (2002) speaks to learning in the moment. A larger proportion of the studies in the related health professional literature identified the importance of goal-setting and the
communication of expectations at the beginning of the practice experience than was reported in the medical literature. Assessing the needs of the students and tailoring the practice experience to address those needs was cited in 50% of the studies. The importance of student self-assessment was also identified by both the nursing and dietetic literature. Joint goal-setting was addressed by one study in the nursing literature (Letizia & Jennrich, 1998).

Teaching skills valued by the related health care professions included summation and debriefing sessions. Summation was more frequently mentioned in the nursing and allied health care literature than in the medical literature. Once again, medical training seems to rely more heavily on learning in the moment than in a structured approach. Consistent with the medical literature, employment of regular, specific, and constructive feedback was cited by each of the disciplines. Physical therapy and nursing address problem-solving approaches as well as the ability of preceptors to clearly answer student questions as conducive to learning.

Unlike the medical literature, there is no mention of appropriate delegation of responsibility to the student and the enhanced role of student autonomy. Rather, the importance of a safe and supervised learning environment is acknowledged by the majority of the studies emanating from the nursing and allied health care literature. Access to the preceptor by the student and identification of adequate time for the preceptor to devote to the student was apparent in the physical therapy, nursing, and dietetic literature. These characteristics were much less frequently identified in the medical literature. Patient presence and ample opportunity for patient interaction as
identified by the preceptor was apparent in all of the ancillary health care studies and is consistent with the medical literature.

Personal attributes and characteristics of the preceptor were predominant in the literature of the related health professions. Nursing, physical therapy, and the dietetic literature identified friendliness, honesty, openness, trust, genuine concern, and respect for the student as important preceptor characteristics in spite of a power differential. Such characteristics create an environment conducive to learning:

Indeed, students indicated that the experiences of having their opinions and reactions sought regularly, and responded to in an open manner, contributed significantly to the development of trust in their preceptor. Ultimately that trust led to their ability to be able to question and be questioned, to develop confidence in their ability to think critically and more importantly, to elevate that thinking to a higher level. (Myrick & Yonge, 2004, p. 377)

Correction without humiliation was also cited by physical therapy and nursing. Other preceptor attributes and behaviors that were not evident in the medical literature included the respect of one's peers, self-awareness of strengths and weaknesses (Letizia & Jennrich, 1998), the ability to help students prioritize (Andersen, 1991; Myrick & Yonge, 2002a), and the employment of humor and storytelling in allaying student anxiety (Andersen, 1991).

Several of the studies further identified preceptor behaviors that hindered learning (Jarski et al., 1990; Kruzich et al., 2003). Unhelpful approaches included questioning in an intimidating manner, correction of students in the presence of patients, and discouragement of the development of a student-faculty rapport. Other unhelpful
behaviors included lack of adherence to a teaching schedule, failure to allot sufficient
time for the student, inaccessibility of the preceptor for consult, lack of establishment of
student expectations, failure to provide an explanation of the preceptor's thought
processes and decision-making, discussion of medical cases in the presence of the patient,
providing general answers to specific questions, failure to recognize extra effort on the
part of the student, provision of student assessment based on indirect evidence, and
criticism of the student without providing helpful suggestions for improvement.
Behaviors that are detrimental to learning as reported in the medical literature include
overly rigid preceptor structuring of the interview process, teaching and reviewing in the
presence of the patient, and focusing on only one teaching theme per clinic (Schultz et al.
2004).

Krichbaum (1994) is one of the few studies in the health professional literature
that has attempted to link preceptor characteristics and behaviors to student learning
outcomes. Thirty-six nursing preceptors and their associated students rated the preceptors
on 24 specific teaching behaviors grouped into eight categories that were derived from
the literature. These teaching behaviors were then correlated with student outcomes on a
knowledge-based content examination and on performance-based assessments in the
clinical setting. Gains in student content knowledge as identified from pre-test and post-
test measures were most highly correlated with preceptor utilization of objectives in
planning the experience; provision of performance-related feedback; enthusiasm for
teaching; and concern for the student's progress. Also correlated, but to a lesser extent,
were employment of effective questioning by the preceptor; provision of specific and
timely feedback; and providing opportunities for student practice. Surprisingly, the ability
of the preceptor to offer explanations or lead discussion was not related to improved student outcomes.

Gains in student performance as measured by assessment in the clinical practice setting were most highly correlated with the clarity of preceptor expectations; flexibility and adaptability of the experiential structure; provision of opportunities for student observation; and preceptor enthusiasm. Also correlated, but to a lesser extent, were the establishment of learning objectives; the employment of appropriate questioning in a non-threatening manner; utilization of sufficient feedback in an appropriate manner; demonstration of concern for the learner; and frequent explanation by the preceptor. Unexpectedly, the amount of discourse offered by the preceptor rather than the quality of the discourse was linked to improved student performance.

The pharmacy literature.

The Academic Practice Partnership Initiative.

In 2005, The American Association of Colleges of Pharmacy (AACP), in conjunction with the University of Washington, PMM Consulting, and Silver Pennies Consulting, convened a summit to examine the state of experiential education in the profession of pharmacy (AACP-APPI, 2005). This Academic Practice Partnership Initiative specifically focused on the interaction of preceptors, practice sites, students, and schools of pharmacy in relationship to the advanced pharmacy practice experiences delivered in the final year of the academic sequence.

An outgrowth of that initiative was the development of a system to identify exemplary practice sites for the advanced pharmacy practice experiences (Smith et al., 2005). Separate criteria as a measure of excellence were developed for practice sites and
preceptors (AACP-APPI, 2005). An instrument created to identify exemplary preceptors for the purpose of recognition measures the following attributes: leadership/management skills; embodiment of practice philosophy; role modeling in terms of patient-centered care, ethical decision making, problem solving, providing patient education, and professionalism; enthusiasm and effectiveness as a teacher; encouragement of student self-directed learning; and interpersonal communication skills.

Development of the AACP-APPI instrument was based primarily on pharmacy literature from the 1990's, as cited by its authors. Pharmacy literature from that era predated the implementation of the ACPE Accreditation Standards and Guidelines for the Doctor of Pharmacy degree program and the addition of the introductory pharmacy practice experiences as part of the curriculum. In development of the AACP-APPI instrument, the authors cite a survey conducted by Boh et al. (1991). Results of that survey, disseminated to the 74 schools of pharmacy in existence at that time, revealed that the majority of schools seek preceptors who are respected as ethical contemporary practitioners or good role models; have a desire to teach students; are licensed to practice pharmacy; attend continuing education programs; display a patient-oriented approach to practice; display good interpersonal skills; display a professional appearance; and are recommended by the experiential director or school of pharmacy faculty. Schools also demonstrated a preference for preceptors who are members of professional associations and have practiced a given number of years as a pharmacist. The Boh survey, however, was not open-ended. Rather, survey items were constructed by the authors who reference literature dating back to the 1970's and 1980's, including a now out-of-print pharmacy
internship manual. No research studies are cited by Boh et al. (1991) in the construction of their survey.

In development of the AACP-APPI instrument, Smith et al. (2005) also cite the work of Campagna et al. (1994) who published recommended standards and guidelines for experiential education programs. These guidelines suggested that preceptors embody the following qualities and characteristics: possession of professional licensure with a minimum of one year of experience; maintenance of a high quality practice that provides services such as drug information, patient education, medication history interview, drug monitoring, pharmacokinetic dosing, consults, and in-service teaching; training in teaching methods; engagement in professional growth and life-long learning; establishment of rotation expectations and meetings with the student on a regularly scheduled basis; adherence to institutional policy and procedure; and concordance with the educational philosophy of the school. The Campagna publication does not constitute a research study. Rather, it is a list of recommended standards and guidelines for experiential education prepared by a task force of the AACP Pharmacy Practice Experience Special Interest Group (PEP-SIG). Campagna et al. cite the Boh survey and early pharmacy literature and guidelines regarding internships and experiential education. Once again, no original research studies are cited.

Finally, authors of the AACP-APPI instrument reference the American Society of Health-System Pharmacists accreditation standards for residency training (ASHP, 1988) and an opinion column in the same journal by Erstad (1993). The ASHP standards briefly address desirable preceptor characteristics with no reference to prior research to support their recommendations. Erstad discusses preceptor best practices in the delivery of
experiential education from the author's perspective and own experience. Little original research from either the medical, affiliated health professions, or pharmacy was used in the construction of the AACP-APPI instrument. Nor has it been scientifically tested for validity and reliability.

**Other studies.**

Few other peer-reviewed studies of preceptor characteristics and behaviors exist in the pharmacy literature. A national survey of volunteer pharmacy preceptors examined issues such as workload, capacity, and compensation (Skrabal et al., 2008). Information gathered relative to teaching qualities and characteristics of preceptors was scant. The study did reveal, however, that 53% of the 1163 respondents held a doctor of pharmacy degree with 44% of the respondents possessing a bachelor of science pharmacy degree. Nearly 70% of the study participants had practiced pharmacy for more than ten years.

Survey assessments relative to teaching behaviors were very global. Ninety percent of those surveyed agreed or strongly agreed that the quality of the practice experience was enhanced based on the amount of time the preceptor spent with the student. Twenty percent of those surveyed indicated that they had inadequate time to provide a quality learning experience. The authors suggested that "Models that provide balance among quantity of preceptor one-on-one student time, quality interactions that facilitate self-directed student learning, and student contribution (value-added services) to sites would be useful for both sites and schools" (Skrabal et al., 2008, p. 7).

An open-ended survey of Canadian pharmacy residents, who had recently completed residency programs situated in the British Columbia hospital system, revealed three recurrent themes connected to preceptor effectiveness (Kanji, Hamilton, & Hill,
Pharmacy residents valued regular feedback, whether positive or negative; a practice experience that was well-structured by the preceptor with realistic expectations; and positive personal attributes of their preceptors, such as enthusiasm and friendliness. The residents also expressed an appreciation of their preceptors as role models. The authors acknowledge the small number of survey participants and low response rate as limitations to their study. However, the emphasis on the use of formative feedback, preceptor as role model, and personal attributes of the preceptor are consistent with the medical and related health professional literature. The value placed on rotation structure and preceptor expectations by the pharmacy residents is more closely aligned with the findings from nursing and the allied health professions than with medicine.

In an observational study of three exemplary community pharmacy preceptors with follow-up interviews, the following behaviors were identified: structuring of rotations with hierarchical goals; performance of task-based assessments; interaction with students in the context of practice; combination of work with teaching objectives; and replacement of instruction with collegial interactions at the conclusion of the rotation (Dehoney, 1999). Although this study does not appear in the peer-reviewed literature, it was accepted for presentation at an AACP Annual Meeting. Once again, the emphasis on formal structure is more consistent with the findings reported in the literature of nursing and the allied health professions than it is with the medical literature.

The University of Washington and Washington State University schools of pharmacy conducted their own informal survey of pharmacy students regarding the characteristics of effective preceptors (O'Sullivan et al., 2001). Of the 25 respondents, the following general characteristics were identified: enthusiasm for teaching;
encouragement of critical thinking and problem solving; organization; development of student knowledge base; role modeling; integration into the workflow; and communication skills.

**Differences between student and preceptor perceptions.**

A survey of student and preceptor perceptions regarding the effectiveness of preceptor teaching behaviors in the advanced pharmacy practice experiences revealed a significant difference between students and preceptors in the ratings of preceptor behaviors (Sonthisombat, 2008). This survey, disseminated to students and preceptors participating in an advanced pharmacy practice experience as part of a doctor of pharmacy degree program situated in Thailand, was adapted from surveys gleaned from the medical literature.

Preceptors rated themselves significantly higher than students on nine of the 47 items. These items included demonstration of sensitivity to patient needs; giving students the opportunity to ask, discuss, and exchange opinions; remaining accessible to students when help is needed; setting criteria for student performance; evaluating students based on the objectives established at the beginning of the practice experience; grading students based on performance and effort; observing student performance in the proper manner; giving students positive feedback for good work; responding positively to students' comments and suggestions about preceptor teaching; and inviting comments and/or criticism of the preceptor's own ideas.

Students rated preceptors significantly higher on only one item: evaluating and advising students of their progress in a timely and systematic manner. Preceptors rated themselves higher than students, though not to a level of significance, on 16 additional
items. It is evident from this study that students and preceptors often perceive teaching behaviors quite differently from one another.

Differences in student and preceptor perceptions of the effectiveness of preceptor characteristics, skills, and teaching behaviors are also apparent in the medical and nursing literature. Riesenberg et al. (2001) reported that medical students tended to value learning opportunities provided by the preceptor as well as exposure to a wide range of patients to a greater extent than do their instructors. The medical preceptors, on the other hand, tended to value role modeling behaviors such as the ability to provide care and relate to their patients to a greater extent than do their students. Both students and preceptors agreed that allowing the student to assume greater levels of responsibility and a degree of autonomy in the practice setting was conducive to learning. A study of medical residents by Buchel and Edwards (2005) uncovered the same. Residents were more likely to value autonomy, whereas preceptors preferentially valued role modeling behaviors.

Conversely, in a qualitative analysis of the journals maintained by seven nursing students, Andersen (1991) reported the opposite effect regarding role modeling behaviors. Students valued the role modeling behavior that nurse preceptors exhibited when intercepting anticipated problems. Preceptors dismissed the significance of such behaviors to the learning process.

Of the 58 preceptor behaviors identified as being conducive to learning, Kernan et al. (2008) found that preceptors and medical students diverged on 14 percent of the items. Students valued expansion of student involvement in patient care and the delegation of responsibility to the student for wrap-up discussion with the patient to a significantly greater extent than their instructors. In contrast, preceptors valued preceptor-directed
activities (e.g., orchestration of the student-patient encounter, counseling students on a problem-focused approach to the patient encounter, observation of student interaction with patients, and communication with students to ensure that learning goals are being met) to a significantly greater extent than students. Both preceptors and students valued giving students the opportunity to explain choices regarding patient care as well as the merits of specific and honest feedback. Overall, preceptors preferred a teacher-directed approach, whereas students preferred a learner-centered approach to the practice experience.

Only McKee, Steiner-Grossman, Burton, and Mulvihill (1998) seemed to depart from this trend. In a study of medical students participating in experiential learning at urban community health centers, the student perception of the quality of the learning experience was most positively associated with the amount of time that the preceptor dedicated to teaching and the degree to which the preceptor raised family issues. For preceptors, the correlation with quality of learning was most positively associated with the number of patients that the student saw independently, the number of times the preceptor observed a student present a patient case, and the number of times the preceptor observed student note-writing outside of the student-patient interaction. Contrary to other studies in the medical literature, McKee et al. concluded that preceptors tended to overvalue student autonomy. The authors purport that students preferred interaction with the preceptor in the context of direct patient care.

The nursing literature also reveals differences in the value that students and preceptors place on preceptor characteristics, skills, and behaviors. Byrd et al. (1997) found that the rank-ordering of 15 factors relative to effective preceptor characteristics
and behaviors by preceptors and students was essentially opposite of one another. Whereas preceptors valued the giving and receiving of constructive criticism, clinical competence, and knowledge of the objectives for the practice experience as the top three most important attributes, students ranked these among their bottom four. Conversely, students ranked knowledge of the preceptoring process, student-preceptor compatibility, and preceptor attitude towards teaching and learning as the top three most important preceptor attributes. Preceptors ranked these three factors as the least important. It appears that students tended to place the greatest value on the personal characteristics of their instructors, whereas preceptors tended to give more weight to their role as teacher and clinician.

Based on reported differences in perception between students and preceptors, Riesenberg et al. (2001) concluded that identification of effective preceptor characteristics and behaviors ought not to be driven solely by content experts. Rather, they urge that the voice of the student be included in research design:

A review of our earlier study with students revealed a potential flaw in the preceptor and site characteristic items selected for comparison. Content experts chose the list of characteristics . . . Using the preceptor and site characteristics assigned the highest rankings by the students during the previous study (rather than relying solely on content experts) would allow for a more appropriate comparison. (p. 661)

Differences in student perceptions based on academic maturity.

The medical literature contains several studies that have also reported differences in student perception of preceptor effectiveness based on the academic and maturity level
of the student. Learners progress from initial dependence on their instructors, moving to collaboration with their instructors, finally culminating in a more autonomous pursuit of learning needs with the instructor serving as guide or facilitator (Stritter, Shahady, & Mattern, 1988). Described as a learning vector, this model contends that professional development begins with exposure to the practice environment; progressing to the acquisition of knowledge and skills through practice and application; and ultimately resulting in integration and socialization to the profession.

Congruent with the learning vector model, Paukert and Richards (2000) concluded that learners progress from dependence on instructors to student-centered learning as they become more experienced. Exit surveys of fourth year medical students, conducted at the conclusion of the didactic curriculum and prior to the commencement of medical residencies, revealed that less experienced students favored the teaching role of their instructors. With only limited exposure to practice experiences, these students were heavily dependent on the instructor to control the learning environment. Role modeling was deemed especially important as it related to the discernment of career choices by students.

Similar results are reported with early learners (Huggett, Warrier, & Maio, 2007). An analysis of the learning journals of second year medical students, designed to uncover early learner perceptions of effective preceptors, found that those preceptors who were identified as good role models were also deemed to be the most credible. As role models, early learners valued preceptors who possessed good patient communication skills, the ability to develop a rapport with their patients, and a deep medical knowledge base. The collegiality and professionalism of their preceptors were also deemed to be important role
modeling behaviors. The willingness of preceptors to discuss career-related topics was especially significant.

Second year medical students further valued preceptors who actively engaged students in learning. Examples of active engagement included the ability of the instructor to link basic science courses to clinical experiences, integrate students in team activities, assign meaningful tasks, demonstrate activities, involve students in hands-on activities, and engage students in patient case discussions. Students valued preceptors who set expectations and coached students in advance of patient encounters. Novice students with minimal clinical experience placed value on preceptors who were good role models and who actively directed the student learning process (Huggett et al., 2007; Paukert & Richards, 2000). Unlike many other studies in the medical literature, however, Huggett et al. failed to identify the delivery of feedback as a preceptor behavior valued by second year students.

Other studies confirm the learning vector model. In a content analysis of student comments relative to their residency learning experiences, first year medical residents placed a higher value on the role modeling characteristics of their preceptors in contrast to third year residents who valued the preceptor in terms of the guidance provided (Ullian et al., 1994). Novice residents placed greater importance on the teaching that the preceptor provided through patient rounds. Importance was attached to the availability of the preceptor, the preceptor's approach to patient care, and the feedback provided to the student. Third year residents, on the other hand, preferred to manage their own learning. They sought guidance from preceptors in terms of the identification of critical content and associated readings. Third-year residents tended to view their preceptors as
colleagues. Multiple studies demonstrate that novice medical students begin as dependent learners, move to collaborative learners as first-year residents, and finally progress to independent learners as third-year residents (Huggett et al., 2007; Paukert & Richards, 2000; Ullian et al., 1994).

A similar trend was discovered when examining the preferred preceptor and site characteristics between fourth year medical students and more experienced medical residents (Schultz et al., 2004). In a survey that examined 38 preceptor behaviors and 24 site characteristics, novice medical students gave greater weight to the value of direct preceptor interactions in contrast to the residents who valued issues related to patient logistics. Younger students valued preceptor direction in guiding the patient encounter. Residents had a preference for autonomy relying on the preceptor for the identification of an adequate number and sufficient mix of patients. Residents found little value in a preceptor-structured interview format. The findings of Schultz confirm an earlier study by Stritter and Baker (as cited in Schultz et al., 2004). First year residents preferred being told what to do by their preceptors, whereas more experienced residents valued autonomy with clarifying explanations as provided by their preceptors.

The clinical teaching behaviors of preceptors accounted for a greater degree of variance in student growth across their practice experiences for older students and for those students with a non-science undergraduate degree (Roop and Pangaro, 2001). Preceptor behaviors contributing to student growth included the leadership style of the instructor and the ability of the instructor to foster student understanding. The authors concluded,
These results suggest that some teaching behaviors have a stronger influence on the learning of . . . more mature students. Perhaps these students have a more solid knowledge base upon which to build their clinical skills, better listening skills, or greater motivation. Older students with nonscience undergraduate majors may have had broader life experiences that affect their receptiveness to certain teaching behaviors. (Roop & Pangaro, 2001, p. 208)

Summary

Connections to educational theory and experiential models.

The qualities and characteristics that preceptors possess and the behaviors that effective preceptors exhibit, as uncovered by studies in the professional literature, can be linked to educational theory. Transformational leadership theory, adult learning theory, and social cognitive theory are particularly useful in examining experiential education. Experiential models, as defined by Kolb and Joplin, also provide a framework upon which effective preceptor characteristics and behaviors can be viewed.

The importance assigned to the opportunity for ample patient interaction and practice experiences, as identified by the literature, speaks to the necessity for planned and sequential concrete experiences, as advocated by Dewey and identified as the first stage in Kolb's experiential learning cycle. Behaviors such as goal setting, communicating expectations, and assessment of prior student learning were also valued. Whether this is instructor-driven or studentirected can be addressed from either a pedagogical or andragogical perspective, as described by Knowles, based on the experience level of the student. Joplin acknowledges this as part of the focus stage of the experiential cycle.
Interpersonal communication skills, as part of teaching behaviors, were also valued across the disciplines. Practices such as the employment of problem-solving approaches to learning through active questioning, the provision of formative feedback, and engagement in thinking-out-loud practices of the preceptor were frequently identified as effective behaviors. These coaching behaviors and reflection-in-action practices by the preceptor resonate with the work of Bandura and Schön. They also represent the reflection stage of Kolb and Joplin's models. Burns and Bass address this as intellectual stimulation.

