

Identifying Effective Teaching Behaviors of Pharmacy Faculty Master Teachers

by

Channing Rodriguez Ford

A dissertation submitted to the Graduate Faculty of
Auburn University
in partial fulfillment of the
requirements for the Degree of
Doctor of Philosophy

Auburn, Alabama
August 6, 2016

Keywords: Pharmacy education, student consumerism, Teacher Behavior Checklist, teaching qualities, teaching behaviors

Copyright 2016 by Channing Rodriguez Ford

Approved by

James Groccia, Chair, Professor, Educational Foundations, Leadership, and Technology
William Buskist, Professor, Psychology
David DiRamio, Associate Professor, Educational Foundations, Leadership, and Technology
Maria Witte, Professor, Educational Foundations, Leadership, and Technology

Abstract

This study aimed to examine the similarities and differences of effective teaching qualities and behaviors identified by student pharmacists and pharmacy faculty. Using an online survey, participants were asked to identify the top 10 qualities/behaviors they felt were essential to teaching in a school of pharmacy using the Teacher Behavior Checklist (Keeley, Smith, & Buskist, 2006). The survey was sent by email to 856 faculty members at 10 institutions. Of those contacted, 211 faculty (24.6%) completed the survey. Due to FERPA concerns, the researchers were unable to determine how many students received the survey email. However, 213 student pharmacists completed the survey from four institutions.

Results showed that pharmacy faculty and student pharmacists agreed on six of the 10 qualities and behaviors: a) knowledgeable about subject matter; b) effective communicator; c) approachable/personable; d) enthusiastic about teaching and the topic; e) realistic expectations of students/fair testing and grading; and f) confident. The findings of this study show strong consistency with previously conducted studies, with pharmacy faculty and student pharmacists identifying similar teaching qualities and behaviors.

When considering just faculty responses, faculty across rank similarly identified seven of the 10 qualities and behaviors: a) approachable/personable; b) effective communicator; c) enthusiastic about teaching and topic; d) knowledgeable about the subject matter; e) prepared; f) promotes critical thinking/intellectually stimulating; and g) strives to be a better teacher. Student selections varied by learner level, with students across all three years agreeing on eight of the 10

qualities/behaviors: a) approachable/personable; b) confident; c) effective communicator; d) enthusiastic about teaching and topic; e) knowledgeable about subject matter; f) realistic expectations of students/fair testing and grading; g) respectful; and h) understanding. The findings of this study emphasize that pharmacy faculty and student pharmacists both acknowledge the importance of an instructor being knowledgeable about the subject matter. However, the gap between pharmacy faculty's (69.75%) and student pharmacists' (22%) expectations regarding the importance of producing critically thinking students is concerning. For pharmacy faculty to transition their students to critical thinkers, faculty will need to adopt more of the teaching qualities and behaviors their students expect from the caring and supportive subscale during this transition.

Acknowledgments

I am truly grateful to my advisor and committee chair, Dr. James E. Groccia. Throughout this process, Dr. Groccia provided the guidance and structure I needed to successfully meet the challenges of both the program and dissertation. Dr. G., you served as the best type of role model, one who expects great things since you strive to do great things. I am thankful for the numerous hours you spent guiding me along this journey. Your continuous support and willingness to talk things through allowed me to focus and do my best work.

I am also grateful to my other committee members, Drs. William Buskist, David DiRamio, and Maria Witte. Dr. Buskist, you pushed me to do my best and to think about everything. As an expert in the teaching and learning process, you were and continue to be a source of inspiration for me. Your research served as my guide and expanded my understanding of what it means to be a master teacher. I hope that I will one day be able to serve as a guiding force for others the way you have been for me. Dr. DiRamio, I have to thank you for your ability to challenge me to question my ideas and to consider my arguments. I will always appreciate your consistency and dedication to pushing me in the right direction. To Dr. Witte, your strength and support made navigating the twists and turns of the program easier. Your dedication to your students is unprecedented and I appreciate all the help and guidance you provided me.

Lastly, I have to thank my family and friends. To my mom and dad, without your constant love, support, and fierce strength, this would not have been possible. Mom, you will never understand how appreciative I am to you for your unending willingness to do whatever

was needed. Dad, your ability to step back and make me see the bigger picture helped guide me through this challenge, to which I will be forever grateful. To Anastasia, our daily chats kept me sane and your unwavering faith in my ability provided me with the strength I needed to persevere. To my friends, Meredith, Emily, and Mary, you all provided support when it was needed most and I hope that I will be able to repay the favor one day.

Table of Contents

Abstract.....	ii
Acknowledgments.....	iv
List of Tables	ix
List of Abbreviations	xi
Chapter 1	1
Statement of the Research Problem	2
Significance of the Study	3
Assumptions	4
Organization of the Study.....	5
Chapter 2: Literature Review	6
Purpose of the Study	6
Preparing Faculty to Effectively Reach Students	7
History of Pharmacy Education	8
Educating Future Health Professionals	28
Groccia’s Model for Understanding Teaching and Learning	29
How Students and Teachers Influence Learning	31
Students as Consumers	31
Teaching is a Calling	36
Reaching the Student Pharmacist Learner	39

Ideal vs. Typical Teacher	43
Master Teacher	44
International Applications	55
Limitations of the TBC	64
Master Teachers and the Future	66
The Future of Pharmacy Education	68
Chapter 3: Methods	70
Purpose of the Study	70
Instrument	71
Survey Instrument	72
Participants	72
Data Collection and Procedures	73
Data Analysis	73
Limitations	75
Summary	75
Chapter 4: Findings	76
Instrument	77
Participant Demographics	77
Analysis	79
Summary	105
Chapter 5: Conclusions and Next Steps	107
Summary of Results	108
Discussion	109

Implications	119
Limitations	123
Recommendations for Future Research	123
References	125
Appendix A: TBC Checklist	132
Appendix B: Faculty Survey Instrument	135
Appendix C: Student Survey Instrument	139
Appendix D: IRB Approval Form	143

List of Tables

Table 4.1: Diversity Breakdown from 2014-15 AACCP Report	79
Table 4.2: TBC Faculty Results by Total Responses and Gender	80
Table 4.3: TBC Faculty Differences Between Groups for Gender and Age	82
Table 4.4: Faculty TBC Breakdown by Rank, Ethnicity, and Age	86
Table 4.5: Faculty Rank Response Rating	87
Table 4.6: Faculty Differences Between Groups and Faculty Rank	87
Table 4.7: Pairwise Comparisons – Faculty Level X TBC	89
Table 4.8: Pairwise Comparisons – Faculty Age X TBC	89
Table 4.9: Student Identified TBC Qualities/Behaviors by Gender	90
Table 4.10: TBC Breakdown of Student Responses by Demographics	92
Table 4.11: Differences Among Student Groups by Program Year	94
Table 4.12: Pairwise Comparisons – Learner Level X TBC	95
Table 4.13: Student Responses by Institution	96
Table 4.14: Differences Among Student Groups by Institution	97
Table 4.15: Pairwise Comparison – Students by Institution	98
Table 4.16: TBC Student vs. Faculty Comparisons Overall	99
Table 4.17: Faculty to Student TBC Differences between Groups	100
Table 4.18: TBC χ^2 Analysis	102
Table 4.19: Student to Faculty Comparison by Institution	104

Table 5.1: Comparison of Findings Across Faculty Studies	111
Table 5.2: Comparisons of Student Responses Across Studies	113
Table 5.3: TBC Comparisons Across Multiple Student Samples	116
Table 5.4: Top 10 TBC Item Comparisons – Faculty and Student Groups	118
Table 5.5: Faculty Top 10 Responses to TBC	128

List of Abbreviations

AACP	American Association of Colleges of Pharmacy
ACPE	Accreditation Council for Pharmacy Education
ANOVA	Analysis of Variance
APhA	American Pharmaceutical Association
PharmD	Doctorate of Pharmacy
SEC	Southeastern Conference
TBC	Teacher Behaviors Checklist
WHO	World Health Organization

Chapter 1

Introduction

Over the last 15 years, academic pharmacy has grown immensely. This growth in new pharmacy programs has increased the need for faculty instructors. Typically, however, pharmacy faculty are not well prepared to educate students in “skills such as critical thinking and problem solving; working teams and collaborating; communicating with others; and finding and analyzing information” (Lancaster, Stein, MacLean, Van Amburgh, & Persky, 2014, p.1). With the increasing number of pharmacy programs, competition for students also continues to rise, providing students with multiple program options (Cain, Romanelli, & Smith, 2012). To make sure that pharmacy programs recruit the best students, the need for quality instructors is essential. As Buskist, Sikorski, Buckley, and Saville (2002) note, to ensure that faculty are better prepared to meet changing educational realities, faculty must strive to be master teachers. As master teachers, faculty will have the knowledge and skills needed to successfully reach their students to ensure success in the workforce (Buskist et al, 2002). Pharmacy faculty must be prepared to equip students with the knowledge, skills, and abilities to provide the best patient care.

To adequately prepare faculty to educate the ever-changing student body, it is essential that faculty understand the teaching qualities and behaviors needed to effectively educate students. If not addressed, these deficits could impact numerous outcomes such as student learning, unprepared graduates, and increased faculty turnover (Lancaster et al., 2014). To identify effective teaching qualities and behaviors, pharmacy faculty and students completed

the Teacher Behaviors Checklist to assess what students and faculty identify as the essential qualities and behaviors needed to effectively educate student pharmacists.

Statement of the Research Problem

This study examined the similarities and differences of effective teaching qualities and behaviors identified by student pharmacists and pharmacy faculty. Previous studies have explored the similarities and differences between undergraduate students and faculty. However, this study focused on effective teaching qualities and behaviors identified by students and faculty in a graduate health professions program. The study had students and faculty identify the top 10 qualities and behaviors from the Teacher Behavior Checklist and looked for similarities and differences between the two samples.

Purpose of the Study

The purpose of this study was to identify the teaching qualities and behaviors student pharmacists and pharmacy faculty identify as essential to effective teaching. This study compared pharmacy faculty responses across career levels (i.e. adjunct, assistant, associate, full professor) and student pharmacists across student rank (i.e. first, second or third-year) to identify similarities and differences. Demographic data was collected for both survey samples to identify commonalities and differences between gender, ethnicity, and geographical region.

Research Questions

1. Do pharmacy faculty select similar qualities and behaviors across career levels (i.e. adjunct, assistant, associate, and full professors)?
2. Do student pharmacists identify the same teaching qualities and behaviors of effective master teachers across years of study?

3. Do pharmacy faculty and student pharmacists identify the same teaching qualities and behaviors as essential to effective teaching?

Significance of the Study

Faculty and student perceptions of education should align and those perceptions should facilitate congruence between teaching and learning behaviors. With the use of mega-classrooms in pharmacy education, it is essential that faculty and students be able to establish a positive learning environment. To accomplish this goal, student pharmacists and pharmacy faculty must work together to create a collaborative learning atmosphere.

Historically, scholars have suggested that students identify their preferred learning styles to allow instructors to integrate adaptive strategies reflective of these identified teaching styles into the classroom (Cassidy, 2004; Romanelli, Bird, & Ryan, 2009). However, one could argue that faculty hesitancy to incorporate teaching strategies reflective of these learning styles is a result of large class sizes appearing in schools of pharmacy. Faculty and students must accept that adapting an individual instructor's teaching style to the learning style of individual students may not be plausible, and that expecting students to adapt to the instructors preferred teaching style may be more realistic (Romanelli et al., 2009). However, to ensure that students receive the best learning experience, both faculty and students must communicate teaching behaviors and qualities they feel are essential to building a community of collaborative learning where effective teaching can occur.

This study was needed and is significant as it expanded the literature of the Teacher Behavior Checklist (TBC). Traditionally, the TBC has been used to assess the essential teaching qualities and behaviors of undergraduate professors. To date, the literature has been limited to this survey sample; however, this study added a new dynamic to the current teaching and

learning literature by utilizing the TBC to determine the teaching qualities and behaviors considered essential for effective teaching by faculty in schools of pharmacy and with students within a doctoral-level program. This expansion of the literature examined the usability of the TBC with graduate-level students and graduate-level teaching faculty, which has not occurred to date.

Assumptions

The following assumptions were identified:

1. Due to the target population of the study, students and faculty may identify the intent of the study and adjust their responses to list responses they believe the researcher hopes to gather.
2. An anonymous survey reduces the threat of punitive retributions and should result in honest responses.
3. Use of an electronic survey allows for more efficient and timely data collection; however, the use of an anonymous survey may result in limited response rate.

Definition of Terms

The following defines the terms used specifically in this study and are provided to offer clarity of the terminology used.

1. Teacher Behavior Checklist (TBC): a 28-item checklist designed by Buskist et al. (2002) to assess for qualities and behaviors associated with master teachers.
2. PharmD: Doctorate of Pharmacy
3. Academic entitlement: a student's tendency to expect academic success when taking no personal responsibility for achieving said success (Holdford, 2014).

4. Student consumerism: a student's expectation that faculty will cater to their needs and desires at the student's convenience, requiring little effort from the student (Cain et al., 2012).
5. Machiavellianism: Achieving personal gain through the externalization of blame, use of manipulative interpersonal strategies or duplicity (Turnipseed & Cohen, 2015).
6. Millennials: individuals born between 1980 – 2000.
7. Learning styles: the way an individual interprets, understands, and responds to learning (Cassidy, 2004; Romanelli et al., 2009).

Organization of the Study

This study is organized into five chapters. Chapter 1 introduces the study, outlining the statement of the research problem, the purpose of the study, research questions, significance of the study, assumptions, and the definition of terms. Chapter 2 provides a literature review examining the history of pharmacy and pharmacy education, the student as consumer, the ideal vs. typical teacher, the definition of a master teacher, the development of the TBC, and the impact of the TBC. Chapter 3 describes the methods used including the research design, instrument, sample population, data collection process, and the data analysis. Chapter 4 provides a detailed analysis of the study findings. Chapter 5 presents study conclusions, implication, limitations, and recommendations for future research.

CHAPTER 2

Literature Review

Introduction

Over the last 15 years, academic pharmacy has grown immensely. This growth in new pharmacy programs has increased the need for faculty instructors. Typically, however, pharmacy faculty are not well prepared to educate students in “skills such as critical thinking and problem solving; working teams and collaborating; communicating with others; and finding and analyzing information” (Lancaster et al., 2014, p.1). With the increasing number of pharmacy programs, competition for students also continues to rise, providing students with multiple program options (Cain et al., 2012). To ensure that pharmacy programs recruit the best students, the need for quality instructors is essential. As Buskist et al. (2002) note, to ensure that faculty are better equipped to meet changing educational realities, they must strive to be master teachers. Master teachers as defined by Buskist et al. (2002) are a blend of multiple qualities that can vary among individuals. However, each master teacher shares some commonalities when considering their enthusiasm regarding their topic, students, and teaching. Master teachers have the knowledge and skills needed to successfully reach their students to ensure success in the workforce. Pharmacy faculty must have the necessary resources to equip students with the knowledge, skills, and abilities to provide the best patient care.

Purpose of the Study

The purpose of the study was to identify the teaching qualities and behaviors student pharmacists and pharmacy faculty identify as essential to effective teaching. This study

compared pharmacy faculty responses across career levels (i.e. adjunct, assistant, associate, full professor) and student pharmacists across student rank (i.e. first, second, or third-year) to identify commonalities and differences between gender, ethnicity, and geographical region.

Research Questions

1. Do pharmacy faculty select similar qualities and behaviors across career levels (i.e. adjunct, assistant, associate, and full professors)?
2. Do student pharmacists identify the same teaching qualities and behaviors of effective master teachers across years of study?
3. Do pharmacy faculty and student pharmacists identify the same teaching qualities and behaviors as essential to effective teaching?

Preparing Faculty to Effectively Reach Students

To successfully reach students, educators must strive to effectively incorporate current teaching strategies into their curriculum. As educators, faculty must be concerned not only with professional development, but also with how effective they are in improving student learning. For those educators working with undergraduate students, Chickering and Gamson (1987) identified *Seven Principles for Good Practice in Undergraduate Education*. These principles include: a) encourages contacts between students and faculty; b) develops reciprocity and cooperation among students; c) uses active learning techniques; d) gives prompt feedback; e) emphasizes time on task; f) communicates high expectations; and g) respects diverse talents and ways of learning (Chickering & Gamson, 1987). Through the application of these principles, educators are better prepared to effectively educate future generations of students.

As with all things, practice makes perfect. This idea is especially true regarding teaching, as faculty should strive to continuously improve their teaching practices. To truly understand

how educators process information as well as integrate new teaching practices, it is vital to understand the process of teaching and learning. However, to comprehend how to best prepare pharmacy faculty and student pharmacists, one should first become familiar with the history of pharmacy education.

History of Pharmacy Education

The origins of pharmacy practice, as a more formalized system of pharmacy education did not occur until the early 1900s. Over hundreds of years, the role of the pharmacist has transitioned multiple times: a healer, a prescriber, a practitioner, and finally as a member of the healthcare team. While initially seen as a means to cure and drive away evil spirits, the role of pharmacist continues to evolve.

Prehistoric Pharmacy

Historians believe that pharmacy practice began with the dawn of man. “The early history of pharmacy is practically inseparable from the early history of medicine, yet as we shall see, separation between the diagnosis and treatment of disease on the one hand and the making of medicines on the other, can be traced back over 4,000 years” (Anderson, 2005, p. 21). While there were no true pharmacists during prehistoric times, individuals would have looked to their tribe’s healer or shaman for guidance to cure ailments. To care for individuals in each society, some type of specialist would emerge. However, often what caused the disease was not understood by the person treating it (Anderson, 2005). These healers often referred to as shamans, witchdoctors, wise women, medicine men, and so on would use local ‘medicines’ along with spells to cure their people (Allen, 2013; Anderson, 2005). These individuals understood the value of plants in their communities and how to use them (Anderson, 2005). The

concepts of good and evil spirits were very much alive in this prehistoric culture, and medicines would be used to remove evil spirits (Allen, 2013).

Pharmacy in Ancient Times

As humans moved away from hunting and gathering to establishing permanent communities, pharmacy practice also evolved. “Early communities developed a knowledge of the food plants necessary for bodily development, the poisonous plants detrimental to health and, somewhere in between, medicinal plants that alleviated symptoms of illness” (Anderson, 2005, p. 22). A healer’s knowledge was closely guarded, although as the use of medicinal plants flourished, the need for secrecy diminished. The Sumerians (3,000-2,400 BC) were considered to be the first urban civilization who used plant drugs, wound washing, plasters and bandaging to care for their citizens (Anderson, 2005).

Healers took different approaches when using spells and incantations, using medicines to remove evil spirits from the body resulting in two types of healers: asipu (a magical healer) and asu (an empirical healer) (Allen, 2013). The asipu relied primarily on spells and magical stones while the asu used drugs and dosages to care for their patients. While typically the asipu and asu would work independently, at times the two would collaborate on difficult cases (Allen, 2013). The Babylonians, during the reign of King Hammurabi (1795-1750 BC), also established and regulated medical and surgical practices. They separated diagnostics and treatment from the preparation of medicines which was handled by apothecaries. (Anderson, 2005).

Egyptians used both supernatural and empirical healing. The scientific value of Egyptian medicine remained relatively low as individuals choose to instead use magic and sorcery (Anderson, 2005). However, the physician and pharmacist roles within society were respected, yet physicians and other healers remained the prevalent resource for medicine preparation (Allen, 2013). Egyptians were also one of the first societies to establish separate and distinct

roles for diagnosing, treating disease, and making medications (Anderson, 2005). In 1500 BC, the *Papyrus Ebers* was produced which included 875 prescriptions and 700 drugs (Anderson, 2005).

Greek Civilization (1250 BC to 285 BC)

In Greece, the medical profession as a whole would expand over the next millennium (Allen, 2013). Yet, medicine and magic continued to be intertwined. Early Greek medicine included three knowledge and practice sources: “the temple practice of Asclepius or healing by the gods; the physiological opinions of philosophers; and the practice of the superintendents of the gymnasia” (Anderson, 2005, p. 27). These links can be found in literature such as the stories of Homer. An example includes the story that describes Greek citizens sleeping in the temple of Asklepios in the hopes of being cured during the night (Allen, 2013).

It was in the scholarly works of Hippocrates of Cos that the links between illness and environment were formed. This resulted in dietary and life-style adjustments being integrated first, adding medicines only when the initial adjustments were unsuccessful (Allen, 2013). During this time, physicians were also known to prepare medicines or provide prescriptions to families to compound and administer (Allen, 2013). Herophilus (335-280 BC) advanced medicine substantially, founding a medical school, dissecting the human body and writing a handbook for midwives (Anderson, 2005). Lastly, as a result of various Greek physicians’ innovations and the continued study of plants, one of the first drug encyclopedias, the *Materia Medica* written by Pedanius Dioscorides was created, which would be used for hundreds of years (Anderson, 2005; Allen, 2013).

Between 275 BC and 476 AD, wealthy Romans adopted Greek Medicine and added to the profession. Aurelius Cornelius Celsus (20-50 AD), a medical practitioner, was responsible

for editing a number of Greek Medicine volumes including the 8-volume *De Medicina*, which references 250 drugs and 100 surgical instruments (Anderson, 2005). With the expanding reach of the Roman legions, the Roman way of life became the norm, which included embracing Roman medical treatment. Roman era medicine was a multistep process including “the servi, medici (slaves), the rhizotomi (root gatherers), the pharmacopolae (drug peddlers), the unguentarii (sellers of salves), and the sagae (wise women)” (Anderson, 2005, p. 31-32). As Emperor Claudius ventured to Britain (43 AD), he was accompanied by Scribonius Largus who brought the *De Compositione Medeamentorum*, a collection of prescriptions and treatments with them (Anderson, 2005).

Claudius Galenus (129-199 AD) is famously known for his role as a physician and surgeon to the gladiators. However, he also made significant contributions to medicine and pharmacy. He experimented on animals and developed the humoral pathology scheme (Anderson, 2005). Galenus also combined the Hippocratic theory with the Pythagorean four elements and the four temperaments of man. His theory led to the idea that illnesses were an imbalance between the elements and treatment was focused on restoring balance. Galenus’ theories remained popular until 1600 AD, being reproduced in later books, which included descriptions of his own drugs stored in his apotheca (Anderson, 2005).

The Fall of Rome and Constantinople: The Dark and Middle Ages

Historically, the Middle Ages, occurred between the fall of Rome (ca 400 AD) and Constantinople (1453), with the first half of that millennium referred to as the Dark Ages (Allen, 2013). Many historians view this time period as one of little innovation, but pharmacy emerged as its own profession during this period.

In 750 AD, Persia hosted shops for drug sellers. However, it was not until 850 AD that apothecary shop proprietors established a division between medicine and pharmacy. The proprietors of these shops were viewed as highly ethical, educated men. The individuals running these apothecaries completed a precise education and were known for their ability for preparing a broad range of medicines which included classical, Persian, and Indian drugs and chemicals (Anderson, 2005).

During the Dark Ages, the church became a predominant cultural force, resulting in a shift away from pagan influences (Allen, 2013). With the church's influence, the perceptions of illness changed shifting away from the thoughts of good and evil spirits causing disease to the idea of sin leading to disease. Monasteries became the sole source of healing centers, with monks serving as healers (Allen, 2013).

In the Middle East, Arab physicians were expanding on Greek works, which included increasing their knowledge of new drugs and developing methods for ensuring that patients took their prescribed medications (Allen, 2013). As these new medications took time to prepare, physicians relied more on other specialists. These specialists are considered the ancestors to pharmacists of today. By the mid 1200s in Europe, Frederick II had established pharmacy as an individual practice, allowing pharmacy practitioners, known then as apothecaries, to belong to guilds and to establish shops (Allen, 2013).

The Modern Period

The invention of the printing press by Johann Gutenberg allowed pharmacy to flourish and establish consistent practices. Gutenberg's invention allowed illustrations to be easily reproduced making the study of plant drugs more accessible, thus providing pharmacists with the resources needed for fieldwork and ways to identify the drugs needed for patient care (Allen,

2013). The printing press also provided a means for formula books to be distributed to assist with medicine preparation (Allen, 2013).

As pharmacy practice progressed, additional attention was given to examining the chemical preparation of drugs, which eventually led to scholars transitioning away from pharmacy practice to chemistry (Allen, 2013). The strongest advocate for this transition was Phillipus Aureolus Theophrastus Bombastus von Honhenheim, known as Paracelsus, a Swiss surgeon whose work would “spark the growth of the modern pharmaceutical sciences” (Allen, 2013, p. 16). This resulted in the development of drugs that are still used today and provided the foundation for basic pharmaceutical chemistry (Allen, 2013).

While Paracelsus was debating the need for separation between medicine and pharmacy, pharmacy practitioners were banding together, separating themselves from medical practitioners. As the guilds grew, so did their power, which allowed them to establish training requirements, accreditation standards, and restrictions (Allen, 2013). New laws and government restrictions were imposed when conflicts arose between the professions, further solidifying the pharmacist’s role in society. The enforced regulations prevented price gouging from occurring through set standard prices. The added government oversight also led to medication standardization through book publications. With the growth of available medications, physicians wanted assurances that consistency would occur in prescribing, so by the end of 1499, Florence adopted the *Nuovo receptario* as the standard (Allen, 2013). In 1546, the government in Nuremberg, Germany, adopted the *Dispensatorium of Valerius Cordus* as their standard (Allen, 2013).