The medical literature further addresses the effectiveness of pushing students beyond their comfort zone, otherwise defined by Vygotsky as the zone of proximal development. Providing summation and debriefing at the conclusion of an experience were also highly valued across the studies and are in keeping with Joplin's experiential model. Such practices assist in the abstract conceptualization stage of Kolb's model, during which students make sense of and create new meanings as a result of their experiences. Assimilation and accommodation as addressed by Piaget, Argyris, and Schön occur at this stage of the cycle. The medical literature is unique in its emphasis on student autonomy allowing for active experimentation as identified in the final stage of Kolb's model.

Studies in the medical and health professional literature consistently point to role modeling as an important preceptor attribute in experiential education consistent with Bandura's social learning theory. Good role models were also recognized for their clinical competence, expertise, and professionalism. The majority of studies in the literature also addressed the importance of a safe learning environment, typically attributed to the
personality attributes of the preceptor. These qualities include enthusiasm, a caring demeanor, and respect for the student. Maslow, Rogers, and Knowles all speak to the elimination of threat as a necessary requisite for learning. Burns and Bass identified the importance of inspirational motivation and individualized consideration as critical attributes of effective teacher-leaders.

The medical literature further acknowledges the difference in value placed on preceptor characteristics and behavior as indicated by the academic level and experience of the student. Novice students preferred a more structured learning environment and preceptor-directed activities, whereas more experienced students preferred a greater degree of autonomy and self-directed learning. In their conclusions, Ullian et al. (1994) reported, "The results of this study support Knowles' concepts, with third-year residents matching the adult learning pattern more than first-year residents" (p. 837). As a whole, medical students and residents appear to value a greater degree of self-directed learning and autonomy. Students in nursing, the dietetic field, and physical therapy appear to prefer a greater degree of structure and preceptor-directed experiences.

Although there was evidence of self-directed learning and goal-setting on the part of students across the disciplines, there was surprisingly little indication of joint goal-setting. Only one study in the medical literature (Mann et al., 2001) and one study in the nursing literature (Letizia & Jennrich, 1998) identified goal setting that is determined jointly. Indeed, goal-setting appeared to be an either-or situation, that is, defined by either the preceptor or the student, but not negotiated by both. Yet, Burns and Bass speak to the importance of shared vision and shared experiences as being critical to transformational change. This joint venturing occurs in such a way that leader and follower become
indistinguishable from one another. Knowles describes the instructor as co-inquirer rather than as a director of the learning process. Although many of the studies acknowledged the importance of respect for the student, only Mann et al. (2001) identified the role of preceptor as a true learning partner with the student. In fact, Myrick and Yonge (2004) uncovered the existence of a hierarchy or power differential between student and preceptor.

Findings in the literature appear to support two of the three previously identified educational learning theory themes. Consistent with social cognitive theory, the preceptor as role model and coach was consistently identified as important to student development. Progression of novice to experienced student from a dependent to independent learning position was also predominant in the literature and is congruent with adult education theory. Less evident was the interplay between student and preceptor in joint goal-setting and co-inquiry of shared experiences as defined by transformational leadership theory.

**Remaining questions.**

A comprehensive review of the literature indicates that there is a need for a greater understanding in several areas. With the limited research regarding effective characteristics and behaviors of preceptors in the pharmacy profession, it is important to understand whether preceptor characteristics and behavior as identified by the medical and related health professional literature are transferable to pharmacy. Moreover, it is important to determine whether pharmacy students more closely resemble medical students who seem to prefer a greater deal of autonomy, or students from other health professions such as nursing, dietary, or physical therapy who have a preference for a more structured approach. It is also necessary to determine whether those preceptor
characteristics and behaviors identified by pharmacy studies conducted in Thailand and Canada are applicable to contemporary doctor of pharmacy programs situated in the United States.

Several studies in the literature indicate that instructors and students may value preceptor teaching characteristics and behaviors differently. These differences would be important to uncover and acknowledge in the pharmacy profession. The medical and nursing literature also suggest that students with different levels of experience value preceptor teaching characteristics and behaviors differently. It is unknown whether students participating in the introductory pharmacy practice experiences value preceptor characteristics and behaviors differently than students participating in the advanced pharmacy practice experiences.

Transformational leadership theory would further indicate that sharing a collective vision, joint goal-setting, and participating in shared experiences would be instrumental in assisting students in the process of professional socialization or transformation. Although such preceptor behaviors were not routinely identified as crucial to the learning process by the medical or health professional literature nor by the limited studies in the pharmacy literature, it remains to be seen whether behaviors such as these are valued by pharmacy preceptors and students. It is conceivable that this aspect has not been adequately explored. Many of the surveys as reported in the literature were constructed from previously derived lists or from "experts" in the field and do not reflect the student perspective. Although not explicitly defined, Krichbaum (1994) intimates that a dimension of co-learning may exist, "There are so many new procedures to be learned in critical care that the objective for the student has been interdependence with the
preceptor by the conclusion of the practicum rather than independence” (p. 313). Perhaps the dimension of mutual actualization has been subsumed in the importance attached to preceptor-student interaction in the majority of the reported studies and has not been adequately discerned.

Finally, it is critical to determine whether certain preceptor characteristics and behaviors can be linked to student mastery of the professional pharmacy competencies. Virtually none of the studies identified in the medical, health professional, or pharmacy literature attempted to define or demonstrate any such links. Only Krichbaum (1994), who examined the association between preceptor behaviors and the learning outcomes of nursing students, made such an attempt.
Chapter III

Method

Research Questions

The specific research questions addressed by this study are as follows:

- What qualities, skills, and characteristics do preceptors possess and what behaviors do preceptors exhibit that students and experiential education experts perceive as being valuable in helping students to acquire the professional behaviors and attain the competencies expected of a pharmacist?

- Are there differences in these perceptions between students and experiential education experts?

- Are there differences in these perceptions between students participating in the introductory and advanced pharmacy practice experiences?

A content analysis of preceptor evaluation instruments developed by experiential education experts, as well as comments obtained from students enrolled in the introductory and advanced pharmacy practice experiences at Duquesne University Mylan School of Pharmacy, was conducted to determine the above.

Study Design

Representativeness of the population.

This study examined two distinct sets of artifacts: the content of preceptor evaluation instruments collected from individual schools of pharmacy that were developed by experiential education experts; and the qualitative comments gleaned from evaluative instruments completed by students enrolled in the introductory and advanced pharmacy practice experiences at Duquesne University Mylan School of Pharmacy.
Schools of pharmacy have developed their own internal instruments for utilization by students in the evaluation of preceptors and pharmacy practice experiences because a scientifically validated preceptor evaluation instrument for the pharmacy profession does not currently exist. For purposes of this research, a request was made to all pharmacy school experiential education administrators to provide a copy of the instrument currently being used by their respective students to evaluate rotation quality and preceptor effectiveness. Additionally, the pharmacy school websites of non-responders were examined to secure additional documents. In total, instruments from 44 schools of pharmacy across 25 states were collected. As of January of 2012, there were 119 schools of pharmacy with full or candidate accreditation status reported nationwide (AACP, 2012). The collected instruments, therefore, represent 37% of all U.S. schools of pharmacy and constitute the first set of artifacts.

All regions of the United States, including the Northeast, Mid-Atlantic, Southeast, Midwest, Southwest, and Pacific Northwest, were represented in this subset. The sample that was collected consists of schools of pharmacy with demographics that are representative of the population as a whole. Collected instruments represent the following:

- public, religious-affiliated, and other private institutions;
- schools with enrollments that vary across a range from less than 100 students to over 200 students per class year (median class size of 107);
- schools with traditional and accelerated pathway programs;
- schools with exclusive doctor of pharmacy degree program offerings and those that also offer graduate degree programs;
• schools that are based in large urban centers, small towns, and rural areas;
• schools with varying admission requirements including those that offer their own pre-pharmacy track, those that accept pre-requisite coursework from other institutions, and those that require a prior college degree.

A content analysis of the collected instruments was subsequently performed to discern those preceptor characteristics and behaviors that experiential education experts have identified as being important to the experiential education learning process.

The second set of artifacts encompassed open-ended comments collected from students who completed introductory and advanced pharmacy practice experiences at the Duquesne University Mylan School of Pharmacy from 2009 to 2011. Duquesne is a private institution located in the city of Pittsburgh in southwestern Pennsylvania. Each of its four professional class years consists of approximately 200 students. About 83% of the students are enrolled in a traditional day program track. The vast majority of these students are in their early twenties having matriculated into the program following two years of pre-professional collegiate study immediately upon graduation from high school. Approximately 17% of the student population is enrolled in a parallel doctor of pharmacy degree program with the didactic content delivered on the weekends. The weekend cohort students are older than those students enrolled in the traditional day track and differ in that they have earned at least one non-pharmacy college degree.

Duquesne does not currently offer a non-traditional pathway for previously degreed pharmacists who are seeking to earn the Doctor of Pharmacy degree subsequent to its implementation as the sole entry-level degree awarded by the profession (Travlos & Zarembski, 2003). Therefore, none of the students enrolled in either the traditional or
weekend program tracks at Duquesne University possesses a previously earned bachelor of science pharmacy degree.

Duquesne University students are representative of the general pharmacy student population in terms of gender, minority representation, and previously earned non-pharmacy degrees. The Duquesne University School of Pharmacy student body composition is 63% female and 37% male, as compared to a 61% female and 39% male national student distribution, as reported by the profession. Minorities comprise 4% of the traditional pathway student body and 17% of the weekend student cohort at Duquesne, as compared to an overall national enrollment percentage of 11.2% for underrepresented minorities (AACP, 2012; Taylor & Patton, 2011).

A content review of all school of pharmacy websites reveals that approximately 11% of the schools, averaging 13% of the national student population, exclusively admit students who have earned at least one prior non-pharmacy academic degree. The student percentage was calculated by determining the sum of the average number of enrolled students for each of the schools identified as requiring a prior non-pharmacy academic degree, and dividing it by the total number of pharmacy students enrolled nationwide. This figure does not include students who had previously earned a bachelor of science degree in pharmacy and are now completing the doctor of pharmacy degree. Such students would not be enrolled in a traditional doctor of pharmacy degree program requiring the full complement of introductory and advanced pharmacy practice experiences. Students who have earned at least one prior non-pharmacy academic degree comprise 17% of the Duquesne University student population, which is consistent with the national trend.
All students from the Duquesne University Mylan School of Pharmacy are required to participate in a community-oriented introductory pharmacy practice experience and an institutionally-based introductory practice experience positioned in the first three years of the professional program. All students are also required to participate in a series of seven advanced pharmacy practice experiences in the fourth and final professional year of the program. The advanced practice experiences are situated in community, health-system, acute care, ambulatory, and alternate practice settings.

Representativeness of the general pharmacy student population is further assured through the alignment of the Duquesne University experiential education program, as described above, with the ACPE accreditation standards and guidelines (ACPE, 2006). Accordingly, requirements for the Duquesne program are consistent with experiential programming offered by schools of pharmacy across the nation. Moreover, Duquesne pharmacy students participate in rotations that are hosted by practitioners who also serve as preceptors for multiple schools of pharmacy. These preceptors frequently host practice experiences simultaneously for students from various schools and would likely exhibit similar characteristics and behaviors across multiple student groups. Therefore, Duquesne students are in a position to assess and provide commentary on preceptor characteristics and behaviors that would not be unique to Duquesne's program.

**Data collection.**

Upon completion of each of the introductory and advanced pharmacy practice experiences, Duquesne University pharmacy students were asked to respond to the following questions as part of the preceptor and experiential education evaluation process:
1. What qualities and characteristics does your preceptor possess that made your learning experience valuable? How did your preceptor help you to achieve your learning objectives? Please list specific examples.

2. What specifically could your preceptor improve upon that would have better helped you meet your learning goals and objectives for this rotation?

Comments were collected from students pertaining to approximately 800 introductory pharmacy practice experiences over the course of the 2009-2010 and 2010-2011 academic years. These introductory rotations represented pharmacy practice experiences hosted by more than 150 preceptors in the community pharmacy setting and more than 65 preceptors in the institutional health system practice setting. Comments were also collected from students pertaining to approximately 3,000 advanced pharmacy practice experiences situated in community, institutional health system, acute care, ambulatory, and alternate practice settings over the course of the 2009-2010 and 2010-2011 academic years. These advanced rotations represented pharmacy practice experiences hosted by more than 60 preceptors in the community pharmacy setting, 50 preceptors in the ambulatory care setting, 50 preceptors in the health systems-based setting, 65 preceptors in the acute care-based setting, and more than 60 preceptors in the alternate practice setting. Preceptors supervised anywhere from one to four students during a given rotation. Alternate practice settings included those situated in managed care, long term care, home health care, drug information, nuclear pharmacy, veterinary pharmacy, research, and professional association management environments, among others. A content analysis was conducted to discern those preceptor characteristics and
behaviors that students in both the introductory and advanced pharmacy practice experiences identified as being instrumental to experiential education learning.

This study was approved by the Duquesne University Institutional Review Board (IRB) as exempt research. The first part of this study consisted of information derived from existing preceptor evaluation instruments that were developed and utilized by individual schools of pharmacy. This portion of the study examined a collection of pre-existing instruments. The second part of this study consisted of open-ended comments collected from evaluation instruments completed by Duquesne University student experiential education participants at the conclusion of their practice experiences. Data was mined from instruments that were developed and utilized for internal quality control and assessment processes of the Duquesne University School of Pharmacy experiential education program. The preceptor evaluation instrument was not designed for the purpose of this study. Nor were student comments collected for the purpose of this research. All information contained within the preceptor evaluation instrument was de-identified and cannot be tracked to an individual student or preceptor. There is no foreseeable harm to human subjects as a result of this study.

**Data Analysis**

Utilized by this study as its methodology, content analysis is a way of examining existing artifacts, primarily document text, in a manner that is systematic and objective (Elo & Kyngäs, 2008). Through content analysis, the opinions and insights of many participants can be captured and analyzed for the emergence of salient themes and patterns. Content analysis offers the advantage over other qualitative approaches, such as observational studies, one-on-one interviews, and focus groups in that it is unobtrusive,
the data cannot be inaccurately captured since it is gleaned from pre-existing artifacts, the study participants cannot be unintentionally led, and the insights of many individuals can readily be included (Weber, 1990).

Qualitative content analysis identifies salient themes and patterns that emerge from open-ended responses or other data elements contained within documents and artifacts. "Qualitative data analysis is based on induction; the researcher constructs patterns that emerge from the data and makes sense of them" (Gay & Arasian, 2003, p. 229). Key pieces of data within the document are identified and labeled by the researcher in a process known as coding. These data pieces can be individual words, phrases, larger sections of text or other elements. The coded data is subsequently assembled by the researcher into categories based on similarity of meaning, connotation, or other linkages. From these categories, key themes and patterns can be discerned.

Two primary sets of artifacts, evaluation instruments as developed by experiential experts and student comments gleaned from preceptor evaluation instruments, were analyzed for purposes of this research. The student comments were divided into those obtained from students completing the introductory pharmacy practice experiences, designated as IPPE, and those obtained from students completing the advanced pharmacy practice experiences, designated as APPE. Thus, three distinct data sets were identified: expert, IPPE, and APPE.

In a first cycle coding process, small pieces of text from each data set were subsequently examined and labeled with descriptors. Descriptive coding classifies sub-units or elements by relevant topic areas forming the basis for subsequent categorization.
(Saldaña, 2011). The refinement of codes and placement of coded data into appropriate categories was achieved through a technique known as constant comparison:

... this approach involves the constant comparison of identified data and concepts to determine their distinctive characteristics so that they can be placed in different and appropriate categories. As each new concept or piece of data is identified, it is compared to existing categories . . . Categories are modified as needed to fit new data and are further tested by additional new data, based on their key points as interpreted by the qualitative researcher. Categories can be compared to develop more general patterns of data. The aim of the constant comparative method is to understand and explain qualitative data. (Gay & Airasian, 2003, p. 233)

As codes emerged, a codebook was simultaneously built that provided a brief description of the code, inclusion and exclusion criteria for application of the code, and examples of instances where the code would be applied.

Analysis of the data is an iterative process that continues to be defined and redefined as additional data pieces are added and the interpretation process begins. The coding process and preliminary construction of the codebook began with examination of the expert artifact set. Student comments from the introductory and advanced practice experiences followed suit. Codes emerged or were collapsed as new data was compared to those categories previously established to determine best fit. For clarity of the research, codes were defined to be mutually exclusive of one another. Therefore, data pieces that could have conceivably been labeled with two or more codes required a reworking of the categorization system and refinement of the codebook. Additions to the codebook were
made as new constructs emerged. Frequencies of coded text were also captured to offer a quantitative look at the data.

After the initial coding cycle was complete, further refinement occurred through a second coding cycle. The purpose of second cycle coding was to "develop a sense of categorical, thematic, conceptual, and/or theoretical organization from [the] array of First Cycle codes" (Saldaña, 2011, p. 149). These second cycle pattern codes assisted in the identification of key themes that began to emerge from the data. In second cycle coding, codes were arranged into categories and sub-categories to make better sense of the data. Emergence of patterns and themes from these categories occurred through an inductive reasoning process forming the basis for new understandings that developed as a result of the study.

Although computer programs can be utilized in many types of content analyses, they are most beneficial when dealing with voluminous material that overwhelms manual coding methods. Replacing multiple manual raters, which may be a necessity in a large-scale study, with a computer program provides consistency in the coding process and eliminates the threat to inter-rater reliability. Utilization of software programs is also most appropriate when conducting content analysis from a quantitative perspective and when applying codes and categories that are standardized or rigidly defined. However, they are not as well suited for the discovery of new and evolving elements that this qualitative study requires. The efficiency achieved through software analysis can be overshadowed by the loss of fresh insights that manual coding and categorization provides. Development of a coding system unique to an individual study leads to identification of categories and themes that might otherwise have been overlooked.
"... relying on predefined categories may increase substantially the likelihood that researchers will overlook or miss important categories in their own data" (Gay & Airasian, 2003, p. 234).

Moreover, the large-scale global perspective provided by a manual coding process cannot be readily achieved by the view provided by a computer screen. Saldaña (2001) contends that "there is something about manipulating qualitative data on paper and writing codes in pencil that give you more control over and ownership of the work" (p. 22). Neuendorf (2002) further notes that manual coding allows for the recording of peripheral observations that can lead to new discoveries and emergence of previously unidentified categories and themes. To ensure that previously undiscovered concepts that form the rationale for this research were not lost, manual coding was employed as the method of data analysis.

**Validity and Reliability**

Although qualitative research is interpretive in nature, validity and reliability are no less important than in quantitative studies. Reliability is strengthened when there is consistency in the coding classification system. Development of a tightly-defined codebook as codes emerge ensures rigor and clarity in the coding process. Splitting the data into small pieces also enhances reliability by minimizing ambiguity in categorization. Coding by a single researcher removes the chance for coding differences among multiple raters, thereby eliminating the need to establish inter-rater reliability.

Demonstrating the reproducibility of results by coding the same data multiple times by the same researcher further attests to the reliability of the study. Such an effort ensures clarity of the coding rules, minimization of coding errors, and detection of
cognitive changes in rater judgment, such as that brought on by rater fatigue over time (Weber, 1990). Reliability of this particular study was enhanced by coding small data pieces, building an evolving codebook that is tightly defined, restricting the coding process to this single investigator, and engaging in coding of the same data multiple times to assure stability and consistency over time.

Employment of this investigator as the single evaluator eliminated the necessity of establishing inter-rater reliability. Although the use of a single evaluator minimizes threat to reliability, it also diminishes validity. Because identification of codes, categories, and subsequent themes is dependent on the judgment of the evaluator, validity is threatened with the use of one investigator. However, subsequent research studies employing the same methodology can be used to determine the degree of congruence of study results. Validity can also be established by comparison of the results to other published studies (i.e., predictive validity), as well as theoretical frameworks (i.e., hypothesis validity).

There are multiple types of validity. Face validity is demonstrated when there is agreement among experts that the study measures the construct that it intends to measure. Face validity is purported to be the weakest type of validity, since it is based on the impressions of experts in the field (Weber, 1990). The AACP-APPI instrument, for example, was validated through the consensus of several experiential experts regarding the characteristics and behaviors of exemplary preceptors (AACP-APPI, 2005). No other quantitative or qualitative research measures or collection of data were employed. More notably, the student voice was absent in the construction of the instrument. The AACP-APPI instrument demonstrates face validity.
Knowles (1970) asserted that it is critical for students to have the opportunity to challenge expert assumptions in defining their own learning needs. Lack of student input in the identification of effective preceptor characteristics and behaviors can lead to skewed or even erroneous results prompting the need for this study. Ullian et al. (1994) further addressed the limitations of approaches that are grounded primarily in the perspective of the researcher without due attentiveness paid to the input of the student stakeholder:

... studies of learners' perceptions of clinical teaching have required learners to respond to researcher-generated lists of hypothetically important components of the clinical teacher role. This use of these lists of specified clinical teaching components prevents the discovery of other components important to students or residents but not on the lists. (p. 833)

A more rigorous method of establishing validity, and one employed by this study, is construct validity. Construct validity is "... the extent to which a measure is related to other measures (constructs) in a way consistent with hypotheses derived from theory" (Neuendorf, 2002, p. 117). It is established when the results of data derived from a study are correlated with some other external criteria. Marked correlation between two instruments or study results that are purported to measure the same construct demonstrate strong convergent construct validity; low correlation between two instruments or study results that are meant to measure dissimilar constructs demonstrate robust discriminant construct validity. Comparison of the results of this research to those preceptor characteristics and behaviors as defined by the AACP-APPI instrument is one step that was utilized in the establishment of construct validity (AACP-APPI, 2005).
Hypothesis validity is a subtype of construct validity and a second method of establishing the validity of this study. Hypothesis validity is established when the results of a study can be related to theory. This approach "allows the researcher to test theoretical issues to enhance understanding of the data" (Elo & Kyngäs, 2008, p. 108). In other words, the results of the study behave as they are expected to do so on the basis of previously recognized theory. Categories, patterns, and themes identified through the content analysis, as conducted by this study, were compared to learning theory and experiential learning models to establish hypothesis validity.

Finally, predictive validity is established when the results of the study can be used to forecast or predict outcomes in other similar situations, whether those outcomes occurred in the past, present, or sometime in the future (Weber, 1990). The categories and themes identified by the content analysis conducted by this study were compared to categories and themes identified in the medical, nursing, pharmacy, and other health professional literature constituting the third type of validity measure used in this study.

Summary

The categories, themes, and patterns derived from the content analysis of the preceptor evaluation instruments and the student comments from both the introductory and advanced pharmacy practice experiences were examined to determine the characteristics and behaviors of preceptors deemed to be important in assisting students in the mastery of the professional competencies and inculcation of professional behaviors. Results were then further compared and contrasted to determine if there was a difference between those preceptor characteristics and behaviors as identified by the experiential "experts" and those identified by students. The results of the content analysis
were further examined to determine if there was a difference between preceptor
characteristics and behaviors most valued by novice students participating in the early
introductory pharmacy practice experiences and more experienced learners participating
in the later advanced pharmacy practice experiences.

Finally, the resultant categories and themes that were identified by this study were
compared to theoretical frameworks and the extant literature to establish construct
validity. Transformational leadership theory, adult learning theory, social cognitive
theory, and experiential learning models provide a context for understanding the results
of this study. Comparison of the categories and themes uncovered by this research were
compared to studies reported in the medical, nursing, allied health professional, and
pharmacy literature to identify areas of convergence and divergence.

Although the frequency of coded text was captured and analyzed as one indicator
of the salience of preceptor characteristics and behaviors, it was not the sole measure.
Unlike quantitative methods, qualitative research is focused on discovery of previously
unidentified concepts and constructs. Capturing newly emerging constructs and
dimensions, even if represented by a minority voice, weighs heavily in this research. The
level of perceived impact by the student, when so noted, was also reported. Subsequent
larger scale quantitative studies can test the statistical significance of the dimensions
uncovered by this research.

As is the case with many types of qualitative inquiries, this study was designed to
be one of discovery. As such, it is focused in nature.

The qualitative method is used to explore and identify the ideas, hypotheses, and
variables of interest to the researcher . . . The concepts derived from the
qualitative portion of the study can then be studied through the use of quantitative methods and hypothesis testing. The generalizability of the concepts and hypotheses tested through quantitative research can gain more credibility by obtaining a better link to the real world. Qualitative methods would have provided that link. (Kerlinger & Lee, 2000, p. 592)

Although this particular study has demonstrated that it is representative of schools of pharmacy and their student populations, generalizability to the wider population can best be established through future qualitative and quantitative studies based on the reported results. Reproducibility through additional qualitative approaches utilizing similar methodology can help to strengthen external validity. Testing the preceptor characteristics and behaviors identified by this research through quantitative studies, such as survey methodology and factor analysis, can further establish generalizability.
Chapter IV

Results

Results of the content analysis of the expert-designed preceptor evaluation instruments, and the comments collected from students engaged in the introductory (IPPE) and advanced (APPE) pharmacy practice experiences from Duquesne University Mylan School of Pharmacy in academic years 2009-2010 and 2010-2011, are discussed in this section. For the expert-designed instruments, content analysis was conducted on the elements contained within the artifacts. For the student data sets, content analysis was conducted on comments based on student responses to the following questions:

1. What qualities and characteristics does your preceptor possess that made your learning experience valuable? How did your preceptor help you to achieve your learning objectives? Please list specific examples.

2. What specifically could your preceptor improve upon that would have better helped you meet your learning goals and objectives for this rotation?

A total of 720 pieces of data were extracted from the expert-designed instruments, with 3,075 data points identified from the IPPE student data set, and 6,921 data points extracted from the APPE data set. This section will describe the results of the content analysis including the coding process, development of the codebook, identification of categories and themes, comparative studies, and identification of barriers to learning.

Development of Codes: First Cycle Coding

Descriptive codes were applied to the elements derived from the expert instruments and comments gleaned from the student data sets in a first-cycle coding process. This process allowed for the identification of constructs as they emerged from
the artifacts and was not based upon any predetermined definitions. A description of the results of the first cycle coding process follows with a discussion of the evolution of the codes and building of the codebook.

**Construction of the codebook.**

The evaluation instruments gathered from the representative schools of pharmacy constituted the first set of artifacts to be examined. These instruments reflect the expert voice. Pieces of document text representing a single construct were assigned a descriptive code. For example, "The preceptor provided frequent feedback that helped me improve upon my performance," was labeled as "Formative Feedback." As codes were identified, a codebook was constructed that provided definition to the code. Each definition includes a brief description of the code, the inclusion and exclusion criteria for application of the code, and examples of instances where the code would be applied (see Appendix for the complete coding dictionary).

**Constant comparison.**

The first pass review of the expert-designed documents resulted in the identification of 59 codes. As comments gleaned from the introductory and advanced pharmacy practice experience evaluation instruments completed by Duquesne University Mylan School of Pharmacy students from 2009-2010 and 2010-2011 were subsequently reviewed, they were compared to the defined codes for best fit. Through a constant comparison technique, definitions for codes were refined and nuances in meaning were clarified. For example, preceptor communication with patients regarding therapy was deemed to be part of a larger construct labeled "Competence," whereas preceptor
communication with other health care professionals became "Professional Communication."

Additional distinctions among codes were made. "Competence," reflecting the ability of the preceptor to perform aptly in the practitioner role, was differentiated from "Knowledge," which more accurately describes the preceptor's command of subject matter content. "Maintains Accessibility," or being available to the student for direction, evolved as being distinct from "Willingness to Help." This differentiation was made upon review of the student data sets. It became clear from student comments that a preceptor's willingness to help was a moot point if access to the preceptor was limited.

Other refinements of coding definitions were made as well. Conveying information to students regarding subject matter or by providing a global overview of operations (i.e., "telling" behaviors) was labeled as "Conveys Concepts." Conversely, demonstrating a skill for subsequent student adoption and replication through preceptor modeling approaches (i.e., "showing" behaviors) was labeled as "Demonstrates."

For example, utilization of the word "show" as part of a student comment could lead the coder to label the text as "Demonstrates." However, careful examination of the context more appropriately results in coding the data piece as "Conveys Concepts." The phrase, "... she was sure to show me everything about the profession before the end of the rotation," does not indicate that a particular skill or activity was modeled or demonstrated for subsequent student replication. Rather, it indicates that the preceptor conducted an overview of the professional practice experience for the student. The preceptor conveyed information about the practice site to the student. Consequently, this text was more aptly labeled as "Conveys Concepts."
Another area that required refinement of coding definitions revolved around the concept of questions and answers. Preceptor willingness to answer questions posed by students, coded as "Willingness to Help," was distinguished from conveyance of accurate answers to students or "Answers Questions." For example, student comments such as, ". . . she was able to balance her managerial skills with a highly approachable demeanor and attitude, making it very easy to ask questions," and, "[My preceptor] was very patient with any questions that I had," indicates that the preceptor was receptive to questions and willing to help.

Willingness to help, however, did not necessarily indicate that the preceptor was able to answer student questions completely and accurately. That dimension was more accurately reflected by comments such as, "[I could] expect well-thought [out] and accurate responses," and, "She did not give hurried answers; instead she took the time to answer each question with detail until I understood." These were coded as "Answers Questions." Encouraging or prodding students to ask questions of the preceptor was further coded as "Encourages Questions." Finally, posing questions to students in an effort to engage student recall was labeled as "Prompts Students." Each of these preceptor behaviors emerged as a separate construct.

**Collapse of coding constructs.**

In addition to the refinement and clarification of coding definitions, the review of student comments and elements contained in the expert instruments through the constant comparison technique, further contributed to the collapse and expansion of previously defined codes and to the emergence of new codes. For example, the construct "Ethical" was eventually subsumed into "Professionalism." Rarely, did students explicitly denote
ethical behavior as a separate and distinct construct. Rather, ethical preceptor behaviors were more likely to be implied as part of a global embodiment of professionalism as evidenced by the following student comment:

My preceptor . . . possesses all the qualities I believe a good pharmacist should possess. He . . . has the respect of and is very well-liked among his employees and the other pharmacists, and most importantly, he had gained the trust of the patients that rely on him on a daily basis.

Other student comments including, "My preceptor was very personable, honest, understanding and overall a great person," and, "He takes full responsibility for his actions and the actions of his staff," seemed to indicate the same. "Ethical" behavior did not stand-alone as a separate and distinct entity.

Preceptor self-motivation also became part of a larger sense of preceptor zeal for the profession, satisfaction of career choice, and willingness to work hard. These four associated characteristics and behaviors fell under the single coding tag of "Enthusiasm for Practice." Preceptor preparedness for the practice experience and organization were also viewed as representing a single dimension, becoming part of a single code labeled as "Organized."

The final instance of merged coding constructs is the dimension represented by willingness to help. Students consistently viewed preceptor approachability and willingness to answer questions as willingness to help. Student comments including, "[My preceptor] is always willing to discuss and answer questions that I have. He provides feedback and is always willing to help," as well as, "She is open to any questions and willing to help with any problems we would experience," and, "She is very
helpful and approachable so it is easy for me to ask her questions about projects and pharmacy in general," are examples of this dimension. Since preceptor approachability, willingness to answer questions, and willingness to help were so frequently linked together, they became part of a single construct labeled as "Willingness to Help."

**Expansion of coding constructs.**

"Opportunities for Learning," on the other hand, represents an initial coding construct that was subsequently split into five separate coding items. These are represented by "Provides Opportunities to Observe," "Provides Opportunities to Practice," "Provides Opportunities for Classroom Application," "Provides Opportunities for Patient Contact," and "Provides Opportunities for Inter-Professional Interactions."

The overwhelming majority of student comments made a very clear distinction between "Provides Opportunities to Observe" and "Provides Opportunities to Practice." "Provides Opportunities to Observe" represents a more passive approach to learning. Shadowing a pharmacist, touring other departments within a facility, or observing a meeting all reflected this dimension: "[My preceptor] set me up to observe pharmacists doing order entry and the usual pharmacy procedures. I also got the opportunity to go to grand rounds every Tuesday morning and to tumor board on Wednesday afternoons."

Conversely, "Provides Opportunity to Practice" represents a hands-on or active approach to learning. This coding construct includes participation in practice skills such as dispensing prescriptions, entering prescription orders, compounding medications, reviewing patient charts, developing therapy recommendations, and engaging as an active meeting participant. Student comments including, "I was exposed to many tasks (compounding, BP, glucose screenings, chart reviews, etc.) that I had not been asked to
do in the past," and, "I felt that I learned a lot through . . . answering phone calls, researching questions, and writing up patients that have provided me with beneficial experiences," typified this construct.

Further distinctions were made among the following coding labels: "Provides Opportunity for Patient Contact," "Provides Opportunity for Inter-Professional Interactions," and "Provides Opportunity for Classroom Application." Opportunities for the student to interact with patients was captured by the following student comment:

My goal for this rotation has been to improve upon my patient counseling, and [my preceptor] has helped me to reach this goal by having me perform all of the counseling during my time at the pharmacy. Any time a patient asks a question, it is directed towards me to answer.

Inter-professional interaction represents the opportunity for students to collaborate and interact with other health care professionals in terms of providing drug information, participating in medical rounds, and contributing to patient and global health care as part of an interdisciplinary effort. This construct was represented by student comments such as, "He allowed me to take part in conversations with physicians regarding recommendations and changes in therapy," and, "He has a great rapport with the doctors which allowed me to participate in rounds and ask them questions." Another student wrote, "Each day we . . . answered questions from other healthcare professionals, which helped us learn ideas and concepts."

Finally, the opportunity for students to apply classroom knowledge was represented by its own distinct code. The following student comments typified this construct: " . . . we had case-based discussions with the other students on rotation and a
pharmacist which helped reinforce the information we have previously learned in classes," and, "They encouraged me to expand my knowledge on certain topics and use the knowledge I already had throughout the entire process."

**Newly emergent coding constructs.**

As the student data sets were examined and coded, previously undefined constructs emerged. A total of eight new constructs that were not identified as part of the expert instruments were defined. The first of these new constructs was labeled as "Personal Attributes" and represents personality characteristics and affect of the preceptor, such as kindness, patience, positive attitude, friendliness, and a sense of humor. The second newly identified construct addresses the willingness of the preceptor to share unique experiences and stories relative to past work history and professional practice. Students valued the richness that depth of experience can provide: "He discussed with me his experience operating diabetes clinics and administering vaccines, and the knowledge he's gained from them." It was labeled as "Shares Experiences."

A third emerging construct describes the flexibility of the preceptor to changing student wants, needs, and circumstances. This construct, which was coded as "Accommodating," represents the willingness of the preceptor to adapt student schedules and to provide students with the opportunity to observe or participate in activities based on previously undefined interests or learning needs. A fourth dimension, labeled as "Monitors Progress," differs from formative feedback or formal assessment measures, which were associated with their own codes. Rather, "Monitors Progress" was used to describe the manner in which the preceptor regularly checks in on students to ensure that their learning needs are being met.
"Preps Students" represents a fifth newly identified concept. It pertains to the preparation that the preceptor provides to students prior to participating in a learning activity or patient encounter. It offers students the opportunity to rehearse in a safe environment, as evidenced by the following student comments: "Specifically each morning I made doctor calls to verify certain things. Before making the calls, my preceptor would help me decide the most effective way of communicating to the physicians," and, "She made sure that I understood my drugs very well before counseling or interviewing a patient. For example, I spent time researching on 'Clinical Pharmacology,' then going over it with her before interviewing with the patient."

The sixth and seventh newly identified constructs address self-directed student learning activities as encouraged by the preceptor. The sixth construct represents the ability of the preceptor to encourage students to define their own learning goals, objectives, and activities for the practice experience: "My preceptor asked me on my first day to give her five things I wanted to do on this rotation and made a point of having me complete my goals." This construct was labeled as "Encourages Student-Defined Goals & Objectives (G's & O's)." The seventh emergent construct addresses the ability of the preceptor to encourage students to take the lead on independent projects and activities, coordinate peer group learning, and mentor fellow students: "He let me help a [fellow] student perform a blood pressure screening, through which I learned a lot." It was coded as "Encourages Student Lead."

Finally, the eighth newly identified construct was labeled as "Identification with Patients." It describes the role of the preceptor in helping students understand the challenges that patients face by viewing the disease from the patient's perspective. The
following student comment reflected the learning insight provided by this approach: "I did learn about the basics for diabetes with the . . . diabetic shopping list where I had $75 to make a meal plan."

Clarification of coding definitions, collapse and expansion of constructs, and the emergence of newly defined codes resulted in the expansion of the original coding dictionary from 59 to 68 distinct codes. The fully developed coding dictionary is available as an Appendix to this document.

**Reliability.**

Reliability of this study was enhanced by the use of one coder. However, coder fatigue and cognitive changes in coder judgments can result in data shifts over time. To mitigate this possibility, two strategies were employed to enhance reliability. The first approach was to re-code the entire group of expert instruments following the completion of coding for both the IPPE and APPE student data sets. Because coding definitions were refined and categories were collapsed, expanded, and added through constant comparison of the student data set to the baseline codes, re-coding was employed to ensure that coding drift did not occur. The second approach was to re-code a sample of the student data sets. Approximately 20% of the student data sets were re-coded. Demonstrated reliability between the initial and repeat coding was calculated to be 94%. Only 6% of the document text was assigned a different code upon second review.

**Development of Categories and Themes: Second Cycle Coding**

Second-cycle coding examined the initial set of codes as identified by first-cycle coding and organized them into categories and sub-categories based on similarity of meaning, connotation, and other commonalities. Patterns and themes were then discerned
from the categorical groupings. Seven categories and 18 sub-categories were determined from the first cycle codes (see Table 1).
### Table 1

**Codes, Categories, and Themes**

<table>
<thead>
<tr>
<th>Code</th>
<th>Descriptor</th>
<th>Sub-Category</th>
<th>Category</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Role Model</td>
<td>Professional</td>
<td>Professional</td>
<td>Preceptor as Professional</td>
</tr>
<tr>
<td>2</td>
<td>Professionalism</td>
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</tr>
<tr>
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<td>Caring</td>
<td>Professional</td>
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</tr>
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<td>Knowledgeable</td>
<td>Expertise</td>
<td>Professional</td>
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</tr>
<tr>
<td>5</td>
<td>Competence</td>
<td>Expertise</td>
<td>Professional</td>
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</tr>
<tr>
<td>6</td>
<td>Professional Communication</td>
<td>Expertise</td>
<td>Professional</td>
<td>Preceptor as Professional</td>
</tr>
<tr>
<td>7</td>
<td>Enthusiasm for Practice</td>
<td>Disposition</td>
<td>Professional</td>
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<tr>
<td>8</td>
<td>Orientation</td>
<td>Preparation</td>
<td>Preceptor Directed</td>
<td>Preceptor as Instructor</td>
</tr>
<tr>
<td>9</td>
<td>Organized</td>
<td>Preparation</td>
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<tr>
<td>10</td>
<td>Defines Expectations</td>
<td>Preparation</td>
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<td>Preceptor as Instructor</td>
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<tr>
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<td>Preceptor Defined G's &amp; O's</td>
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<tr>
<td>12</td>
<td>Planned Activities/Assignments</td>
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*Codes, Categories, and Themes*

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Table 1 (continued)

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<td>Personal Attributes</td>
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<td>Welcomes Student Feedback</td>
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<td>Preceptor as Support</td>
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<td>Joint Negotiation of Student Activities</td>
<td>Mutual Visioning</td>
<td>Joint Partnering</td>
<td>Preceptor as Partner</td>
</tr>
<tr>
<td>67</td>
<td>Views Students as Part of Team</td>
<td>Mutual Actualization</td>
<td>Joint Partnering</td>
<td>Preceptor as Partner</td>
</tr>
<tr>
<td>68</td>
<td>Collective Outcomes</td>
<td>Mutual Actualization</td>
<td>Joint Partnering</td>
<td>Preceptor as Partner</td>
</tr>
</tbody>
</table>
Categories.

The category labeled as "Professional" is comprised of those codes that speak to the preceptor's role as a pharmacist practitioner. It represents the preceptor as both a professional and an expert with an enthusiasm for the profession. The preceptor as a professional is seen as a positive role model to which students aspire; an individual who is responsible, reliable, and displays strength of character; and a practitioner who demonstrates concern and care for others. This category is represented by student comments such as, "[My preceptor] is an admirable example of a practicing pharmacist," and, "He set a model for me of the relationship that I would like to have with my customers when I am a pharmacist." This category represents a student perspective of the preceptor in active practice that is observational in nature.

The second category, labeled as "Preceptor Directed," is comprised of those codes that describe a formal transmission-based, preceptor-driven approach to instruction. A structured approach to preparation for the practice experience, assessment as conducted by the preceptor, didactic teaching methods, and preceptor modeling behaviors all contribute to this category. Structured preparation includes formal orientation to the practice site, adequate organization and scheduling, expectations that are clearly defined and relayed to the student in advance of the practice experience, preceptor defined goals and objectives for the rotation, and a planned set of activities and assignments to address those goals. A student comment representative of this category is as follows:

[My preceptor] is very organized and approachable. He developed a detailed schedule of my entire rotation and presented it to me on my first day. This is very
valuable to us as students because we know what we will be doing and when assignments are due.

Assessment as conducted by the preceptor is also aligned with the "Preceptor Directed" category. Such assessment measures include determining student learning gaps, sharing assessment criteria with students in advance, providing formative feedback, and conducting formal periodic and summative evaluations that are perceived to be fair. Preceptor-driven teaching behaviors such as conveying concepts, providing explanations, answering questions, demonstrating skills, sharing experiences, and explaining preceptor reasoning also fall in this category.

"Preceptor Guided Teaching" describes the next category, which involves a greater degree of preceptor and student exchange. Consisting of coaching and preceptor-guided behaviors, this category is comprised of activities such as prepping students in advance of an activity and encouraging open discussion. Behaviors such as prompting students by posing questions, assisting students in making connections to previous coursework, guiding students through problem-solving schema, and challenging students towards mastery of the professional competencies represent techniques employed by preceptors to guide the learning process. One student described such behaviors as follows:

She continually challenged me to think of alternative solutions or viewpoints. For example, when evaluating whether a certain drug should be added to the formulary, she would ask me to make a recommendation before she would reveal her opinion. If my recommendation differed from hers, she would help me to think of alternative circumstances, situations, etc.
Preceptors also guide students by taking advantage of situations that arise in the course of practice (i.e., "teachable moments"), helping students identify with their patients, and demonstrating relevancy to future practice.

A fourth category was labeled as "Preceptor-Facilitated Self-Directed" student learning. Preceptor behaviors that fall in this category are based on the ability of preceptors to encourage their students to engage in independent and self-directed activities. This grouping addresses preceptor encouragement of student self-assessment strategies including learning gap assessment and measurement of competency mastery. Preceptors in this category also encourage students to work independently, conduct literature reviews and research drug information questions, problem-solve independently, communicate with patients and other health care professionals, and take the lead on projects. Preceptors are available when needed to guide students through the process, point students in the right direction, and review student work. One student commented on the value to such an approach:

[My preceptor] allowed me to conduct the projects as I saw fit, allowing me a greater sense of responsibility and self-directed learning. We were given a general idea of how to conduct the project and a desired completion time. The rest was up to us to evaluate, conduct, and present. To me, this is more how real work experiences are. I learned much more by doing it myself than if someone were to spoon feed it to me.