Little is known about the contents of either text (Huguet-Termes, 2011). However, Huguet-Termes’ research determined that the *Nuovo receptario* was divided into three books, which focused on establishing an apothecary’s shop, providing practitioners with the essential

books of the trade, and instructions for compounding elements. The *Dispensatorium of Valerius Cordus*, though was one of the first documents to be considered as legitimate. The text provided practitioners with the first pharmacopoeia and the chapters within were representative of the chapters one would find in a modern day pharmacopoeia (Huguet-Termes, 2011).

Significant progress had been made, but between the mid-1600s and mid-1800s, medication use came under fire (Allen, 2013). However, it was also during this time that pharmacy further established itself as a profession in Europe through the discovery and development of drugs (Allen, 2013). The acceptance of pharmacists as medical practitioners and these innovations resulted in pharmacists earning the same prestige and social position as physicians (Allen, 2013). The divide between apothecaries and chemists/druggists became more predominant as apothecaries transitioned into more of a practitioner role and chemists/druggists transitioned into the pharmaceutical fields (Allen, 2013).

Pharmacy Education in Europe

In Britain, the role of apothecaries remained unchanged for a number of years. Extensive training was required and was accomplished through extended apprenticeships, and limited regulation (Anderson, 2005). With the establishment of the Society of Apothecaries in 1617, a more formalized training expectation was implemented. Entry into the profession became more regulated with strict examination requirements, yet no regulations were implemented regarding the sale and supply of drugs and chemicals (Anderson, 2005). In 1803, six schools of pharmacy were founded in France, with additional schools opening in the German states and Bavaria. In 1808, Bavaria mandated university study for the profession (Anderson, 2005). In Britain, the Pharmaceutical Society (founded in 1841) stimulated the development of traditional academic pharmacy (Anderson, 2005).

While new schools were being established, no formal educational programs were available in Britain. This lack of programs resulted in the traditional apprenticeship model remaining common practice. Students striving to complete formal courses were resigned to study pharmacy-related topics at schools such as the London Apothecaries' Hall or medical schools, with no opportunities to complete a traditional degree program (Anderson, 2005).

With the installation of the Pharmaceutical Society, the organization's first mandate was to establish a school of pharmacy in 1842. Students within the school would first complete a test in Latin as evidence of their education. Apprentices were required to attend lectures in applied sciences prior to sitting for the minor examination. Once successfully passing the minor examination, apprentices then qualified as an assistant to a chemist or druggist and were allowed to join the Pharmaceutical Society as an associate member (Anderson, 2005). Candidates who completed the advanced major examination qualified as a Pharmaceutical Chemist and candidacy for full society membership (Anderson, 2005).

In 1851, Jacob Bell proposed a bill that would require a qualification examination in order to practice as a chemist/druggist. The bill did not initially pass and indirectly impacted the Pharmaceutical Society's educational goal. A number of poisoning accidents and trials cited in the government's proposal stressed the need for a Board of Examiner that would grant licenses (Anderson, 2005). Members of the society opposed the policy stating that requiring "a license to practice pharmacy" would cause the general public to have "no distinction between a licensed chemist and a pharmaceutical chemist" making the society's examination pointless (Anderson, 2005, p. 101).

While not supportive of the government's plan, the Society recognized the need for pharmacy practice regulation. To accomplish this goal, a revised Pharmacy Act was proposed by

the organization that required the registration of qualified practitioners that compounded prescriptions for medical practitioners (Anderson, 2005). To register as a chemist and druggist, candidates were required to pass the minor examination. Those that achieved the Pharmaceutical Chemist (PhC) qualification were then allowed to conduct a pharmacy business (Anderson, 2005). The change in expectations resulted from the Society's intention of creating a sense of responsibility and resolved the issues surrounding the sale of poisons. However, opposition still remained. The United Society of Chemists and Druggists created an alternate solution, proposing a bill that focused on insuring practitioners were qualified to sell poisons. The debate, however, did not provide the Society with their preferred outcome. In 1868, a new Pharmacy Act was implemented to regulate poison sales. The new act required all practitioners, excluding those currently in practice to have their practical knowledge assessed and then registered as chemists and druggists, with the Pharmaceutical Society serving as examiners (Anderson, 2005). The examinations were conducted as oral exams with participants identifying items "such as crude drugs, medicinal plants, chemical and pharmaceutical apparatus, pharmacopoeias and specimen prescriptions" (Anderson, 2005, p. 103) with the Privy Council overseeing the examination process.

By the mid-19th Century examinations were commonplace and complimented apprenticeship. For apprentices who were unable to attend the previously described learning environments, private schools were also an option. By 1890 seven private institutions were open and within 10 years there were a total of 22. These types of institutions were reliant on "student fees and their reputation"; however, the success of these programs were dependent on institutional reputation and student success on their qualifying exams (Anderson, 2005, p. 104). To ensure student success, the curriculum was tailored to the exam requirements. As with current

educational practices, some programs were considered as “crammer” programs that focused solely on the overall examination and less on the individual’s education (Anderson, 2005). Due to the lack of oversight and no preventative safeguards, the failure rate was high for the examination. By 1881, the failure rate in “chemistry, botany and material medica was twice those in the practical subjects of pharmacy dispensing and prescription reading” (Anderson, 2005, p. 104). To overcome these deficiencies, the Pharmaceutical Society proposed that potential practitioners be required to provide a certificate of attendance that proved they attended a recognized study program and their exam was then divided into two sections, science and practice (Anderson, 2005). However, the Privy Council refused, stating that the 1868 Act spoke to how the exam should be conducted but did not mandate preparation requirements. Over the next several decades there was continuous support from the Pharmaceutical Society for the implementation of a required formalized course of study. At the governmental level, the proposal met with stiff opposition (Anderson, 2005).

By the turn of the century, additional disciplines (experimental pharmacology, bacteriology) were becoming essential to pharmacy practice, with pharmacy being increasingly recognized as an academic discipline (Anderson, 2005). While recognition of the discipline was improving, training practices remained locked in an “examination enforces education” philosophy (Anderson, 2005, p. 105). During this time the average potential practitioner attended a private school for a series of months to supplement his home study or attended courses offered by the local technical institute. However, while potential practitioners had access to a growing number of training resources, the London board of examiners reported that the failure rate for 1900 was 72% for those individuals sitting for the minor examination (Anderson, 2005).

Three Acts of Parliament were passed in 1889 to address ongoing inconsistencies in pharmacy education. First, the Technical Instructions Act (1889) allowed institutions to implement or enhance pharmacy courses and the development of departments of pharmacy (Anderson, 2005). The Pharmacy Act of 1908 established bylaws to regulate courses and qualifying exams (Anderson, 2005). Lastly, the Lloyd George's National Insurance Act (1911) required that only contracted pharmacists handled National Insurance dispensing (Anderson, 2005). These acts provided the structure and regulation the Pharmaceutical Society had been arguing to have in place. They ensured that potential practitioners would have the educational background needed to effectively practice and to pass the required examinations that would qualify potential practitioners to dispense prescriptions. The qualifying exam was divided into two components: a) chemistry and botany; and b) materia medica (drug encyclopedia), pharmacy, and dispensing (Anderson, 2005). Potential practitioners were also required to complete a period of apprenticeship.

Pharmacy Education Following World War I

It was following World War I (WWI) that these new requirements went into effect. These changes did not result in a surge of pharmacy practitioners as a significant number of men entered into the armed services to fight in WWI (Anderson, 2005). However, following the war, servicemen returned looking for training opportunities and employment and the Pharmaceutical Society approved training schools at the request of the Ministry of Labor to fill this need. In 1924, a Bachelor of Pharmacy degree program was introduced at the University of London, monumentally changing Britain's approach to pharmaceutical education (Anderson, 2005).

The degree offered by the University of London was approved for qualification towards being a Pharmaceutical Chemist (following the test in forensic pharmacy), but while the degrees

were now available, few practitioners chose to acquire them. Fifty to 80 practitioners qualified with the chemist and druggist qualification annually; however, in 1932, two BPharm and three PhC degrees were awarded and in 1939, four BPharm and two PhC (Anderson, 2005).

Following World War II, pharmacy education adapted to meet advances in pharmacotherapy. The 1944 Education Act increased the number of student grants available which enabled individuals to enter into the higher education system. With the increased learning opportunities, the apprenticeship model became outdated and potential practitioners transitioned into practice training, which provided new practitioners with focused training with a practicing provider following completion of the qualifying exam (Anderson, 2005). It was during this time that teaching institutions changed. Some private institutions closed while others were incorporated into local public institutions. This transition resulted in pharmacy being taught in varying academic departments such as polytechnics and advanced technology (Anderson, 2005). The University of London eliminated its two-year general degree in 1946, replacing it with a three year honors degree (Anderson, 2005).

The Pharmaceutical Society's post-war agenda strived to create a degree standard for qualification. These changes phased out the three-term chemist and druggist course. This change allowed practitioners to register as Pharmaceutical Chemists (Anderson, 2005). Those practitioners who had already been recognized as qualified chemists or druggists were upgraded to the rank of a PhC; while those that already held the PhC qualification were named as Fellows of the Pharmaceutical Society of Great Britain (FPS) (Anderson, 2005). To earn a PhC qualification in 1957, the entrance requirements reflected the university expectations and was extended to three years (Anderson, 2005).

Pharmacy degree curricula were science-based with the majority of courses focusing on pharmaceuticals, pharmaceutical chemistry, pharmacognosy, and pharmacology (Anderson, 2005). This focus resulted in a shift in teaching practices with faculty transitioning to a more research-focused intent, as institutions placed more value on research funding/output and less on teaching (Anderson, 2005). This shift in focus created concerns about the overall intent of the pharmacy curriculum. Many began to question how the current curriculum prepared practitioners to practice pharmacy. This question led to the idea that maybe different courses should be offered for those intending to work in retail, hospital or industry (Anderson, 2005).

Around this time, the role of the hospital pharmacists was also changing; with hospital pharmacists transitioning away from the isolated role within the dispensary to serving as an important part of the healthcare team on the hospital ward (Anderson, 2005). With this change, the discipline of clinical pharmacy entered into the curriculum. In 1997, the Master of Pharmacy (MPharm) degree was introduced. Graduates of this program completed four years of study and then had to complete an additional year of training before sitting for their examination to become a pharmaceutical chemist (Anderson, 2005).

History of Pharmacy Education and Practice in the United States

As explorers settled in America, they found themselves with limited access to apothecaries or druggists, leaving settlers to resort to home medications or if those were unsuccessful, to spiritual leaders for medical advice and guidance (Allen, 2013). However, as the financial growth of the colonies improved, apothecaries began moving to America, serving as both physician and pharmacists to those unable to afford a university-trained physician (Allen, 2013).

In the early 18th Century, apothecary shops were typically run by physicians, the physician's apprentice, or an apothecary paid by a physician (Allen, 2013). Few laws governed pharmacy practice in the United States at this time and this remained true until the 1870s (Allen, 2013). It was following the Revolutionary War that pharmacy practice indeed began to change. With limited access to pharmaceuticals from Britain, American druggists were forced to learn how to manufacture their own chemically-based medications (Allen, 2013). As a result, the U.S. was able to create a network of production and distribution that would remain successful following the war.

The apothecaries' role in the early 1800s was also changing in the healthcare system. It was common for a staff apothecary to practice both medicine and pharmacy, rounding (seeing multiple patients over a specific period of time), and treating patients (Allen, 2013). As this trend grew, hospitals began hiring full-time pharmacists; however, the expectations of those healthcare providers were different. Pharmacists were tested prior to hiring, were expected to remain in the pharmacy at all times, and were required to give at least two months' notice before leaving the position (Allen, 2013).

The War of 1812 forced changes in pharmaceutical production requiring additional resources, which continued following the end of the war, and served as a catalyst for future U.S. pharmaceutical production (Allen, 2013). It was during this period that physicians gained significant clinical skills, transitioning more to the writing of prescriptions and less on compounding medications (Allen, 2013). As more and more physicians wrote prescriptions, concern grew regarding medication consistency, stimulating physician's approval of the utilization of a standardized resource guide. Initially published in 1808 by the Massachusetts Medical Society, the *Pharmacopoeia of the United States of America* was written to serve as a

state guide for drug standards (Allen, 2013). However, in 1820 the *Pharmacopoeia* was approved for widespread use as more and more physicians began writing prescriptions and concerns grew regarding medication consistency. With these manuals, reliance on pharmacists increased, which led to an increase in pharmacy practitioners. To provide governance for these practitioners, the Philadelphia College of Pharmacy and the Massachusetts College of Pharmacy “established night schools for the instruction of apprentices and discussion groups on scientific pharmacy” (Allen, 2013, p. 20).

Founded by 68 druggists and apothecaries, the Philadelphia College of Pharmacy was established to create a curriculum for pharmacy students that would lead to a Master of Pharmacy degree (England, 1922). For the first 50 years of the program, didactic teaching was the staple of the institution with students studying materia medica, pharmacy, and chemistry. As the profession changed, additions were made to the curriculum that were essential to pharmaceutical practice (England, 1922).

Physicians and pharmacists collaborated relatively successfully until just prior to the American Civil War. As pharmacists became more comfortable with their profession, they increased their patient services. In the 1840s, pharmacists began treating patients and refilling patient’s prescriptions without physician consent (Allen, 2013). At the same time, the mass production of medications continued to accelerate, transitioning the majority of compounding to large corporations. As pharmacists were no longer required to conduct their own compounding, the market was flooded with uneducated apothecaries. It was this industry change that led to the changes in the physician/pharmacist relationship.

By the late 1800s, the strife between physicians and pharmacists increased, both blaming the other for negative patient outcomes and improper use of patent medications (Allen, 2013).

Due to continued limited legal restrictions on both medical and pharmacy practice, roles of both professions remained blurred. It was not until the Civil War that clear decisive lines were established between the professions (Allen, 2013).

The creation of the American Pharmaceutical Association (APhA) in 1852 helped establish a professional statute, providing governance and structure (Allen, 2013). As the issue of professionalism began to spread, debate resumed regarding the limited role pharmacists had in compounding medications. While some uneducated practitioners embraced access to ready-made pharmaceuticals, those that considered themselves to be true practitioners continued to advocate for the need for this skill. The idea of professionalism also opened the debate for a more formalized education process, to reflect other professional schools (Allen, 2013). By the late 1860s professional standards had been accepted but not required for practitioners, with some practitioners choosing not to avail themselves of those qualifications (Allen, 2013). This resulted in an increased practice gap and inconsistencies across the profession. As inconsistencies increased, the APhA and physicians pushed for legislation to prevent adverse patient outcomes.

As the profession struggled to find its way, pharmacy education as a whole began to experience change. Prior to the Civil War, only 5% of pharmacists received training in pharmacy (night course and an apprenticeship; Allen, 2013). With the implementation of state laws in the 1870s, pharmacists were then required to pass a board examination and register prior to practice (Allen, 2013). These new laws led to perception change, with pharmacists striving to be known for their qualifications and not for their products (Allen, 2013).

The role of pharmacy education began to change again as physicians relied more heavily on pharmacists. Physician's roles in pharmacy education decreased and practicing pharmacists took over these educational roles. While there were increasing numbers of university-offered

training programs, students still had a variety of options for training. The majority of future pharmacists choose to be self-taught, relying on textbooks and apprenticeships to be adequately prepared (Allen, 2013). There were also “cram” schools that focused solely on preparing individuals to pass the required board exams (Allen, 2013). A small number of students elected to attend local schools that provided one to two years of serious training, while the remaining opted to attend a university sponsored program which provided training and insight into other areas of research (Allen, 2013).

A new trend began in 1868 with schools of pharmacy partnering with state colleges/universities, with the University of Michigan being the first to start this trend (Allen, 2013). The integration of pharmacy education into a university setting transitioned the art of pharmacy from a vocational practice to a science-based practice that strived to integrate full-time coursework and laboratory skills (Allen, 2013).

While some training programs and university programs were available, the practice of pharmacy until the early 1900s was limited primarily to practitioners who had never attended pharmacy school, obtaining knowledge over years of practice (Lin, 2012). In 1905, states began passing laws requiring pharmacists to complete a pharmacy degree in order to practice.

With states changing the laws, the level of care provided by practitioners varied between practice settings. A community pharmacist could provide services such as medication compounding, patient counseling, and recommendations for over-the-counter products (Lin, 2012). The level of compounding occurring in community pharmacies was limited, with larger corporations assuming this role as they had the resources required to ensure drug consistency and were able to provide drugs at lower costs (Allen, 2013). Pharmacists that worked in large established hospitals were relegated to more of a dispensary role, providing medications but

referring all questions to the primary care provider, i.e. the physician (Lin, 2012). This remained common practice until the early 1940's.

Pharmacy and pharmaceutical education saw a period of transition between 1870 and 1920, with the role of the pharmacist as dispenser transitioning to one of a member of the healthcare team (Allen, 2013). This evolution of pharmacy practice and pharmacy education increased when pharmaceutical companies began taking over the role of drug compounding (Lin, 2012). As a result, coursework changed, restricting student learning of crude plant drugs and their preparations to focusing more on chemical compatibility (Allen, 2013). The level of professional preparation increased even more in 1932 when pharmacists were required to hold a four-year bachelor degree to qualify for licensure (Allen, 2013).

The role of the pharmacist within the healthcare system remained limited. Restricted by the APhA Code of Ethics and the 1951 Durham-Humphrey Amendment of the 1930 Food, Drug, and Cosmetic Act which precluded pharmacists from communicating with patients, pharmacists were limited strictly to the role of prescribing both in the hospital and the community (Lin, 2012). Due to these limitations, it was no wonder that the general report of the 1946-1949 Pharmaceutical Survey examining the quality of student pharmacists, the education system and curriculum, and the training process and relationships between pharmacists and other health professionals, found that pharmacy education was way behind the times (Lin, 2012). The report also discussed the limited role of the pharmacists in the hospital setting finding that a number of pharmacists were serving in non-pharmacy related capacities (Lin, 2012). A time for change was needed.

While pharmacy education struggled, the pharmaceutical industry experienced significant expansion and success following World War II. With the application of technology, medicines

could be produced quickly and efficiently (Allen, 2013). Medications were no longer tailor-made for the individual but produced for the masses and over the course of 20 years, the number of practicing compounding pharmacists decreased substantially, lessening from 1 in 25 to 1 in 100 (Allen, 2013).

After the movement in the 1900s to require pharmacists to obtain a pharmacy degree, it was not until 1954 that schools agreed to begin a five-year program, with some schools in California electing to begin six-year programs (Allen, 2013; Lin, 2012). The rationale for the initiation of these five and six-year programs was to prepare future pharmacists to take on new roles within hospital settings. Although, pharmacy curricula continued to focus on the physical sciences that led to medication manufacturing even though that role had been transitioned to the pharmaceutical industry (Allen, 2013; Lin 2012).

By the 1960s things had begun to change again, with scholars referring to it as a revolutionary era (Lin, 2012). Demand was so great that pharmacists could move away from their soda and cigar counters and focus solely on pharmacy practice (Allen, 2013). While this led to successful businesses, pharmacists moved even further into a dispensary role, with few opportunities to apply their formal training (Allen, 2013).

It was at this time, however, that Francke, Latiolais, Francke, and Ho conducted hospital pharmacy surveys, which resulted in the birth of clinical pharmacy (Francke et al., 1964; Lin, 2012). By 1966, the University of California – San Francisco implemented a new initiative called the Ninth Floor project. The Ninth Floor project was essentially the first clinical pharmacy practice, which led to the integration of essential reforms such as patient-centered teaching; identifying and monitoring drug-drug interactions; interviewing patients upon admission regarding their medication history; and answering drug-related questions for patients and

providers (Lin, 2012). The adoption of this new program was successful as it led to the development of the interprofessional team (multiple professions working with and learning from each other), individualized treatment plans, and sub-specialties within pharmacy (Lin, 2012). It was during this time that graduates of the 5-year programs began challenging the pharmacy education standards to move from product orientation to patient-centered care (Lin, 2012).

Finally, in 1969, the APhA published a new Code of Ethics transitioning the pharmacist role from one of dispenser to an active member of the healthcare team (Allen, 2013; Lin, 2012). With this new code of ethics, APhA charged pharmacists with the responsibility of considering the patient's health and safety foremost in their plan of care, which as mentioned previously was a substantive change from their previous roles in the healthcare system. The integration of clinical pharmacy and the new code of ethics provided overworked physicians with healthcare collaborators that could provide resources and feedback about patient concerns. Clinical pharmacists were also able to serve as a patient resource providing medication information, establishing trust between the patient and the healthcare system (Allen, 2013).

The positive impact of these new professional changes was recognized in 1971 as research found that improved pharmaceutical services reduced hospital length of stay as well as incidences of adverse events (Lin, 2012). The improved outcomes were supported by a report published by the Millis Commission in 1975 encouraging the expansion of the PharmD program, to include curriculum reform (Lin, 2012). This report emphasized that pharmacy education should focus on multiple aspects including clinical pharmacy, and social and behavioral pharmacy to ensure that all aspects of the individual are being considered (Lin, 2012).

The 1980s brought a new challenge to pharmacy practice: how to cooperate with other members of the healthcare disciplines. These collaborations strove to bridge the gap between

hospital and community pharmacists and resulted in a standard of practice being implemented in 1992 by the International Pharmaceutical Federation (Lin, 2012). In 1993, the World Health Organization (WHO) released a report identifying pharmacy's key role in managed care, specifically within the older adult population. The WHO followed this with another report in 1994 stressing the importance of pharmacists within the healthcare system (Lin, 2012).

This continuous evolution of pharmacy practice spurred the Accreditation Council for Pharmacy Education (ACPE) to develop new accreditation standards for programs that awarded the PharmD degree (Lin, 2012). The four-year bachelor's degree remained the dominant model until 1997 when the ACPE determined that changes needed to occur. Strongly supported by the WHO, ACPE proposed that pharmacy education should produce pharmacists focused on filling multiple roles including caregiver, decision maker, communicator, leader, manager, a lifelong learner, and teacher (Lin, 2012). To meet this new challenge, programs transitioned to six-year doctorate programs in 2000, with some schools adopting four-year programs enrolling students that had completed a bachelor's degree (Lin, 2012).

Educating Future Healthcare Professionals

The need for adequately trained healthcare professionals continues to grow, both as a result of changes in education requirements and as individuals' utilizing the healthcare systems continues to expand. To meet this growing demand, future pharmacists must be educated by instructors who are prepared to fulfill the learning needs of students. These faculty members must be equipped to address not only the challenges of teaching the material, but also the unique learning styles and expectations that this current generation of learners expects (Buskist, Benson, & Sikorski, 2005; Buskist et al., 2002; Cassidy, 2004; Romanelli et al., 2009).

Groccia's Model for Understanding Teaching and Learning

To understand how teaching and learning occurs in the college and university setting, Groccia designed a Model for Understanding Teaching and Learning (Groccia, 2012). He proposes seven interrelated variables: learning outcomes, instructional processes, course content, teacher and student characteristics, learning process, and learning context. Each of these variables has a significant impact on the process of teaching and learning and encourages instructors to approach the teaching and learning experience holistically (Groccia, 2012).

Groccia (2012) defines learning outcomes as what an instructor expects a student to learn from the educational experience. Learning outcomes are measured throughout the learning process, and determine if the instructor's teaching was effective (Groccia, 2012). The next part of the equation is the impact of the instructor on the learning process. The teacher variable focuses on how an instructor's personality and preferences impact the learning environment. While the instructor is an important piece of the puzzle, the learner is just as important. A student's background, academic capabilities, and individuality all impact the learning process and environment.

While the instructor and learners are essential pieces of the learning experience, instructors' knowledge of the teaching and learning process enhances the experience. As Groccia (2012) states, "the wealth of information about human learning and how that knowledge can be applied to enhance teaching can provide a solid foundation for understanding the teaching and learning process" (p. 10). The learning process then impacts the learning context. To create an effective learning environment, an instructor must understand how the environment can affect a learner's ability to process information. The physical learning environment can have a direct impact on both an instructor's and student's behavior. This learning environment includes the

classroom setting (i.e. the room size and design), technology, and seating. However, the learning context includes assessment methods, course objectives/goals, administration, and classroom policies.

Once the instructor understands the process, the learner, and the educational environment, the next element of the teaching and learning process is grasping the course content. Ismail and Hassan (2012) note that curricular design is directly impacted by course content. When developing educational content, the instructor must be cognizant of methods that effectively meet the instructor's desired learning outcomes for the course (Groccia, 2012). The final variable that ties everything together is the instructional process/pedagogy.

How the content is taught, the choice of one teaching method over another, should be made after consideration of desired learning outcomes, a careful review of the evidence on the effectiveness of different teaching approaches, the prior knowledge and present needs of learners, the expertise of instructors, and the limits or advantages presented by the classroom context (Groccia, 2012, p. 11).

Ismail and Hassan (2012) also stress that effective curriculum design should factor in both content and cultural diversity. The incorporation of culture will allow instructors to examine thoughts and behaviors (i.e. values, beliefs, political and economic issues, and communication styles). Culture impacts the way students interpret thought, behave, and react. By integrating culture, instructors can look in-depth at how their students learn.