"Preceptor Facilitated Experience" constitutes the fifth defined category and encompasses those codes that represent the ability of the preceptor to create an environment conducive to learning. A "Preceptor Facilitated Experience" further offers
students multiple opportunities to learn. A positive learning environment is both welcoming and professional in nature. It provides for adequate and comfortable physical space for the student, along with appropriate information resources and computer access. An environment conducive to learning offers students the opportunity to practice skills in a safe and supervised setting. Staff are also engaged and support the student learning process. Opportunities to learn are identified by the preceptor and include the opportunity for observation, the ability to participate in practice activities, exposure to patient contact, and the opportunity for engagement with other health care professionals.

The sixth category speaks to the preceptor role as one of support. Denoted as "Supportive," this domain alludes to the helpful and encouraging nature of the preceptor. Codes within this category further highlight the preceptor's positive disposition, interpersonal communication skills, and enthusiasm for teaching. The preceptor in this role demonstrates a willingness to help, provides students with positive reinforcement, demonstrates respect for students, and is concerned with their progress. The pleasant nature of the preceptor provides for a non-threatening atmosphere. The importance of the support role of the preceptor was captured by the following student comment:

[My preceptor] helped me to achieve my objectives in a manner that was enjoyable rather than demanding or bothersome. She would ask me to do something and when I was finished would say something like "Congratulations! You just . . ." So completing tasks never felt like work, but rather like something to look forward to.
The supportive preceptor is further concerned with the quality of the practice experience and seeks opportunities for continuous self-improvement of personal preceptor teaching behaviors.

"Joint Partnering" represents the seventh and final category. Codes within this category capture the mutual partnership of preceptor and student. In this domain, preceptors and students seek a common vision through the negotiation of goals, objectives, and activities. They further work together as a team to achieve collective solutions and outcomes. Students are made to feel like they are one of the team. One student, expressing the value of mutual actualization, commented, "She was able to choose projects that actually positively benefitted the company and introduced me to a new pharmacy setting." Another student described how participation in authentic activities in a collaborative environment contributed to learning:

[My preceptor] treated us like pharmacists and disseminated real-life tasks. For example, the pharmacy department at the hospital has pharmacists that are attentive to frequent questions received by physicians on medications. [My preceptor] had me research and type up a formal response to several questions which was later going to be used to present to the person asking the question.

In summary, the following seven unique categories that were developed capture groupings of codes based on commonalities that cut across each group: Professional, Preceptor-Directed, Preceptor-Guided Teaching, Preceptor-Facilitated Self-Directed Learning, Preceptor-Facilitated Experience, Supportive, and Joint Partnering.
Themes.

Themes were identified by examining the categories created from the codes. Four main themes that address the role of the preceptor emerged from the previously defined categories or groupings: Preceptor as Professional, Preceptor as Instructor, Preceptor as Support, and Preceptor as Partner. "Preceptor as Professional" speaks to the role of the preceptor as a practicing pharmacist professional. It represents the preceptor who students observe in action and the role to which they aspire. "Preceptor as Professional" characterizes the types of behaviors that students wish to emulate and the type of pharmacist that students want to become.

The second major theme is that of "Preceptor as Instructor." This theme represents the teaching role of the preceptor. As such, it envelops teaching behaviors that are both preceptor-driven and preceptor-facilitated. The "Preceptor as Instructor" theme encompasses four separate categories: preceptor-directed, preceptor-guided, preceptor-facilitated student learning that is self-directed, and preceptor-facilitated experiences. Preceptor-directed activities are highly structured and transmission-based. They include preparation for the experience (i.e., providing orientation, goal-setting, planning for activities and assignments, and defining expectations); transmission of information to the student (i.e., delivering concepts and subject matter, providing students with explanations, and answering questions); and assessment activities (i.e., providing formative and summative evaluations and offering constructive feedback).

The "Preceptor as Instructor" theme also addresses preceptor-guided coaching behaviors such as prompting, guided problem-solving, and open discussion. It further addresses preceptor facilitation of self-directed student learning behaviors such as student
self-assessment practices, student-defined goals and objectives, independent student problem-solving strategies and communications, and student leadership. Finally, the "Preceptor as Instructor" theme includes preceptor facilitation of the experience through the creation of a positive learning environment, provision of the necessary resources, and identification of opportunities for student learning.

"Preceptor as Support" constitutes the third major theme. It revolves around the concept of providing the student with emotional support and encouragement. This theme addresses the accessibility of the preceptor and willingness to help. The positive demeanor and kindness of the preceptor provides students with the freedom to practice skills without fear of intimidation. Students feel comfortable in posing questions and asking for help when the preceptor is perceived as being approachable. Preceptors who demonstrate respect for students and concern for their progress create an atmosphere that motivates students to learn.

Finally, "Preceptor as Partner" emerges as a separate and unique theme. It represents joint visioning, mutual actualization, and delivery of collective outcomes. This theme is embodied by the preceptor who views the student as a partner and member of the team. Preceptor and students work hand-in-hand to create a beneficial learning experience. They further collaborate on authentic projects that contribute to the good of the organization and to achieve positive health care outcomes for their patients. Students who see the positive contributions of their efforts feel a sense of value and worth.

**Comparative Analyses**

Comparative studies were conducted on results obtained from the content analysis of the expert instruments and the comments collected from students enrolled in the
introductory (IPPE) and advanced pharmacy practice experiences (APPE). Three separate analyses were conducted: rank order of results by individual coded construct; correlations among study groups (i.e., expert, IPPE, and APPE); and percent representation of responses by category for each of the study groups.

**Rank orders.**

To determine rank order, the number of responses for each of the coded constructs was converted to a frequency ratio to allow for uniform comparisons. Frequency ratios were calculated by dividing the total number of data pieces identified for each code by the total number of data pieces identified for the given data set (i.e., expert, IPPE, APPE). The calculated frequency ratios and associated rank orders of the results for the expert, IPPE, and APPE content analyses are displayed in Table 2. Rankings by code and associated category are displayed in Table 3 for each of the data sets by quartile. The rankings for the IPPE and APPE student results show remarkable consistency. Expert rankings, on the other hand, demonstrate little agreement with the IPPE and APPE student rankings.
Table 2

Comparative Rank Order of Frequency Ratio Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Descriptor</th>
<th>Theme</th>
<th>Expert Ratio</th>
<th>IPPE Ratio</th>
<th>APPE Ratio</th>
<th>Expert Rank</th>
<th>IPPE Rank</th>
<th>APPE Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Knowledgeable</td>
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<td>0.0192</td>
<td>0.0589</td>
<td>0.0798</td>
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<td>Instructor</td>
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<td>3</td>
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<td>Willingness to Help</td>
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<td>0.0524</td>
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<td>4</td>
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<td>Competence</td>
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<td>29-30t</td>
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<td>Professional</td>
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<td>9-10t</td>
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<td>29-30t</td>
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</table>

$t$ denotes tied ranking within expert, IPPE, and APPE groupings respectively
Table 2 (continued)

Comparative Rank Order of Frequency Ratio Codes

<table>
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<tr>
<th>Code</th>
<th>Descriptor</th>
<th>Theme</th>
<th>Expert Ratio</th>
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<th>APPE Ratio</th>
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<th>IPPE Rank</th>
<th>APPE Rank</th>
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<td>Enthusiasm for Teaching</td>
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<td>67</td>
<td>Views Students as Part of Team</td>
<td>Partner</td>
<td>0.0051</td>
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<td>0.0114</td>
<td>0.0127</td>
<td>43-45t</td>
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</tr>
</tbody>
</table>

\( t \) denotes tied ranking within expert, IPPE, and APPE groupings respectively.
Table 2 (continued)

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<tr>
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<th>APPE Ratio</th>
<th>Expert Rank</th>
<th>IPPE Rank</th>
<th>APPE Rank</th>
</tr>
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<tbody>
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<td>Promotes Staff Engagement</td>
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<td>29-32t</td>
<td>39-41t</td>
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<td>58</td>
<td>Motivates Students</td>
<td>Support</td>
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<td>0.0100</td>
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<td>Challenges Students</td>
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<td>Joint Negotiation of Student Activities</td>
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<td>0.0068</td>
<td>43-45t</td>
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$t$ denotes tied ranking within expert, IPPE, and APPE groupings respectively.
Table 2 (continued)

Comparative Rank Order of Frequency Ratio Codes

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<td>Support</td>
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<sup>t</sup> denotes tied ranking within expert, IPPE, and APPE groupings respectively
Table 3

Quartile Rankings for Expert, IPPE, and APPE Frequency Ratios

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<th>Category</th>
<th>IPPE Code</th>
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### Table 3 (continued)

**Quartile Rankings for Expert, IPPE, and APPE Frequency Ratios**

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Table 3 (continued)

Quartile Rankings for Expert, IPPE, and APPE Frequency Ratios

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<td>Oppty for Patients</td>
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<td>Gauges Workload</td>
<td>Preceptor Directed</td>
<td>Teachable Moments (tied ranking with #52)</td>
<td>Preceptor Guided</td>
</tr>
</tbody>
</table>
Table 3 (continued)

Quartile Rankings for Expert, IPPE, and APPE Frequency Ratios

<table>
<thead>
<tr>
<th>Rank</th>
<th>Expert Code</th>
<th>Category</th>
<th>IPPE Code</th>
<th>Category</th>
<th>APPE Code</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>Caring (tied ranking with #53)</td>
<td>Professional</td>
<td>Monitors Progress</td>
<td>Preceptor Directed</td>
<td>Accommodating</td>
<td>Supportive</td>
</tr>
<tr>
<td>53</td>
<td>Student as Team</td>
<td>Partner</td>
<td>Preceptor Guided</td>
<td>Monitors Progress</td>
<td>Preceptor Directed</td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>Teachable Moments (tied ranking with #55)</td>
<td>Preceptor Guided</td>
<td>Orientation (tied ranking with #55)</td>
<td>Preceptor Directed</td>
<td>Shares Experiences (tied ranking with #55)</td>
<td>Preceptor Directed</td>
</tr>
<tr>
<td>55</td>
<td>Oppty to Observe</td>
<td>Preceptor Facil Exp</td>
<td>Student Commun</td>
<td>Preceptor Facil Stdnt</td>
<td>Student Self Assess</td>
<td>Preceptor Facil Stdnt</td>
</tr>
<tr>
<td>56</td>
<td>Explains Reasoning (tied ranking #56-59)</td>
<td>Preceptor Directed</td>
<td>Oppty for Classroom (tied ranking #56-58)</td>
<td>Preceptor Facil Exp</td>
<td>Collective Outcomes</td>
<td>Partner</td>
</tr>
<tr>
<td>57</td>
<td>Student Self Assess</td>
<td>Preceptor Facil Stdnt</td>
<td>Accommodating</td>
<td>Supportive</td>
<td>Supervision (tied ranking with #58)</td>
<td>Preceptor Facil Exp</td>
</tr>
<tr>
<td>58</td>
<td>Student Commun</td>
<td>Preceptor Facil Stdnt</td>
<td>Shares Experiences</td>
<td>Preceptor Directed</td>
<td>Preps Students</td>
<td>Preceptor Guided</td>
</tr>
<tr>
<td>59</td>
<td>Joint Negotiation</td>
<td>Partner</td>
<td>Student Feedback</td>
<td>Supportive</td>
<td>Oppty for Classroom (tied ranking with #60)</td>
<td>Preceptor Facil Exp</td>
</tr>
<tr>
<td>60</td>
<td>Student G's &amp; O's (tied ranking #60-63)</td>
<td>Preceptor Facil Stdnt</td>
<td>Collective Outcomes</td>
<td>Partner</td>
<td>Student Feedback</td>
<td>Supportive</td>
</tr>
<tr>
<td>61</td>
<td>Student Lead</td>
<td>Preceptor Facil Stdnt</td>
<td>Physical Environ (tied ranking with #62)</td>
<td>Preceptor Facil Exp</td>
<td>Orientation</td>
<td>Preceptor Directed</td>
</tr>
<tr>
<td>62</td>
<td>Accommodating</td>
<td>Supportive</td>
<td>Student Lead</td>
<td>Preceptor Facil Stdnt</td>
<td>Physical Environ (tied ranking with #63)</td>
<td>Preceptor Facil Exp</td>
</tr>
<tr>
<td>63</td>
<td>Collective Outcomes</td>
<td>Partner</td>
<td>Fair Evaluation (tied ranking with #64)</td>
<td>Preceptor Directed</td>
<td>Periodic Formal Eval</td>
<td>Preceptor Directed</td>
</tr>
<tr>
<td>64</td>
<td>Monitors Progress (tied ranking #64-68)</td>
<td>Preceptor Directed</td>
<td>Assessment Criteria</td>
<td>Preceptor Directed</td>
<td>Student Lead (tied ranking with #65)</td>
<td>Preceptor Facil Stdnt</td>
</tr>
<tr>
<td>65</td>
<td>Shares Experiences</td>
<td>Preceptor Directed</td>
<td>Periodic Formal Eval (tied ranking #65-68)</td>
<td>Preceptor Directed</td>
<td>Summative Eval</td>
<td>Preceptor Directed</td>
</tr>
<tr>
<td>66</td>
<td>Preps Students</td>
<td>Preceptor Guided</td>
<td>Summative Eval</td>
<td>Preceptor Directed</td>
<td>Fair Evaluation</td>
<td>Preceptor Directed</td>
</tr>
<tr>
<td>67</td>
<td>Identifies w/ Patients</td>
<td>Preceptor Guided</td>
<td>Student Self Assess</td>
<td>Preceptor Facil Stdnt</td>
<td>Assessment Criteria (tied ranking with #68)</td>
<td>Preceptor Directed</td>
</tr>
<tr>
<td>68</td>
<td>Personal Attributes</td>
<td>Supportive</td>
<td>Identifies w/ Patients</td>
<td>Preceptor Guided</td>
<td>Identifies w/ Patients</td>
<td>Preceptor Guided</td>
</tr>
</tbody>
</table>
Correlations.

The frequency ratios were further correlated with one another to determine strength of agreement. Four separate correlations were conducted: expert to IPPE; expert to APPE; expert to combined IPPE and APPE (all students); and IPPE to APPE. Correlations among the groups were conducted in Excel®. Because students may have completed evaluations of their preceptors prior to receiving a summative evaluation, correlations were conducted both with and without this item (see Table 4). The differences in results are negligible.

Results demonstrate strong correlation between the IPPE and APPE students regarding the value placed on designated preceptor characteristics and behaviors ($r = 0.8776$). Weak correlation exists between the experts and students ($r = 0.3359$). The correlation between experts and IPPE students ($r = 0.2802$) is lower than that exhibited between the experts and APPE students ($r = 0.3494$).

Table 4

*Code Frequency Ratio Correlations*

<table>
<thead>
<tr>
<th></th>
<th>$r$ value</th>
<th>$r$ value without Summative Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expert to IPPE</td>
<td>0.2802</td>
<td>0.2797</td>
</tr>
<tr>
<td>Expert to APPE</td>
<td>0.3494</td>
<td>0.3496</td>
</tr>
<tr>
<td>Expert to Total Students</td>
<td>0.3359</td>
<td>0.3356</td>
</tr>
<tr>
<td>IPPE to APPE Students</td>
<td>0.8776</td>
<td>0.8764</td>
</tr>
</tbody>
</table>
Categorical representations.

Results were further grouped by category. The percent of responses for each of the expert, IPPE, and APPE data sets by defined categories was calculated (see Table 5).

Table 5

Percent Representation of Responses by Category

<table>
<thead>
<tr>
<th>Categories</th>
<th>Expert</th>
<th>IPPE</th>
<th>APPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional</td>
<td>14.2</td>
<td>19.4</td>
<td>22.6</td>
</tr>
<tr>
<td>Preceptor Directed</td>
<td>34.8</td>
<td>27.1</td>
<td>22.5</td>
</tr>
<tr>
<td>Preceptor Guided</td>
<td>14.0</td>
<td>11.6</td>
<td>13.8</td>
</tr>
<tr>
<td>Preceptor Facilitated Self Directed</td>
<td>4.3</td>
<td>2.2</td>
<td>4.7</td>
</tr>
<tr>
<td>Preceptor Facilitated Experience</td>
<td>14.7</td>
<td>18.9</td>
<td>13.5</td>
</tr>
<tr>
<td>Instructor Total</td>
<td>67.8</td>
<td>59.8</td>
<td>54.5</td>
</tr>
<tr>
<td>Supportive</td>
<td>17.1</td>
<td>19.6</td>
<td>20.6</td>
</tr>
<tr>
<td>Joint Partnering</td>
<td>1.0</td>
<td>1.2</td>
<td>2.4</td>
</tr>
</tbody>
</table>

The overall theme of preceptor as instructor represented the largest portion of the responses for each of the study groups. It was valued most heavily by the expert group. However, when results are viewed by individual categories, rather than by theme, preceptor as professional represented the largest portion of responses for the APPE students. Preceptor-directed instruction garnered the largest percentage of responses for the expert and IPPE categories.
Overall, the professional and support behaviors of preceptors were valued more heavily by the IPPE and APPE student groups when compared to the expert perspective. There was also a positive trending towards preceptor facilitation of self-directed student learning behaviors from the IPPE to the APPE student groups.

**Barriers to Learning**

Barriers to learning were not included as evaluative elements within the expert instruments. Therefore, formal analysis by comparative coding of such barriers between experts and student data sets could not be conducted. However, some sense of learning barriers was obtained through student response to the following question, which was posed as part of the student evaluation of their respective preceptors:

What specifically could your preceptor improve upon that would have better helped you meet your learning goals and objectives for this rotation?

The responses obtained from the IPPE and APPE data sets provided some additional insight to impediments to learning, as viewed from the student perspective, and have been included in this section.

The top ten student suggestions for improvement in preceptor behaviors are described in Table 6. Responses are grouped according to IPPE and APPE students. Once again, there is notable consistency between the two groups. Agreement exists on six of the ten most frequently cited recommendations. Among the top four items listed for both groups are the following: better structuring of the practice experience; spending more time with the preceptor; offering more variety and better quality of experiential activities; and providing better direction and guidance throughout the practice experience with student expectations more clearly defined.
Table 6.

**Top Recommendations for Improvement of Pharmacy Practice Experiences**

<table>
<thead>
<tr>
<th>Rank</th>
<th>IPPE Students</th>
<th>APPE Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Better structure</td>
<td>More time with preceptor</td>
</tr>
<tr>
<td>2</td>
<td>More time with preceptor</td>
<td>Better structure</td>
</tr>
<tr>
<td>3</td>
<td>More variety and better quality of activities</td>
<td>More variety and better quality of activities</td>
</tr>
<tr>
<td>4</td>
<td>Better direction and guidance; expectations more clearly defined</td>
<td>Better direction and guidance; expectations more clearly defined</td>
</tr>
<tr>
<td>5</td>
<td>Better sense of what pharmacists do</td>
<td>More frequent feedback</td>
</tr>
<tr>
<td>6</td>
<td>More frequent feedback</td>
<td>More open discussion</td>
</tr>
<tr>
<td>7</td>
<td>More delivery and review of content by preceptor</td>
<td>Better access to computer and databases</td>
</tr>
<tr>
<td>8</td>
<td>Better explanations</td>
<td>More opportunities for patient contact</td>
</tr>
<tr>
<td>9</td>
<td>Better accessibility to preceptor</td>
<td>More delivery and review of content by preceptor</td>
</tr>
<tr>
<td>10</td>
<td>Educate staff to student presence</td>
<td>Challenge students through active questioning</td>
</tr>
</tbody>
</table>

The desire for more structure to the practice experience included the need for better planning, scheduling, and coordination of activities. The following student comment typified the desire for structure in the enhancement of learning:

She could have a more detailed schedule of what part of the pharmacy I would be observing each day. Some days I did not know what to do, so I would just pick one of the pharmacists to follow around.

Another student noted the same:

I wish there was a set schedule of things to do each day. I am not one to "slack" so it made me feel as though I should be busy/working on something, but I literally
could not do anything. This was my first institutional setting experience, so there wasn't anything I know how to do to self-start.

The desire for a better mix and variety of activities representative of the practice setting was also voiced:

[My preceptor] could give us different tasks to complete each day. Since I already worked at a retail pharmacy, I was familiar with all of the different jobs. I wish I was able to do different things to learn more.

Another student reflected a similar sentiment:

Because this is a large, diverse hospital I would have liked to have seen the decentralized pharmacies. I did the majority of my rotation in the main pharmacy and would have liked to observe the tasks of a decentralized, clinical pharmacist as to further my education on career options.

Students clearly expressed the desire to spend more time with their preceptor. Although this desire was often based simply on preceptor availability and accessibility, it was oftentimes a testament to the expertise and teaching acumen of the preceptor. The following student comments reflect that perspective: "It would have been nice to shadow him more and do more activities with him," and, "I would have liked to spend more time with her because I learned so much when I was around her." Another student shared that opinion:

Although I understand that a pharmacy manager has many responsibilities, I think it would have been helpful if [my preceptor] had made herself more available to me. I found that I learned more when I was directly interacting with her so it
would have been easier to accomplish my goals/objectives if [my preceptor] was with her students more often.

The IPPE students, in particular, wanted to gain a better sense of the day-to-day functions of a typical pharmacist. As one student stated, "I would have liked to spend more time with the pharmacists. The first week I spent almost exclusively with technicians. I am much more interested in understanding the pharmacist roles within a practice setting." Another student indicated the same:

I think my hospital experiential rotation could have been more beneficial if [my preceptor] could have spent more time showing us actual pharmacy procedures versus the business aspect. Although the information he shared was interesting, it wasn't related to what the actual pharmacists do in the pharmacy.

It was also important to both IPPE and APPE students that the preceptor engage the entire staff. Ensuring that the staff has an understanding of the experiential learning process and is committed to student learning was critical to the quality of the experience. One student expressed frustration with staff who were either unengaged or uninformed as to the presence of the student:

I believe she could have done a more efficient job at ensuring that the schedule she has laid out for me would be followed by her coworkers. She made a well-designed plan for my rotation but when I was sent to various sites within the pharmacy, there was often nothing for me to do. Possibly educating the other staff on the goals of the student rotation would help them be more involved.

Another stated,
[My preceptor] did an awesome job, but she needs to have the staff understand that by hosting a student they need to accept the student. Most of the staff loved explaining their job, but some wanted nothing to do with my learning experience, which left me in the dark.

Students oftentimes felt lost when the primary preceptor was not present and they were left to the supervision of others. One student commented,

My preceptor . . . was very helpful in helping me to meet my learning goals and objectives. However, one thing that she could have done to improve the learning process would be to share my objectives with the other pharmacist that I worked with so that my learning would not be stunted when she wasn't working.

Students also expressed the desire for honest and constructive feedback on their performance. As one student stated, "She could give me more feedback on my written projects. For example, we could go over the patient case together so I could learn of my mistakes." Others voiced the same, clearly embracing critical feedback as a means to self-improvement. As one student expressed,

The only thing that could have better helped me to meet my learning goals and objectives for this rotation would have been receiving a little more feedback on my performance. I would have liked to have known if I was doing anything wrong or if more was expected from me and I needed to work harder, or if I was performing tasks efficiently.

As another student commented,
[My preceptor] can be more to the point with her constructive criticism. I feel that she tried to go about criticisms in the most non-confrontational way possible, but I sometimes would get confused as to what she was trying to tell me.

Both IPPE and APPE students desired more direct instruction and subject matter delivery from their preceptors. One student commented, "The only way [my preceptor] could have improved would have been by spending more time discussing drugs and side effects." Another expressed the same desire for content review:

I think [my preceptor] could have gone over some of the more common drugs that you see in a hospital. This is my first experience in a hospital pharmacy and I had hoped to become more familiar with drugs . . . I would have liked to know more about the drugs themselves.

For APPE students, engagement in learning with the preceptor also meant open discussion and being challenged through active questioning techniques. One student expressed this desire for more interactive exchange with the preceptor as follows: "I would have liked to have more time for topic discussions, however I realize that the clinic was very busy at the time." Another student indicated that the effectiveness of the learning experience could be improved by "having more time for open discussion and explaining the different cancer treatments discussed on rounds." As a third student suggested, "[My preceptor] could have engaged in more disease state discussions with us. He could have quizzed me more on the drugs (indications, side effects, doses, etc.)."

APPE students, in particular, expressed the desire for more patient contact. One student commented, "It would be good to have exposure to patients in the pharmacy for the drug self-care interventions." Another recommended that it would be helpful for the
preceptor to "provide more opportunities to counsel patients and answer their questions."

A third student suggested that ". . . providing more time in the hospital on the floor
(patient contact/involvement) would help to reinforce concepts/ideas."

Student comments that provided recommendations to preceptors for improvement
of the practice experience demonstrated noteworthy consistency across the introductory
and advanced pharmacy practice experiences. The most frequently cited
recommendations addressed better structuring, increased and dedicated time with the
preceptor, more variety and better quality of activities, and a better understanding of
student expectations.

Summary

Content analysis of instruments developed by experts to assess preceptor
effectiveness, as well as student comments associated with the introductory and advanced
pharmacy practice experiences, resulted in the identification of four dominant themes.
These themes speak to the role of preceptor as professional, instructor, support, and
partner.

There was marked consistency and strong correlation among the most frequently
cited preceptor characteristics and behaviors between the introductory and advanced
pharmacy practice students. Little consistency and weak correlation existed between the
most frequently noted preceptor characteristics and behaviors between the expert and
student voices. A high degree of agreement was also demonstrated between introductory
and advanced pharmacy practice students regarding recommendations for preceptor
improvement to the learning experience. Results indicate that introductory and advanced
pharmacy students value similar preceptor characteristics and behaviors. Experts value preceptor characteristics and behaviors differently than do their students.
Chapter V

Discussion

This section provides an overview of the findings and a discussion of the study results. As such, it looks to transformational leadership theory, adult education theory, social cognitive theory, and experiential learning models for grounding. Such theory provides a framework for making sense of the data. The themes identified by this study were also compared to the medical, nursing, and related health professional literature to identify similarities and differences.

Further comparison of the results derived from the content analysis of the IPPE and APPE student data sets, and comparisons of the results derived from the content analysis of expert instruments and student data sets, identify areas of convergence and divergence. Results were also compared to the pharmacy literature. Insights obtained by these comparisons can help to identify emergent ideas and concepts. Moreover, they provide grounding for future studies as well as practical applications for experiential education.

Overview of Findings

Themes.

The four themes that emerged from the content analysis of expert instruments and the introductory and advanced pharmacy practice experience student comments are the following: preceptor as professional, preceptor as instructor, preceptor as support, and preceptor as joint partner. These themes can be traced back to transformational leadership, adult education, and social cognitive theory as well as experiential learning
models. Such theories and models provide a framework for understanding the results of the analysis.

*Preceptor as professional.*

Preceptor as professional finds its roots in social cognitive theory (Bandura, 1986). Social cognitive theory speaks to the importance of role models in the acquisition of new patterns and behaviors. Bass (1985) refers to this as idealized influence. Inculcation of professional behaviors is more easily accomplished when students can closely identify with the pharmacist professional. Identification is further strengthened when students can see positive outcomes as a result of the actions of the preceptor professional: "I was able to see through this rotation the way that [my preceptor] counseled his patients - which was great because I've never seen a whole lot of counseling - and the positive reactions of the patients to the counseling." Students are more apt to adopt professional behaviors when they view positive results as a consequence of preceptor behaviors.

Adult learning theory further illuminates the importance of the preceptor as a positive role model. Preceptors who possess expert knowledge in the field, demonstrate success as a practitioner, and display enthusiasm for their area of expertise are influential instructors (Knowles, 1970). These same dimensions are represented as separate constructs within the preceptor as professional theme. Students attached particular significance to the role of preceptor as professional. Preceptor knowledge, as a distinct coding construct within the preceptor as professional theme, was ranked first and second overall by the APPE and IPPE student groups respectively.


**Preceptor as instructor.**

*Preceptor-directed approach.*

The preceptor as instructor theme is multi-dimensional. It consists of the following categories: preceptor-directed instruction, preceptor-guided teaching, preceptor-facilitated self-directed learning, and preceptor-facilitated experience. Preceptor-directed instruction draws from pedagogical roots. From this teaching perspective, the instructor takes a dominant role in the learning process as a result of the inexperience of the learner (Houle, 1972; Knowles, 1970, 1984). Consequently, the approach to instruction is more structured.

Through a preceptor-directed approach to instruction, the preceptor defines the goals and objectives of the practice experience, plans activities and assignments to address those goals, creates an organized schedule, and clearly defines what is expected of the students. Instruction is driven from the vantage point of the preceptor. The preceptor conveys important information and concepts to the students and demonstrates vital skills. The preceptor further assesses student performance through formal assessment measures as well as through informal formative feedback.

Students who are inexperienced and do not yet have a grasp on what they need to know benefit from a preceptor-directed approach (Dewey, 1938). The frustration that results when there is a gap in student understanding of the student role is evidenced by the following comment: "The first week was tough because I didn't know what needed to be done so I felt useless at times." Another student expressed similar frustration, "The preceptor could be more involved with the student's everyday tasks, which would help the student to better understand the goals and objectives." A student comment that "she
could have been more clear about what was expected of me . . . Sometimes she assumed I knew how to do certain things when I would have liked a little more direction," indicates the need for clear direction from the preceptor. Novice students who are relatively inexperienced benefit from a preceptor-directed approach.

Seven of the 17 codes ranked in the top quartile of the expert rankings were categorized as preceptor-directed approaches. The expert perspective values the role of the preceptor as directive instructor. Results of the content analysis demonstrated that experts place more value on preceptor-directed activities that are preparatory in nature (e.g., defining goals and objectives, planning activities, and defining practice experience expectations). Students, on the other hand, were more likely to value preceptor-directed activities that involved preceptor instruction and explanation.

Preceptor-guided approach.

Preceptor-guided approaches are more interactive in nature than preceptor-directed approaches. Through preceptor-guided approaches, the preceptor takes on a coaching role. Coaching behaviors include prompting students through active questioning techniques, guiding students through problem-solving schema, reframing problems when needed, rehearsing with students in advance of an activity, and challenging students with increasing levels of complexity. Twelve individual constructs that are categorized as preceptor-guided teaching behaviors emerged from the content analysis. Preceptor-guided coaching approaches also draw from social cognitive theory (Bandura, 1986). Schön (1987) further describes these types of behaviors as "telling and listening" and "demonstrating and imitating" (pp. 102, 107). The following student comment speaks to the effectiveness of coaching behaviors:
As I progressed through my three-week rotation, my preceptor gradually utilized daily activities and experience in a way to demonstrate the necessity of mastering certain skills and techniques. For example, I began by observing the pharmacy technician fill prescriptions, and a day or two later I proceeded to those prescription-filling tasks. Furthermore, after a week or so I began taking phone calls and actively participating in the flow of work.

Preceptor-guided approaches assist students in making connections with didactic coursework, prior experiences, and previous understandings in the creation of new meanings. Experiential learning models are particularly useful in providing a framework for understanding these preceptor-guided approaches to learning (Joplin, 1995; Kolb, 1984). Participation in the experience, followed by active dialogue and open discussion between student and instructor, leads to the assimilation and accommodation of newly acquired knowledge in the creation of new meanings (Argyris, 1982; Argyris & Schön, 1974; Piaget, 1952; Piaget & Inhelder, 1973). Assisting students in challenging previous assumptions in the accommodation of new understandings is described by Bass (1985) as intellectual stimulation. The value of the preceptor in assisting with these links is represented by the following student comment:

He was able to connect patient scenarios with reading and discussions to create an active learning environment. For example, he would point out physical examination findings on individual patients during rounds in order to show us how patients with adverse drug reactions or disease state complications present in a real-life situation. This was a valuable experience in that I was able to see the
symptoms and findings I had read about almost immediately after learning about them.

Similarly, another student relayed the value of establishing links:

He taught primarily through hands-on work, but every now and then would take us into the conference room and demonstrate a particular concept on the white board. Viewing what he wrote on the board and then going into the pharmacy to see how it was done allowed me to more fully grasp the principles versus either alone.

Content analysis revealed that APPE students, in particular, valued preceptor-guided approaches. Open discussion and dialogue between preceptor and student were especially important to these students.

Strikingly absent from the content analysis, however, was the identification of student reflection, as prompted by the preceptor, in the learning process. It did not emerge as a behavior that was identified by students or experts as valuable to the learning process. Yet, educational learning theory and experiential learning models clearly identify the importance of reflection-in-action and reflection-on-action behaviors as part of the learning cycle (Joplin, 1995; Kolb, 1984; Schön, 1987). Only one student comment addressed the role of reflection, but did so only as a recommendation for improvement to the practice experience:

Something that could have been helpful would have been like a ‘reflection time’ at the end of each day. I forgot to ask a lot of questions about things that happened in the pharmacy or about his job in that situation, so having a quick ten minute meeting could have brought some ideas together for me.
It is not known whether reflection as a teaching tool was subsumed into other identified preceptor teaching behaviors, such as open discussion and dialoguing, and therefore was not readily apparent. Moreover, employment of reflection as a learning approach has only been emphasized more recently in pharmacy school curricula. It remains to be seen whether preceptor-prompted student reflection will emerge as a construct in future studies.

*Preceptor-facilitated self-directed learning.*

Preceptor-facilitated self-directed learning represents another category within the overarching preceptor as instructor theme. Adult learning theory provides a lens through which preceptor behaviors that encourage and support self-directed learning can be viewed (Houle, 1972; Knowles 1970, 1984). Preceptors facilitate self-directed student learning by encouraging student independence in the learning process. Independent learning includes preceptor facilitation of student self-assessment of learning gaps, student definition of learning goals and objectives, independent student problem-solving, student engagement in communication with patients and other health care professionals, student assumption of leadership roles, and student self-assessment of the defined competencies.

Preceptor facilitation of student self-directed learning is based on andragogical principles and is best suited for students who are more experienced, exhibit a readiness to learn based on the roles they need to assume, and understand the relevancy of knowledge and skills application. The coded constructs that emerged from content analysis can be directly linked to the five factors that characterize self-directed learning: learning climate,
self-diagnosis of mastery, planning for the learning experience, participating in the learning experience, and self-evaluations of learning mastery.

Student appreciation of a preceptor-facilitated self-directed approach to learning is reflected in the following comment made by an APPE student:

Allowing me and the other student to work on the assigned projects independently provided us with the opportunity to learn what was and was not important/relevant. There was no "micromanagement." Working independently gave me the freedom to take my time and look things up when I needed to, not when told to. For example, if I was already familiar with a drug or therapy, I didn't need to re-review it. I was able to move forward and learn something totally new.

Encouraging student independence and encouraging student problem-solving ranked the highest of the preceptor-facilitated self-directed learning behaviors for all three study groups (i.e., expert, IPPE, APPE). However, this dimension only began to emerge in the second quartile rankings.

Preceptor-facilitated experience.

A preceptor-facilitated experience represents the final category within the preceptor as instructor theme. Providing a friendly and safe environment that is conducive to learning, as well as offering sufficient learning opportunities for students, can also find its roots in adult learning theory. An environment that is safe, secure, and free of threat or intimidation allows for student exploration and optimizes learning (Rogers, 1969). The student's fundamental need for safety and security must be met before learning can occur (Maslow, 1970).
Providing opportunities for learning (i.e., opportunities for observation, opportunities for practice, opportunities for patient contact, opportunities for classroom application, and opportunities for inter-professional interactions) is also grounded in adult learning theory. Whether student engagement in opportunities for learning were instructor-driven (i.e., pedagogical) or self-directed (i.e., andragogical) in nature could not always be easily discerned from the data sets. Nonetheless, providing such opportunities was highly valued by all of the groups.

Expert instruments, as well as the IPPE and APPE student comments alike, attached substantive weight to the ability of the preceptor to provide opportunity for practice. Analysis of all three groups placed this particular construct in the top tier of their respective rankings. Other opportunities for learning, as noted above, that emerged from the data sets included the opportunity to observe, the opportunity for the application of classroom knowledge, the opportunity for patient contact, and the opportunity for inter-professional interactions. When all of these are folded together as a single construct, preceptor-facilitated opportunities to learn, as an aggregate dimension, emerges as the top-ranked item across all three groups.

Numerous student comments spoke to their appreciation for opportunities to learn. One student expressed the value provided by the opportunity to practice by commenting, "My preceptor provided the opportunity to perform tasks such as taking doctor calls, calling insurance companies, and patient counseling, which are skills necessary in the retail setting to practice pharmacy." Still another stated, "My preceptor had a good deal of experience in compounding and provided me with many opportunities to hone my compounding skills." The benefit derived from the opportunity for inter-
professional interaction was voiced by a student as, "We had many opportunities to collaborate with doctors and I gained a better appreciation for the role a pharmacist can play in collaborative health care."

**Preceptor as support.**

The support role of the preceptor draws from both adult learning theory and transformational leadership theory (Bass, 1985; Bass & Riggio, 2006; Burns, 1978, 2003). Both theories speak to the importance of recognizing the value and dignity of students, assisting students in achieving their full potential, and motivating students through enthusiasm for teaching. Bass refers to this as individualized consideration. Adult learning theory further contends that personality traits conducive to positive interactions and communication, such as friendliness, a sense of humor, and understanding, are essential for effectiveness as an instructor (Knowles, 1970; Rogers, 1969). The model of experiential learning, as portrayed by Joplin (1995), further emphasizes the critical role that the instructor plays in providing support and feedback throughout the learning process.

Eleven separate coding constructs relative to the support role of the preceptor emerged from the data set. The importance of the support role of the preceptor to students cannot be overstated. Personal attributes of the preceptor ranked first and second overall for the IPPE and APPE student groups respectively. Yet, the personal attribute dimension was completely absent from the analysis of the expert-designed instruments. The following student comment reflects the importance of this dimension:
She was very personable, which made it easy to talk to her about any questions I had. It also made it easy to learn from her because she always wanted to help us and make sure we had the best experience possible. Another student commented, "He also is very approachable as a preceptor and always made me and the other students a priority and was never too busy for us." Still others expressed the importance of the personal attributes of the preceptor in the creation of an optimal learning environment. Comments such as, "Courteous and friendly to the students . . . wants us to succeed, wants us to learn;" "[My preceptor] was incredibly kind;" "[My preceptor] was one of the more patient and compassionate people I have had the pleasure to work with;" "[My preceptor] was very nice and understanding;" "She is also very positive and fun to be around;" "[My preceptor] was very easy to get along with;" and "[My preceptor] is patient, kind, and a good listener," are representative of the numerous student comments that addressed this dimension.

**Preceptor as partner.**

The final theme of preceptor as partner is heavily grounded in transformational leadership theory (Bass, 1985; Bass & Riggio, 2006; Burns, 1978, 2003). Three coding constructs that represent this theme emerged from the data sets: the joint negotiation of student activities between preceptor and student, the acceptance of the student as a fully-entrenched member of the team, and the value of the outcomes of collective work. Transformational leadership theory addresses the role of the instructor in working with the student to craft a shared vision, engaging collaboratively to achieve common goals, and providing meaning to collective work. Students are viewed and accepted as a full member of the team. Preceptor and student share in the collective outcomes of their
efforts. Ultimately, students begin to take on the persona of a pharmacist professional.

Comments such as, "[My preceptor] treated us like pharmacists and disseminated real-life tasks;" "[My preceptor] gave me work that was beneficial to the company;" "They have made me feel at home like I am one of the crew;" "He helped me achieve my learning objectives by asking me many questions about my opinions on treatment and including me in his clinical decisions;" and "She was always accessible to me and got me involved in the pharmacy. I was in charge of scheduling flu shots," reflect the beginning of that transition. Although none of the constructs categorized as preceptor as partner occupied the first quartile of the ranked codes for any of the study groups, it nonetheless emerged as a separate and distinct theme that stands on its own.

The overall preceptor roles that were identified by this study find a basis for understanding in transformational leadership theory, adult learning theory, social cognitive theory, and experiential learning models. Themes in the educational literature that allude to instructor as role model; instructor as teacher who both directs and facilitates level-appropriate learning while providing support; and instructor as a partner in learning validate the results of this content analysis.

**Relationship of themes to the health professional literature.**

Preceptor as professional, preceptor as instructor, preceptor as support, and preceptor as partner are the four themes that emerged from this study. A content analysis published in the medical literature that examined comments obtained from medical residents on preceptor evaluation instruments also identified four themes: preceptor as physician, preceptor as supervisor, preceptor as teacher, and preceptor as person (Ullian et al., 1994). The medical preceptor as physician role closely parallels that of pharmacist...
preceptor as a practicing professional. The medical preceptor as teacher also aligns with pharmacy preceptor as instructor. The role of medical preceptor as person matches the role of pharmacist preceptor as support.

However, the medical preceptor as supervisor, as defined by Ullian et al., speaks to the role of the physician in providing the resident with opportunities for practice and patient contact. A similar role of the pharmacist preceptor in providing practice opportunities for students was classified as a sub-category within the larger theme of preceptor as instructor as uncovered by this study.

Finally, the pharmacist preceptor as partner was not identified as a separate theme within the medical resident study. Rather, the medical preceptor as co-worker was seen in the Ullian et al. study as someone "easy to work with" and "fun to work with." As such, it was subsumed within the larger theme of medical preceptor as person. The connotation of co-worker as someone who is collegial is much different than the concept of joint partnership, as identified by this study. The theme of preceptor as joint partner and collaborator was absent from the Ullian study. Although pharmacy preceptor as partner represents only a small percentage of the data derived from the content analysis conducted by this study, it nonetheless emerges as a distinct theme.

From a more comprehensive view of the medical literature, three dominant themes emerged from the 28 separate studies as previously cited in Chapter Two: preceptor as role model, preceptor as instructor, and preceptor as interpersonal communicator. Similar themes were also uncovered from studies published in the nursing and allied health professional literature. Once again, however, the role of the preceptor as
a joint collaborator did not emerge as a predominant theme from the previously cited studies.

Although the importance of respect for the student was consistently revealed as an important preceptor behavior across multiple studies in the medical and related health professional literature, few studies offered the view of preceptor as joint partner and collaborator. A study based on medical preceptor interviews conducted by Mann et al. (2001) was the only examined medical study that addressed joint goal setting: "[Preceptors] expressed their intent to create an enjoyable learning environment, to know the learner's goals, to help the learner achieve them, and a willingness and ability to adjust teaching and learning goals based on the individual learner's needs" (p. 281).

A study in the dietetic literature also addressed the preceptor view of student as colleague (Wilson, 2002). Yet, in a study of nursing students and their preceptors, the following opinion expressed by a nursing instructor offered just the opposite point of view:

I have to say that I'm still a big believer in hierarchy because we are a hierarchical system. You can have lovely debates at the graduate level, lovely conversations debating ideas about research, theory, about clinical practice, but when the end of the term comes, I have to put a grade on our grade sheet . . . Maybe we can enjoy each other's ideas but I think there is a hierarchy there, and I'm fine about the hierarchy. (Myrick & Yonge, 2004, p. 375)

The one dimension that figures predominantly across medicine, nursing, the allied health professions, and the results of this study is the ability of the preceptor to identify opportunities for practice. This was consistently valued by instructors and students across
all of the health professions. However, there was a marked difference in the value placed upon structuring of the learning experience. The medical literature demonstrates inconsistency in the importance attached to structured learning. In fact, several studies identified the value of unplanned learning encounters (Epstein et al., 1998; Loftus as cited in Irby, 1995; Ottolini et al., 2010). Other medical studies uncovered the importance of fresh learning experiences in the creation of new insights (Epstein et al., 1998, Leone-Perkins et al., 1999; Mann et al., 2001). In general, studies of medical residents demonstrated a trend towards the preference of autonomy and self-directed learning in the experiential learning process. Studies in the nursing and allied health professional literature, on the other hand, attached greater importance to structure in the learning process.