It is also essential that instructors understand how students learn in the classroom. With the growing diversity among the student body, faculty members have begun to examine the role learning styles have on the learning environment (Cassidy, 2004; Romanelli et al., 2009). By understanding a student's learning style, both faculty and students will be better prepared to

adjust the learning environment to achieve the student's learning goals (Romanelli et al., 2009). However, adapting the learning environment in mega-classrooms (large classes of hundreds of students) can prove difficult. By strategizing early, faculty can determine best practices for reaching students in and out of the classroom (Crawford, Alhreish, & Popovich, 2012; Romanelli et al., 2009).

How Students and Teachers Influence Learning

Both teachers and students are responsible for the learning process and for improving the experience. Chickering and Gamson (1987) outlined five qualities of an effective learning environment, which include: a) strong sense of shared purposes; b) concrete support from administrative/faculty leaders; c) adequate funding; d) consistent policies and procedures; and e) continuous quality improvement to determine what has been achieved and what has not. Faculty must be cognizant of these five qualities to ensure that they have the tools needed to assess their teaching environment.

As Chickering and Gamson (1987) note, individualized degree programs allow students to tailor their learning experience, honing in on what they want to achieve. Instructors must also communicate high expectations to ensure that students are prepared. However, faculty should also understand that students who excel in some environments might struggle in others. Instructors should strive to maintain an open dialogue with students to ensure that struggling students do not give up on learning the material.

Students as Consumers

As the cost of tuition increases, more and more students view higher education as a financial decision that requires a significant return on investment (Cain, Noel, Smith, & Romanelli, 2014). This mindset has led to culture change, transitioning students from learners

into consumers and has created a sense of academic entitlement. To fully understand this transition, scholars have begun exploring instances of academic entitlement and how student's expectations have changed (Cain et al., 2014; Holdford, 2014; Turnipseed & Cohen, 2015). The concept of the student consumer can drastically impact the learning community. Consumerist students typically have high expectations for their instructors, expecting them to cater to their demands, providing a convenient learning experience that requires minimal effort (Cain et al., 2012). This attitude affects the academic classroom altering expectations, behaviors, and outcomes (Eisenberg, 1997). This disconnect with students creates an unhealthy academic environment where students expect high grades in return for the tuition they pay and not for the content they learn. When examining students entering into pharmacy programs, one must look at a number of factors to assess how student consumerism impacts both the recruitment process and how students' progress through their degree program.

With the growing number of pharmacy programs, competition for students continues to increase (Cain et al., 2012). The tactics used by student services to recruit students, however, is suggested to have altered students' attitudes regarding the academic process (Cain et al., 2012). This trend also impacted students' sense of academic entitlement. Academic entitlement is a student's expectation of accomplishing academic achievement without responsibility for accomplishing that success (Holdford, 2014). Academic entitlement is exhibited in academic environments only and may not transfer to other forms of entitlement (Turnipseed & Cohen, 2015). As students' attitudes change, the level of responsibility they feel for accomplishing their academic success dwindles, resulting in transitioning that role of responsibility to their faculty instructors. Students operating from a sense of academic entitlement are typically in the

minority; however, because they are typically the most vocal students, it can appear that they are in the majority (Holdford, 2014).

Cain et al. in *Academic Entitlement in Pharmacy Education* (2012) describe work by Dubovsky regarding five facets of academic entitlement issues in medical education:

First, knowledge is a right and students should receive it with minimal exertion and discomfort. Second, instructors will provide all necessary information and guidance necessary for success in the course. Third, the instructor is responsible for student success (or failure) in the classroom. Fourth, all students should receive equal recognition regardless of individual effort put forth. Fifth, aggressive confrontations with instructors or school administrators are acceptable if student expectations are not met (p. 1).

Within academic entitlement, scholars have identified two related dimensions, which include externalized responsibility and entitled expectations (Turnipseed & Cohen, 2015). Externalized responsibility is defined as a student's lack of individual responsibility and entitled expectations as a student's unrealistic expectations regarding grades and their professor's behaviors (Turnipseed & Cohen, 2015).

This sense of academic entitlement could be theorized to correlate to Jean Piaget's theory of egocentrism. Egocentrism is an individual's inability to distinguish their perspective from others (Crain, 2011; Piaget, 1955). Students suffering from academic entitlement are unable to see past their own needs and project their expectations onto the instructor.

Students suffering from academic entitlement typically have low self-esteem, lower levels of academic success, reduced course self-efficacy, academic dishonesty, pressure from parents, and a consumerist attitude (Jeffres, Barclay, & Stotle, 2014; Turnipseed & Cohen, 2015). Other traits associated with academic entitlement are often referred to as dark traits and

include narcissism and exploitive tendencies, otherwise known as Machiavellianism (Turnipseed & Cohen, 2015). The characteristics of Machiavellianism are the “externalization of blame, duplicity, and the use of manipulative interpersonal strategies to achieve personal gain” (Turnipseed & Cohen, 2015, p. 73). While these traits are associated with academic entitlement, the prevalence of these specific characteristics in students is limited (Turnipseed & Cohen, 2015). These students, when faced with education outcomes they view as unfair, can express their frustration through incivility, which can include grade negotiation, threatening, demanding, and potentially hostile confrontations (Turnipseed & Cohen, 2015). It is also common for faculty to encounter students who behave unprofessionally (Holdford, 2014).

Jeffres et al. (2014) examined academic entitlement among graduating pharmacy students. Graduating PharmD students had high expectations for both themselves as well as their instructors, indicating a higher level of responsibility for one’s own learning (Jeffres et al., 2014). Researchers also found that only 10% of the 141 respondents showed signs of academic entitlement. However, the authors did suggest that due to the learning level of the students responding to the survey, the responses may have been biased because the respondents may have identified the intention of the survey and altered their responses accordingly (Jeffres et al., 2014).

Academic entitlement, which has begun to be used by academics interchangeably with student consumerism, also affects the academic classroom altering expectations, behaviors, and outcomes (Cain et al., 2012; Eisenberg, 1997). This disconnect with students (and at times their parents) creates an unhealthy learning environment.

As more and more scholars study academic entitlement, the overlap with student consumerism becomes more predominant (Cain et al., 2012; Jeffres et al., 2014; Turnipseed & Cohen, 2015). Yet, the definitions are slightly different. Student consumerism is the perception

that since a student pays for their education, this payment links to payment for service, which makes the students consumers (Holdford, 2014).

Millennial Generation

While academic entitlement has always occurred in students, it is most closely associated with the millennial generation (Jeffres et al., 2014). This generation of students has aptly been dubbed as ‘Generation Me’ and are typically described as narcissistic, entitled, arrogant, and disrespectful; all attributes of students portraying a sense of academic entitlement (Cain et al., 2012; Jeffres et al., 2014). While these traits are closely associated with the millennial generation, this tendency is also considered to be a consistent behavior for student consumers (Holdford, 2014). However, it is important to note that this sense of academic entitlement does not stem from a sense of being better than others, it is closely associated with “their role as a customer in the sense that they have paid for their education” (Jeffres et al., 2014, p. 1). As with Piaget’s theory, egocentric individuals are not necessarily selfish or conceited; they are simply unable to see that the instructor’s expectations are different than their own (Crain, 2011; Piaget, 1955).

The sense of entitlement is no longer relegated to students utilizing the educational system. With the millennial generation, this sense of entitlement extends into their time in the workforce impacting professionalism (Holdford, 2014; Turnipseed & Cohen, 2015). To prevent students from entering into the workforce with this sense of academic entitlement, it is important that clear discussions be integrated into the curriculum regarding student expectations and how their negative perspectives can impact future work performance (Jeffres et al., 2014).

Negative Impact of Student Consumerism

Student consumerism, if allowed to run rampant, can impact the quality of education. As Holdford (2014) discusses by catering to consumerist students, programs could lower overall standards resulting in students who are less prepared and less competitive. This could also lead to schools retaining students that are unable to meet the original standards to avoid penalties associated with accreditation benchmarks such as student progression and retention (Holdford, 2014).

Teaching is a Calling

Teaching is a calling and not one to be taken lightly (Buskist et al., 2005). As a profession, teaching continues to be described as one of the most rewarding and frustrating career options available. To be a successful educator, an instructor should embrace the challenges of academia and work towards becoming a master teacher. However, becoming a master teacher does not occur overnight. Instructors must meet the challenges of educating future generations and have the drive needed to overcome these challenges. The article *The Call to Teach* describes the challenges instructors must overcome to educate future generations successfully and proposes four elements of teaching. These elements include: a) content first; b) making the subject matter relevant; c) facilitating critical thinking; and d) passing the torch. As educators, the first way to reach students is through content which can then be interpreted and passed along to others. By serving as the subject matter expert, an instructor can share this knowledge with their students to ensure that learning continues. However, to effectively reach students, the instructor must ensure that the subject matter is relevant. It is essential that students grasp how the content applies to real-life situations. If the student can identify the connections, they are more likely to return and participate in class. Once an instructor has engaged the student,

they must then facilitate critical thinking. To do so, the instructor must teach the student how to take the knowledge they have gained and use critical thinking skills to transform knowledge from “concrete and external to reflective and internal” (Buskist et al., 2005, p. 117). The final step for instructors is the idea of passing the torch. By passing the torch, faculty have the opportunity to share their values, ideas, and enthusiasm to the next generation in the hopes that these students will embrace the instructor’s values and ideas.

Teacher-Student Dynamic

While striving to be master teachers, instructors must understand that the student-teacher relationship can impact students’ overall learning. Students learn best when they feel the instructor is on their side. As Chickering and Gamson state, “Good learning, like good work, is collaborative and social, not competitive and isolated” (1987, p. 3). An instructor that establishes a learning community will establish a positive learning environment that encourages working together instead of competition (Chickering & Gamson, 1987). By improving student-teacher relationships, scholars have found that students become more receptive to the instructor and show added investment in their learning process (Epting, Zinn, Buskist, & Buskist, 2004). Epting et al. (2004) discussed how instructors may transition from typical teachers to ideal teachers noting that to understand the attributes of an ideal instructor, one must be able to determine what students view as important to the learning environment and how they want to interact with their instructors. More distinction will be lent to distinguishing the differences between typical and ideal instructors later in this paper.

When examining the roles of the student-teacher dynamic, attention must be paid to the idea of academic entitlement. The issue of academic entitlement could easily be blamed on the Millennials, their parents, and society, but faculty must embrace that academia also plays a part

in reinforcing this sense of academic entitlement (Holdford, 2014). For example, faculty who award high grades for second-rate work over-inflate the student's sense of academic achievement, which strengthens this sense of entitlement. This reinforcement can result in students not recognizing this sense of entitlement.

To stimulate learning, faculty must be open to interaction in the classroom. With the incorporation of team learning, faculty encourage students to share ideas through discussion and reflection, which will result in critically thinking students (Chickering & Gamson, 1987). Effective team learning is accomplished through active learning. Students learn best when encouraged to discuss content, write about it, or apply it to real-life experiences (Chickering & Gamson, 1987). However, this must be done with care. Cain et al. (2012) theorized that in an effort to integrate active learning strategies, instructors may inadvertently remove their authority both in and out of the classroom. In an attempt to push students to think critically and be more engaged, i.e. establishing a collaborative environment, students may no longer recognize the role of the instructor and instead view the instructor as simply a conduit for knowledge transfer (Cain et al., 2012). Faculty must be cognizant of their role in the classroom.

While it is easy to condemn the idea of students as consumers, scholars have determined that colleges and programs owe students a debt for entering into their academic establishment (Cain et al., 2014). Cain et al. (2014) argued that pharmacy students have four rights: a) the opportunity to learn; b) faculty members striving to use the best teaching practices; c) a curriculum designed to produce the most qualified professional; and d) the resources needed to be successful. Each of these rights focuses on providing students with the best overall education experience; yet, it is important to note that while students have these rights, it does not guarantee that they will complete the program. Students must take care that opportunity does not equal

entitlement. When looking at the first right, opportunity to learn, an entitled student will view this right as a transaction since the student is paying the institution to obtain a degree, when in reality the student is paying the institution to learn (Cain et al., 2014). The road between student entitlement and what is actually owed to the student can be tricky, and programs must be cognizant of the potential hazards that could result.

Faculty must be prepared to challenge students when appropriate. While learning should be a collaborative process, it is important that faculty not capitulate to student requests that are unreasonable or inappropriate. When needed, students should be placed in uncomfortable situations to encourage continued growth and also when the learning process will result in a better-prepared practitioner in the future (Cain et al., 2014).

Reaching the Student Pharmacist Learner

As with all learners, the way in which each student absorbs, interprets and retains information is different. As a faculty member, it can be a challenge to identify effective methods for developing future practitioners, who are knowledgeable, strong communicators, critical thinkers, and successful problem solvers, especially in a school of pharmacy (Crawford et al., 2012; Toklu & Hussain, 2013). Due to large classroom size, varied student backgrounds and advances in technology, the challenge of reaching today's students continues to increase and requires a better understanding of both their needs and expectations within their learning environment.

Faculty members should be prepared to integrate the best teaching principles to ensure that students are being reached. These principles should include: creating an environment that stimulates learning; being accessible inside and outside the classroom; providing resources needed to encourage students to continue learning outside the classroom; and to project both an

interested and caring attitude (Cain et al., 2014). As with any professional school, pharmacy students' expectations will differ from those of undergraduate students. As these students prepare to enter into the healthcare workforce, it should be expected that faculty be prepared to challenge students with active learning opportunities and expose them to relevant scholarly literature to promote ideas of creativity (Cain et al., 2014). Students should also be pushed to be productive and explore their own ideas (Cain et al., 2014).

To adequately challenge students, faculty must also develop curricula that adheres to the best pharmacy practices and prepares them for their future clinical responsibilities addressing not only content but also what are referred to as soft skills: communication (both patient and provider), empathy, and adaptability (Cain et al., 2014). Professional programs can find this challenging as they must be concerned with meeting student needs as well as those of accreditation bodies. Accreditation bodies may impose standards that look to the future needs of the profession and current students may not welcome the implemented curriculum changes. Students may not identify the linkages or relevance of the content they are learning and how it applies to practice or patient care, which can result in students feeling frustrated at the 'extra' content being required (Cain et al., 2014).

Learning Styles

While faculty push students to excel independently, faculty are also responsible for providing guidance and feedback. This can be provided through verbal communication, written feedback given on homework, exams, and papers, as well as peer and teacher evaluations (Cain et al., 2014). It is essential that faculty continue to push students to transition from dependent learners to independent learners (Cain et al., 2014). However, to adequately transition students to

independent learners, faculty must provide students with the necessary tools to successfully make this transition.

As the diversity of the student population continues to grow, faculty members have begun to examine the role learning styles has in the education environment. A learning style is essentially the way an individual interprets, understands, and responds to learning (Cassidy, 2004; Romanelli et al., 2009). In the past, scholars have stressed the importance of a faculty member's ability to identify and understand a student's preferred learning style to effectively reach their audience (Cassidy, 2004; Crawford et al., 2012; Romanelli et al., 2009). They also stressed the importance of faculty and student ability to recognize the student's own preferred learning style (Romanelli et al., 2009). However, research supporting this idea has remained limited. Scholars have postulated that by identifying students' preferred learning styles, an instructor will be better prepared to adjust the learning environment to best meet the needs of the majority of students (De Vita, 2001; Romanelli et al., 2009). A student's understanding of their own preferred learning style will allow for better study practices and classroom learning, resulting in an improved educational experience (Crawford et al., 2012; De Vita, 2001; Romanelli et al., 2009).

The application of learning style influenced teaching practices in the classroom has been met with some resistance as scholars argue that maintaining current practices has its benefits (Romanelli et al., 2009). Romanelli and his team (2009) theorized that not changing teaching to accommodate individual student learning styles can provide positive challenges to students resulting in an expansion of their academic abilities, thus leading to increase critical thinking skills and adaptability. However, mismatched teaching environments can result in obstacles within the learning environment, which prevents students from grasping the material (De Vita,

2001; Romanelli et al., 2009). Romanelli et al. (2009) proposes the incorporation of mixed teaching approaches, i.e. active learning, lecturing, etc., within the learning environment to prevent student frustration.

One could argue that faculty hesitancy is a result of mega-classrooms, which host over a hundred students. Due to the large number of learners, faculty struggle to adapt their teaching to meet the various learning styles in large classrooms. Many feel that expecting students to adapt to the instructors teaching style seems more plausible (De Vita, 2001; Romanelli et al., 2009). Researchers argue that this places the burden of change on the student which could damage the overall learning environment (Cassidy, 2004; De Vita, 2001; Romanelli et al., 2009). This expectation may also result in faculty maintaining the status-quo and refusing to adopt new innovative teaching approaches when needed. However, while change can improve the learning environment, it is also important that faculty understand that significant changes or modifications may not be necessary “in order to effectively create a classroom atmosphere that addresses multiple learning styles or targets individual ones” (Romanelli et al., 2009, p. 3).

By identifying student learning styles, faculty can help students both personally and professionally (Crawford et al., 2012; Romanelli et al., 2009). While instructors may not be able to implement every student’s learning style into their course, a student’s learning style can be used for advising and resolving learning difficulties (Crawford et al., 2012). However, understanding a student’s individual learning style does not increase a faculty member’s ability to understand the student’s learning expectations. To fully grasp student needs, faculty and students must communicate the expected teaching behaviors and qualities they feel are essential to building a community of collaborative learning where effective teaching can occur.

Ideal vs. Typical Teacher

Scholars have theorized that the dynamics between an instructor and a student can impact a student's overall learning. They have posed that by improving the relationship between instructor and student, a student will become more receptive to the instructor, resulting in added investment into their learning process (Epting et al., 2004). This can be accomplished through formal and informal student evaluations. An instructor who strives to understand a student's perspective is one who strives to be an ideal instructor. Grasping these student's perceptions provides instructors with the tools needed to communicate more effectively, creates a positive learning environment, and shows students that they are receptive and open to interacting with them.

Students do not attach specific personal characteristics to ideal instructors (Epting et al., 2004). Students instead identified characteristics associated with patterns of experiences, such as a preference for a clear and unvaried voice, a syllabus with clearly outlined course and daily goals, and flexibility within the course (Epting et al., 2004). The preferences outlined speak more to behaviors within the classroom and less to the individual faculty member. Epting et al. (2004) found that students primarily endorsed the same classroom behaviors in both typical and ideal instructors. However, they differentiated that ideal instructors are essentially more open to outside appointments, would know the individual names of students, and are more comfortable conversing with students informally (Epting et al., 2004).

The differences in typical and ideal instructors became more apparent as students discussed the differences in content delivery. Students stated that typical instructors were less likely to use innovative teaching strategies, relying primarily on a lecture-based approach. Typical instructors also utilized short-answer responses for assessments while ideal instructors

allowed for a balance of assessment strategies (essay, short answer, fill in the blank and multiple choice) (Epting et al., 2004). Students also felt that typical instructors were not as open to responding to student questions either inside or outside the classroom.

Feedback was also an area where students noticed a difference between ideal and typical teachers. Ideal instructors would provide multiple opportunities for feedback throughout the term, while students reported few typical instructors requested any feedback (Epting et al., 2004). Ideal professors were also known to be more proactive when dealing with academic dishonesty issues and more flexible regarding make-up policies. This clarity results in a more positive learning experience for students and avoids communication issues.

Master Teachers

As previously described, Buskist et al. (2002) defined master teachers as a blend of multiple qualities that can vary between individuals. However, each master teacher shares some commonalities when considering their enthusiasm regarding their topic, students, and teaching. Whereas ideal instructors provide students with the necessary resources and communication needed to be successful, those striving to become master teachers understand that it is the instructor's responsibility to ensure that a student's knowledge is expanded outside of the student's own profession to focus on all aspects of learning. To accomplish this goal, there are a number of proponents that are considered essential for effectively reaching students.

Over the years, scholars have examined the attributes that constitute master teaching and have identified three common qualities: knowledge, personality, and classroom management skills (Buskist et al., 2002). All faculty should be knowledgeable within their own content area; however, master teachers must show students how this knowledge relates to everything else. Master teachers must be able to effectively educate their students not only on their course

content, but by also emphasizing that there are other disciplines outside their perspective fields. Students should understand that there are similarities regarding expectations across disciplines and that these similar reactions occur across subject matter. Through the creation of linkages across the curriculum, students will see how each subject area impacts the other. For example, a student must see how English Composition impacts their Introduction to Marketing course (i.e. how a badly worded email could result in the loss of a marketing contract). Faculty should establish these linkages to ensure that students not only hear the relevant content but also retain it as well. Master teachers should be prepared to “share new discoveries and how new knowledge complements and extends older knowledge” (Buskist et al., 2002, p. 28). While sharing new knowledge is important, master teachers should also model critical thinking skills to ensure that students are trained to think critically.

The personality of a faculty member is also an important variable to consider when training to be effective in the classroom. As Buskist et al. (2002) noted, master teachers engage students using their distinctive personal strengths. Although an instructor’s personality can alter the learning environment, there is no single personality type required to find success in that environment. However, to engage learners, master teachers may alter their personal style to tailor to the needs of the class to create different and unique learning environments. Of all characteristics associated with master teachers (e.g., approachable, genuine, and humorous) studies have found that rapport is an especially important component of the professor-student relationship (Buskist et al., 2002; Frisby & Martin, 2010; Frisby & Myers, 2008; Granitz, Koernig, & Harich, 2009; Micari & Pazos, 2010; Ryan & Wilson, 2014).

Rapport is one’s ability to establish and maintain positive relationships based on a mutual connection. When examining the effectiveness of rapport, research has been conducted across

various disciplines including education, psychology, and marketing (Granitz et al., 2009).

Although each discipline has slightly different interpretations of rapport, the overall concept is the same. Each definition focuses on mutual trust, respect, and positive relationships between two parties. Granitz et al. (2009) also focus on three objectives that must occur before rapport can develop between two individuals: approachability/accessibility, personality, and similarities. Approachability/accessibility pertains to the availability of faculty members to meet with students both in and outside the classroom. However, for faculty to be approachable, they must also have mutual openness, trust, accessibility, and respect. To achieve mutual openness, faculty and students must have open and honest communication with each other. Although complete honesty may seem difficult to achieve, this openness between faculty and students can lead to trust.

Viewed as the mutual belief that both parties will do as promised, trust must occur for faculty to develop rapport with students (Granitz et al., 2009). Whereas some researchers believe that trust must occur before rapport can occur, others feel that rapport can establish a sense of trust between the student and the instructor creating a sense of approachability (Buskist et al., 2002; Frisby, Berger, Burchett, Herovic, & Strawser, 2014; Frisby & Martin, 2010; Frisby & Myers, 2008; Granitz et al., 2009; Miracari & Pazos, 2010). Instructor-student rapport can also impact a student's classroom participation, motivation, and satisfaction (Micari & Pazos, 2010; Ryan & Wilson, 2014). The faculty member's enthusiasm can create excitement within the learner regarding the subject matter. This enthusiasm can alter the learning environment instilling within the student additional motivation and satisfaction (Buskist et al., 2002; Frisby et al., 2014; Frisby & Martin, 2010; Granitz et al., 2009; Ryan & Wilson, 2014). By creating a safe learning environment, instructors encourage students to think critically and to actively participate

in the course (Frisby et al., 2014). Strong rapport between faculty and students can result in students identifying faculty as learning resources (Granitz et al., 2009).

Granitz et al. (2009) examined the personality factors that impact an individual's ability to build rapport with others. These personality factors include emotions, thoughts, attitudes, and behaviors. Although these factors play a part in building rapport, the authors focused primarily on the caring, positive, and empathy issues. They postulated that an instructor who cares is more likely to be concerned that students are learning. A positive faculty member is more likely to integrate humor into their teaching, creating excitement and contentment within the learning environment. Lastly, empathetic instructors are going to place themselves in the student's shoes to determine what the student needs throughout the learning process.

While approachability and personality factors can greatly affect rapport, faculty and students must also recognize the impact similarities can have on the relationship. As faculty strive to bond with students, it is important that they recognize that they may not share the same similarities with every student so building rapport with all students may prove to be difficult.

Managing Students in the Classroom

How an instructor manages a classroom speaks to the type of teacher they strive to become. A master teacher identifies problem students and develops strategies for supporting those students to become more effective learners. Master teachers identify potentially difficult situations that may arise and use their problem-solving skills to handle those difficult situations (Buskist et al., 2002). Through the use of active learning strategies, master teachers provide students with the resources needed to engage in the learning process and move from dependent to independent learners. Although to adequately accomplish this goal, master teachers must establish a learning environment that welcomes student interactions and cooperation. Through

the integration of these types of learning techniques, instructors strive to motivate students to invest in their learning experience while also creating an atmosphere that is open to participation, sharing, and learning.

Buskist et al. (2002) note that while knowledge, personality, and classroom management skills are important, there are other qualities necessary to be an effective teacher which include: flexibility, humor, thoughtfulness, strong work ethic, and creativity. They stress that master teachers come in a variety of shapes and sizes, meaning that their teaching qualities may differ from instructor to instructor, and what is effective in one may not be effective in others.

However, scholars have agreed that master teachers typically are:

able to do four things to a greater extent than ordinary teachers: (a) instill in their students a desire to learn, (b) help their students actually learn something about the subject matter, (c) help their students discover that what they are learning is interesting, and (d) demonstrate to their students that learning in and of itself is enjoyable (Buskist et al., 2002, p. 32).