The results of this study demonstrate greater similarity to nursing and the allied health professions than to medicine regarding structured approaches to learning. Structured approaches include orientation, scheduling, defining goals and objectives, planning activities and assignments, and clearly relaying expectations to students. As a category, preceptor-directed behaviors constituted 34.8% of the expert data set, 27.1% of the IPPE responses, and 22.5% of the APPE responses. Among student suggestions for preceptor behavioral improvements, the desire for better structure was cited as the first and second recommendations overall by IPPE and APPE students respectively.

The personality characteristics of the preceptor in terms of caring, friendliness, and helpfulness were also consistently noted across the nursing studies. "Personal qualities thought to impact successful student learning on the part of the preceptor are: sincerity, warmth, caring, patience, enthusiasm . . . sense of humor . . ." (Letizia &
Jennrich, 1998). Results reported in the medical literature, on the other hand, focused more heavily on the enthusiasm of the physician preceptor for teaching and the profession and less so on the personality characteristics of the preceptor. Although the results of the analysis conducted by this study likewise identified pharmacy preceptor enthusiasm for teaching and for the profession as important constructs, pharmacy students placed tremendous weight on the personal attributes of their preceptors in a manner more similar to the results reported in the nursing literature. Describing such preceptors as being kind, caring, friendly, personable, and possessing a good sense of humor, this coding construct ranked first overall for the IPPE students and second overall for the APPE students.

**Comparison of introductory to advanced practice experience students.**

There was notable consistency in the value assigned to pharmacy preceptor characteristics and behaviors by IPPE and APPE students across all rankings. The calculated correlation value between the data sets was 0.8776 (see Table 4).

Additionally, both IPPE and APPE students placed the content knowledge of the preceptor, the personal attributes of the preceptor, the ability to convey concepts and information, and willingness to help among the top four rankings (see Tables 2 and 3). The APPE students, in particular, attached a relatively high importance to the knowledge level of the preceptor. Content analysis revealed a frequency ratio of 0.0798, which was the highest calculated frequency ratio for all categories across all groups, placing preceptor knowledge level at the top of the APPE rankings. IPPE students assigned greatest importance to the personal attributes of the preceptor with a calculated frequency ratio of 0.0663. Both groups also attached substantive value to the preceptor as a
professional practitioner. Five of the seven codes attributable to preceptor as professional appeared in the top quartile of all coded preceptor characteristics and behaviors for APPE students, with four of the seven professionalism codes appearing in the top quartile for IPPE students. Both groups of students valued the preceptor as a role model whose behaviors they wished to emulate.

When collapsed as a single construct, providing students with the opportunity to learn (i.e., through observation, practice, access to patients, inter-professional interactions, and opportunities for application of classroom knowledge) emerged as the highest-ranked coding construct for both the IPPE and APPE student data sets. Students also assigned substantive value to the role of the preceptor as instructor in facilitating learning experiences.

Similarities between the IPPE and APPE student groups persisted throughout the individual concept codes and categories. The 68 individual coding constructs were broken into four quartiles by rank for ease of further comparison. Within the first quartile, there was agreement on the rankings for 12 of the first 17 coding elements between IPPE and APPE students. The second quartile demonstrated agreement on the rank-ordering of coding elements for nine of the next 17 items. Eleven to twelve of the next 17 rank-ordered items jointly occupied the third quartile for both the IPPE and APPE students. Finally, the IPPE and APPE rankings demonstrated a high level of agreement on the placement of 15 to 16 of the final 17 coding elements in the fourth quartile. (Note: Numbers vary because of ties in the rankings.)

IPPE and APPE students also were consistent in the most frequently cited recommendations for preceptor improvement of the practice experiences. Both groups
named better structure of the practice experience, more time spent with the preceptor, more variety and better quality of practice activities, and better direction and guidance with expectations more clearly defined among the top four recommendations. More frequent feedback and content review were also cited by both groups as improvements preceptors could make to the practice experience. These comments indicate a preference for preceptor-directed teaching behaviors.

The consistency in comments across both student groups was somewhat unexpected. Numerous studies in the medical literature indicate a difference in preceptor characteristics and behaviors that are valued by novice and more experienced learners. Less experienced medical students and residents preferred preceptor-directed and preceptor-guided teaching behaviors, whereas more experienced residents preferred greater autonomy and self-directed learning approaches (Huggett et al., 2007; Paukert & Richards, 2000; Schultz et al., 2004; Ullian et al., 1994).

Although there was little overall difference between the IPPE and APPE students in valued preceptor behaviors, there was a slight trending towards preceptor facilitation of self-directed learning by the APPE students. Results show that 4.7% of the APPE coded data responses were categorized as preceptor-facilitated self-directed learning behaviors as compared to 2.2% of the IPPE responses. Conversely, 27.1% of the IPPE coded comments valued preceptor-directed behaviors, as compared to 22.5% of the APPE coded responses (see Table 5).

Perhaps the lack of a more striking difference between IPPE and APPE students can be attributed to the nature of the practice experiences themselves. Unlike medical residents who have graduated from academic programs, pharmacy experiential students
have not yet earned their professional degrees. Moreover, medical residents are more likely to be placed in a practice setting or institution for prolonged periods of time. Consequently, they are apt to develop a greater sense of familiarity and comfort with their surroundings. Conversely, the vast majority of pharmacy practice experiences are typically shorter in length and oftentimes occur in an unfamiliar practice setting. This holds true for both the IPPE and APPE students alike.

Although the APPE student has received more academic training than the IPPE student, venues for the advanced practice experiences may nonetheless be completely foreign to the student. For example, APPE students may be exposed to clinical practice environments or non-traditional settings, such as home health care or managed care, for the first time. Moreover, APPE students are required to perform more complex tasks than their IPPE counterparts. Although these skills may have been introduced in practice labs and simulated environments in the academic setting, the application of these skills in authentic practice sites may present novel experiences for the APPE student. It is likely that given the unfamiliarity with a unique practice setting, the APPE student would place greater value on preceptor behaviors that provide significant guidance and structure. Adult education theory would predict as much.

**Comparison of expert voice to student perspective.**

Expert rankings demonstrated little agreement with the IPPE and APPE student rankings. The calculated correlation value between the expert and student data sets was 0.2802 for the IPPE students and 0.3494 for the APPE students. The calculated correlation value between experts and both student groups combined was 0.3359 (see Table 4). Indeed, the four highest ranked preceptor characteristics and behaviors for the
IPPE and APPE students do not appear in the top quartile of the expert rankings (see Table 3).

Unlike the student groups which placed the knowledge of the preceptor (preceptor as professional) and personal attributes of the preceptor (preceptor as support) at the top of the rankings, the most frequently cited preceptor behavior as determined from the expert instruments is the utilization of formative feedback (preceptor as instructor). Formative feedback appeared at the bottom of the first quartile for the APPE students and in the second quartile for the IPPE students. Although it appears lower in the rankings, the desire for more frequent formative feedback was nonetheless cited by both IPPE and APPE students as one of the top ten areas for improvement by preceptors. When opportunities for learning (i.e., observation, practice, patient contact, inter-professional interaction, and classroom application) were considered as a singular construct, this dimension rose to the number one ranking for the experts, demonstrating the one area of consistency across the expert, IPPE, and APPE data sets.

Across the rankings of codes, expert and IPPE results demonstrated agreement in the placement of five of the 17 coding elements in the first quartile. Expert and APPE rankings demonstrated agreement on eight of the 17 elements in the first quartile. Expert and IPPE rankings demonstrated agreement on two to three of the items in the second quartile, with expert and APPE results agreeing on three to four of the 17 items. There was concurrence on four to five of the elements for placement in the third quartile for the expert and IPPE rankings, with a similar concurrence of four to five elements for the expert and APPE rankings. (Note: Numbers vary because of ties in the rankings.) Expert and IPPE rankings, as well as expert and APPE rankings, concurred on the placement of
eight out of the final 17 elements in the fourth quartile. The level of agreement between the expert and student perspectives is notably less when compared to the level of agreement between the IPPE and APPE students. However, there is a slight tendency towards greater agreement between the APPE and expert ratings, as compared to the IPPE and expert ratings. This is not unexpected as the APPE students are closer to their transition to the role of professional pharmacist practitioner and, consequently, may begin to trend towards the expert perspective.

Frequency of student comments for both the introductory and advanced practice experiences gave little weight to formal evaluative processes placing those in the bottom quartile. Conversely, content analysis of the expert instruments placed these items much higher in the rankings. Students are currently provided with formal summative evaluations by their preceptors at the conclusion of the practice experience. These summative evaluations, therefore, may not occur until after students have completed the evaluation of the preceptor and may not be reflected in the student comments that were analyzed. However, other formal evaluative processes such as the provision and review of assessment criteria at the beginning of the rotation, periodic formal evaluations throughout the practice experience, and the sense of fairness in evaluative processes would be wholly unaffected by the positioning of the student evaluation of the preceptor. Yet, these other formal evaluative measures are infrequently identified by students as effective preceptor behaviors.

Because formal evaluative processes are required by the schools, the students may not have viewed these as behaviors unique to the preceptor and may not have alluded to formal evaluative activities in their comments. Nonetheless, all three groups (i.e., expert,
IPPE, and APPE) assigned greater weight to the role of frequent and constructive formative feedback in its contribution to student learning than formal assessment measures. All three groups favored frequent and informal processes over formal assessment measures.

The ability of the preceptor to provide a comfortable and adequate physical environment was ranked in the second quartile by the analysis of the expert instruments. Students found little value in this dimension. Content analysis of both IPPE and APPE student comments placed it in the bottom quartile. Students clearly favored the personal attributes of the preceptor over aspects of the site.

An emphasis on preceptor-directed behaviors and structure emerged as an important construct across all three groups. The ability of the preceptor to organize the practice experience and plan for activities and assignments appears in the top quartile for the expert, IPPE, and APPE perspectives alike. Providing opportunities to practice, promoting a positive learning environment, and demonstrating professionalism are also highly ranked preceptor behaviors for all three groups.

Examination of categories, rather than individual codes, demonstrated that teaching behaviors comprised the highest percentage of the coded data across all three groups. However, teaching behaviors, especially those designated as preceptor-directed, are weighted much more heavily by the experts than by the students. Conversely, supportive and professional preceptor behaviors are given more weight by the IPPE and APPE student data sets (see Table 5).

The most glaring discrepancy between the expert instruments and responses of students was related to the personal attributes and characteristics of the preceptor (e.g.,
kindness, friendliness, sense of humor, and patience). Completely absent from the expert instruments, personal attributes as a coded concept was ranked first and second respectively by the IPPE and APPE students.

An overview of multiple studies in the medical and nursing literature indicated that students and preceptors do not necessarily concur when it comes to the identification of preceptor behaviors and characteristics that are conducive to learning (Buchel & Edwards, 2005; Byrd et al., 1997; McKee et al., 1998; Riesenberg et al., 2001). Although this study did not include the preceptor perspective, it does provide further evidence that students value preceptor characteristics and behaviors differently than the experts in pharmacy experiential education. In concert with the medical and nursing literature, it demonstrates that the student perspective may differ from that of the professionals.

Comparison of findings to pharmacy literature.

Related studies.

The results of this study confirmed the findings of an earlier study of Canadian pharmacy residents that identified the employment of regular feedback, well-structured practice experiences, the positive personal attributes of the preceptor, and preceptor as role model as being conducive to learning (Kanji et al., 2000). Likewise, an observational study of three exemplary community pharmacy preceptors identified structuring of the rotation, development of clearly defined goals and objectives, and preceptor-student interaction as preceptor behaviors that contributed to learning (Dehoney, 1999). The emphasis on structure and the personal attributes of the preceptor, as revealed by the content analysis conducted by this study and the aforementioned studies in the pharmacy
literature, paralleled the results reported in the nursing and allied health professional literature regarding structure and the caring disposition of the preceptor.

The Dehoney study further speaks to a movement away from direct instruction towards collegial interactions by the end of the rotation. A non-published survey of a small sample of pharmacy students conducted by the University of Washington and Washington State University further speaks to the integration of the pharmacy student into the daily workflow (O'Sullivan et al., 2001). The results of the content analysis as reported in this study, which identifies the role of the pharmacist preceptor as joint partner, confirmed the behaviors that were uncovered by Dehoney and O'Sullivan et al.

In terms of the level of agreement between experts and students regarding effective pharmacy preceptor characteristics and behaviors, this study also supported the results of a survey conducted in Thailand (Sonthisombat, 2008). The Thailand study revealed that preceptors and their students did not concur on the weight assigned to specifically-defined preceptor criteria collected through an evaluation process. The Thailand study concluded that students and preceptors often perceived teaching behaviors differently. Although this study did not include the preceptor perspective, it does provide further evidence that students value preceptor characteristics and behaviors differently than experts in pharmacy experiential education. It appears that the student voice differs from that of pharmacy professionals.

The AACP-APPI instrument. The results of the current study were further compared against the AACP-APPI instrument, which was developed to assess pharmacy preceptors and experiential learning sites for the purpose of identifying best practices (AACP-APPI, 2005). The role of
preceptor as professional is adequately addressed by the APPI instrument. The knowledge, competence, and professionalism of the preceptor are all taken into account, as is the aspect of the preceptor as a professional role model. The instrument also captures the preceptor's involvement in professional organizations, which was not uncovered as a dimension in this study. Nor was the practice philosophy of the preceptor identified as a construct by this study. Ethical decision-making, which was subsumed as part of the professionalism construct, is identified as a separate item in the APPI instrument.

The role of preceptor as instructor is less specifically defined by the APPI instrument than by the current study. It addresses teaching behaviors, such as coaching, in more general terms. The instrument does not identify specific behaviors such as preceptor-guided problem solving, assisting students in making links to prior learning, prompting students through questioning techniques, taking advantage of teachable moments, and employing open discussion. It also does not speak to the structuring of the rotation experience. The APPI instrument is silent on specific preceptor-directed aspects such as orientation, scheduling, planning of activities and assignments, defining goals and objectives, relaying student expectations, and utilizing formal assessment measures.

It does, however, address the preceptor's role in identifying and responding to the specific learning needs of the student. The current study identified these dimensions as learning gap assessment and providing opportunities for learning through observation, practice, classroom application, patient contact, and inter-professional interaction. When it comes to the aspect of self-directed learning, the APPI instrument is once again very general in its approach. It does not address specific preceptor-facilitated self-directed
student learning behaviors that were uncovered in this study, such as student self-assessment, student-defined goals and objectives, student independence in seeking learning opportunities, student independence in problem-solving, student independence in communication, and student leadership. The APPI instrument does, on the other hand, comprehensively address preceptor-facilitated aspects of the learning environment.

Some facets of the role of preceptor as support are identified by the APPI instrument. This includes demonstration of a caring attitude towards students. Once again, the APPI instrument is very general in its definition of this construct. The current study teased out specific dimensions such as willingness to help, concern for student progress, respect for students, and personality attributes that are missing from the APPI instrument.

Finally, the APPI instrument acknowledges the preceptor as partner. It addresses the preceptor view of students as colleagues-in-training. Although the APPI instrument represents aspects of the four themes identified by the current study, it lacks specificity. The role of the preceptor in structuring the practice experience, as well as personality attributes of the preceptor, are incomplete. Other teaching dimensions such as coaching and facilitation of self-directed student learning behaviors are not fully explored. The overall emphasis of the APPI instrument appears to be focused primarily on the professional role of the pharmacist preceptor with limited development of the other areas of preceptor as instructor, support, and partner. Nonetheless, convergence of the themes of this study with the general domains as addressed by the APPI instrument lends credibility and validity to the results.
Emergent concepts.

Several new concepts emerged from this study. As the student comments were compared to the expert instruments over the course of the coding process, eight new constructs were identified. Although items such as the personal attributes and characteristics of the preceptor, providing flexibility and accommodation, prepping students in advance of an experience, monitoring student progress, encouraging students to take the lead, and encouraging students to define their own learning goals and objectives were uncovered as this particular study progressed, they nevertheless have been reported in other studies published in the literature. As such, they are not novel.

However, two separate dimensions that are singularly unique emerged. Sharing prior experiences with the student evolved as a novel preceptor dimension that contributed to learning. Although infrequently mentioned, several students commented on the value of this interaction with their preceptor. One student offered this approach as a recommendation for improvement of the practice experience:

There are not many things my preceptor could improve. He was an excellent mentor and showed me how to do many things in a retail setting. I wish I could have had a chance to sit and talk with him to understand why he went into retail. I am still unsure of what field I want to go into, and knowing his reason would have been a good learning experience.

The second unique dimension that was uncovered dealt with preceptor encouragement of student role identification with the patient. By providing assignments that placed the student in the shoes of the patient, the preceptor facilitated student understanding of challenges faced by a patient. In this particular situation, the preceptor
offered the student opportunities to gain an appreciation of the hurdles faced by a diabetic patient: "[My preceptor] encourages us to learn hands-on by making us test our blood sugar every morning. He also has us counting how many carbohydrates we eat each day."

Finally, the concept of preceptor as joint partner and co-learner has emerged as a separate and distinct theme in this study, as discussed previously in this Chapter. Although the dimension of joint partner has been intimated in other studies as published in the health professional literature, it has not been fully explored or developed. As uncovered by this study, the concepts of the preceptor helping students identify with their patients, sharing past experiences with students, and viewing the student as a joint partner are emergent and worthy of future investigation and development.

**Summary.**

The four themes identified through this study, preceptor as professional, preceptor as instructor, preceptor as support, and preceptor as partner, find their roots in transformational leadership theory, educational learning theory, and experiential learning models. Comparison to the health professional literature identified the role of preceptor as partner as a newly emergent theme. Pharmacy students more closely resembled nursing students and students in the allied health professions in their desire for structure and the importance they attached to the personality attributes of their preceptors.

Introductory and advanced pharmacy practice students closely resembled each other in the value they placed on desirable preceptor characteristics and behaviors. There was a slight trending towards preceptor-facilitated self-directed student learning behaviors by the APPE students. There was little correlation between the value placed on the preceptor characteristics and behaviors as identified by the expert instruments and
those extracted from the student comments. Students assigned greater weight to the professional role of the preceptor, particularly in terms of knowledge and competence. Students also valued the personality attributes of the preceptor in providing support to the learning experience. Experts preferentially emphasized the directive role of the instructor in providing a positive practice experience. When viewed as a singular construct, preceptor-facilitated opportunities for learning were viewed by expert, IPPE, and APPE student perspectives alike as the most important construct. Although the AACP-APPI instrument does address some of the same elements as identified by this study, it is lacking in specificity. The concepts of preceptor as joint partner, sharing experiences with students, and helping students to identify with their patients are newly evolving concepts that are worthy of future study.

Limitations

This study has several limitations. By its nature, qualitative research involves judgment and interpretation on the part of the researcher. The development of categories, the fit of data into those categories, and the identification of emergent patterns and themes are all dependent on the researcher. As such, they pose a threat to the validity of the study. However, the introduction of bias on the part of the researcher is minimized by the creation of tight definitions of categories, protocols for data inclusion and exclusion, and relevant examples of appropriate classification as evidenced by the development of a comprehensive codebook. Validity was established by demonstrating convergence of the themes uncovered by this study with the general domains inherent to the AACP-APPI instrument, even though those themes are less fully developed by the APPI. Validity can be further confirmed through replication of this study by future researchers.
Internal validity is also strengthened by the review of a substantive number of student comments. Data was extracted from preceptor evaluation documents completed by students participating in approximately 800 introductory and 3,000 advanced pharmacy practice experiences over the course of two academic years. The expert instruments that were reviewed represented 37% of the entire pool of pharmacy schools across the United States and included schools with varying demographics. The size of the samples lends credibility to the internal validity of the study. Content analysis resulted in the identification of 720 pieces of coded data that were extracted from the expert instruments, 3,075 pieces of data identified from the IPPE student comments, and 6,921 separate pieces of coded data gleaned from the APPE student comments.

The study was also limited by analysis of student comments derived from a single school of pharmacy. It is not known whether students from other schools of pharmacy value the same preceptor characteristics and behaviors. This threat to external validity, however, was minimized by ensuring representativeness of the overall pharmacy student population. Representativeness of the entire pharmacy student population by the Duquesne cohort was demonstrated in terms of gender make-up, minority representation, and students with previously earned academic degrees. External validity of this study can be confirmed through subsequent replication with other sample groups.

External validity or generalizability of the results can be further confirmed through additional qualitative and quantitative methods. The utilization of focus groups, representative of multiple schools and student populations, can provide additional external validity through an alternative qualitative approach. Inclusion of study participants through a scientific sampling process can assure adequate representation of
the overall population. Survey methodologies can further assure representation of a wider population enhancing generalizability. Nonetheless, the information obtained from the results of this content analysis study is an important first step in determining important preceptor characteristics and behaviors that can be tested by subsequent research.

**Implications**

The new understandings that have been generated as a result of this study can be utilized in a number of ways. The identification of effective preceptor characteristics and behaviors can be used in the preceptor recruitment and selection process. Interviewing and screening procedures that utilize the results of this study as a framework can be employed to discern candidate suitability as a preceptor for the pharmacy practice experiences.

Information gleaned from this study can also be used as a foundation for preceptor development programs. Having a better understanding of the most effective preceptor characteristics and behaviors can be utilized in the creation of valuable programming. Such programming could target the function of preceptor as professional role model, instructor, support, and joint partner. The theme of preceptor as partner suggests that some developmental programming may be more effective when delivered to a joint audience of preceptors and their students.

Finally, information gained as a result of this study can be used as the first steps in the development of a valid and reliable instrument to measure preceptor effectiveness. Ullian et al. (1994) recommends just such an approach, "Highly ranked categories and clusters should be considered for inclusion on evaluation forms used by residents to evaluate their preceptors" (p. 837). The current lack of a universally-employed validated
instrument to assess effective preceptor characteristics and behaviors hinders the experiential assessment and quality improvement processes. A standardized instrument would not only provide schools with information regarding the performance of individual preceptors, but would also allow schools the ability to benchmark their own experiential programmatic quality and progress. The AACP Professional Affairs Committee calls for the development of such a tool:

Standardization of this process and assessment tool in concert with preceptor evaluations would be potentially powerful . . . Consideration should be given to the development of standardized assessment instruments for use at all colleges/schools. Additional (institution-specific) items can be added at the level of the individual institution. Standardization would afford the opportunity for national comparisons, the data from which would be incredibly valuable in light of the different curricula and programmatic structures . . . (Littlefield et al., 2004, p. 8)

To that end, the development of a validated and reliable assessment instrument that could be utilized by students to evaluate preceptor effectiveness could prove to be enormously valuable. Recommendations for that as well as other future studies are described in the next section.

**Recommendations for Future Studies**

Replication of this study in different student populations can help to determine the reproducibility and validity of these results. It would also be useful to discover whether software programs used in qualitative research would result in identification of similar constructs, categories, and themes. The insights gained through the content analyses
conducted by this research can further serve as a springboard for future research.

Additional qualitative studies can strengthen the internal validity of the results while quantitative studies can begin to establish external validity or generalizability.

Focus groups serve as one type of qualitative research that can provide for an expanded understanding of the constructs, patterns, and themes identified by this study. Focus groups, for example, could further explore the theme of preceptor as joint partner. Focus groups could also delve into the significance of newly uncovered preceptor behaviors, such as sharing experiences with students and assisting students in role identification with their patients. Utilizing the professional outcome and competency statements developed by American Association of Colleges of Pharmacy and adopted in part by the Accreditation Council for Pharmacy Education as a framework, focus groups can begin to anchor preceptor characteristics and behaviors to student mastery of the terminal professional competencies (AACP, 2004; ACPE, 2006).

Qualitative methods, such as content analyses and focus groups, while providing an in-depth examination of a topic of inquiry, are restricted to a small number of study participants. To determine whether the results are representative of the larger population, quantitative approaches are needed. As characteristics and behaviors of effective preceptors become more clearly defined through the results of this and subsequent qualitative studies, it is recommended that follow-up quantitative methods be employed to determine the generalizability of the results.

Survey methodology is one such approach. A survey instrument that is constructed using the preceptor characteristics and attributes as defined by the qualitative research can be disseminated to a representative sample of students, preceptors, and
experiential experts to determine the level of agreement among all stakeholders. Levels of convergence and divergence among the groups can be subsequently quantified and compared to the results of the qualitative studies.

As called for by the profession, the results of the qualitative and quantitative analyses can be used to construct a pilot instrument for the assessment of preceptor effectiveness by students participating in the practice experiences (Littlefield et al., 2004). Once constructed, pilot testing with a select number of students can be used to resolve any inconsistencies or lack of clarity of the instrument. Once the instrument is refined, it can be disseminated to a larger sample group for purposes of determining validity and reliability. Internal consistency can be calculated to determine the reliability of the instrument. Factor analysis can also be conducted to identify valid categories or dimensions. The categories determined by factor analysis could be compared to the themes identified by this study to ascertain the level of agreement. Stronger levels of agreement would provide more confidence in the results of the studies.

As experience with the preceptor evaluation instrument grows, it can be compared to student experiential performance measures to determine if there is a correlation between student performance and preceptor characteristics and behaviors. Finally, preceptor characteristics and behaviors can be compared to site characteristics in light of student assessment of the quality of experience. It would be important to determine the interplay between preceptor and site factors. Results of the content analysis revealed that students placed little value on the physical environment. Yet, they clearly valued opportunities for practice. It is unknown whether preceptor and site factors are independent of one another or inextricably intertwined. It is also unknown whether a
disparity in the quality of the rotation site and effectiveness of the preceptor impacts the learning experience, or if one factor outweighs the other. Exploration of these questions would be useful in both the selection of experiential sites and preceptors as well as in site and preceptor development.

Conclusion

Content analysis as conducted by this study revealed several important findings. Four themes relative to the role of the pharmacist preceptor were identified: preceptor as professional, instructor, support, and joint partner. Students engaged in the introductory and advanced pharmacy practice experiences were found to markedly resemble each other in terms of the value placed upon preceptor characteristics and behaviors that contribute to learning. Experiential experts, however, did not attach the same weight to the characteristics and behaviors valued by students.

Students were found to value the knowledge and competence of the preceptor as a professional role model. They also valued the support provided by the preceptor through willingness to help and the positive personal attributes of the preceptor. The expert voice, in contrast, placed greater weight on the role of the preceptor as instructor. The personal attributes of the preceptor, so heavily favored by students, are absent from the expert perspective. When viewed as a single construct, the role of the preceptor in the facilitation of learning opportunities figured predominately across all three groups.

The results from the content analysis demonstrated some agreement with the health professional literature, especially in regards to providing students with opportunities for learning. Results from this study align more closely with nursing and the allied health professions. It departs from studies reported in the medical literature in
its emphasis on structure and the personal attributes of the preceptor. Joint partnering emerged as a separate and unique theme distinct from the other studies, as reported in the literature.

Emergent concepts that are worthy of future exploration include the role of the preceptor as partner, the role of the preceptor in sharing personal experiences with students, and the role of the preceptor in facilitating student identification with their patients. Absent from this content analysis was the role of the preceptor in facilitating approaches to learning based on reflection. It is not known, however, whether this behavior was subsumed in other constructs. Moreover, it is apparent that reflection operates at some level as evidenced by the insight provided by the student comments. However, it was not explicitly identified as a behavior facilitated by the preceptor.

The results obtained from the content analysis conducted by this study are the first steps in determining preceptor characteristics and behaviors that are valued by students and experts. Results can be used to inform preceptor selection criteria, provide foundation for preceptor development programs, and begin the process of creating a preceptor evaluation instrument. Study results can be further used as a springboard for future qualitative and quantitative studies that examine the role of pharmacy preceptors in providing effective learning experiences.


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Appendix

Codebook for Preceptor Characteristics and Behaviors

01. Role Model
Acts in a manner that students wish to emulate.
Inclusion: Exhibiting the types of positive behaviors occurring throughout the course of normal day-to-day activities that students would like to adopt.
[Exclusion: Demonstrating planned skills and behaviors for student observation and subsequent imitation; exhibiting depth of knowledge and expertise; displaying characteristics of professionalism.]
Examples: Students specifically address the desire to become the type of practitioner that preceptor represents; students observe how preceptor manages stressful situations; students can identify with preceptor.

02. Professionalism
Exhibits professional behaviors that are integral to a pharmacist professional.
Inclusion: Presenting a neatly groomed and professional appearance; demonstrating punctuality, reliability, and dependability; demonstrating respect and diplomacy in interactions; displaying ethical decision-making behaviors; exhibiting self-confidence without arrogance; displaying strength of character and maturity; assuming responsibility for actions; maintaining a professional workplace environment.
[Exclusion: Serving as a role model that students wish to emulate; exhibiting depth of knowledge and expertise; demonstrating competence.]
Examples: Preceptor takes responsibility for actions; preceptor effectively handles workload without sacrificing patient care; preceptor acts in the best interest of patients; preceptor follows-through on previous actions and delegated assignments; preceptor is assertive but not arrogant in interactions; preceptor maintains a positive rapport with coworkers and health care professionals; other health care professionals and staff indicate respect for preceptor.
03. Caring

Displays a caring disposition.

Inclusion: Demonstrating sensitivity to the needs of others; exhibiting concern for the well-being of patients.

[Exclusion: Demonstrating concern for the learning needs of students; acting professionally; demonstrating competence in providing patient care.]

Examples: Preceptor expresses empathy for patients; preceptor takes a sincere interest in and responds to the needs of co-workers, staff, and professional peers.

04. Knowledgeable

Possesses superior knowledge and expertise in area of practice.

Inclusion: Demonstrating masterful integration and synthesis of content knowledge; exhibiting exemplary critical-thinking and decision-making skills; maintaining currency in the field.

[Exclusion: Demonstrating role modeling behaviors; exemplifying the characteristics and behaviors of a professional practitioner; demonstrating competence as a practitioner; employing exemplary teaching skills.]

Examples: Preceptor has exemplary command of the content knowledge and information specific to area of practice; preceptor maintains currency in field; preceptor is cognizant of recent developments as published in the literature; preceptor stays up-to-date; preceptor is described as being intelligent, knowledgeable, and smart.

05. Competence

Displays effectiveness and competence as a practitioner.

Inclusion: Having a positive influence on patient care decisions; demonstrating proficient clinical skills; possessing the ability to apply knowledge and information to patient care; communicating effectively with patients.

[Exclusion: Possessing knowledge in area of practice; demonstrating professional behaviors; serving as a role model that students wish to emulate.]
Examples: Actions of preceptor have a positive influence on patient health care outcomes; preceptor effectively communicates with patients in regards to health care recommendations; preceptor can articulately defend and support recommendations; other health care professionals and peers seek preceptor input and guidance.

06. Professional Communication
Communicates effectively with peers, other health care professionals, and staff.
Inclusion: Communicating with others in a positive way; expressing viewpoints and positions in an assertive yet non-combative manner; listening and giving careful consideration to other opinions and viewpoints; providing rationale to support positions.
[Exclusion: Communicating with student in role of instructor; communicating with patients in regards to health care interventions and recommendations.]
Examples: Preceptor uses appropriate and professional terminology when communicating with staff, peers, and other health care professionals; preceptor is receptive to the views and input of others; preceptor can be assertive and articulate a viewpoint without being confrontational; preceptor engages in active listening techniques.

07. Enthusiasm for Practice
Demonstrates enthusiasm for practice; displays passion for career choice and for the profession.
Inclusion: Exhibiting a true commitment to and passion for the profession through daily practice; internally motivated to deliver exemplary work and provide model patient care.
[Exclusion: Exhibiting enthusiasm for teaching; motivating students through teaching approaches that are engaging.]
Examples: Preceptor demonstrates satisfaction and contentment with career choice; preceptor approaches practice with a positive attitude; preceptor embraces his/her work; preceptor is motivated to achieve.
08. Orientation
Orients students to the site and personnel.
Inclusion: Providing introductions to staff; acclimating students to the site and surroundings; reviewing practice site policy and procedure.
[Exclusion: Providing a rotation schedule; reviewing expectations of students; reviewing rotation goals, objectives, activities, and assignments.]
Examples: Preceptor introduces students to staff; preceptor provides students with a tour of the facilities; preceptor provides students with an overview of practice site policy and procedures (e.g., site-specific HIPAA policy).

09. Organized
Develops a planned practice experience; preceptor is prepared and organized.
Inclusion: Providing students with a schedule of activities; structuring the practice experience; demonstrating readiness for the practice experience.
[Exclusion: Providing orientation to the practice site; reviewing expectations of students; reviewing rotation goals, objectives, activities, and assignments.]
Examples: Preceptor prepares a schedule for students; preceptor identifies and arranges activities in advance of student arrival; preceptor coordinates the practice experience with other staff members; preceptor has a clearly defined plan for the experience.

10. Defines Expectations
Defines what is expected of students in advance of the practice experience; outlines student responsibilities.
Inclusion: Clearly conveying student responsibilities; specifying performance requirements; defining student expectations that are realistic and achievable.
[Exclusion: Defining rotation goals and objectives; defining rotation activities and assignments; developing a schedule or plan for the practice experience.]
Examples: Preceptor provides students with a clear outline of the types of behavior and performance that are expected of the students; preceptor identifies student responsibilities for the rotation.

11. Preceptor-Defined G’s & O’s

Develops site-specific learning goals and objectives for the practice experience that are preceptor-driven; relays goals and objectives to student in advance of the practice experience.

Inclusion: Defining goals and objectives that are realistic, achievable, and site-specific; development of structured goals and objectives by the preceptor in advance of the practice experience.

[Exclusion: Joint determination or negotiation of goals and objectives by students and preceptor; relaying expectations for student behavior and performance; providing students with planned activities, schedule, or orientation.]

Examples: Preceptor unilaterally develops learning goals and objectives that are site-specific and are in alignment with curricular guidelines; preceptor conveys goals and objectives to students in advance of the practice experience; preceptor indicates anticipated student learning outcomes.

12. Planned Activities/Assignments

Plans and assigns specific activities and assignments that support learning goals and objectives; coordinates a sufficient depth, breadth, and variety of activities and assignments to address rotation requirements; structures activities and assignments in advance of the practice experience.

Inclusion: Arranging activities and assignments that assist students in meeting learning objectives; linking activities and assignments to goals and objectives; providing activities and assignments that are meaningful, realistic, and foster student learning and growth.

[Exclusion: Joint identification and negotiation of activities and assignments that support student learning needs; determination of site-specific learning goals and
objectives; offering opportunities for unplanned or in-the-moment learning encounters.]

Examples: Preceptor unilaterally arranges and facilitates activities that will assist student in meeting learning goals and objectives; preceptor defines activities that address patient care; preceptor plans activities and assignments that are meaningful and specifically linked to defined learning outcomes; preceptor assigns readings that are useful and applicable in the practice setting; preceptor has a well-defined structure for assignments and activities.

13. Learning Gap Assessment

Diagnoses student learning gaps and learning needs; identifies areas for improvement; addresses identified areas of weakness; ascertains student areas of interest.

Inclusion: Performing a preceptor-driven assessment of student strengths and weaknesses; identifying gaps in student learning; addressing student-specific learning wants and needs.

[Exclusion: Encouraging student self-assessment of learning needs; jointly negotiating activities based on student interest or needs.]

Examples: Preceptor conducts student interview and reviews past performance to ascertain learning needs; preceptor performs an assessment of student strengths and weaknesses in advance of learning experience; preceptor recognizes student difficulties in understanding new information and mastering skills as the rotation unfolds; preceptor unilaterally arranges for learning opportunities to address identified student learning wants and needs.

14. Gauges Appropriate Workload

Gauges an appropriate student workload; provides students with adequate time to complete assignments.

Inclusion: Assigning students an appropriate workload commensurate with their abilities; allotting students sufficient time to engage in assigned activities; granting students appropriate time to complete assignments.
[Exclusion: Defining student activities and assignments that meet rotation goals and objectives; dedicating time to student-preceptor interaction.]

Examples: Preceptor gives students sufficient time to complete assigned tasks; preceptor assigns a reasonable workload to students based on student ability level; preceptor provides students with reasonable deadlines for assignments.

15. Assessment Criteria

Provides student with assessment criteria and evaluation methods in advance of the practice experience.

Inclusion: Explaining and clarifying evaluation methods in advance of the rotation; providing student with grading rubric.

[Exclusion: Encouraging student self-evaluation; jointly developing assessment criteria; performing an assessment of student learning needs in advance of the practice experience; performing formal student evaluations and assessments; providing students with formative feedback.]

Examples: Preceptor reviews grading rubric with student in advance of rotation assignments and activities; preceptor explains assessment criteria in advance of student performance; preceptor entertains student questions regarding the evaluation process.

16. Monitors Progress

Monitors student progress throughout the rotation; ensures that student is on-track.

Inclusion: Modifying rotation structure as needed; resolving problems or issues as they arise.

[Exclusion: Conducting formal assessments; providing students with formative feedback.]

Examples: Preceptor makes sure that students are on-track with assignments; preceptor addresses any student concerns; preceptor makes adjustments as needed to address student needs.
17. Periodic Formal Evaluation

Conducts a formal mid-point or other periodic evaluation of the student.
Inclusion: Performing a formal written mid-rotation or other periodic assessment of student performance against defined criteria; reviewing student strengths and weaknesses; offering a plan to address areas of deficiency for the remainder of the practice experience.
[Exclusion: Monitoring student progress to ensure that students are on-track; offering informal verbal feedback throughout the course of the practice experience; conducting a final summative assessment and grade for the practice experience; encouraging student self-assessment of performance.]
Examples: Preceptor completes a formal mid-point or other formal periodic evaluation of students using a pre-defined instrument; preceptor offers recommendations for student improvement and develops a plan for the remainder of the practice experience.

18. Summative Evaluation

Conducts a formal summative evaluation of students at the conclusion of the practice experience and provides an end-of-rotation grade.
Inclusion: Performing a formal written assessment at the end of the rotation; reviewing areas of strength and weakness.
[Exclusion: Offering informal verbal feedback; monitoring student progress; allowing for student self-assessment; performing a joint assessment of student performance.]
Examples: Preceptor completes a final evaluation of student performance using a pre-defined instrument; preceptor assigns students a grade for the rotation.

19. Fair Evaluation

Conducts an assessment of student performance that is perceived as being fair.
Inclusion: Utilizing pre-established objective criteria for assessment; applying assessment criteria in a just and equitable manner.
[Exclusion: Offering informal verbal feedback.]
Examples: Preceptor provides supporting reasons for evaluation; preceptor applies objective criteria in measurement; evaluation scores are grounded in evidence (e.g., observation of specific performance points, student assignments, input from others who interacted with student).

20. Formative Feedback
Offers constructive feedback to support student learning.
Inclusion: Providing sufficient feedback that is specific, timely, and helpful; offering informal feedback on a regular basis; providing feedback that supports student improvement.
[Exclusion: Providing formal assessment of student learning outcomes; correcting errors in a positive way without humiliation.]
Examples: Preceptor offers students recommendations for improvement; preceptor provides helpful feedback on a regular and consistent basis; preceptor provides students with critique regarding performance and assignments that is prompt and specific.

21. Conveys Concepts
Delivers important information and content that is preceptor-determined and preceptor-driven.
Inclusion: Providing instruction to students regarding practice-based content and skills; presenting important facts and subject matter; communicating knowledge; teaching material; providing students with an overview of the operations; “telling” behaviors.
[Exclusion: Providing answers to student questions; engaging in open discussion; demonstrating specific operations or behaviors for student replication.]
Examples: Preceptor stresses important practice content; preceptor identifies key concepts relative to practice; preceptor effectvely communicates principles to students; preceptor determines importance and relevancy of content; preceptor explains the operations of the practice site.
22. Provides Explanations

Provides clear and thorough explanations.
Inclusion: Clarifying important information.
[Exclusion: Delivering information and concepts in a transmission-driven or “telling” approach; encouraging open discussion.]
Examples: Preceptor is very clear in explanation of processes and procedures; students can readily understand and assimilate conveyed information; preceptor further explains difficult information in a manner that can be readily understood by students; preceptor clarifies gray areas.

23. Answers Questions

Provides answers to direct student questions regarding content, processes, and procedural matters.
Inclusion: Addressing student problems and questions.
[Exclusion: Providing explanations and clarification of important subject matter and content information; encouraging open discussion; demonstrating willingness to answer student questions; delivering subject content in a preceptor-driven approach.]
Examples: Preceptor is responsive to student questions; preceptor answers student questions in a clear and concise manner offering rationale.

24. Demonstrates

Models tasks for student imitation; models behaviors for student adoption; demonstrates skills step-by-step.
Inclusion: Demonstrating practice skills for student observation and subsequent replication; modeling communication and relationship skills.
[Exclusion: Serving as a role model or the type of professional to which students aspire; providing students with an overview of the operations without an expectation for replication of specific behaviors (e.g., “showing students around”).]
Examples: Preceptor demonstrates how to assess and manage patient therapy; preceptor shows students how to “do things” (i.e., entering an order in the computer,
preparing a compound, taking a blood pressure); preceptor demonstrates how to effectively communicate with patients and other health care professionals.

25. Explains Reasoning
Describes own reasoning and thinking processes to students.
Inclusion: Walking students through own problem-solving and decision-making thought processes; explaining rationale to students in determining solutions; providing insights.
[Exclusion: Prompting students in identifying solutions through active inquiry, Socratic questioning, and reframing of problems; preceptor guided problem-solving.]
Examples: Preceptor engages in "thinking-out-loud" approaches; preceptor explains how plausible courses of action were weighted; preceptor shares how a decision was reached.

26. Shares Experiences
Shares own professional experiences.
Inclusion: Offering students the preceptor’s perspective of professional practice; providing students with guidance based on the preceptor’s own life experiences; providing students with practical life knowledge.
[Exclusion: Assisting students in establishing links to past and present experiences; establishing relevancy of learning experiences to authentic practice.]
Examples: Preceptor provides students with insight gained from years of experience; preceptor provides students with bits of wisdom gained from prior practice; preceptor shares life lessons with students; preceptor is able to provide students with perspectives from a history of multiple practice settings and positions of varying responsibilities.

27. Preceptor-Guided Goal Attainment
Provides guidance and support for student attainment of the defined goals and objectives.
Inclusion: Helping students to meet course objectives; providing sufficient direction for students to complete assigned tasks.

[Exclusion: Providing for self-directed student attainment of goals and objectives.]

Examples: Preceptor provides sufficient guidance and support in assisting students in the mastery of specific skills (e.g., patient evaluation, data collection and analysis, documentation and writing skills); preceptor ensures that students are provided sufficient learning experiences to meet the defined goals and objectives.