Identifying a master teacher can prove to be difficult as it does not equate to one specific iteration. Instead, it represents a variety of qualities and behaviors. Each instructor is unique and offers students a varied learning environment. However, it is important to recognize that master teachers share common teaching behaviors and qualities. Buskist et al. (2002) created the Teacher Behavior Checklist (TBC) to identify these shared commonalities.

Development of the TBC

The development of the TBC occurred over two phases. In the first phase, Buskist et al. (2002) asked 114 undergraduates to list three characteristics that they believed were essential for a college or university instructor master teacher. Students identified 47 different characteristics.

This list was then provided to 184 different undergraduate students who were then asked to list or indicate three specific behaviors reflecting the provided characteristics. The researchers found that behaviors overlapped among some characteristics, which led to Buskist et al. (2002) collapsing those categories into a final list of 28 qualities and their attendant behaviors.

In Phase 2, 916 undergraduate students and 118 Auburn University faculty members selected the top 10 qualities and behaviors from the list of 28 that were, in their view, vital to master teaching. Both male and female students rated the qualities/behaviors similarly regardless of year of study. Male and female faculty also rated the qualities/behaviors similarly. Analysis of the qualities and behavior rankings found that students and faculty agreed on six of the top 10, although differences occurred within the ranking of the items. The six common qualities and behaviors included: (a) realistic expectations/fairness; (b) knowledgeable; (c) approachable/personable; (d) respectful; (e) creative/interesting; and (f) enthusiasm. The remaining four characteristics differed between faculty and students, with faculty selecting items focused on classroom techniques (effective communication, prepared, current, and critical thinking) and students focusing on qualities/behaviors associated with the student-teacher relationship (understanding, happy/positive/humorous, encouraging, and flexible).

Psychometric Attributes of the TBC

Following the successful development of the TBC, researchers examined the usability of the instrument for formative evaluation purposes (Keeley, Smith, & Buskist, 2006). Keeley and his team recruited 313 undergraduate students to complete a modified version of the TBC and a standard end-of-semester Auburn University teaching evaluation. Students used the TBC, which included a set of instructions and a five-point Likert scale (*5=frequent to 1=never*), to rate their instructor according to each of the 28 items. The end-of-semester evaluation was a standard

form, which requested students to rate their instructor (*1=strongly disagree to 5=strongly agree*) regarding a number of items including helpfulness, organization, etc. Using factor analysis, Keeley et al. (2006) identified two factors in the TBC, caring and supportive, and professional competency and communication skills. Within the two new subscales, 13 items (items 1, 7, 8, 10, 13, 16, 18, 19, 20, 22, 23, 25, and 28) were included in the caring and supportive scale, with 11 items (items 2, 3, 4, 6, 11, 12, 14, 15, 21, 24, and 27) associated with the professional competency and communication skills scale (See Appendix A). Four items were not used (5, 9, 17, and 26). Keeley and his team conducted a second study to confirm their findings. Further analysis supported the two sub-scales, with no items being removed. These studies also showed the TBC to be psychometrically sound. The first phase of the study confirmed the high internal reliability of the TBC, while the second phase indicated strong test-retest reliability. Using the Pearson correlation, Keeley et al. determined that all 28-items had r values between .24 to .64 ($p < .001$ for 19 items). The coefficient for the total scale was .71 ($p < .001$), with the reliability ratings of .68 ($p < .001$) for the caring and supportive subscale and a reliability score of .72 ($p < .001$) for the professional competency and communication skills subscale.

Assessing Teacher Quality Differences

Keeley, Furr, and Buskist (2010) investigated the TBC “so that its measurement scheme is known for future evaluations of external factors (e.g., learning outcomes) on the validity of student ratings using the instrument” (p. 16). Building on previous research, Keeley et al. conducted the study to examine the instrument’s ability to determine differences in teacher quality.

Using generalizability theory, these researchers evaluated the degree of variance in teaching evaluations, essentially examining how teaching evaluations differed when considering

various factors. The researchers examined seven factors: (a) teacher quality differences; (b) differences in use of the subscale or student perceptions; (c) item differences; (d) differences in degrees of how students evaluate their instructors; (e) differences in degree of how items differentially relate to teacher quality; (f) different degrees of which students respond to items; and (g) random error. One hundred and forty-two Auburn University undergraduate students and 184 Appalachian State undergraduate students participated in the study. Participants rated their instructors according to the TBC using a five-point Likert scale (*1 = my professor never exhibits this behavior to 5 = my professor always exhibits this behavior*). Each student completed the TBC three times, assessing the worst professor they had ever had, the best professor, and the professor of a course students had immediately before their introductory psychology course. Keeley et al. used the most recent teaching experience assessment to compare the best and worst teacher assessments.

Keeley et al. (2010) assessed the variability factors (i.e. teachers, students, and items) and examined the convergent validity of the ratings. To ascertain validity, the researchers evaluated the students' ratings of the worst, best and prior teachers to see if the expected pattern occurred. In the Auburn undergraduates' sample, the teacher effect showed the greatest proportion of variance when examining all substantive factors. The variance in scale ratings was 45% when examining the differences among the three types of instructors, with very little variance occurring with the other two main effects. Auburn participants showed little difference in their mean responses, with only a small percentage of variance across items. The only substantive variance occurred when looking at the teacher and student interaction, with the rating of the most recent instructor impacting how close that rating was to either the best or worst instructor. For those students having experienced recently a relatively effective teacher, the scores for both the

best and most recent would be close together, where the opposite occurred when the student had recently experienced an ineffective instructor.

In the Appalachian State sample, the generalizability theory analysis was virtually identical to the Auburn sample, with the teacher type as the largest effect (Keeley et al., 2010). Yet the main effect in the Appalachian State sample was larger than that of Auburn students, with differences among Appalachian State students accounting for 5% of the rating variance. Keeley et al. (2010) theorized that “one could interpret this finding as a satisfaction effect (i.e., some students are generally more satisfied with teachers in general than other students)...” (p. 18). The researchers also posed an alternative theory that the study findings could indicate individual differences in how those participants used the response scale.

Overall, this study determined that the variability of student ratings in the TBC were a result of teacher differences. Keeley and his team were unable to determine from the generalizability theory analysis if these differences were meaningful or valid. When examining the convergent validity, Keeley et al. (2010) analyzed the mean differences of the ratings of the three teacher types and found that presentation order had no effect on Auburn students’ ratings. However, the Appalachian State data showed a significant order effect when examining the caring and supportive subscale. The difference only occurred in the best teacher data and the effect size was small.

When examining both participant groups, Keeley et al. (2010) found that students rated instructors in the following order: the best instructor higher than the most recent, and the most recent higher than the worst. Both student groups also followed this same trend within the subscales as well. Therefore, the authors determined that students’ perceptions of their instructors could be differentiated using the TBC, with students rating better teachers higher than

less skilled teachers. They also theorized that the TBC can detect differences among different types of teachers, although they stressed that additional research was needed to assess the TBC's accuracy in detecting subtler differences among instructors.

Utilizing the TBC in Research

McGovern and Miller (2008) discussed the strength of the TBC in terms of offering faculty an empirical means to assess methods of instruction and to ensure that faculty have the resources needed to adjust their curriculum to reduce the level of disgruntled students. Using the TBC should provide faculty with the resources needed to create stronger learning environments. McGovern and Miller noted that the TBC provides feedback in an expedient manner that is supportive and diagnostically focused on allowing necessary changes to be made and for constant reassessment.

Schaeffer, Epting, Zinn, and Buskist (2003) asked 99 faculty and 231 students to complete the TBC, identifying the top 10 qualities/behaviors of master teaching. The study found that students and faculty had similar rankings, with students and faculty agreeing on their top eight (approachable, creative and interesting, encouraging and caring, enthusiastic, flexible and open-minded, knowledgeable, realistic expectations and fair, and respectful). The faculty respondents' remaining top 10 included qualities/behaviors associated with technical aspects of teaching whereas students' responses focused more on the teacher/student relationship. This study's findings supported Buskist et al.'s earlier study in which faculty and students agreed on six of the 10 items.

Mowrer, Love, and Orem (2004) conducted two studies exploring whether students ranked a teacher's characteristics differently based on a variety of factors including GPA, year in school, high school graduating class size, motivation level, perceived difficulty level of college,

and gender. In the first study, the researchers asked 332 undergraduate students to rank the TBC qualities and behaviors into four groups of seven characteristics. These four groups included: very important, important, somewhat important, and not very important. No more than seven qualities and behaviors could be included within each of the four groups. Of the 28 items, knowledgeable and approachable appeared in every student's list of top 10 qualities and behaviors. The major differences within the study's findings were how students ranked individual qualities and behaviors within the four groups. Students tended to list the same top six qualities and behaviors. However, the lower half of the top 10 ranking, tended to vary when looking at individual responses. This study's findings reinforced the validity of Buskist et al.'s 2002 study. Mowrer and his team found that the only difference in their results from those of Buskist's team were that their students ranked effective communicator and accessibility within their top 10, excluding understanding and positive attitude which differed from Buskist et al.'s findings (Buskist et al., 2002; Mowrer et al., 2004).

In the second study, Mowrer et al. (2004) replicated the first study with 134 undergraduate students. The results of this study mirrored previous study findings, with students identifying eight of the 10 same teaching qualities and behaviors. Mowrer et al. (2004) determined that students were more likely to identify the same teaching qualities and behaviors across academic disciplines.

Landrum and Stowell (2013) examined the reliability of student ratings using the TBC to assess videotaped segments of instructors. These researchers asked students to rate instructors using eight TBC behaviors (approachable, interesting, encouraging, enthusiastic, flexible, knowledgeable, and realistic). Faculty volunteers agreed to videotape their classroom lectures that were split into 5-minute segments. Students were then asked to review the videos and rate

each instructor on the eight behaviors using a scale of 1 (*not at all*) to 4 (*extremely*) to indicate the level of behavior displayed. The authors found a correlation among the eight behaviors and determined that if teachers were displaying one of the master teaching behaviors they were more likely to display others. However, Landrum and Stowell noted that this result applied to all behavior except for being knowledgeable. They stated, “that a teacher could display a high amount of knowledge, but not be effective in conveying that knowledge to students, or conversely, display a lower amount of knowledge, but still maintain high levels of the other teaching behaviors” (p. 302).

International Applications

American Students vs. Japanese Students

In two separate studies, Keeley, Christopher, and Buskist (2012) explored the international generalizability of the TBC for identifying the qualities and behavior of master teachers. Participants in the study were 231 American and 111 Japanese students. The American students completed the survey online whereas the Japanese participants received hard copies of the instrument from research personnel during the students’ normal class period. They completed the instrument outside of class and returned it to a predetermined location. All participants completed the TBC using a Likert-like scale (*1=never exhibits this quality to 5=frequently exhibits this quality*), rating each quality/behavior regarding the extent this quality/behavior is exhibited by master teachers.

Keeley et al. (2012) determined the rank order of the 28 items and found that both student groups primarily identified the same seven out of 10 qualities and behaviors (knowledgeable, confident, approachable/personal, enthusiastic, effective communicator, prepared, and good listener). However, American students identified accessible, respectful, and intellectually

stimulating to round out the top 10 whereas Japanese students identified creative and interesting, strives to be a better teacher, and humble for their top 10. Overall, Keeley and his associates found that U.S. and Japanese students identified similar master teaching qualities as the most important, with very few differences found regarding the level of importance across the two student groups.

Keeley et al. (2012) then compared this study's findings to Schaeffer et al.'s (2003) findings examining the differences between students at a research institution and a community college. Students from all three types of learning institutions agreed on four of the 10 teaching qualities and behaviors (knowledgeable; approachable/personable; respectful; and enthusiastic). Students from U.S. and Japanese liberal arts colleges identified confident, effective communicator, prepared, and good listener as attributes of master teachers (Keeley et al., 2012) whereas students from research institutions and community colleges disagreed, rating these qualities/behaviors as less important. These students identified fair testing/grading, creative and interesting, happy/positive/humorous, encouraging, flexible, and understanding as important qualities/behaviors.

Overall, Keeley et al. (2012) theorized that although there were participant differences between the student populations that it was premature to say that perceptions of master teachers differed substantially. Due to the differing research methods used between the studies and the methods used by participants to rank the TBC, comparing participant pools does not allow for a true comparison. The research team also questioned the validity of the analysis as the study examining liberal arts colleges examined just one institution in the U.S. and one in Japan, and the findings for those two institutions may not prove to be representative of most liberal arts colleges.

American Students vs. Japanese Students vs. Chinese Students

Although the TBC has been used by various U. S. scholars, the adaptability and reliability of the instrument has enticed scholars from abroad to use the instrument as well. Liu, Keeley, and Buskist (2015) recently examined Chinese college students' perceptions of master teachers by comparing American and Chinese student qualities and behaviors rating responses to the TBC. In this study, 115 students from a large university in Eastern China completed the TBC. Participants rated each quality/behavior using a 1 (*never exhibits this quality*) to 5 (*frequently exhibits this quality*) Likert scale. Liu et al. found that only three TBC qualities were rated the same across the participant groups (prepared, sensitive and persistent, and understanding). Chinese students were less likely to indicate a preference for teachers who emphasized interpersonal skills (i.e. creative/interesting, humorous, humble, rapport) than the other student groups. They instead placed more importance on teachers who exhibit one of the teaching qualities/behaviors such as authoritative, professional, respectful, and so on. Unlike American or Japanese students, Chinese students placed less emphasis on instructors who were approachable, confident, enthusiastic, knowledgeable, effective communicators, or good listeners, although they indicated that they valued instructors who were technologically competent. Liu et al. stressed the need for future research to further examine the differences found in the teaching qualities/behaviors of master teachers educating students from different cultural backgrounds, with attention paid to how these differences impact teaching quality and students' learning experience.

Estonian Students and the TBC

In response to the limited literature on teacher effectiveness in Estonian education, Jõemaa (2013) conducted a study utilizing the TBC to determine what qualities and behaviors

university students identified as essential to master teaching. Using the TBC, participants identified the top 10 qualities and behaviors essential for master teaching. Students also provided their degree level, curriculum discipline, and age. The study included participants at all higher education levels (bachelor's (n=382), masters (n=171), integrated (n=112), and doctoral (n=14)) and represented five disciplines (educational sciences (n=110), applied social sciences (n=248), humanities and pure social sciences (n=98), natural sciences (n=68), and technologies (n=154).

Of the 679 participants, 78.6% selected knowledgeable about topic as the most important quality/behavior from the 28-item TBC checklist. Students identified enthusiastic about teaching, provides constructive feedback, approachable/personable, creative/interesting, professional, realistic expectations/fair, presents current information, prepared, flexible/open-minded, and encourages/cares for students as the remaining top 10 qualities/behaviors. Jõemaa's analysis determined that all characteristics were correlated at statistically significant ($p < 0.05$) levels. Using a t-test analysis, she determined that a statistical difference was found across age groups for six qualities/behaviors (happy/positive/humorous; establishes goals; promotes class discussion; promotes critical thinking; rapport; and realistic expectations/fair). Older students rated establishes goals, promotes class discussion, and promotes critical thinking skills as more important, whereas younger students identified happy/positive/humorous, rapport, and realistic expectations/fair.

To determine differences among academic disciplines, Jõemaa (2013) used a one-way analysis of variance (ANOVA) to analyze the data. She found statistically significant differences in 13 qualities and behaviors (accessible; approachable/personable; effective communicator; enthusiastic about teaching; encourages/cares for students; enthusiastic about teaching; establishes goals; good listener; prepared; presents current information; promotes critical

thinking; provides constructive feedback; respectful). Of those identified, approachable/personable scored high in all groups, with a statistically significant difference between educational sciences and technologies.

Jõemaa (2013) determined that students with life experiences that included both educational and practical knowledge view critical thinking and discussion as a substantial component of the teaching and learning process. She also theorized that younger students typically required more faculty support; therefore, these students would expect instructors to be more readily available both in and out of the classroom. The analysis of discipline differences led Jõemaa to determine that there are differences in essential teaching qualities and behaviors among disciplines.

Overall, Jõemaa's (2013) study determined that an important factor of student perceptions of master teachers was academic discipline. She also concluded that perceptions changed according to age and that students in Estonia related master teaching to an instructor's subject matter knowledge and classroom skills. Jõemaa (2013) resolved that "just because something has been taught in a certain way and students have adopted this approach, does not mean that it is necessarily the best way for teaching" (p. 31).

Discipline Comparison TBC Research Abroad

Liu, Keeley, & Buskist (2016) conducted a study to determine if students from varying academic disciplines saw different teaching qualities and behaviors as having more value than others. Conducted at a university in Eastern China, 348 students majoring in psychology, education, and chemical engineering participated, with the age range of participants between 18 and 30 years of age.

Each participant ranked each item on the TBC using a Likert scale of 1 (never exhibits this quality) to 5 (frequently exhibits this quality) to rate the extent a master teacher exhibits each quality/behavior (Liu et al., 2016). The research team found that students across the disciplines showed substantial agreement regarding the top 10 items. Overall, all three groups identified respectful, knowledgeable, confident, strives to be a better teacher, and realistic expectations to be in the top 10. While there were similarities there were also differences. Using a multivariate analysis of variance (MANOVA), Liu et al. (2016) determined that there were statistically significant differences for 17 of the 28 items. Psychology and chemical engineering students agreed on 15 items (authoritative, confident, enthusiastic about teaching and about topic, establishes daily and academic term goals, flexible/open-minded, happy/positive attitude/humorous, humble, prepared, presents current information, professional, punctuality/manages class time, realistic expectations of students/fair testing and grading, respectful, sensitive and persistent, and strives to be a better teacher). Seven statistically significant differences were found between the education and chemical engineering students (authoritative, establishes daily and academic term goals, humble, prepared, professional, punctuality/manages class time, and sensitive and persistent). Psychology and education students only exhibited a significant difference on one item, approachable/personable.

Liu et al. (2016) determined that their findings were consistent with those of other studies. They stressed the importance of administrators considering the role of the academic discipline when examining an instructor's student evaluation of teaching to ensure that the data being considered is contextualized. Lastly, Liu et al. stressed that the results of their study should be considered when developing and implementing future student teaching evaluations to ensure that cultural context be taken into account.

Student and Instructor Use of the TBC

Stigall and Blincoe (2015) examined the applicability of the TBC to end-of-the-semester teaching evaluations. Over the course of the 2010-11 academic year, 35 faculty voluntarily participated in a study of student incivility. Instructors were from a variety of disciplines including fine arts/humanities (8); social/behavioral sciences (10); physical sciences (11); and other miscellaneous disciplines (6). The majority of participants held doctoral degrees (26), with six full professors, nine associate professors, six assistant professors, and 14 instructors or non-tenured faculty. Faculty instructor participants were recruited through email, phone, and face-to-face contacts. Faculty participants designated one course to be included in the study from across the undergraduate curriculum: 14 courses at the 100-level; 11 at the 200-level; and 10 at the 300 or above-level (Stigall & Blincoe, 2015). Each course had between 14 and 183 students enrolled for a total of 1,632 student participants. Each instructor agreed to allow a research assistant to attend one class to videotape a 3-minute section of the start of the lecture. Following the class, the research assistant rated the instructor using the TBC. Students present on the day of the data collection were also asked to assess their instructor by completing demographic information, and the student-version of the TBC. Following the class, the instructor also completed the survey information including some background information and the faculty version of the TBC. Student participants ranged across the four class years with 30.4% freshman, 29.3% sophomores, 22.9% juniors, and 16% seniors.

Students rated their instructor using a Likert scale of 1 (not at all) to 7 (definitely) on 3 general items: a) I would take another course with this instructor; b) I wish I hadn't signed up for this class; and c) I would recommend this instructor to a friend. Instructors reported some demographic information and were asked to provide the following information: number of

minutes they spent speaking when giving a 50-minute class, and questions regarding teaching style.

Students were asked to rate their current instructors using the TBC. Instructors were asked to rate themselves when thinking of the course their students were assessing. Both participant groups assessed each quality/behavior using a 5-point Likert scale (A=always exhibits/has exhibited behaviors reflective of this quality to E=Never exhibits/has never exhibited behaviors reflective of this quality). The researchers followed Keeley et al. (2006) recommendations to assess the data collected as a total score and the two subscale scores. The analysis found “high internal reliability for all student rating scales and acceptable internal reliability for the instructors on both the Total and caring scales” (Stigall & Blincoe, 2015, p. 301). However, an acceptable reliability was not found for the instructor competency subscale.

The researchers calculated three TBC scores for each instructor. The analysis determined that higher student ratings “were associated with female instructors, higher expected grades, upper level courses, and smaller classes” (Stigall & Blincoe, 2015, p. 303-304).

Stigall & Blincoe (2015) determined that the TBC was an easy-to-use instrument that incorporated behavioral anchors that allowed instructors to target teaching deficits to improve their teaching. The study showed that using the TBC to evaluate instructors proved that the same characteristics that influence the TBC ratings would also influence other assessment instruments.

Using the TBC with U.S. and Foreign-educated Faculty

Ismail (2014) conducted a study to identify what foreign-educated instructors in the U.S. view as excellence in teaching. A survey was emailed to 5,238 faculty members within the Southern Regional Educational Board. Of those contacted, 448 participants completed the survey, of which 309 received their undergraduate education in the U.S. and 139 were receive

their undergraduate education abroad. The U.S. faculty participants were comprised of 171 male and 138 female participants; 90 male and 48 female foreign-educated participants completed the online survey. Faculty participants were from two disciplinary areas: Science, Technology, Engineering, and Math (247), and Social/Human Sciences (198). Three faculty failed to identify their discipline.

Faculty participants were asked to rank the top 10 teaching qualities and behaviors as outlined in the TBC. Both faculty groups agreed on nine of the 10 qualities/behaviors: a) knowledgeable about topic; b) enthusiastic about teaching; c) creative/interesting; d) promotes critical thinking; e) effective communication; f) approachable/personable; g) encourages/cares for students; h) manages class time/punctuality; and i) accessible. Differences were found between the two faculty groups regarding some qualities/behaviors. Foreign-educated faculty ranked confident, effective communicator, and encourages/cares for students significantly higher than faculty educated in America.

When considering gender, Ismail found that male and female faculty agreed on the first eight qualities/behaviors. However, statistically significant differences were found between the groups when ranking confident, effective communicator, humble, manages class time, creative/interesting, flexible/open-minded, and promotes discussion. Statistically significant differences were also found between foreign-educated and U.S.-educated male faculty regarding their rankings of confident and prepared, and female U.S.-educated faculty and foreign-educated rankings for enthusiastic, prepared, respectful, and encourages/cares for students.

When considering faculty across rank, they agreed on eight of the 10 qualities/behaviors except for order. A Chi-square analysis found that there were differences across faculty rank for encourages/cares for students, and realistic expectations. U.S. and foreign-educated professors

ranked encourages/cares for students at a statistically significant different level, while associate professors differed on encourages/cares for students, enthusiastic about teaching, establishes goals, and provides constructive feedback. Assistant professors differed when ranking on the following teaching qualities/behaviors: enthusiastic about teaching, and effective communicator. Other faculty only had differences when ranking respectful.

Limitations of the TBC

Since the development of the TBC in 2002, a variety of studies have been conducted examining the qualities and behaviors that students and faculty identify as essential for master teaching. These studies have determined that similarities occur across institutions within the U. S. and internationally; however, more research is needed. To date, studies have been limited to undergraduate students. With the inclusion of masters and doctoral-level students, researchers will be better equipped to determine if the TBC can be effectively used to identify the teaching qualities and behaviors those learners identify as essential to master teachers.

Keeley et al. (2012) called for additional research to determine if linkages occur between the qualities/behaviors of excellent teachers and improved student outcomes. Although the TBC has provided students and faculty a mechanism for identifying the teaching qualities and behaviors they feel are essential to master teachers, it has not provided a mechanism for determining if master teaching results in improved student outcomes. However, to transition the research to include this new perspective, the TBC instrument would need to be revised to collect data for future studies. As Keeley and his team also discussed, TBC research has occurred in a limited number of countries and the similarities regarding essential teaching qualities and behaviors could be due to shared educational and teaching approaches.

When applying TBC research outcomes to the research regarding teaching qualities and behaviors of master teachers, lack of rapport as a consistently identified quality/behavior is interesting. However, it is important to note that students and faculty identify teaching qualities and behaviors that are associated with the development of rapport over time (i.e. approachability, knowledge, approachable). With the growing interest in improving student outcomes, more and more scholars are looking to additional research regarding rapport to provide the empirical evidence needed to support the claims that rapport leads to improved student outcomes (Frisby & Myers, 2008; Granitz et al., 2009). Additional TBC research could help bridge this gap: The TBC could be used to create comparisons between student identified master teachers and class performance in those instructor's courses.

Additional research is needed to examine the effectiveness of the TBC to assess qualities and behaviors of faculty across all degree levels to determine differences between years of education. Research has also been relatively limited to students participating in psychology courses. Expansion to other disciplines would provide more in-depth analysis of the TBC and its effectiveness to assess the teaching qualities and behaviors students and faculty in other disciplines identify as essential characteristics of master teachers. The incorporation of data from other disciplines would also expand the literature to include different educational settings. For example, traditionally, schools of health professions use clinical teaching within their curriculum, which expands the learning environment outside of a traditional classroom setting. With the expansion of the literature, researchers would have the data needed to determine if students identify different teaching qualities and behaviors in different learning environments.