28. Dedicates Time

Dedicates structured time for student-preceptor interaction; dedicates sufficient time to students.

Inclusion: Being present; meeting with students on a regular and consistent basis; dedicating time for student discussion.

[Exclusion: Being available and accessible on an as-needed basis; being approachable and willing to help.]

Examples: Preceptor carves out time for students; preceptor arranges for dedicated time for student discussion regarding experiential activities (e.g., patient cases, interventions, projects, subject content matter); preceptor allows sufficient time for student questions; preceptor meets with students on a regular basis to plan activities, gauge performance, and monitor progress.

29. Preps Students

Prepares student in advance of a learning experience; ensures that student has the requisite skills and knowledge for practical application.

Inclusion: Reviewing necessary content in advance of a real application; practicing a skill in advance of an authentic experience.

[Exclusion: Modeling behaviors for student practice independent of an actual application event.]

Examples: Preceptor provides students with the opportunity to practice use of screening instruments prior to student participation in a patient health screening.
event; preceptor reviews disease state content prior to student participation in medical rounds; preceptor provides students with the opportunity to provide mock patient counseling prior to engagement in an actual patient counseling encounter.

30. Challenges Students
Challenges students in progressive stages of development.
Inclusion: Providing sufficiently challenging experiences that increase in complexity over time; challenging students to the next step at a level that is matched to student ability and readiness.
[Exclusion: Guiding students toward solutions through Socratic style of questioning; reframing issues for problem-solving.]
Examples: Preceptor increases expectations of students over time in an effort to meet designated goals and objectives; preceptor requires students to stretch to the next level of learning commensurate with their abilities.

31. Making Connections
Assists students in establishing links to past and present experiences as well as previous didactic coursework in making sense of new experiences.
Inclusion: Establishing links to classroom knowledge and its application in practice; demonstrating how present experiences can build on those of the past.
[Exclusion: Projecting newly acquired knowledge and skills to future practice; providing relevancy to future practice.]
Examples: Preceptor helps students link foundational coursework to a practice site activity; preceptor assists students in making connections from drug therapy content knowledge to patient care; preceptor assists students in understanding the interface between pharmacy and other health care disciplines.

32. Identification with Patients
Assists students in identifying with patients.
Inclusion: Helping students to view a disease state from the patient's perspective.  
[Exclusion: Establishing links to past and present classroom knowledge and other practice experiences; providing relevancy to future practice.]

Examples: Preceptor has students experience the challenges that patients with a given disease face (e.g., participating in daily blood glucose monitoring/counting daily carbohydrate intake for diabetic patients).

33. Preceptor-Guided Problem Solving
Challenges students through a problem solving approach; guides students in problem solving; engages students in critical thinking.

Inclusion: Guiding students through decision-making processes; basing instruction on real and authentic problems that arise in the practice setting; employing problem-solving schemata.

[Exclusion: Providing students with the “answers” or preceptor-derived solutions; promoting open discussion; encouraging independent student problem-solving behaviors.]

Examples: Preceptor walks students through decision-making processes; preceptor engages students in authentic practice setting problems and challenges; preceptor fosters critical thinking skills by challenging students to consider multiple perspectives; preceptor stimulates student problem-solving skills through interaction.

34. Prompts Students
Prompts students through thought-provoking questions; reframes issues for student consideration in identifying solutions.

Inclusion: Prompting students through guided questioning; asking students questions to stimulate learning; reframing problems for consideration of solutions through alternate perspectives and approaches.

[Exclusion: Providing students with the “answers” or preceptor-derived solutions; employing problem solving schemata that serve as a model or template for arriving at solutions; hosting open discussions.]
Examples: Preceptor asks students probing questions to stimulate memory and recall; preceptor employs a Socratic line of questioning; preceptor reframes issues through guided questions when students cannot arrive at a solution independently.

35. Open Discussion
Facilitates discussion regarding practice experiences; encourages student input; prompts student deliberation through open discussion.
Inclusion: Engaging in discussions at a level that is appropriate for student understanding and participation; encouraging students to share ideas and opinions; discussing patient cases to facilitate learning.
[Exclusion: Answering questions posed by students; prompting students through questioning; leading students to solutions through preceptor-guided problem-solving.]
Examples: Preceptor engages students in a thorough and comprehensive discussion of patient cases; preceptor engages students in an open discussion of emerging healthcare issues; preceptor leads open discussion inviting student input.

36. Encourages Questions
Encourages students to ask questions.
Inclusion: Inviting student questions; inviting student comments.
[Exclusion: Facilitating open discussion and exchange; answering questions posed by students; demonstrating a willingness to answer questions.]
Examples: Preceptor encourages students to question explanations, probe for additional information, and ask for clarification; preceptor invites students to share comments; preceptor is receptive to student requests for guidance.

37. Relevancy
Provides students with relevant experiences that translate to practical application; ensures that acquired skills are applicable to future practice; prepares students for future roles.
Inclusion: Preparing students for future career; providing opportunity for students to refine skills that are applicable to future practice.
[Exclusion: Establishing connections to past and present experiences and didactic classroom concepts.]
Examples: Ensuring that relevance to future practice is clear to students; discussing the practical application of acquired knowledge and skills; engaging students in discussion and exposure to evolving trends in healthcare that will impact future practice; discussing career directions.

38. Teachable Moments
Identifies and shares points of interest in the midst of unplanned experiences.
Inclusion: Identifying learning opportunities in the midst of day-to-day experiences.
[Exclusion: Conveying subject matter content in a planned and structured manner; carving out defined time for open topic discussion.]
Examples: Preceptor shares “clinical pearls” with students as the opportunity arises; preceptor takes advantage of “teachable moments” or learning opportunities as they spontaneously arise.

39. Encourages Student Self Assessment
Encourages students in self-assessment practices; assists students in identification of learning gaps; encourages students to evaluate own mastery of learning goals and objectives; fosters student professional accountability and responsibility for own learning.
Inclusion: Providing students with the tools for self-determination of mastery against the defined learning objectives and competencies.
[Exclusion: Conducting informal and formal assessment of student learning gaps and student mastery of the competencies by the preceptor.]
Examples: Preceptor assists students in conducting an honest appraisal of content knowledge and performance skills; preceptor assists students in identifying learning gaps as well as the means to address those gaps; preceptor encourages students to
critique own knowledge and performance skills to enhance problem-solving aptitude; preceptor encourages students to assume responsibility for their own learning.

40. Encourages Student Defined G’s & O’s
Encourages student to define own learning goals and objectives for the rotation based on individual wants and needs; encourages students to plan own activities to address learning goals and objectives.
Inclusion: Responding to student-defined learning goals and objectives; identifying appropriate channels and personnel to assist students in establishing desired activities to meet goals.
[Exclusion: Defining goals/objectives and activities/assignments that are preceptor-driven as a consequence of a pre-planned structure; defining goals/objectives and activities/assignments that are preceptor-driven as a consequence of preceptor assessment of student learning needs.]
Examples: Preceptor prompts students to determine what they would like to get out of the rotation; preceptor prompts students to develop a plan to address student wants and needs; preceptor provides students with the right connections to implement the learning plan.

41. Encourages Student Independence
Encourages students to work independently; facilitates self-directed student work.
Inclusion: Encouraging student initiative to function independently; providing opportunities to foster independence and self-directed learning.
[Exclusion: Providing students with learning opportunities that are preceptor-directed or preceptor-modeled.]
Examples: Preceptor provides student with the freedom to function independently; preceptor identifies opportunities for self-directed student work; preceptor encourages students to explore new ideas; preceptor encourages students to take initiative.
42. Encourages Student Problem Solving
Encourages students to problem-solve independently.
Inclusion: Promoting independent decision-making by students.
[Exclusion: Prompting student solutions through guided questioning techniques; encouraging students to explore new ideas and opportunities.]
Examples: Preceptor encourages students to arrive at solutions independently; preceptor encourages students to think for themselves; preceptor encourages students to utilize drug literature and other resources to aid in answering questions and independent decision-making.

43. Encourages Student Communication
Encourages student communications with patients and other health care professionals.
Inclusion: Encouraging students in independent communications with other health care professionals; encouraging students to engage in patient dialogue.
[Exclusion: Interacting with preceptor in a student-instructor capacity; facilitating open student-preceptor discussions.]
Examples: Preceptor encourages students to conduct patient interviews; preceptor encourages students to engage in patient counseling and intervention activities; preceptor encourages students to engage in communications with other health care professionals; preceptor encourages students to seek assistance from other professional expert resources.

44. Encourages Student Lead
Encourages students to take the lead; encourages students to lead peers in collaborative efforts.
Inclusion: Encouraging students to implement new projects and ideas; encouraging students to coalesce peers in group endeavors.
[Exclusion: Encouraging students to seek self-directed learning opportunities; encouraging students to problem-solve independently; encouraging students to unilaterally engage in professional and patient communications.]
Examples: Preceptor prompts students to “run” with a new idea or innovative approach; preceptor encourages students to coalesce fellow students as a peer-led work team.

45. Provides Positive Learning Environment

Provides an environment that is conducive to learning; provides for a positive learning experience; creates a comfortable learning environment.
Inclusion: Establishing a professional atmosphere; providing a setting that promotes patient care; promoting an environment that is respectful of others; creating a friendly and welcoming practice setting.
[Exclusion: Providing adequate physical facilities; providing adequate references and resources; engaging staff in student learning.]
Examples: Preceptor provides an environment that has a positive disposition to learning; preceptor establishes a practice environment that supports both guided and independent student learning; preceptor promotes an environment that embraces a pharmaceutical care model; students feel comfortable in the practice setting; student does not feel threatened or intimidated by the learning environment.

46. Provides Optimal Physical Environment

Provides a physical environment that comfortably accommodates student learning.
Inclusion: Offering adequate physical space for student; providing a safe environment for student.
[Exclusion: Establishing a professional environment; providing adequate references and resources.]
Examples: Preceptor provides student with space for personal belongings; preceptor arranges for comfortable meeting space; preceptor provides student with space for work assignments and research; preceptor provides sufficient equipment, supplies, and services to support student learning.
47. Provides Resources
Provides references and resources to facilitate student learning.
Inclusion: Establishing computer and internet student access; providing hard-copy and/or electronic access to information resources, professional journals, and patient databases.
[Exclusion: Establishing a professional environment; providing an adequate physical environment for student learning.]
Examples: Preceptor ensures adequate technology to support student learning; preceptor obtains necessary clearances to provide students with access to electronic practice site records and proprietary information; preceptor provides students with access to drug information resources.

48. Promotes Staff Engagement
Engages entire staff in the support of student learning; ensures that staff has a positive disposition to student learning.
Inclusion: Ensuring sufficient and adequate staffing; including staff in the facilitation of student learning activities.
[Exclusion: Providing a professional environment and physical environment that is conducive to learning; providing necessary references and resources to facilitate student learning.]
Examples: Preceptor ensures that staff is aware of student presence and learning needs; preceptor works with staff to create a positive, welcoming, and receptive environment for students; preceptor engages staff in support of student activities; preceptor avoids scheduling students in lieu of regular staff.

49. Provides Adequate Supervision
Provides adequate student supervision.
Inclusion: Providing a learning environment that offers appropriate supervision; giving students the opportunity to practice skills in a safe environment.
[Exclusion: Providing a professional and physical environment that is conducive to student learning; engaging staff in the facilitation of learning activities.]
Examples: Preceptor allows student to practice newly acquired skills within a safety net; preceptor provides students with a safe learning environment; preceptor provides adequate supervision to ensure patient and student safety.

50. Provides Opportunities to Observe
Provides opportunities for students to learn through observation; provides students the opportunity to shadow preceptor and other pharmacist practitioners.
Inclusion: Including students in professional committee meetings; allowing students to observe pharmacist activities and responsibilities; arranging for students to view other departments.
[Exclusion: Providing students with opportunities to actively participate in pharmacy-related activities; providing students with opportunities to engage patients; providing students with the opportunity to actively interact with other health care professionals.]
Examples: Student “shadows” staff and clinical pharmacists; student tours other areas of the institution or facility; student accompanies preceptor to meetings but does not play an active role; student observes.

51. Provides Opportunities to Practice
Offers a variety of experiences to assist students in meeting learning goals and objectives; actively engages students in pharmacy practice activities.
Inclusion: Providing students with the opportunity to actively participate in the practice experience.
[Exclusion: Structuring activities and assignments for student completion; providing students with the opportunity to observe pharmacist-related activities; providing students with the opportunity to observe other departments; providing students with the opportunity to shadow the preceptor/ pharmacists; providing students with the opportunity to engage patients; providing students with the opportunity to actively interact with other health care professionals.]
Examples: Preceptor provides a sufficient variety of experiences; preceptor gives students the opportunity to participate in day-to-day activities excluding those involving direct patient contact (e.g., processing prescriptions, compounding, adjudicating third party claims, reviewing patient records, preparing IV admixtures, adjusting dosing, providing consults); preceptor provides students ample opportunity for skill development.

52. Provides Opportunities for Classroom Application
Provides student with opportunities to apply classroom learning to practical experiences.
Inclusion: Providing opportunities for students to utilize previously acquired didactic knowledge in real applications.
[Exclusion: Providing students with the opportunity to engage in pharmacy practice activities; providing students with the opportunity to observe pharmacist-related activities; providing students with the opportunity to “shadow”; providing students with opportunities for patient and interdisciplinary encounters; actively assisting students in making connections and links to prior coursework and previous understandings.]
Examples: Preceptor provides students with the chance to apply disease state and drug information knowledge to actual patient cases; preceptor provides students with the opportunity to apply classroom concepts to authentic practice setting projects.

53. Provides Opportunities for Patient Contact
Provides opportunities for sufficient student contact with patients; provides students with an adequate number of patient interventions.
Inclusion: Offering sufficient opportunities for patient care; providing students with access to a sufficient patient population to refine skills.
[Exclusion: Providing students with opportunities for interdisciplinary encounters; providing students with sufficient opportunities to engage in pharmacist-related
activities that do not involve direct patient contact; encouraging independently driven student communication with patients.]
Examples: Preceptor arranges for sufficient student contact and interaction with patients; preceptor arranges for opportunities for students to conduct patient interviews; preceptor identifies an adequate patient population for student to develop assessment skills; preceptor facilitates student encounters with patients.

54. Provides Opportunities for Inter-professional Interactions

Provides opportunities for inter-professional interactions; provides students with sufficient contact with other health care professionals.
Inclusion: Giving students the opportunity to collaborate with other health care professionals; providing students with the opportunity to communicate with other health care professionals.
[Exclusion: Providing students with opportunities for patient contact; allowing students to observe other departments; encouraging independently driven student communication with health care professionals.]
Examples: Preceptor provides students with the opportunity to interact with other health care professionals by providing drug information and patient medication therapy recommendations; preceptor provides students with the opportunity to collaborate with other health care professionals as part of a team or committee; preceptor facilitates student participation in medical rounds.

55. Maintains Accessibility

Ensures accessibility and availability to students.
Inclusion: Maintaining availability to students when needed to provide guidance; readily accessible to students.
[Exclusion: Dedicating defined time to meet with students; spending adequate time with students throughout the course of day-to-day activities.]
Examples: Preceptor can be easily reached by students; preceptor provides students with means for communication when not physically present; preceptor is readily accessible to provide prompt responses to student needs.

56. Accommodating
Maintains flexibility; accommodates student needs.
Inclusion: Responding to changing circumstances; adjusting to student needs.
[Exclusion: Being accessible; demonstrating a willingness to help; being approachable.]
Examples: Preceptor responds to student need for a change in scheduling; preceptor adapts to emerging student wants and needs to provide an optimal learning environment.

57. Willing to Help
Expresses willingness to help; responsive to student needs; provides support.
Inclusion: Being approachable.
[Exclusion: Assisting students in mastery of rotation goals and objectives; providing answers to student questions; encouraging student questions.]
Examples: Preceptor demonstrates sensitivity to student needs; students feel comfortable asking preceptor for help; preceptor readily provides student assistance upon request; preceptor demonstrates willingness to answer student questions; preceptor provides student with support.

58. Motivates Students
Motivates students to learn; encourages students to take initiative; provides support throughout experience; creates student excitement for learning.
Inclusion: Stimulating student interest in practice; providing encouragement; engaging students in learning.
[Exclusion: Challenging students in progressive stages of development; demonstrating own motivation for practice.]
Examples: Preceptor inspires student interest in practice; preceptor inspires student desire to learn; preceptor motivates student to be an active member of the health care team.

59. Concern for Student Progress

Demonstrates concern for student progress; cares for the professional development of the student.
Inclusion: Demonstrating concern for student success.
[Exclusion: Demonstrating respect for students; displaying tolerance and openness to student opinions.]
Examples: Preceptor assists students in career discernment; preceptor has an interest in the personal and professional development of students; preceptor wants students to succeed; preceptor is eager for the student to learn.

60. Provides Positive Reinforcement

Offers reinforcement in a positive way; recognizes students for accomplishments; promotes student confidence.
Inclusion: Providing feedback and criticism in a positive way; correcting student errors without humiliation; enhancing student confidence in decision-making skills.
[Exclusion: Demonstrating respect for students as valued individuals; exhibiting concern for student progress; providing constructive feedback for the purpose of improving student knowledge and skills.]
Examples: Preceptor compliments student on contributions and exemplary performance; preceptor avoids correcting students in front of patients, peers, and staff; preceptor corrects student errors and provides feedback in a positive and helpful way; preceptor assists students in gaining self-confidence through the application of knowledge and practice of skills and behaviors in the practice setting.
61. Respect for Students

Demonstrates respect for students; gives due consideration to the viewpoints and perspectives of students; eager to listen to student perspective; displays care and concern for students.

Inclusion: Respecting students and caring for them as valued individuals; displaying tolerance and openness to opposing opinions; treating students with dignity.

[Exclusion: Demonstrating concern for student progress; providing student with constructive feedback in a positive way.]

Examples: Preceptor respects student as a contributing member of the practice site; preceptor is appropriate and respectful towards student; preceptor encourages and values student ideas and opinions; preceptor exhibits a nonjudgmental attitude.

62. Effectively Communicates

Effectively communicates with students; possesses good interpersonal communication skills.

Inclusion: Communicating with students on a professional level; engaging in a level of communication that is comfortable.

[Exclusion: Expressing willingness to help; providing positive reinforcement; offering constructive feedback; providing clarity in explanations; engaging in professional communication with patients and other health care professionals.]

Examples: Preceptor relates well to students; preceptor clearly communicates with students at an appropriate level of understanding; student feels comfortable conversing with preceptor; student indicates that preceptor is “easy to talk to.”

63. Personal Attributes

Exhibits personal characteristics that are conducive to student learning.

Inclusion: Exhibiting kindness and patience towards students; possessing a positive attitude; displaying friendliness.

[Exclusion: Demonstrating respect for students; displaying concern for student progress; creating a positive learning environment.]
Examples: Students describe preceptor as being nice; students describe preceptor as having a good sense of humor and down-to-earth; students describe preceptor as being “pleasant to work with”; students describe preceptor as being personable and kind.

64. Enthusiasm for Teaching
Demonstrates enthusiasm for teaching; embraces role as instructor.
Inclusion: Displaying an interest in teaching; dedicated to teaching; demonstrating confidence in ability to teach.
[Exclusion: Enthusiasm for the profession and for practice; contentment with career choice.]
Examples: Preceptor welcomes student presence; preceptor is motivated to teach; preceptor considers student instruction high-priority.

65. Welcomes Student Feedback
Assesses own teaching; demonstrates concern with quality of teaching.
Inclusion: Accepts feedback and constructive criticism regarding own teaching.
[Exclusion: Assesses student achievement; provides positive and constructive feedback to students.]
Examples: Preceptor is concerned with continuous improvement of teaching behaviors; preceptor conducts self-assessment identifying areas for improvement; preceptor is receptive to student suggestions for enhancement of the practice experience.

66. Joint Negotiation of Student Activities
Jointly plan and schedule rotation activities and assignments to achieve attainment of goals and objectives.
Inclusion: Negotiating rotation activities and assignments to meet individualized student learning wants and needs.
[Exclusion: Preceptor-driven planning of rotation schedule and activities; encouraging student to independently create a learning plan and arrange for activities to address goals and objectives.]
Examples: Preceptor and students collaboratively determine a schedule of activities for the rotation that address the learning goals and objectives (e.g., patient rounding, health care screenings, patient chart reviews, patient counseling activities, in-services, etc.); preceptor works in conjunction with students to plan activities that address the learning wants, needs, and interests of the students.

67. Views Students as Part of Team
Works with students as partners in achieving positive outcomes; views student as part of the team; views students as peers.
Inclusion: Joint problem-solving; joint collaboration in seeking attainment of common goals; delegating full responsibility to students as competence warrants; demonstrating trust in students.
[Exclusion: Prompting students to solutions through preceptor-guided discussions and problem-solving approaches, Socratic questioning techniques, and reframing approaches; assisting students in independent problem-solving and self-directed learning.]
Examples: Preceptor views students as contributing members of the health care team; preceptor facilitates patient confidence in students; preceptor actively engages students in joint decision-making; preceptor demonstrates trust in students by delegating responsibilities; preceptor views students as one of the team.

68. Collective Outcomes
Provides meaning to collective work.
Inclusion: Ensuring that students gain an appreciation of the implications and impact of their contributions to the practice site.
[Exclusion: Jointly negotiating rotation goals and activities; working in collaboration with students; delegating responsibilities to students.]
Examples: Preceptor demonstrates the positive impact of student work on individual patient and/or global healthcare outcomes; preceptor indicates how student projects and contributions have a positive impact on the practice site; preceptor and students together make a positive contribution to the practice site; preceptor and students together grow in knowledge and skills.