Master Teachers and the Future

TBC research continues to contribute to the overall theories associated with master teachers. As more and more scholars assess the qualities and behaviors of master teachers, additional research associated with the TBC has been collected and discussed (Boysen, Tichmond, & Gurung, 2015; Gurung, Daniel, & Landrum, 2012; Komarraju, 2013; McGovern & Miller, 2008; Mowrer et al., 2004). Scholars continue to examine TBC studies, analyzing the research findings to assess the qualities and behaviors identified as essential to master teaching and applying those findings to the prescribed ideals of master teachers. These qualities and behaviors have become considered essential components of master teaching and scholars are now theorizing about the relationship between master teachers and improved student outcomes (Boysen et al, 2015; Frisby & Myers, 2008; Ryan & Wilson, 2014).

Research examining the effectiveness and usability of the TBC has provided specific guidelines for the objectives future faculty members should strive to achieve. As Keeley et al. (2012) noted, “research on the qualities and characteristics of master teaching is honing in on those few qualities that may represent universal principles of mastering teaching” (p. 386). Through future TBC research, scholars can continue to examine results to see if these principles appear as the qualities previously identified as aspects of master teaching in new study populations.

Research from the TBC has provided four achievable qualities and behaviors (knowledgeable, effective communicator, enthusiasm, and approachable/personable) for new teaching faculty to strive to reach (Keeley et al., 2012). Viewed as simple behaviors, these attributes are essential pieces of an instructor’s repertoire to ensure that faculty have practical and effective teaching skills needed to improve student learning (Keeley et al., 2012). However,

building one's teaching skillset is a lengthy process and faculty should understand that no instructor becomes a master teacher overnight. To become a master teacher, scholars have identified three common themes that are necessary qualities: knowledge, personality, and classroom management skills (e.g., Buskist et al., 2002). A new faculty member may have the knowledge needed to serve as a master teacher but may require additional training in classroom management skills and/or pedagogical techniques. The same could be said regarding a faculty member who has the personality to be a master teacher but lacks the depth of knowledge required. An example of this divide would be junior faculty members who are passionate about teaching their subject matter to students but lack the knowledge and depth of relevant examples as more seasoned faculty. Such a deficit is likely to improve over time with professional development, thus enhancing junior faculty members' ability to transition into master teachers.

However, to become master teachers, faculty must be cognizant of the learning environment in which they are teaching. For example, in recent years, educational scholars have begun examining the role of student consumerism in higher education (Cain et al., 2014; Holdford, 2014; Jeffres et al., 2014; Turnipseed & Cohen, 2015). With the increasing number of millennial students entering higher education, faculty are encountering students demonstrating a sense of academic entitlement, or the tendency among students to "expect academic success without taking personal responsibility for achieving that success" (Holdford, 2014, p. 1). As students' attitudes change, the level of responsibility they feel for accomplishing academic success dwindles, resulting in projecting that responsibility to their faculty instructors. Should this shift in responsibility occur, the teaching qualities and behaviors students identify as essential to master teaching may change as well. This shift could change the qualities and behaviors most associated with effective master teachers. To ensure that this change does not

occur, it is important that instructors monitor and try to eliminate this sense of entitlement and consumerism. Holdford (2014) suggests altering students' views of their role as a consumer who purchases a degree to that of a co-producer of the final product of their education. As future faculty strive to become master teachers, they will be responsible for continuing to ensure that students view their education as an opportunity to learn and prepare for a future career.

The Future of Pharmacy Education

Pharmacy education today looks very similar to what was offered 60 years ago (Allen, 2013). While pharmacy programs have transitioned to four and six-year graduate programs, the curriculum remains consistent. However, with the recent adoption of the 2016 ACPE accreditation standards recently released, new education opportunities may be on the horizon. The new emphasis on interprofessional education requirements in these standards will stimulate pharmacy programs to create additional flexibility within their course curriculum. If a program wishes to be in compliance with the new standards, opportunities for pharmacy students to work with other members of the other healthcare professions must be introduced.

Student's perceptions of education must also evolve to ensure that pharmacy education continues to progress in the future. To truly ensure that students are prepared to enter into the workforce, students must eliminate their sense of entitlement and consumerism. Students must begin to view their education as a product and the patients they serve as the consumer (Holdford, 2014). Until that mental change can be made, the education system will continue to struggle to adequately educate millennials.

The perception of patients as consumers produces "a more sophisticated relationship and approach to education results" (Holdford, 2014, p. 3). By applying this principle, faculty and

students must work together to establish professional competence, leading both students and faculty to become intertwined in the educational process.

Colleges and programs should also modify their view of students, from consumers to products. By adequately preparing students, programs are showing evidence to their stakeholders that they produce graduates prepared to enter the field with skills and abilities needed to produce the highest standards of practice, professionalism, and ethical behavior (Holdford, 2014). It is essential that students and faculty agree “the primary purpose of pharmacy education is to prepare students to serve patients” and that providing premium patient care is the ultimate product (Holdford, 2014, p. 5).

It is also essential to ensure that the future generation of pharmacy educators are adequately trained to enter the classroom. The ability to recruit and retain pharmacy faculty members continues to remain a challenge (Poirier & Santanello, 2010). By preparing faculty to integrate the best teaching and learning opportunities into the PharmD curriculum, students will complete their degree programs with the necessary resources to excel as practicing practitioners. However, to do this effectively, schools of pharmacy must have master teachers leading the charge.

Chapter 3: Methods

Introduction

Over the last 15 years, academic pharmacy has grown immensely with multiple new pharmacy programs requiring an increased number of faculty instructors. Typically, however, pharmacy faculty are not prepared to educate students in “skills such as critical thinking and problem solving; working teams and collaborating; communicating with others; and finding and analyzing information” (Lancaster et al., 2014, p.1). With the increasing number of pharmacy programs, competition for students also continues to rise, providing students with multiple program options (Cain et al., 2012). To ensure that pharmacy programs recruit the best students, the need for quality instructors is essential. As Buskist et al. (2002) noted, to ensure that faculty are better prepared to meet the changing needs, faculty must strive to be master teachers. As master teachers, faculty will have the knowledge and skills needed to successfully reach their students to ensure they are prepared to enter the workforce. To meet these needs, pharmacy faculty must be prepared to equip students with the knowledge, skills, and abilities to provide the best patient care. This chapter outlines the steps taken to identify the teaching qualities and behaviors pharmacy faculty and student pharmacists consider as essential to teaching within a pharmacy curriculum.

Purpose of the Study

The purpose of the study was to identify the teaching qualities and behaviors student pharmacists and pharmacy faculty identify as essential to effective teaching. This study compared pharmacy faculty responses across career levels (i.e. adjunct, assistant, associate, full

professor) and student pharmacists across student rank (i.e. first, second, or third-year) to identify commonalities and differences between gender, ethnicity, and geographical region.

Research Questions

1. Do pharmacy faculty select similar qualities and behaviors across career levels (i.e. adjunct, assistant, associate, and full professors)?
2. Do student pharmacists identify the same teaching qualities and behaviors of effective master teachers across years of study?
3. Do pharmacy faculty and student pharmacists identify the same teaching qualities and behaviors as essential to effective teaching?

Research Design

This study focused on identifying the teaching qualities and behaviors that pharmacy faculty and student pharmacists identify as essential in teaching. Using a survey design, participants were asked to identify the top 10 qualities/behaviors from the TBC's 28 items. The goal of this survey was to compare pharmacy faculty responses to those of student pharmacists. University websites were used to gather faculty emails to survey a large faculty population within schools of pharmacy in the Southeastern Athletic Conference. Student pharmacists were recruited from willing institutions that were open to sharing the survey with their student body.

Instrument

For this study, the survey instrument was developed and based off the Teacher Behavior Checklist (TBC), a 28-item survey tool (Buskist et al., 2002). The TBC was used to identify essential teaching qualities and behaviors student pharmacists and pharmacy faculty identified as effective in master teaching. The TBC is comprised of two subscales, caring and supportive (items 1, 7, 8, 10, 13, 16, 18, 19, 20, 22, 23, 25, and 28) and professional competency and

communication skills (items 2, 3, 4, 6, 11, 12, 14, 15, 21, 24, and 27) [See Appendix A]. Four items were not used (5, 9, 17, and 26).

Studies conducted by Keeley et al. (2006) showed the TBC to be psychometrically sound, with a high internal reliability, and a strong test-retest reliability. Using the Pearson correlation, Keeley et al. determined that all 28 items had r values between .24 to .64 ($p < .001$ for 19 items). The coefficient for the total scale was .71 ($p < .001$), with the reliability ratings of .68 ($p < .001$) for the caring and supportive subscale and a reliability score of .72 ($p < .001$) for the professional competency and communication skills subscales.

Survey Instrument

Two survey instruments were designed for this study. The first instrument was designed for faculty use and included six questions. The first five questions asked participants to identify their faculty rank, location of their School of Pharmacy (Midwest, Northeast, South, West), gender, age range and race/ethnicity. The final question asked faculty to identify the 10 qualities/behaviors they identified as essential to teaching [Appendix B]. The TBC checklist appeared within the survey as it was initially designed by Buskist et al (2002) and included both the qualities/behaviors as well as their descriptors.

The student survey instrument also included six questions. The first five questions were demographic questions (year of study, school location, gender, age range, and race/ethnicity). The final question asked students to identify the 10 qualities/behaviors essential to pharmacy faculty teaching [Appendix C].

Participants

Pharmacy faculty participants were identified using publically available schools of pharmacy websites. Ten institution websites of schools located within the SEC were reviewed to

obtain the email addresses of pharmacy faculty. All email addresses were stored in an Excel spreadsheet for tracking purposes and future correspondence. Faculty members were contacted by school as a group via email to participate in the survey. All participation in the survey was anonymous and voluntary.

Due to FERPA concerns and privacy issues, the researcher worked with the Associate Dean of Academics and Student Affairs at Auburn University's Harrison School of Pharmacy to identify potential student survey respondents. The Associate Dean contacted his counterparts at other institutions via email to determine which programs would be willing to share the survey with their students. Once personnel indicated their willingness to distribute the survey to their students, the researcher contacted the university official to provide the survey information letter, survey link, and email verbiage.

Data Collection and Procedures

University specific survey links were provided to both student and faculty participants. Each survey was designed and housed within Auburn University's Qualtrics platform. Participants accessed the survey link via a distributed email and had the ability to exit the survey at any time. The study protocol and all survey documents were approved by Auburn University's Institutional Review Board before contact with any institutions [Appendix D].

Data Analysis

Data were collected over a four-month period to answer the three proposed research questions. Participants provided limited demographic data and identified the top 10 qualities and behaviors they felt were essential to pharmacy teaching. Statistical software, SPSS version 23, was used for all analyses.

To answer Research Question One, pharmacy faculty were asked to identify 10 qualities and behaviors from the 28-item list as essential to master teaching. Unlike some previous studies, participants were not asked to rank the items but only identify the 10 they felt were essential. The pharmacy faculty responses were assessed to identify similarities and differences across variables. Descriptive statistics were analyzed to determine frequency. An ANOVA was conducted to identify differences across the groups and Tukey and Bonferroni post-hoc tests were used for pairwise comparisons. The ANOVA was used as it determines statistical significant differences among means and can be used between two or more groups (Fraenkel, Wallen, & Hyun, 2012).

To answer Research Question Two, student pharmacists identified the 10 teaching qualities and behaviors they felt should be present in pharmacy faculty teaching. Their responses were calculated to determine what teaching qualities and behaviors were selected across years of study. Descriptive statistics were used to identify the top 10 qualities/behaviors, with an ANOVA calculating differences across groups, and a Tukey and Bonferroni post-hoc test identifying pairwise differences.

To answer Research Question Three, pharmacy faculty and student pharmacists' responses were compared. Descriptive statistics were calculated to determine the frequency and percentage of responses for all items. The sum of frequencies was used to identify the top 10 qualities/behaviors for each participant group (i.e. faculty, students, gender, age). The analysis of variance (ANOVA) was used to identify differences between groups, with Tukey and Bonferroni post-hoc tests used to identify differences between pairs. A non-parametric chi-square test was used to compare means of each TBC item and within groups. The chi-square test was selected because of the appropriateness for use when data are in the form of frequency counts and

compares frequencies observed to frequencies expected to determine if there are significant differences (Fraenkel et al., 2012).

Limitations

The decision to use an online survey proved to have some advantages. The ease of distribution and follow-up allowed for timely contact with potential participants. As access to the survey was provided via email, potential participants were able to link directly to the survey instrument. A limitation of this online survey was the low response rate for faculty participants. The faculty response rate for the survey was 24.6%, which may have increased with face-to-face survey completion as was the norm in earlier studies (Buskist et al., 2002; Schaeffer et al., 2003).

An additional limitation of the study included the limited access to student participants. Due to FERPA restrictions, all student pharmacist research was reliant on the willingness of academic administrators at schools of pharmacy to share the online survey link with their students. Most schools cited survey burden as the main reason for their non-participation. The limited student response rate resulted in small correlated faculty to student institution comparison. However, the data collected proved sufficient for a pilot study that may lead to further future research.

Summary

This chapter outlined the study design and procedures for collecting data to answer the proposed research questions. The participant sample consisted of pharmacy faculty and student pharmacists from institutions located within the SEC. The instrument used for the study was the TBC and demographic questions specific to the participant population. The collection and analysis procedures were outlined and additional information regarding the results of the analyses is included in Chapter 4.

Chapter 4: Findings

Introduction

Over the last 15 years, academic pharmacy has grown immensely. This growth in new pharmacy programs has increased the need for faculty instructors. Typically, however, these pharmacy faculty are not prepared to educate students in “skills such as critical thinking and problem solving; working teams and collaborating; communicating with others; and finding and analyzing information” (Lancaster et al., 2014, p.1). With the increasing number of pharmacy programs, competition for students also continues to rise, providing students with multiple program options (Cain et al., 2012). To ensure that pharmacy programs recruit the best students, the need for quality instructors is essential. As Buskist et al. (2002) notes, to ensure that the pharmacy faculty are better prepared to meet the changing needs, faculty must strive to be master teachers. As master teachers, faculty will have the knowledge and skills needed to successfully reach their students to ensure they are prepared to enter the workforce. Faculty must be prepared to equip students with the knowledge, skills and abilities so that future pharmacists may provide the best patient care. This chapter discusses the analysis of the proposed study and outlines the study findings.

Purpose of the Study

The purpose of the study was to identify the teaching qualities and behaviors student pharmacists and pharmacy faculty identify as essential to effective teaching. This study compared pharmacy faculty responses across career levels (i.e. adjunct, assistant, associate, full

professor) and student pharmacists across student rank (i.e. first, second, or third-year) to identify commonalities and differences between gender, ethnicity, and geographical region.

Research Questions

1. Do pharmacy faculty select similar qualities and behaviors across career levels (i.e. adjunct, assistant, associate, and full professors)?
2. Do student pharmacists identify the same teaching qualities and behaviors of effective master teachers across years of study?
3. Do pharmacy faculty and student pharmacists identify the same teaching qualities and behaviors as essential to effective teaching?

Instrument

The Teacher Behavior Checklist (TBC), a 28-item survey tool, was used to identify the top 10 teaching qualities and behaviors pharmacy faculty and student pharmacists feel are essential in teaching. The TBC is comprised of two subscales, caring and supportive, and professional competency and communication skills. Psychometrically sound, the TBC has strong test-retest reliability and high internal reliability.

Participant Demographics

Research participants included 213 student pharmacists and 211 pharmacy faculty. Student pharmacists were currently enrolled in the first, second, or third-year of their pharmacy education. All fourth-year students were excluded from the sample as these students were no longer learning in a classroom environment. Faculty from schools of pharmacy located within the Southeastern Athletic Conference (SEC) were invited to participate in the study.

Faculty Sample

Pharmacy faculty were recruited from pharmacy schools located in the SEC. Across the 10 institutions, 856 faculty had valid email addresses and were contacted by email soliciting their participation. Of those contacted, 246 participants started the survey with 211 faculty (24.6%) completing the survey. Faculty respondents included Assistant Professors (71), Associate Professors (71), Full Professor (50), Adjuncts (3), and Facilitators (3). Thirteen participants indicated other which included administrative staff, academic professional, affiliate faculty, clinical associate professor, instructor, professor emeritus, research assistant professor and senior public service associate. For the analysis, all adjuncts, facilitators, and others were assessed as one faculty rank. Faculty participants were primarily from the south (191). The gender equity was relatively even (108 male [51.2%], 102 female [48.3%]) with 52.6% of faculty averaging between 40-49 years of age (61) and 30-39 years of age (50).

In comparison to the 2014-15 American Association of Colleges of Pharmacy (AACP) Faculty Data Survey, the study's faculty participant sample is representative of the current faculty pool at schools of pharmacy in the United States (American Association of Colleges of Pharmacy [AACP], 2015). In the 2014-15 report, the AACP analyzed the responses of 7,016 full-time, part-time, and emeriti status faculty members. The response rate for the survey was 98.5% for demographic data. However, the total number of responses varied between survey questions.

A total of 6,244 faculty indicated gender, with 3,186 (51%) indicating male and 3,058 indicating female (49%) for full-time faculty. Of the 290 part-time faculty, 150 indicated male with 140 indicating female (see Table 4.1). Overall, the total number of respondents when considering both full-time and part-time faculty retained the overall average of 51% male/49%

female. The report also showed that of the 6,241 responders, the majority of pharmacy faculty were white (69%) and between the ages of 40-59 (50.6%) (AACP, 2015).

Table 4.1: Diversity Breakdown from 2014-15 AACP Report

Gender	Ethnicity								
	White	Black or African American	Hispanic or Latino	Asian	Native Hawaiian or Pacific Islander	American Indian	Two or More	Unknown	International / Foreign
Male	2,159	111	79	519	3	5	2	172	133
Female	2,156	167	100	386	4	5	3	168	69
Total	4,315 (69%)	278 (4.5%)	179 (2.9%)	905 (14.5%)	7 (0.1%)	10 (0.2%)	5 (0.1%)	340 (5.4%)	202 (3.2%)

Student Sample

Students from four institutions, Auburn University, University of Florida, University of Georgia, and the University of Kentucky, participated in the survey. All survey requests were sent via email and all responses were anonymous. Of the 213 complete responses, the majority of respondents were female (74.2%), white (78.9%) and between the ages of 21 and 29 (89.7%).

AACP’s student 2014 survey found that 63,927 students were enrolled in a PharmD Program (AACP, 2015). Of those students, 48% indicated that they were 25 years of age or younger; 38.6% were between 26-30 years old; 8.3% between 31 and 35; and 5% were 36 years of age or older. Student responses indicated 61.4% female and 38.6% male. The male/female participant ratio for the study is slightly outside the AACP’s 2014 survey demographics; however, the age range and ethnicity demographics are congruent with the AACP study findings.

Analysis

To understand study findings, the data collected were analyzed to examine faculty and student responses both individually and collectively. A one-way ANOVA was conducted to evaluate the relationships between faculty and items within the TBC. An ANOVA was also used to establish relationships between students and the TBC. The following sections outline those findings.

Faculty

Of the 28-items, faculty identified knowledgeable about subject matter (77.7%) as the top teaching quality/behavior necessary in pharmacy faculty (see Table 4.2). Faculty identified enthusiastic about teaching and about topic (69.7%); promotes critical thinking/intellectually stimulating (69.7%); effective communicator (65.9%); strives to be a better teacher (65.4%); approachable/personable (60.7%); prepared (49.8%); respectful (48.3%); confident (45%); and creative and interesting (42.7%) as the remaining nine.

Table 4.2: TBC Faculty Results by Total Responses and Gender

	Total Responses	Male	Female
Knowledgeable about Subject Matter	164	84	79
Enthusiastic about Teaching and about Topic	147	77	69
Promotes Critical Thinking/Intellectually Stimulating	147	74	72
Effective Communicator	139	71	67
Strives to be a Better Teacher	138	63	75
Approachable/Personable	128	60	67
Prepared	105	57	47
Respectful	102	56	46
Confident	95	50	44
Creative and Interesting	90	44	45
Encourages and Cares for Students	82	48	33
Realistic Expectations of Students/Fair Testing and Grading	82	40	41
Presents Current Information	79	41	38
Provides Constructive Feedback	77	26	50
Accessible	68	44	23
Promotes Class Discussion	59	27	31
Good Listener	54	33	21
Professional	51	29	21
Punctuality/Manages Class Time	46	28	17
Humble	43	28	14
Flexible/Open-minded	42	19	23
Understanding	42	20	22
Happy/Positive Attitude/Humorous	39	26	12
Authoritative	36	20	15
Technologically Competent	34	13	21
Sensitive and Persistent	32	19	13
Establishes Daily and Academic Term Goals	29	11	18
Rapport	27	13	13

Within the 10 items, there were differences between male and female faculty [Table 4.2].

Male faculty identified accessible and confident as essential teaching qualities/behaviors, while

female faculty identified provides constructive feedback. The ANOVA [Table 4.3] was significant for gender groups and accessible ($F(1, 208) = 8.228, p=.005$); happy/positive attitude/humorous ($F(1, 208) = 5.451, p=.021$); humble ($F(1, 208) = 4.949, p=.027$); provides constructive feedback ($F(1, 208) = 15.011, p=.000$); and strives to be a better teacher ($F(1, 208) = 5.465, p=.020$). No post hoc tests were performed as there were fewer than three groups.

Table 4.3: TBC Faculty Differences Between Groups for Gender and Age

Quality/Behavior		Gender					Age					
		Sum of Squares	Df	Mean Square	F	Sig.	Sum of Squares	df	Mean Square	F	Sig.	
Accessible	Between Groups	1.736	1	1.736	8.228	.005	Between Groups	3.574	5	.715	3.447	.005
	Within Groups	43.888	208	.211			Within Groups	42.512	205	.207		
	Total	45.624	209				Total	46.085	210			
Approachable / Personable	Between Groups	.538	1	.538	2.255	.135	Between Groups	1.183	5	.237	.987	.427
	Within Groups	49.657	208	.239			Within Groups	49.167	205	.240		
	Total	50.195	209				Total	50.351	210			
Authoritative	Between Groups	.076	1	.076	.545	.461	Between Groups	1.800	5	.360	2.630	.025
	Within Groups	29.090	208	.140			Within Groups	28.058	205	.137		
	Total	29.167	209				Total	29.858	210			
Confident	Between Groups	.052	1	.052	.210	.647	Between Groups	.886	5	.177	.708	.618
	Within Groups	51.871	208	.249			Within Groups	51.341	205	.250		
	Total	81.924	209				Total	52.227	210			
Creative and Interesting	Between Groups	.060	1	.060	.243	.623	Between Groups	.694	5	.139	.559	.731
	Within Groups	51.221	208	.246			Within Groups	50.917	205	.248		
	Total	51.281	209				Total	51.611	210			
Effective Communicator	Between Groups	.002	1	.002	.010	.919	Between Groups	.787	5	.157	.695	.628
	Within Groups	46.878	207	.226			Within Groups	46.208	204	.227		
	Total	46.880	208				Total	46.995	209			
Encourages and Cares for Students	Between Groups	.767	1	.767	3.256	.073	Between Groups	2.814	2	.563	2.438	.036
	Within Groups	48.990	208	.236			Within Groups	47.319	205	.231		
	Total	49.757	209				Total	50.133	210			
Enthusiastic about Teaching and about Topic	Between Groups	.070	1	.070	.327	.568	Between Groups	2.652	5	.530	2.592	.027
	Within Groups	44.425	208	.214			Within Groups	41.936	205	.205		
	Total	44.495	209				Total	44.588	210			
Establishes Daily and Academic Term Goals	Between Groups	.292	1	.292	2.459	.118	Between Groups	.577	5	.115	.969	.438
	Within Groups	24.703	208	.119			Within Groups	24.437	205	.119		
	Total	24.995	209				Total	25.014	210			
Flexible / Open-minded	Between Groups	.129	1	.129	.801	.372	Between Groups	.700	5	.140	1.006	.415
	Within Groups	33.471	208	.161			Within Groups	32.940	205	.161		
	Total	33.600	209				Total	33.640	210			
Good Listener	Between Groups	.521	1	.521	2.738	.100	Between Groups	.962	5	.192	1.006	.415
	Within Groups	39.593	208	.190			Within Groups	39.218	205	.191		
	Total	40.114	209				Total	40.180	210			
Happy / Positive Attitude / Humorous	Between Groups	.795	1	.795	5.451	.021	Between Groups	.196	5	.039	.254	.937
	Within Groups	30.329	208	.146			Within Groups	31.596	205	.154		

	Total	31.124	209				Total	31.791	210			
Humble	Between Groups	.781	1	.781	4.949	.027	Between Groups	.273	5	.055	.329	.895
	Within Groups	32.819	208	.158			Within Groups	33.964	205	.166		
	Total	33.600	209				Total	34.237	210			
Knowledgeable about Subject Matter	Between Groups	.001	1	.001	.003	.955	Between Groups	1.215	5	.243	1.411	.222
	Within Groups	36.480	208	.175			Within Groups	35.316	205	.172		
	Total	36.481	209				Total	36.531	210			
Prepared	Between Groups	.235	1	.235	.937	.334	Between Groups	3.516	5	.703	2.928	.014
	Within Groups	52.260	208	.251			Within Groups	49.233	205	.240		
	Total	52.495	209				Total	52.749	210			
Presents Current Information	Between Groups	.003	1	.003	.011	.916	Between Groups	3.423	5	.685	3.051	.011
	Within Groups	49.278	208	.237			Within Groups	45.999	205	.224		
	Total	49.281	209				Total	49.422	210			
Professional	Between Groups	.206	1	.206	1.130	.289	Between Groups	.459	5	.092	.492	.782
	Within Groups	37.889	208	.182			Within Groups	38.214	205	.186		
	Total	38.095	209				Total	38.673	210			
Promotes Class Discussion	Between Groups	.153	1	.153	.758	.385	Between Groups	1.280	5	.256	1.273	.277
	Within Groups	41.828	208	.201			Within Groups	41.222	205	.201		
	Total	41.981	209				Total	42.502	210			
Promotes Critical Thinking / Intellectually Stimulating	Between Groups	.022	1	.022	.105	.746	Between Groups	1.988	5	.398	1.913	.094
	Within Groups	44.473	208	.214			Within Groups	42.600	205	.208		
	Total	44.495	209				Total	44.588	210			
Provides Constructive Feedback	Between Groups	3.264	1	.450	2.680	.103	Between Groups	2.136	5	.427	1.873	.1014
	Within Groups	45.231	208	.168			Within Groups	46.764	205	.228		
	Total	48.495	209				Total	48.900	210			
Punctuality / Manages Class Time	Between Groups	.450	1	.450	2.680	.103	Between Groups	1.019	5	.204	1.195	.313
	Within Groups	34.907	208	.168			Within Groups	34.953	205	.171		
	Total	35.357	209				Total	35.972	210			
Rapport	Between Groups	.003	1	.003	.024	.877	Between Groups	.595	5	.119	1.063	.382
	Within Groups	22.778	208	.110			Within Groups	22.950	205	.112		
	Total	22.781	209				Total	23.545	210			
Realistic Expectations of Students / Fair Testing and Grading	Between Groups	.052	1	.052	.219	.640	Between Groups	.337	5	.067	.278	.925
	Within Groups	49.705	208	.239			Within Groups	49.795	205	.243		
	Total	49.757	209				Total	50.133	210			
Respectful	Between Groups	.208	1	.208	.826	.364	Between Groups	2.857	5	.571	2.350	.042
	Within Groups	52.012	207	.251			Within Groups	49.600	204	.243		
	Total	52.220	208				Total	52.457	209			

Sensitive and Persistent	Between Groups	.123	1	.123	.950	.331	Between Groups	1.320	5	.264	2.096	.067
	Within Groups	27.001	208	.130			Within Groups	25.827	205	.126		
	Total	27.124	209				Total	27.147	210			
Strives to be a Better Teacher	Between Groups	1.211	1	1.211	5.465	.020	Between Groups	4.288	5	.858	4.045	.002
	Within Groups	46.103	208	.222			Within Groups	43.456	205	.212		
	Total	47.314	209				Total	47.744	210			
Technologically Competent	Between Groups	.384	1	.384	2.838	.094	Between Groups	.949	5	.190	1.411	.221
	Within Groups	28.112	208	.135			Within Groups	27.572	205	.134		
	Total	28.495	209				Total	28.521	210			
Understanding	Between Groups	.049	1	.049	.303	.583	Between Groups	.837	5	.167	1.046	.392
	Within Groups	33.551	208	.161			Within Groups	32.803	205	.160		
	Total	33.600	209				Total	33.640	210			

When examining ethnicity there were statistically significant differences between the gender groups for the following teaching qualities/behaviors: authoritative ($F(6, 204) = 3.614$, $p=.002$); encourages and cares for students ($F(6, 204) = 2.438$, $p=.027$); enthusiastic about teaching/topic ($F(6, 204) = 2.192$, $p=.045$); happy/positive attitude/humorous ($F(6, 204) = 3.545$, $p=.002$); and rapport ($F(6, 204) = 2.251$, $p=.040$). While there were statistically significant differences between the groups, no differences were identified between the pairs as no post hoc tests could be performed as at least one group had fewer than two cases.

Answering Research Question One

Table 4.4 outlines the faculty survey responses by faculty rank, ethnicity and age. The findings confirmed Research Question One. When considering faculty selections across rank, faculty agreed on seven of the 10 teaching qualities and behaviors (approachable/personable; effective communicator; enthusiastic about teaching and about topic; knowledgeable about subject matter; prepared; promotes critical thinking/intellectually stimulating; and strives to be a better teacher). The majority of respondents selected knowledgeable about subject matter, enthusiastic about teaching and about topic, and promotes critical thinking/intellectually stimulating.

Assistant, associate and other faculty members (i.e. administrative staff, affiliate faculty, instructors) agreed that creative and interesting was essential and included this quality/behavior in one of the remaining top 10 selections. Professors and other faculty agreed that respectful was essential, while full professors identified accessible and presents current information to round out their top 10. Table 4.5 depicts the top 10 qualities/behaviors selected according to faculty rank.

Table 4.4: Faculty TBC Breakdown by Rank, Ethnicity, & Age

Quality/Behavior	Faculty Rank				Ethnicity							Age					
	Assistant (N=71)	Associate (N=71)	Full (N=50)	Other (N=19)	Asian (N=18)	Black or African American (N=4)	Native Hawaiian or Pacific Islander (N=1)	White (N=178)	Hispanic (N=2)	Other (N=4)	Not Indicated (N=4)	20-29 (N=19)	30-39 (N=50)	40-49 (N=61)	50-59 (N=46)	60-69 (N=31)	70+ (N=4)
Accessible	16	25	22	5	11	0	0	55	1	1	0	3	12	18	16	15	4
Approachable/Personable	47	38	31	12	14	3	0	108	0	2	1	13	33	39	22	18	3
Authoritative	12	13	5	6	9	2	0	25	0	0	0	1	8	13	6	5	3
Confident	36	30	21	8	9	2	0	82	0	1	1	10	24	23	20	15	3
Creative and Interesting	32	31	17	10	12	1	0	73	1	2	1	8	19	30	21	11	1
Effective Communicator	44	50	32	13	9	2	0	125	0	2	1	13	34	41	26	23	2
Encourages and Cares for Students	30	24	19	9	12	3	0	66	1	0	0	11	15	29	12	12	3
Enthusiastic about Teaching/Topic	49	52	33	13	12	3	0	127	2	3	0	10	39	47	25	24	2
Establishes Daily and Academic Term Goals	9	10	7	3	2	0	0	26	0	1	0	0	7	10	6	6	0
Flexible/Open-minded	22	11	7	2	5	0	0	35	1	1	0	6	12	10	7	7	0
Good Listener	24	9	15	6	9	0	0	44	0	1	0	5	11	13	11	12	2
Happy/Positive Attitude/Humorous	12	12	10	5	10	0	0	28	0	1	0	5	8	12	8	5	1
Humble	18	14	9	2	8	0	0	32	1	1	1	3	10	13	11	6	0
Knowledgeable about Subject Matter	49	58	42	15	11	4	0	142	2	3	2	13	40	42	39	26	4
Prepared	32	36	27	10	7	2	0	93	1	2	0	8	17	35	31	12	2
Presents Current Information	22	27	22	8	5	3	0	68	1	1	1	6	15	24	14	20	0
Professional	16	15	15	5	7	2	0	40	1	0	1	4	11	15	13	6	2
Promotes Class Discussion	22	20	12	5	8	0	0	49	0	1	1	2	13	20	16	8	0
Promotes Critical Thinking/Intellectually Stimulating	52	51	31	13	12	3	1	124	2	3	2	15	35	43	36	17	1
Constructive Feedback	32	27	9	9	10	2	1	61	1	2	0	10	20	25	16	6	0
Punctuality/Manages Class Time	13	13	15	5	5	2	1	36	0	1	1	2	9	12	11	10	2
Rapport	14	7	6	0	5	0	1	19	0	1	1	5	8	6	4	4	0
Realistic Expectations of Students/Fair Testing and Grading	25	33	17	7	9	1	1	66	2	3	0	7	19	26	19	10	1
Respectful	30	29	32	11	9	2	1	85	2	1	2	5	19	28	28	19	3
Sensitive and Persistent	11	8	9	4	4	0	1	26	0	0	1	3	2	9	12	6	0
Strives to be a Better Teacher	49	52	27	10	9	3	1	118	1	4	2	11	39	40	35	12	1
Technologically Competent	9	12	9	4	4	0	1	25	1	2	1	0	9	7	10	7	1
Understanding	15	12	8	7	5	2	1	34	0	0	0	1	10	15	8	8	0

Table 4.5: Faculty Rank Response Ratings

Quality/Behavior	Assistant Professor	Associate Professor	Full Professor	Other Faculty
Accessible			9	
Approachable/Personable	5	6	5	5
Confident	7	10		
Creative and Interesting	8	9		7
Effective Communicator	6	5	3	2
Encourages and Cares for Students				10
Enthusiastic about Teaching and about Topic	2	2	2	2
Knowledgeable about Subject Matter	2	1	1	1
Prepared	8	7	7	7
Presents Current Information			9	
Promotes Critical Thinking/Intellectually Stimulating	1	4	5	2
Provides Constructive Feedback	8			10
Realistic Expectations of Students/Fair Testing and Grading		8		
Respectful			3	6
Strives to be a Better Teacher	2	2	7	7

The initial ANOVA findings [Table 4.6] determined that significant differences did occur when identifying the teaching qualities/behaviors essential to teaching between faculty rank: flexible/open minded ($F(3, 207) = 2.888, p=.037$); good listener ($F(3, 207) = 3.289, p=.022$); and respectful ($F(3, 206) = 2.733; p=.045$). However, these differences primarily occurred in qualities and behaviors that received a limited number of votes by faculty.

Table 4.6: Faculty Differences between Groups for Faculty Rank

Quality/Behavior		Sum of Squares	df	Mean Square	F	Sig.
Accessible	Between Groups	1.490	3	.497	2.305	.078
	Within Groups	44.596	207	.215		
	Total	46.085	210			
Approachable / Personable	Between Groups	.600	3	.200	.833	.477
	Within Groups	49.750	207	.240		
	Total	50.351	210			
Authoritative	Between Groups	.661	3	.220	1.562	.200
	Within Groups	29.197	207	.141		
	Total	29.858	210			
Confident	Between Groups	.345	3	.115	.459	.711
	Within Groups	51.882	207	.251		
	Total	52.227	210			
Creative and Interesting	Between Groups	.612	3	.204	.828	.480
	Within Groups	50.999	207	.246		
	Total	51.611	210			
Effective Communicator	Between Groups	.352	3	.117	.518	.670
	Within Groups	46.643	206	.226		
	Total	46.995	209			

Encourages and Cares for Students	Between Groups Within Groups Total	.405 49.728 50.133	3 207 210	.135 .240	.561	.641
Enthusiastic about Teaching and about Topic	Between Groups Within Groups Total	.164 44.424 44.588	3 207 210	.055 .215	.254	.858
Establishes Daily and Academic Term Goals	Between Groups Within Groups Total	.017 24.997 25.014	3 207 210	.006 .121	.047	.986
Flexible / Open-minded	Between Groups Within Groups Total	1.351 32.288 33.640	3 207 210	.450 .156	2.888	.037
Good Listener	Between Groups Within Groups Total	1.828 38.352 40.180	3 207 210	.609 .185	3.289	.022
Happy / Positive Attitude / Humorous	Between Groups Within Groups Total	.164 31.628 31.791	3 207 210	.055 .153	.357	.784
Humble	Between Groups Within Groups Total	.391 33.846 34.237	3 207 210	.130 .164	.798	.496
Knowledgeable about Subject Matter	Between Groups Within Groups Total	.850 35.681 36.531	3 207 210	.283 .172	1.644	.180
Prepared	Between Groups Within Groups Total	.268 52.481 52.749	3 207 210	.089 .254	.352	.787
Presents Current Information	Between Groups Within Groups Total	.555 48.867 49.422	3 207 210	.185 .236	.783	.504
Professional	Between Groups Within Groups Total	.263 38.410 38.673	3 207 210	.088 .186	.473	.701
Promotes Class Discussion	Between Groups Within Groups Total	.149 42.354 42.502	3 207 210	.050 .205	.243	.867
Promotes Critical Thinking / Intellectually Stimulating	Between Groups Within Groups Total	.421 44.167 44.588	3 207 210	.140 .213	.657	.579
Provides Constructive Feedback	Between Groups Within Groups Total	2.474 46.427 48.900	3 207 210	.239 .110	2.163	.093
Punctuality / Manages Class Time	Between Groups Within Groups Total	.548 35.424 35.972	3 207 210	.183 .171	1.067	.364
Rapport	Between Groups Within Groups Total	.716 22.829 23.545	3 207 210	.239 .110	2.163	.093
Realistic Expectations of Students / Fair Testing and Grading	Between Groups Within Groups Total	.632 49.500 50.133	3 207 210	.211 .239	.882	.451
Respectful	Between Groups Within Groups Total	2.008 50.449 52.457	3 206 209	.669 .245	2.733	.045
Sensitive and Persistent	Between Groups	.215	3	.072	.550	.649

	Within Groups Total	26.932 27.147	207 210	.130		
Strives to be a Better Teacher	Between Groups	1.489	3	.496	2.221	.087
	Within Groups Total	46.255 47.744	207 210	.223		
Technologically Competent	Between Groups	.152	3	.051	.371	.774
	Within Groups Total	28.369 28.521	207 210	.137		
Understanding	Between Groups	.696	3	.232	1.458	.227
	Within Groups Total	32.944 33.640	207 210	.159		

Follow-up tests were conducted to evaluate pairwise differences among the means [Table 4.7].

There were significant differences between pairs: good listener (assistant professor and associate professor); and provides constructive feedback (assistant professor and full professor).

Table 4.7: Pairwise Comparisons Faculty Level X TBC

Quality/Behavior	Pair	Tukey HSD	Bonferroni
Good listener	Assistant Professor to Associate Professor	.020	.023
Provides constructive feedback	Assistant Professor to Full Professor	.012	.013

Faculty differences when considering age [Table 4.3] were also found: accessible ($F(5, 205) = 3.447$; $p=.005$); authoritative ($F(5, 205) = 2.630$; $p=.025$); encourages and cares for students ($F(5, 205) = 2.438$; $p=.036$); enthusiastic ($F(5, 205) = 2.592$; $p=.027$); prepared ($F(2, 205) = 2.928$; $p=.014$); presents current information ($F(5, 205) = 3.051$; $p=.011$); respectful ($F(2, 204) = 2.350$; $p=.042$); and strives to be a better teacher ($F(5, 205) = 4.045$; $p=.002$). Within the groups, statistically significant differences were found within the grouped pairs (see Table 4.8).

Table 4.8: Pairwise Comparisons Faculty Age X TBC

Quality/Behavior	Pair	Tukey HSD	Bonferroni
Accessible	21-29 to 70+	.012	.014
	30-39 to 70+	.019	.023
	40-49 to 70+	.036	.046
Authoritative	21-29 to 70+	.010	.011
	30-39 to 70+	.029	.037
	50-59 to 70+	.019	.023
	60-69 to 70+	.036	.046

Prepared	30-39 to 50-59	.013	.015
Presents Current Information	30-39 to 60-69	.020	.025
	50-59 to 60-69	.027	.034
Strives to be a Better Teacher	30-39 to 60-69	.003	.004
	50-59 to 60-69	.008	.009

Answering Research Question Two

Of the 213 student responses, the top 10 teaching qualities/behaviors students identified included: knowledgeable about subject matter (74.6%); effective communicator (71.4%); realistic expectation of students/fair testing and grading (70.4%); approachable/personable (70%); enthusiastic about teaching and topic (56.3%); respectful (50.7%); confident (47.4%); encourages and cares for students (47.4%); understanding (45.1%); and accessible (42.7%).

Within the top ten selections, there were no differences between gender selections (Table 4.9).

An ANOVA test identified one statistically significant difference between the groups when examining the teaching quality/behaviors: sensitive and persistent, $F(1, 211) = 5.405$; $p = .0214$.

Table 4.9: Student Identified TBC Qualities/Behaviors by Gender

	Total Responses	Male	Female
Knowledgeable about Subject Matter	159	43	116
Effective Communicator	152	36	116
Realistic Expectations of Students/Fair Testing and Grading	150	38	112
Approachable/Personable	149	36	113
Enthusiastic about Teaching and about Topic	120	35	85
Respectful	108	29	79
Confident	101	21	80
Encourages and Cares for Students	101	23	78
Understanding	96	31	65
Accessible	91	26	65
Prepared	84	19	65
Strives to be a Better Teacher	73	18	55
Creative and Interesting	71	20	51
Happy/Positive Attitude/Humorous	69	20	49
Flexible/Open-minded	68	15	53
Provides Constructive Feedback	65	17	48
Sensitive and Persistent	65	10	55
Humble	53	16	37
Presents Current Information	51	16	35
Technologically Competent	48	10	38
Promotes Critical Thinking/Intellectually Stimulating	47	16	31
Good Listener	46	10	36

Punctuality/Manages Class Time	44	10	34
Rapport	40	11	29
Establishes Daily and Academic Term Goals	38	8	30
Authoritative	31	7	24
Professional	26	10	16
Promotes Class Discussion	23	7	16

Differences occurred among students by learning level (Table 4.10). Student pharmacists across the first three program years selected approachable; confident; effective communicator; enthusiastic about teaching/topic; knowledgeable about subject matter; realistic expectations of students/fair testing and grading; respectful; and understanding. Both first and second-year students identified accessible, while second and third-year students agreed that encourages and cares for students was important. First and third-year students identified prepared as an essential teaching quality/behavior. Third-year students found constructive feedback and strives to be a better teacher as essential to pharmacy teaching. The ANOVA identified significant differences among the groups [Table 4.11] for the following items: presents current information ($F(3, 209) = 3.132; p=.027$); and provides constructive feedback ($F(3, 209) = 4.041; p=.008$).

Table 4.10: TBC Breakdown of Student Responses by Demographics

Quality/Behavior	Learning Level				Ethnicity							Age				
	First-Year (N=99)	Second-Year (N=55)	Third-Year (N=53)	Unknown (N=6)	American Indian or Alaska Native (N=1)	Asian (N=22)	Black or African American (N=8)	Native Hawaiian or Other Pacific Islander (N=1)	White (N=168)	Hispanic (N=9)	Other (N=4)	20 or less (N=5)	20-29 (N=191)	30-39 (N=12)	40-49 (N=4)	50-59 (N=1)
Accessible	49	22	19	1	0	10	5	0	71	3	2	2	79	6	3	1
Approachable	71	41	35	2	0	17	6	1	116	6	3	1	138	6	4	0
Authoritative	18	5	7	1	0	5	2	0	22	1	1	1	25	3	2	0
Confident	43	25	29	4	1	12	4	1	77	4	2	2	90	5	4	0
Creative and Interesting	37	15	17	2	1	10	4	0	51	4	1	1	67	2	1	0
Effective Communicator	73	37	38	4	0	12	4	0	125	8	3	5	133	10	4	0
Encourages and Cares for Students	40	31	29	1	0	10	2	0	82	5	2	0	93	5	2	1
Enthusiastic about Teaching and about Topic	55	29	32	4	1	13	3	0	96	6	1	3	107	8	2	0
Establishes Daily and Academic Term Goals	24	6	6	2	0	3	1	1	32	1	0	0	36	2	0	0
Flexible/Open-minded	28	21	17	2	0	6	1	0	59	2	0	2	60	5	0	1
Good Listener	18	17	11	0	0	5	2	0	36	2	1	0	41	3	2	0
Happy/Positive Attitude/Humorous	39	14	14	2	0	10	2	0	57	0	0	1	62	2	3	1
Humble	19	15	16	3	1	5	2	0	41	3	1	0	50	2	0	1
Knowledgeable about Subject Matter	70	43	43	3	1	14	8	1	124	8	3	4	144	9	1	1
Prepared	45	19	20	0	0	10	2	0	65	4	3	1	74	6	3	0
Presents Current Information	15	16	17	3	1	5	3	1	38	3	0	2	45	3	1	0
Professional	13	7	6	0	0	0	1	1	23	1	0	0	25	0	1	0
Promotes Class Discussion	10	5	6	2	0	2	1	0	16	3	1	3	18	2	0	0
Promotes Critical Thinking/Intellectually Stimulating	22	15	8	2	1	4	2	0	36	4	0	2	42	2	1	0

Constructive Feedback	35	7	20	3	1	6	4	1	49	3	1	3	59	3	0	0
Punctuality/Manages Class Time	17	13	13	1	0	4	3	0	35	1	1	0	41	2	0	1
Rapport	14	16	8	2	1	4	0	0	35	0	0	1	37	2	0	0
Realistic Expectations of Students/Fair Testing and Grading	65	43	38	4	0	12	6	1	121	7	3	4	133	11	1	1
Respectful	51	29	27	1	0	14	2	0	84	6	2	3	96	6	2	1
Sensitive and Persistent	32	21	10	2	1	5	2	0	52	4	1	2	57	5	0	1
Strives to be a Better Teacher	34	17	20	2	0	10	2	1	55	4	1	4	66	2	1	0
Technologically Competent	25	9	12	2	0	6	3	1	37	1	0	1	43	2	2	0
Understanding	47	23	22	4	0	6	4	0	81	2	3	2	90	4	0	0

Table 4.11: Differences Among Student Groups by Program Year

Quality/Behavior		Sum of Squares	df	Mean Square	F	Sig.
Accessible	Between Groups	1.153	3	.384	1.575	.196
	Within Groups	50.969	209	.244		
	Total	52.122	212			
Approachable / Personable	Between Groups	1.033	3	.344	1.645	.180
	Within Groups	43.737	209	.209		
	Total	44.770	212			
Authoritative	Between Groups	.307	3	.102	.816	.486
	Within Groups	26.182	209	.125		
	Total	26.488	212			
Confident	Between Groups	.683	3	.228	.908	.438
	Within Groups	52.425	209	.251		
	Total	53.108	212			
Creative and Interesting	Between Groups	.372	3	.124	.552	.647
	Within Groups	46.961	209	.225		
	Total	47.333	212			
Effective Communicator	Between Groups	.162	3	.054	.260	.854
	Within Groups	43.369	209	.208		
	Total	43.531	212			
Encourages and Cares for Students	Between Groups	1.777	3	.592	2.412	.068
	Within Groups	51.331	209	.246		
	Total	53.108	212			
Enthusiastic about Teaching and about Topic	Between Groups	.228	3	.076	.305	.822
	Within Groups	52.166	209	.250		
	Total	52.394	212			
Establishes Daily and Academic Term Goals	Between Groups	1.039	3	.346	2.399	.069
	Within Groups	30.181	209	.144		
	Total	31.221	212			
Flexible / Open-minded	Between Groups	.348	3	.116	.528	.664
	Within Groups	45.943	209	.220		
	Total	46.291	212			
Good Listener	Between Groups	.876	3	.292	1.734	.161
	Within Groups	35.190	209	.168		
	Total	36.066	212			
Happy / Positive Attitude / Humorous	Between Groups	.940	3	.313	1.433	.234
	Within Groups	45.708	209	.219		
	Total	46.648	212			
Humble	Between Groups	.880	3	.293	1.574	.197
	Within Groups	38.932	209	.186		
	Total	39.812	212			
Knowledgeable about Subject Matter	Between Groups	.810	3	.270	1.428	.236
	Within Groups	39.500	209	.189		
	Total	40.310	212			
Prepared	Between Groups	1.439	3	.480	2.027	.111
	Within Groups	49.435	209	.237		
	Total	50.873	212			
Presents Current Information	Between Groups	1.669	3	.556	3.132	.027
	Within Groups	37.120	209	.178		
	Total	38.789	212			
Professional	Between Groups	.104	3	.035	.317	.813
	Within Groups	22.723	209	.109		
	Total	22.826	212			
Promotes Class Discussion	Between Groups	.327	3	.109	1.128	.339
	Within Groups	20.189	209	.097		

	Total	20.516	212			
Promotes Critical Thinking / Intellectually Stimulating	Between Groups	.483	3	.161	.931	.427
	Within Groups	36.146	209	.173		
	Total	36.629	212			
Provides Constructive Feedback	Between Groups	2.476	3	.825	4.041	.008
	Within Groups	42.688	209	.204		
	Total	45.164	212			
Punctuality / Manages Class Time	Between Groups	.258	3	.086	.519	.670
	Within Groups	34.653	209	.166		
	Total	34.911	212			
Rapport	Between Groups	.997	3	.332	2.205	.089
	Within Groups	31.491	209	.151		
	Total	32.488	212			
Realistic Expectations of Students / Fair Testing and Grading	Between Groups	.573	3	.191	.912	.436
	Within Groups	43.793	209	.210		
	Total	44.366	212			
Respectful	Between Groups	.724	3	.241	.961	.412
	Within Groups	52.515	209	.251		
	Total	53.239	212			
Sensitive and Persistent	Between Groups	1.079	3	.360	1.706	.167
	Within Groups	44.085	209	.211		
	Total	45.164	212			
Strives to be a Better Teacher	Between Groups	.126	3	.042	.184	.907
	Within Groups	47.855	209	.229		
	Total	47.981	212			
Technologically Competent	Between Groups	.353	3	.118	.667	.573
	Within Groups	36.830	209	.176		
	Total	37.173	212			
Understanding	Between Groups	.462	3	.154	.616	.605
	Within Groups	52.270	209	.250		
	Total	52.732	212			

Post hoc comparison tests found that significant differences were found between first and second-year students as well as second and third-year students for provides constructive feedback quality/behavior [Table 4.12].

Table 4.12: Pairwise Comparisons - Learner Level X TBC

Quality/Behavior	Pair	Tukey HSD	Bonferroni
Provides Constructive Feedback	First-year to Second-year	.017	.020
	Second-year to Third-year	.023	.027

Student responses across the three institutions were consistent for seven of the 10 qualities/behaviors (approachable/personable; confident; effective communicator; encourages

and cares for students; enthusiastic about teaching/topic; knowledgeable about subject matter; realistic expectations of students/fair testing and grading; and respectful) (Table 4.13). Auburn and Florida student pharmacists both listed confident and prepared. Florida and Kentucky students identified creative/interesting and understanding.

Table 4.13: Student Responses by Institution

TBC Item	Auburn	Florida	Kentucky
Knowledgeable about Subject Matter	98	21	37
Realistic Expectations of Students/Fair Testing and Grading	91	16	40
Approachable/Personable	89	21	38
Effective Communicator	88	20	41
Accessible	69	9	12
Confident	67	13	18
Enthusiastic about Teaching and about Topic	65	15	36
Respectful	65	13	29
Encourages and Cares for Students	65	10	26
Prepared	59	10	15
Understanding	58	10	25
Flexible/Open-minded	44	3	19
Sensitive and Persistent	43	4	16
Provides Constructive Feedback	41	7	14
Happy/Positive Attitude/Humorous	40	10	18
Strives to be a Better Teacher	40	7	24
Creative and Interesting	36	12	21
Good Listener	31	7	8
Technologically Competent	28	8	10
Punctuality/Manages Class Time	27	4	12
Establishes Daily and Academic Term Goals	26	4	7
Humble	26	10	15
Presents Current Information	23	12	14
Authoritative	23	4	3
Promotes Critical Thinking/Intellectually Stimulating	22	8	15
Rapport	22	4	12
Professional	18	4	4
Promotes Class Discussion	13	2	6

*Student responses from University of Georgia were excluded from the table due to low response rate.

The F-test comparison [Table 4.14] identified significant differences between academic institution and accessible ($F(3, 209) = 5.176$; $p=.002$); approachable/personable ($F(3, 209) = 2.768$; $p=.043$); and presents current information ($F(3, 209) = 3.804$; $p=.011$). A post hoc pairwise comparison was conducted and found that there were significant differences between pairs [Table 4.15].

Table 4.14: Differences Among Student Groups by Institution

Quality/Behavior		Sum of Squares	df	Mean Square	F	Sig.
Accessible	Between Groups	3.604	3	1.201	5.176	.002
	Within Groups	48.518	209	.232		
	Total	52.122	212			
Approachable / Personable	Between Groups	1.711	3	.570	2.768	.043
	Within Groups	43.059	209	.206		
	Total	44.770	212			
Authoritative	Between Groups	.518	3	.173	1.390	.247
	Within Groups	25.970	209	.124		
	Total	26.488	212			
Confident	Between Groups	1.028	3	.343	1.375	.251
	Within Groups	52.080	209	.249		
	Total	53.108	212			
Creative and Interesting	Between Groups	1.212	3	.404	1.831	.143
	Within Groups	46.121	209	.221		
	Total	47.333	212			
Effective Communicator	Between Groups	.790	3	.263	1.288	.279
	Within Groups	42.740	209	.204		
	Total	43.531	212			
Encourages and Cares for Students	Between Groups	1.461	3	.487	1.971	.119
	Within Groups	51.647	209	.247		
	Total	53.108	212			
Enthusiastic about Teaching and about Topic	Between Groups	1.912	3	.637	2.638	.051
	Within Groups	50.482	209	.242		
	Total	52.394	212			
Establishes Daily and Academic Term Goals	Between Groups	.157	3	.052	.352	.787
	Within Groups	31.064	209	.149		
	Total	31.221	212			
Flexible / Open-minded	Between Groups	1.294	3	.431	2.004	.115
	Within Groups	44.997	209	.215		
	Total	46.291	212			
Good Listener	Between Groups	.541	3	.180	1.061	.367
	Within Groups	35.525	209	.170		
	Total	36.066	212			
Happy / Positive Attitude / Humorous	Between Groups	.261	3	.087	.392	.759
	Within Groups	46.387	209	.222		
	Total	46.648	212			
Humble	Between Groups	1.030	3	.343	1.851	.139
	Within Groups	38.782	209	.186		
	Total	39.812	212			
Knowledgeable about Subject Matter	Between Groups	.228	3	.076	.395	.756
	Within Groups	40.082	209	.108		
	Total	40.310	212			
Prepared	Between Groups	1.704	3	.568	2.414	.068
	Within Groups	49.170	209	.235		
	Total	50.873	212			
Presents Current Information	Between Groups	2.008	3	.669	3.804	.011
	Within Groups	36780	209	.176		
	Total	38.789	212			
Professional	Between Groups	.229	3	.076	.705	.550
	Within Groups	22.598	209	.108		
	Total	22.826	212			
Promotes Class Discussion	Between Groups	.466	3	.155	1.620	.186
	Within Groups	20.050	209	.096		

	Total	20.516	212			
Promotes Critical Thinking / Intellectually Stimulating	Between Groups	.997	3	.332	1.949	.123
	Within Groups	35.632	209	.170		
	Total	36.629	212			
Provides Constructive Feedback	Between Groups	.524	3	.175	.818	.485
	Within Groups	44.640	209	.214		
	Total	45.164	212			
Punctuality / Manages Class Time	Between Groups	.115	3	.038	.229	.876
	Within Groups	34.796	209	.166		
	Total	34.911	212			
Rapport	Between Groups	.422	3	.141	.916	.434
	Within Groups	32.066	209	.153		
	Total	32.488	212			
Realistic Expectations of Students / Fair Testing and Grading	Between Groups	.599	3	.200	.953	.416
	Within Groups	43.768	209	.209		
	Total	44.366	212			
Respectful	Between Groups	.682	3	.227	.903	.440
	Within Groups	52.558	209	.251		
	Total	53.239	212			
Sensitive and Persistent	Between Groups	.714	3	.238	1.119	.342
	Within Groups	44.451	209	.213		
	Total	45.164	212			
Strives to be a Better Teacher	Between Groups	1.174	3	.391	1.747	.159
	Within Groups	46.808	209	.224		
	Total	47.981	212			
Technologically Competent	Between Groups	.390	3	.130	.739	.530
	Within Groups	36.793	209	.176		
	Total	37.183	212			
Understanding	Between Groups	.313	3	.104	.416	.742
	Within Groups	52.420	209	.251		
	Total	52.732	212			

Table 4.15: Pairwise Comparison - Student by Institution

Quality/Behavior	Pair	Tukey HSD	Bonferroni
Accessible	Auburn to Kentucky	.002	.002
Approachable	Florida to Georgia	.033	.040
Presents Current Information	Auburn to Florida	.010	.009

Answering Research Question Three

Faculty and students selected six qualities and behaviors in common as essential for pharmacy teaching. Both groups selected approachable/personable, confident, effective communicator, enthusiastic about teaching and about topic, knowledgeable about subject matter, and respectful [Table 4.16]. Rounding out the top ten, faculty selected creative and interesting, prepared, promotes critical thinking/intellectually stimulating, and strives to be a better teacher.

Students, however, selected accessible, encourages and cares for students, realistic expectations of students/fair testing and grading, and understanding.

Table 4.16: TBC Student vs. Faculty Comparisons Overall

	Faculty (N=211)	Student (N=213)
Knowledgeable about Subject Matter	164	159
Enthusiastic about Teaching and about Topic	147	120
Promotes Critical Thinking/Intellectually Stimulating	147	47
Effective Communicator	139	152
Strives to be a Better Teacher	138	73
Approachable/Personable	128	149
Prepared	105	84
Respectful	102	108
Confident	95	101
Creative and Interesting	90	71
Realistic Expectations of Students/Fair Testing and Grading	82	150
Encourages and Cares for Students	82	101
Presents Current Information	79	51
Provides Constructive Feedback	77	65
Accessible	68	91
Promotes Class Discussion	59	23
Good Listener	54	46
Professional	51	26
Punctuality/Manages Class Time	46	44
Humble	43	53
Understanding	42	96
Flexible/Open-minded	42	68
Happy/Positive Attitude/Humorous	39	69
Authoritative	36	31
Technologically Competent	34	48
Sensitive and Persistent	32	65
Establishes Daily and Academic Term Goals	29	38
Rapport	27	40

Using the ANOVA, significant differences were found between faculty and students [Table 4.17]. These differences occurred between the groups for the following teaching qualities/behaviors: accessible ($F(1, 422) = 5.017$; $p=.026$); approachable ($F(1, 422) = 4.058$; $p=.045$); creative and interesting ($F(1, 422) = 3.927$; $p=.048$); enthusiastic about teaching/topic ($F(1, 422) = 8.196$; $p=.004$); flexible ($F(1, 422) = 8.085$; $p=.005$); happy/positive ($F(1, 422) = 11.035$; $p=.001$); prepared ($F(1, 422) = 4.603$; $p=.032$); presents current information ($F(1, 422) = 9.238$; $p=.003$); professional ($F(1, 422) = 10.411$; $p=.001$); promotes class discussion ($F(1, 422) =$

= 20.911; p=.000); promotes critical thinking (F(1, 422) = 124.802; p=.000); realistic (F(1, 422) = 47.147; p=.000); sensitive and persistent (F(1, 422) = 14.576; p=.000); strives to be a better teacher (F(1, 422) = 45.285; p=.000); and understanding (F(1, 422) = 32.797; p=.000).

Table 4.17: Faculty to Student TBC Differences Between Groups

Quality/Behavior		Sum of Squares	df	Mean Square	F	Sig.
Accessible	Between Groups	1.168	1	1.168	5.017	.026
	Within Groups	98.207	422	.233		
	Total	99.375	423			
Approachable / Personable	Between Groups	.915	1	.915	4.058	.045
	Within Groups	95.121	422	.225		
	Total	96.035	423			
Authoritative	Between Groups	.067	1	.067	.499	.480
	Within Groups	56.346	422	.134		
	Total	56.413	423			
Confident	Between Groups	.061	1	.061	.243	.622
	Within Groups	105.335	422	.250		
	Total	105.396	423			
Creative and Interesting	Between Groups	.921	1	.921	3.927	.048
	Within Groups	98.945	422	.234		
	Total	99.866	423			
Effective Communicator	Between Groups	.283	1	.283	1.315	.252
	Within Groups	90.526	422	.215		
	Total	90.809	423			
Encourages and Cares for Students	Between Groups	.776	1	.776	3.171	.076
	Within Groups	103.241	422	.245		
	Total	104.017	423			
Enthusiastic about Teaching and about Topic	Between Groups	1.884	1	1.884	8.196	.004
	Within Groups	96.982	422	.230		
	Total	98.866	423			
Establishes Daily and Academic Term Goals	Between Groups	.178	1	.178	1.335	.249
	Within Groups	56.235	422	.133		
	Total		423			
Flexible / Open-minded	Between Groups	1.531	1	1.531	8.085	.005
	Within Groups	79.931	422	.189		
	Total	81.462	423			
Good Listener	Between Groups	.169	1	.169	.937	.334
	Within Groups	76.246	422	.181		
	Total	76.415	423			
Happy / Positive Attitude / Humorous	Between Groups	2.051	1	2.051	11.035	.001
	Within Groups	78.439	422	.186		
	Total	80.491	423			
Humble	Between Groups	.215	1	.215	1.225	.269
	Within Groups	74.049	422	.175		
	Total	74.264	423			
Knowledgeable about Subject Matter	Between Groups	.100	1	.100	.551	.458
	Within Groups	76.841	422	.182		
	Total	76.941	423			
Prepared	Between Groups	1.130	1	1.130	4.603	.032
	Within Groups	103.622	422	.246		
	Total	104.752	423			

Presents Current Information	Between Groups Within Groups Total	1.931 88.211 90.142	1 422 423	1.931 .209	9.238	.003
Professional	Between Groups Within Groups Total	1.517 61.499 63.017	1 422 423	1.517 .146	10.411	.001
Promotes Class Discussion	Between Groups Within Groups Total	3.123 63.019 66.142	1 422 423	3.123 .149	20.911	.000
Promotes Critical Thinking / Intellectually Stimulating	Between Groups Within Groups Total	24.019 81.217 105.236	1 422 423	24.019 .192	124.802	.000
Provides Constructive Feedback	Between Groups Within Groups Total	.379 94.065 94.443	1 422 423	.379 .223	1.699	.193
Punctuality / Manages Class Time	Between Groups Within Groups Total	.014 70.882 70.896	1 422 423	.014 .168	.083	.774
Rapport	Between Groups Within Groups Total	.379 56.033 56.413	1 422 423	.379 .133	2.858	.092
Realistic Expectations of Students / Fair Testing and Grading	Between Groups Within Groups Total	10.558 94.499 105.057	1 422 423	10.558 .224	47.147	.000
Respectful	Between Groups Within Groups Total	.048 105.697 105.745	1 421 422	.048 .251	.192	.662
Sensitive and Persistent	Between Groups Within Groups Total	2.498 72.311 74.809	1 422 423	2.498 .171	14.576	.000
Strives to be a Better Teacher	Between Groups Within Groups Total	10.272 95.725 105.998	1 422 423	10.272 .227	45.285	.000
Technologically Competent	Between Groups Within Groups Total	.437 65.704 66.142	1 422 423	.437 .156	2.807	.095
Understanding	Between Groups Within Groups Total	6.713 86.372 93.085	1 422 423	6.713 .205	32.797	.000

A one-sample chi-square test was conducted to assess whether faculty and students identified the same items within the TBC as essential to pharmacy teaching. Table 4.18 outlines each TBC item and the results of the analysis. The results of the test were significant except for the following items: confident ($\chi^2(1, N=424) = 2.415, p=.120$); realistic expectations of students/fair testing and grading ($\chi^2(1, N=424) = 3.774, p=.052$); respectful ($\chi^2(1, N=424) = .021, p=.884$); and strives to be a better teacher ($\chi^2(1, N=424) = .009, p=.923$).

Table 4.18: TBC χ^2 Analysis

Quality/Behavior	Mean	Std. Deviation	Chi-Square	df	Asymp. Sig.	Effect Size
Accessible	.38	.485	26.500	1	.000	.063
Approachable	.65	.476	39.858	1	.000	.094
Authoritative	.16	.365	198.349	1	.000	.468
Confident	.46	.499	2.415	1	.120	.0057
Creative and Interesting	.38	.486	24.538	1	.000	.058
Effective Communicator	.69	.464	59.766	1	.000	.141
Encourages and Cares for Students	.43	.496	7.934	1	.019	.005
Enthusiastic about Teaching and about Topic	.63	.483	28.538	1	.000	.067
Establishes Daily and Academic Term Goals	.16	.365	198.349	1	.000	.468
Flexible/Open-minded	.26	.439	98.151	1	.000	.231
Good Listener	.24	.425	118.340	1	.000	.279
Happy/Positive Attitude/Humorous	.25	.436	102.038	1	.000	.241
Humble	.23	.419	126.943	1	.000	.299
Knowledgeable about Subject Matter	.76	.426	116.236	1	.000	.274
Prepared	.45	.498	4.991	1	.025	.012
Presents Current Information	.31	.462	63.434	1	.000	.150
Professional	.18	.386	171.934	1	.000	.406
Promotes Class Discussion	.19	.395	159.434	1	.000	.376
Promotes Critical Thinking/Intellectually Stimulating	.46	.499	3.057	1	.000	.007
Provides Constructive Feedback	.33	.473	46.226	1	.000	.109
Punctuality/Manages Class Time	.21	.409	140.415	1	.000	.331
Rapport	.16	.365	198.349	1	.000	.468
Realistic Expectations of Students/Fair Testing and Grading	.55	.498	3.774	1	.052	.009
Respectful	.50	.501	.021	1	.884	.000
Sensitive and Persistent	.23	.421	124.764	1	.000	.294
Strives to be a Better Teacher	.50	.501	.009	1	.923	.000
Technologically Competent	.19	.395	159.434	1	.000	.376
Understanding	.33	.469	51.660	1	.000	.122

Faculty and Student Institution Comparison Analysis

Within institution comparisons, students and faculty showed strong similarities when identifying the top 10 qualities and behaviors they felt were essential to pharmacy teaching (Table 4.19). At Auburn, students and faculty identified eight of the 10 same qualities/behaviors (approachable; confident; effective communicator; encourages and cares for students; enthusiastic about teaching/topic; knowledgeable about subject matter; prepared; and realistic expectations of students/fair testing and grading). Auburn faculty identified promotes critical thinking/intellectually stimulating; and strives to be a better teacher to round out the top 10. Auburn students identified accessible and respectful as essential.

Faculty and students from the University of Florida identified five of the same teaching qualities/behaviors as Auburn University participants (approachable; confident; effective communicator; enthusiastic about teaching/topic; and knowledgeable about subject matter). Of the remaining 10 qualities/behaviors, both Florida faculty and students identified creative and interesting; presents current information; and respectful as essential. For their final two selections, Florida faculty identified promotes critical thinking/intellectually stimulating; and strives to be a better teacher. Florida students clearly selected realistic expectations of students/fair testing and grading (51.5%); however, the final quality/behavior varied with 31.2% of students selecting encourages and cares for students; happy/positive attitude/humorous; humble; prepared; and understanding.

University of Kentucky faculty and students were congruent with Auburn and Florida participants. Faculty and students identified five of the same teaching qualities/behaviors as Auburn participants (approachable; effective communicator; encourages and cares for students; enthusiastic about teaching/topic; and knowledgeable about subject matter). Kentucky faculty

and students agreed with Florida participants identifying respectful as essential. Kentucky faculty were diverse in rounding out their top 10, with an equal number of votes being cast to three qualities/behaviors resulting in 11 total selections (accessible; confident; prepared; and promotes critical thinking/intellectually stimulating). Kentucky student pharmacists identified creative and interesting; realistic expectations of students/fair testing and grading; and understanding as their final qualities/behaviors essential to pharmacy teaching.

Table 4.19: Student to Faculty Comparison by Institution

	Auburn		Florida		Kentucky	
	Faculty (N=33)	Student (N=131)	Faculty (N=21)	Student (N=31)	Faculty (N=12)	Student (N=51)
Accessible	6	69	6	9	5	12
Approachable	27	89	10	21	8	38
Authoritative	5	23	4	4	1	3
Confident	18	67	13	13	5	18
Creative and Interesting	10	36	9	12	4	21
Effective Communicator	21	88	16	20	8	41
Encourages and Cares for Students	15	65	6	10	5	26
Enthusiastic about Teaching and about Topic	22	65	17	15	8	36
Establishes Daily and Academic Term Goals	8	26	4	4	0	7
Flexible/Open-minded	7	44	5	3	2	19
Good Listener	4	31	6	7	3	8
Happy/Positive Attitude/Humorous	3	40	8	10	2	18
Humble	5	26	5	10	1	15
Knowledgeable about Subject Matter	27	98	14	21	11	37
Prepared	16	59	7	10	7	15
Presents Current Information	9	23	10	12	4	14
Professional	5	18	5	4	1	4
Promotes Class Discussion	4	13	8	2	2	6
Promotes Critical Thinking/Intellectually Stimulating	24	22	13	8	7	15
Provides Constructive Feedback	15	41	6	7	1	14
Punctuality/Manages Class Time	4	27	6	4	3	12
Rapport	4	22	1	4	1	12
Realistic Expectations of Students/Fair Testing and Grading	15	91	4	16	4	40
Respectful	13	65	15	13	6	29
Sensitive and Persistent	2	43	5	4	1	16
Strives to be a Better Teacher	22	40	14	7	7	24
Technologically Competent	4	28	7	8	2	10
Understanding	6	58	5	10	3	25

*Georgia students and faculty were excluded from the table due to minimal response rate.

Summary

Overall, faculty and students selected six of the same teaching qualities and behaviors out of 10. Both groups identified (from the most selections to the least): a) knowledgeable about subject matter; b) effective communicator; c) approachable/personable; d) enthusiastic about teaching and the topic; e) realistic expectations of students/fair testing and grading; and f) confident. ANOVA test found significant differences within the groups for 15 of the 28-items. A one-sample chi-square test determined that all TBC items were significant except for the following items: confident ($\chi^2(1, n=424) = 2.415, p = .120$); realistic expectations of students/fair testing and grading ($\chi^2(1, n=424) = 3.774, p = .052$); respectful ($\chi^2(1, N=424) = .021, p = .884$); and strives to be a better teacher ($\chi^2(1, N=424) = .009, p = .923$).

Analysis of the data also found that faculty responses varied across faculty rank. All faculty agreed on seven of the 10 teaching qualities and behaviors: approachable/personable; effective communicator; enthusiastic about teaching and about topic; knowledgeable about the subject matter; prepared; promotes critical thinking/intellectually stimulating; and strives to be a better teacher. The remaining three selections differed between rank with full professors selecting two of the three qualities/behaviors (respectful and presents current information) from the caring and supportive subscale. Of the 10 items that faculty selected five out of 10 were within the professional competency and communication skills subscale. The ANOVA initial findings determined significant differences for four items (flexible/open-minded; good listener; provides constructive feedback; and respectful). A post-hoc test was run to evaluate pairwise differences, which found that there were significant differences between pairs for good listener, and provides constructive feedback.

Lastly, students identified knowledgeable about subject matter (74.6%), effective communicator (71.4%), realistic expectation of students/fair testing and grading (70.4%), approachable/personable (70%), enthusiastic about teaching and topic (56.3%), respectful (50.7%), confident (47.4%), encourages and cares for students (47.4%), understanding (45.1%), and accessible (42.7%). The 10 items selected by students were equally distributed across the two subscales. The F-test determined that differences occurred when accessed by student learner level. Student responses across the three program years showed that all three learner levels selected approachable; confident; effective communicator; enthusiastic about teaching/topic; knowledgeable about subject matter; realistic expectations of students/fair testing and grading; respectful; and understanding. The final two qualities and behaviors varied across program year with first and second-year students selecting accessible, while second and third-year students chose prepared. Third-year students stressed the importance of constructive feedback and strives to be a better teacher. Students primarily identified items that were associated with the caring and supportive subscale.

Chapter 5: Conclusions and Next Steps

Introduction

This study examined which teaching qualities and behaviors pharmacy faculty and student pharmacists identified as essential to teaching. Chapter 1 consisted of an introduction, statement of the research problem, purpose of study, research questions, significance of the study, assumptions, definition of terms, and organization of the study.

Chapter 2 provided a focused literature review. The literature review examined the history of pharmacy education, the role of the master teacher, and how the Teacher Behavior Checklist (TBC) identifies the teaching qualities and behaviors needed to educate students effectively. The research found that a number of studies have been conducted that examined the similarities and differences faculty and students have regarding essential teaching qualities and behaviors.

Chapter 3 outlined the research design, instrument, participants, data collection procedures, and data analysis. The study was designed to answer the following research questions: 1) Do pharmacy faculty select similar teaching qualities and behaviors across career levels?; 2) Do student pharmacists identify the same teaching qualities and behaviors of effective master teachers across years of study?; and 3) Do pharmacy faculty and student pharmacists identify the same teaching qualities and behaviors as essential to effective teaching?.

The findings of the study were discussed in Chapter 4, describing how data was analyzed. The chapter focused on describing the role of the survey instrument, participant demographics, and data analyses. The Data analysis examined the commonalities and differences between

pharmacy faculty and student pharmacists when identifying the 10 essential teaching qualities and behaviors. The analysis included a look at faculty overall, students overall, and then student and faculty combined responses. The study found that faculty and students identified seven of the 10 same teaching qualities/behaviors.

Chapter 5 summarizes the overall study and outlined next steps for future research.

Summary of Results

Of the 856 faculty contacted, 211 (24.6%) participated in the study. Faculty responders included Assistant Professors (33.7%), Associate Professors (33.7%), Full Professor (23.7%), other faculty (9%) from 10 institutions. For the analysis, any faculty member that identified as adjunct, facilitator, or other administrative rank were included as one category type. The faculty sample was relatively equal across gender (51.2% male/48.3% female), with the majority of faculty averaging between 30 and 49 years of age (52.6%).

Students from four institutions, Auburn University, University of Florida, University of Georgia, and University of Kentucky, participated in the study. Of the 213 complete responses, the majority were white (78.9%), female (74.2%) students between 21 and 29 years of age (89.7%).

In answering Research Question One, faculty responses did vary across rank with faculty agreeing on seven of the 10 qualities/behaviors: approachable/personable, effective communicator, enthusiastic about teaching and topic, knowledgeable about the subject matter, prepared, promotes critical thinking/intellectually stimulating, and strives to be a better teacher. The ANOVA findings determined differences for flexible/open-minded, good listener, and respectful. A post-hoc test determined pairwise difference for good listener and provided constructive feedback.

In answering Research Question Two, student's selections varied by learner level, with students in all three years agreeing on eight of the 10 qualities and behaviors: approachable/personable, confident, effective communicator, enthusiastic about teaching and topic, knowledgeable about subject matter, realistic expectations of students/fair testing and grading, respectful, and understanding. The ANOVA determined significant differences between the groups for presents current information ($F(3, 209) = 3.132, p=.027$), and provides constructive feedback ($F(3, 209) = 4.041, p=.008$).

In answering Research Question Three, both faculty and students showed commonality when identifying six of the 10 items: knowledgeable about subject matter, effective communicator, approachable/personable, enthusiastic about teaching and the topic, realistic expectations of students/fair testing and grading, and confident. The F-test found significant differences within the groups for 15 of the 28-items. A nonparametric chi-square test determined that all items were significant except for confident ($\chi^2(1, n=424) = 2.415, p=.120$); realistic expectations of students/fair testing and grading ($\chi^2(1, n=424) = 3.774, p=.052$); respectful ($\chi^2(1, N=424) = .021, p=.884$); and strives to be a better teacher ($\chi^2(1, N=424) = .009, p=.923$).

Discussion

It has long been theorized that students value the teaching and learning process for different reasons (Parpala, Lindbloom-Ylänne, & Rytönen, 2011). Over the years, TBC research has attempted to identify which teaching qualities and behaviors are essential to excellent teaching and this study strived to determine if there were differences between identified teaching qualities and behaviors between faculty and students in a doctoral level pharmacy program. The

findings from this study show strong consistency with previously conducted studies, with pharmacy faculty and student pharmacists identifying similar teaching qualities and behaviors.

Faculty Findings Comparisons between Studies

The study conducted by McGovern and Miller (2008) strived to identify a means for providing faculty with the resources needed to amend their curriculum and teaching practices. They found that the expediency of the TBC provided faculty with the means to make appropriate and timely changes. The study outcomes helped reinforce the proposed value of the TBC and how it could support pharmacy faculty in making the changes necessary to meet the needs of student pharmacists.

To date, there have been a limited number of studies conducted examining faculty use of the TBC. However, those conducted have shown consistencies among identified teaching qualities and behaviors selected by faculty from varying disciplines. Ismail (2014) conducted a study to examine the differences between TBC items selected as essential to teaching by U.S.-educated and foreign-educated faculty. Table 5.1 outlines the top 10 qualities/behaviors selected by participants from Ismail's study as well as faculty responses from the studies conducted by Buskist et al. (2002), Schaeffer et al. (2003) and the current study of pharmacy faculty. In Ismail's study U.S.-educated and foreign-educated faculty agreed on nine of the 10 items: knowledgeable, enthusiastic, creative/interesting, promotes critical thinking, effective communicator, approachable/personable, encourages/cares for students, manages class time, and accessible. However, when comparing Ismail's findings to the other three studies, faculty only agreed on five of the 10 qualities/behaviors: knowledgeable, enthusiastic, promotes critical thinking, creative/interesting, and approachable/personable.

It has been hypothesized that academic discipline has an impact on the teaching qualities/behaviors identified as essential to teaching by students. This idea does not appear relevant when considering faculty selections. The results of these studies' findings show similarities cross disciplines. While the study groups had some differences, the shared similarities speak to the overall goals of academic faculty to be focused on providing their students with the best learning process possible.

Table 5.1: Comparison of Findings Across Faculty Studies

Ismail (2014)		Schaeffer (2003)	Buskist (2002)	Ford (2016)
U.S. Faculty	Foreign Faculty			
Knowledgeable	Knowledgeable	Knowledgeable	Knowledgeable	Knowledgeable
Enthusiastic	Enthusiastic	Enthusiastic	Enthusiastic	Enthusiastic
Creative / Interesting	Effective Communicator	Promotes Critical Thinking	Promotes Critical Thinking	Promotes Critical Thinking
Promotes Critical Thinking	Promotes Critical Thinking	Respectful	Prepared	Effective Communicator
Effective Communicator	Creative / Interesting	Strives to be a Better Teacher	Approachable / Personable	Strives to be a Better Teacher
Approachable / Personable	Approachable / Personable	Approachable / Personable	Effective Communicator	Approachable / Personable
Encourages / Cares	Encourages / Cares	Realistic Expectations	Respectful	Prepared
Manages Class Time	Confident	Creative / Interesting	Creative / Interesting	Respectful
Accessible	Accessible	Flexible / Open-minded	Presents Current Information	Confident
Promotes Discussion	Manages Class Time	Encourages / Cares	Realistic Expectations	Creative / Interesting

Student Similarities and Differences Across Studies

In the past, scholars have postulated that student's expectations regarding teaching qualities and behaviors were impacted by the type of academic discipline. Since the development of the TBC, a number of studies have been conducted examining which teaching qualities and behaviors students identify as essential to master teaching. Table 5.2 outlines the top 10 qualities/behaviors students identified within the studies outlined in the coming text and shows

commonalities and differences. Of the eight studies included within the table, only one teaching quality/behavior (knowledgeable) appeared in the top 10 for all student respondents.

Mowrer et al. (2004) conducted two studies examining whether student selections were impacted by GPA, year of study, high school graduating class, motivation level, perceived difficulty level of colleges, or gender. Mowrer et al.'s initial study identified teaching qualities/behaviors as essential to teaching: approachable/personable, knowledgeable, enthusiastic, realistic, encourages/cares for students, creative/interesting, accessible, effective communicator, flexible/open-minded, and respectful. In the second study, researchers found that across the academic disciplines, there were a number of commonalities upon item selection for eight out of 10 and included the following teaching qualities/behaviors: knowledgeable, approachable/personable, enthusiastic, realistic expectations, encourages/cares for students, creative/interesting, effective communicator, and respectful. Students in the second study identified confident and understanding as essential unlike the first group.

The findings from the student pharmacists' survey are similar to those found within Mowrer et al.'s studies. All student groups identified seven of the 10 same qualities and behaviors: approachable/personable, knowledgeable, enthusiastic, realistic expectations, encourages/cares for students, effective communication, and respectful. When considering the first study conducted by Mowrer et al. (2004), both the students from Mowrer et al.'s study and the pharmacy study identified eight qualities/behaviors, with accessible appearing in both lists. The second Mowrer et al. study when compared to student pharmacists showed similarities for nine items (confident, and understanding). Due to these findings, one could determine that commonalities in teaching qualities/behaviors will be similar across years of study, both undergraduate and graduate-level, and are not impacted by program discipline.

Table 5.2: Comparisons of Student Responses Across Studies

Mowrer Study 1 (2004)	Mowrer Study 2 (2004)	Jöemaa (2013)	Schaeffer (2003)	Buskist (2002)	Liu (2015)	Liu (2016)			Keeley (2012)		Ford (2016)
						Psychology	Education	Chemical Engineering	Japanese	American	
Approachable	Knowledgeable	Knowledgeable	Knowledgeable	Realistic	Respectful	Respectful	Respectful	Respectful	Approachable	Accessible	Knowledgeable
Knowledgeable	Approachable	Enthusiastic	Approachable	Knowledgeable	Knowledgeable	Knowledgeable	Approachable	Prepared	Humble	Knowledgeable	Effective Communicator
Enthusiastic	Respectful	Constructive Feedback	Realistic	Understanding	Confident	Confident	Knowledgeable	Confident	Confident	Confident	Realistic
Realistic	Realistic	Approachable	Respectful	Approachable	Prepared	Prepared	Understanding	Better Teacher	Good Listener	Approachable	Approachable
Encourage / Care	Confident	Creative / Interesting	Creative / Interesting	Respectful	Better Teacher	Understanding	Confident	Enthusiastic	Creative / Interesting	Respectful	Enthusiastic
Creative / Interesting	Effective Communicator	Professional	Happy / Positive / Humorous	Creative / Interesting	Understanding	Better Teacher	Realistic	Knowledgeable	Effective Communicator	Enthusiastic	Respectful
Accessible	Creative / Interesting	Realistic	Enthusiastic	Happy / Positive / Humorous	Technologically Competent	Technologically Competent	Better Teacher	Realistic	Knowledgeable	Effective Communicator	Confident
Effective Communicator	Enthusiastic	Presents Current Information	Encourage / Care	Encourage / Care	Creative / Interesting	Realistic	Effective Communicator	Establishes Daily Goals	Prepared	Prepared	Encourage / Care
Flexible / Open-minded	Understanding	Prepared	Flexible / Open-minded	Flexible / Open-minded	Realistic	Creative / Interesting	Flexible / Open-minded	Punctuality	Enthusiastic	Good Listener	Understanding
Respectful	Encourage / Care	Flexible / Open-minded	Understanding	Enthusiastic	Effective Communicator	Effective Communicator	Accessible	Flexible / Open-minded	Better Teacher	Promotes Critical Thinking	Accessible

Comparison of International Students and Student Pharmacists

Jõemaa's (2013) master's thesis study was conducted to examine what Estonian students identified as essential teaching qualities and behaviors using the TBC. The study found that students across degree-levels, curriculum discipline, and age identified similar preferences. Of the 679 participants, 78.6% of participants identified knowledgeable about topic as the most essential teaching quality and behavior. The remaining top nine qualities and behaviors included enthusiastic about the topic and teaching, provides constructive feedback, approachable/personable, creative/interesting, professional, realistic expectations/fair, presents current information, prepared, and flexible/open-minded. The student pharmacists and Estonian students only shared four of the same qualities and behaviors: knowledgeable, enthusiastic, approachable/personable, and realistic expectations.

Liu et al. (2016) theorized that "students in the sciences and applied sciences are more inclined to adopt a surface approach to learning whereas those in the humanities and social sciences are more inclined to adopt a deep approach to learning" (p. 71). Students who adopt a shallow approach typically use rote memorization and are limited to a general knowledge of the topic; those learners that take a deep approach are driven by meaning and content (Liu et al., 2016). Liu et al.'s study posed the theory that "behavioral science students were more likely than law and veterinary medicine students to relate interaction, matching teaching with students' prior knowledge and encouraging critical thinking to good teaching" (2016, p. 71).

Prior to this, most studies have focused on determining differences between students within the same profession (i.e. psychology). However, in more recent months, Liu et al. (2016) published a study looking for trends between students from three academic disciplines (chemical engineering, education, and psychology) to determine if students from different disciplines

perceive excellent teaching in different ways. The researchers found substantial agreement between the three groups, with psychology and education students overlapping on seven items, and psychology and chemical engineering students overlapping on six (Liu et al., 2016). Yet, there were also substantial differences. Liu et al. determined that significant differences were found between psychology and chemical engineering students regarding 15 items within the TBC; education and chemical engineering students differed on seven items; and psychology and education students on one.

Additional similarities were found when comparing Liu et al.'s study findings to those of student pharmacists. Overall, participants from both studies agreed on four teaching qualities/behaviors: knowledgeable, realistic expectations, respectful, and confident. However, when comparing student pharmacist responses to the individual discipline responses, additional similarities were found. Psychology respondents and student pharmacists agreed on six teaching qualities/behaviors (knowledgeable, effective communicator, realistic expectations, respectful, confident, and understanding). Students in education and pharmacy agreed on eight qualities/behaviors (knowledgeable, effective communicator, realistic expectations, approachable/personable, respectful, confident, understanding, and accessible) and chemical engineering and student pharmacists showed agreement on five qualities/behaviors (knowledgeable, realistic expectations, enthusiastic, respectful, and confident). From these findings, one could argue that students across the disciplines tend to agree on most of the top 10 qualities and behaviors for master teaching.

Pharmacy Findings Compared to Previous Research

This study strived to determine if pharmacy faculty and student pharmacists would identify the same teaching qualities and behaviors as prior studies. When assessing the student

pharmacists' responses to the survey, there were some similarities across the disciplines. Table 5.3 shows the top 10 qualities/behaviors identified by student pharmacists as well as those of previous studies conducted by Keeley et al. (2012), Liu et al. (2015), and Liu et al. (2016). To accurately compare the data presented in previously published studies, the mean averages for each item were reviewed and numbered according to mean average (highest to lowest). A ranking order was then assigned and added to the table.

Table 5.3: TBC Comparisons Across Multiple Student Samples

TBC	Liu (2015)	Keeley (2012)		Liu (2016)			Ford (2016)
	Chinese (N=115)	Japanese (N=111)	American (N=231)	Psychology (N=115)	Education (N=94)	Chemical Engineering (N=139)	American Pharmacy (N=213)
Accessible	18	21	1	18	10	27	10
Approachable / Personable	12	1	4	13	2	13	4
Authoritative	27	27	25	27	27	25	26
Confident	3	3	3	3	5	3	7
Creative and Interesting	8	5	18	9	14	19	13
Effective Communicator	10	5	7	10	8	21	2
Encourages and Cares for Students	18	11	17	19	23	28	7
Enthusiastic about Teaching and Topic	12	8	6	12	11	5	5
Establishes daily and academic term goals	25	24	19	25	22	8	25
Flexible/Open-minded	16	15	13	16	9	10	15
Good Listener	11	4	9	11	20	20	22
Happy/Positive Attitude/Humorous	22	13	25	22	16	14	14
Humble	25	2	24	26	25	16	18
Knowledgeable	2	7	2	2	3	6	1
Prepared	3	8	8	4	12	2	11
Presents Current Information	24	22	16	24	18	18	19
Professional	28	28	28	28	28	23	27
Promotes Class Discussion	14	23	20	14	26	26	28
Promotes Critical Thinking/Intellectually Stimulating	18	25	10	20	19	22	21
Provides Constructive Feedback	17	18	12	17	21	24	16
Punctuality/Manages Class Time	23	17	11	23	15	9	23

Rapport	14	12	21	15	17	15	24
Realistic Expectations/Fair Testing and Grading	8	19	14	8	6	7	3
Respectful	1	20	5	1	1	1	6
Sensitive and Persistent	21	14	22	21	24	17	16
Strives to be a Better Teacher	5	8	22	6	7	4	12
Technologically Competent	7	26	27	7	13	12	20
Understanding	5	15	15	5	4	11	9

As the table reflects, there were similarities across the student groups when comparing the student pharmacists' selections. All seven groups identified confident and knowledgeable as essential teaching qualities and behaviors. Six out of seven student groups identified effective communicator, and respectful, with five groups identifying prepared, realistic expectations/fair testing and grading, and strives to be a better teacher as essential. Student pharmacists, chemical engineering, Japanese and American students agreed that enthusiastic about teaching and the topic was a vital teaching quality/behavior, while Chinese, American, psychology, education, chemical engineering, and pharmacy students identified respectful. American, education, and student pharmacists included accessible within their top 10. These commonalities reinforce the idea that the TBC is applicable to all students no matter the discipline or learner level.

Faculty and Student Study Similarities and Differences

The findings from Schaeffer et al.'s (2003) study found that their faculty and students agreed on eight of the 10 qualities/behaviors: approachable, creative and interesting, encourages and caring, enthusiastic, flexible and open-minded, knowledgeable, realistic expectations and fair, and respectful. Schaeffer et al. (2003) then compared their study findings to those found by Buskist et al. (2002). These similarities show that correlations regarding expectations can occur across disciplines for both faculty and students. Researchers found that both faculty groups agreed on eight out of 10 qualities/behaviors: knowledgeable, enthusiastic about teaching,

promotes critical thinking, approachable/personable, respectful, creative/interesting, presents current information, and realistic expectations. While the similarities between these studies were significant, when compared to pharmacy faculty selections the similarities were not as predominant [Table 5.4]. The three faculty samples agreed on six of their top 10: knowledgeable, enthusiastic, promotes critical thinking, respectful, approachable/personable, and creative/interesting.

Table 5.4: Top 10 TBC Item Comparisons – Faculty and Student Groups

Schaeffer (2003)		Buskist (2002)		Ford (2016)	
Faculty	Students	Faculty	Student	Faculty	Student
Knowledgeable	Knowledgeable	Knowledgeable	Realistic Expectations	Knowledgeable	Knowledgeable
Enthusiastic about Teaching	Approachable	Enthusiastic about Teaching	Knowledgeable	Enthusiastic about Teaching	Effective Communicator
Promotes Critical Thinking	Realistic Expectations	Promotes Critical Thinking	Understanding	Promotes Critical Thinking	Realistic Expectations
Respectful	Respectful	Prepared	Approachable / Personable	Effective Communicator	Approachable / Personable
Strives to be a Better Teacher	Creative / Interesting	Approachable / Personable	Respectful	Strives to be a Better Teacher	Enthusiastic about Teaching
Approachable / Personable	Happy / Positive / Humorous	Effective Communicator	Creative / Interesting	Approachable / Personable	Respectful
Realistic Expectations	Enthusiastic about Teaching	Respectful	Happy / Positive / Humorous	Prepared	Confident
Creative / Interesting	Encourages / Cares for Students	Creative / Interesting	Encourages / Cares for Students	Respectful	Encourage
Flexible/Open-minded	Flexible / Open-minded	Presents Current Information	Flexible/Open-minded	Confident	Understanding
Encourages / Cares for Students; Presents Current Info	Understanding	Realistic Expectations	Enthusiastic about Teaching	Creative / Interesting	Accessible

Students across the three samples identified seven of the same qualities/behaviors within their top 10: realistic expectations, encourages/cares for students, understanding, knowledgeable, approachable/personable, respectful, and enthusiastic about teaching.

As shown by the study findings, there are similarities between pharmacy faculty perceptions of teaching qualities/behaviors and those of student pharmacists. The implementation of the TBC into the pharmacy evaluation process could meet the needs of both groups to ensure best practices.

Implications

The pharmacy faculty responses provided a new perspective to the TBC literature. Limited research has been conducted asking faculty to identify the teaching qualities and behaviors they feel are essential to teaching. Asking pharmacy faculty and student pharmacists to indicate their expected teaching qualities and behaviors allowed the researcher to determine if both groups had similar expectations when it came to master teaching.

Implications for Faculty Use of the TBC

Historically, the TBC research has focused primarily on faculty and students in undergraduate psychology (Buskist et al., 2002; Keeley et al., 2010; Keeley et al., 2006; Liu et al., 2015). In more recent years, researchers have begun to explore whether faculty and students in other academic disciplines identify the same teaching qualities/behaviors as those previously studied. These studies have shown that there are similarities across the groups [Table 5.1]. However, this study is one of the first to explore whether students and faculty in an academic healthcare discipline would identify the same qualities/behaviors.

While differences did occur, the level of consistency across both student and faculty groups speaks to the applicability of the TBC to all academic disciplines to assess master teaching qualities/behaviors. When considering all the studies discussed within this paper, the data speak to the remarkable consistency. Table 5.1, which appeared earlier in the paper, outlined all faculty responses in ranked order from studies conducted by Ismail (2014), Schaeffer et al.

(2004), and Buskist et al. (2002), as well as the current pharmacy study. Across the four studies, all faculty identified knowledgeable as the most important teaching quality/behavior. They also all agreed that enthusiastic about teaching was the second most important. Within the remaining top 10, all faculty groups agreed on three additional qualities/behaviors: creative/interesting, promotes critical thinking, and approachable/personable.

As Keeley et al. (2012) noted “research on the qualities and characteristics of master teaching is honing in on these few qualities that may represent universal principles of master teaching” (p.386). Keeley et al.’s (2012) theory may be closer than researchers first believed. The consistency across the multiple studies for the teaching qualities/behaviors reinforces this theory as all four faculty groups agreed on five of the 10, there were additional qualities/behaviors that faculty groups agree upon.

Buskist et al. (2002) defined master teachers as those who share some commonalities when considering their enthusiasm regarding their topic, students, and teaching. They also are a blend of multiple qualities that vary across individuals but they all must have the necessary resources to equip students with the knowledge, skills, and abilities to prepare them for entry into their respective professions.

The consistent qualities and behaviors that all faculty groups identified coincide with the attributes of a master teacher. Identifying knowledge as the most important quality/behavior shows that these faculty understand that a firm grasp on the subject matter is a must for them to qualify as master instructors. The four remaining qualities/behaviors are key to ensuring that faculty have the skills and abilities necessary to teaching.

It was also refreshing to find that all faculty groups identified promotes critical thinking as essential to teaching to ensure that students are able to process information and then apply

what they have learned to practice. Faculty must display critical thinking skills to ensure that students understand how to critically think themselves (Buskist et al., 2002).

A significant amount of research and discussion has been done regarding the role of rapport in master teaching (Buskist et al., 2002; Frisby & Myer, 2008; Frisby & Marin, 2010; Granitz et al, 2009; Micari & Pazos, 2010; Ryan & Wilson, 2014). Researchers consistently define rapport as mutual trust, respect, and positive relationships, and focuses on three primary objectives: approachability/accessibility, personality, and similarities (Granitz et al., 2009). All four study groups identified approachable/personable as essential as well as enthusiastic and creative/interesting, both attributes that speak to the personality of the instructor. While the participant groups do not specifically identify rapport as an essential teaching quality/behavior, their responses show an acknowledgement to the role of rapport in the teaching and learning process.

Implications of Student Use of the TBC and Applicability across Disciplines

Multiple studies have been conducted over time that allowed the findings from this study to be compared to the responses of other student surveys [Table 5.2]. The student pharmacist's selections were compared to those that appeared in Mowrer et al. (2004) two-part study, Jõemaa's master thesis research (2013), Schaeffer et al. (2003), Buskist et al. (2002), Keeley et al. (2012), Liu et al. (2015) and Liu et al. (2016) studies. Overall student responses did vary across the multiple studies. However, one teaching quality and behavior did occur across all groups, knowledgeable. Of the remaining top 10 qualities/behaviors, 10 out of 12 study groups identified realistic expectations, and respectful, with nine out of 12 agreeing that approachable/personable, and enthusiastic about teaching were essential.

As outlined above, the overall findings showed that student groups differed regarding which items they selected within their top 10 qualities/behaviors, with most student groups identifying more qualities and behaviors from the professional competency and communication skills subscale than the caring and supportive subscale. Those student groups identifying items related to the caring and supportive subscale were participants in Mowrer et al.'s study 1, Jõemaa, Schaeffer et al., and Buskist et al.'s studies. While students acknowledge that a positive relationship with an instructor is important, that an instructor's overall ability to communicate with a student is more essential.

Implications of TBC Use in Pharmacy Education

Overall, pharmacy faculty and student pharmacists identified knowledgeable about subject matter as the most important quality/behavior. Within the remaining top 10, both groups agreed on five additional items: effective communicator, approachable/personable, enthusiastic about teaching and topic, respectful, and confident. For the remaining items, students' expectations focused on the teaching qualities and behaviors that spoke to the faculty members caring and supportive side. The remaining four faculty items were more varied across the subscales and focused on their role within the classroom and producing critical thinking students.

The emphasis that pharmacy faculty placed on the importance of producing critically thinking students (69.75%) is drastically different from those of student pharmacists (22%), which is consistent with previous student-faculty comparisons. This disconnect could stem from Liu et al.'s theory that students in the sciences and applied sciences have a tendency to view their learning process as surface learning and not deep learning (2016). When examining pharmacy faculty and student pharmacists top 10 qualities/behaviors, the two groups agreed on six out of 10 teaching qualities/behaviors (knowledgeable, enthusiastic about teaching, effective

communicator, approachable/personable, respectful, and confident). Student pharmacists identified teaching qualities and behaviors that represented both subscales equally. However, pharmacy faculty primarily identified items included within the professional competency and communication skills subscale. This disconnect between pharmacy faculty and student pharmacists must be overcome if pharmacy faculty expect to effectively educate their students. For pharmacy faculty to transition their students to critical thinkers, they will need to adopt more of the teaching qualities and behaviors that students expect from the caring and supportive subscale during this transition. As Buskist et al. (2002) notes, faculty must prepare students to take the knowledge they have acquired and transform it through reflection and internalization. Lastly, it is essential that faculty model critical thinking skills if they hope to truly transform the student learning experience. To accomplish this objective, pharmacy faculty and student pharmacists must share the same expectations regarding the learning experience.

Limitations

The decision to use an online survey could have been the reason behind the low faculty response rate (24.6%), which may have increased with face-to-face survey completion. An additional limitation was the lack of student data for every institution. Due to FERPA restrictions, all student pharmacist research was reliant on the willingness of academic administrators to share the online survey link with their students. The limited distribution of the student survey resulted in a lack of variance between faculty and students that resulted in a limited analysis of institution specific data and a lack of equal institution representation.

Recommendations for Future Research

Additional research is needed to determine if faculty and students identify the same teaching qualities and behaviors. While this study examined the differences between faculty and

students, to truly determine if these differences are institution specific more data is needed. Additional research is also needed to see if there are correlations between student and faculty responses and the type of curriculum being offered at the individual's academic institution.

Also, while this study explored the relationships between faculty and students in a doctoral level program, more studies examining this level of learner are needed. Historically TBC research has been limited to undergraduate students. To truly understand if there are differences across learner level, more research is needed and should include examining a number of different masters and doctoral level programs.

References

- Allen, L. V. (Ed.) (2013). *Remington – An introduction to Pharmacy*. Chicago, IL: Pharmaceutical Press.
- American Association of Colleges of Pharmacy. (January 2015). *2014-15 Profile of Pharmacy Faculty*. Retrieved from <http://www.aacp.org/resources/research/institutionalresearch/Documents/PPF1415-final.pdf>.
- American Association of Colleges of Pharmacy. (June 2015). *Pharmacy Education: Student Pharmacist Q&A*. Retrieved from <http://www.aacp.org/resources/research/institutionalresearch/Documents/Student%20Pharmacist%20QA-flyer.pdf>.
- Anderson, S. (2005). *Making medicines: A brief history of pharmacy and pharmaceuticals*. London: Pharmaceutical Press.
- Boysen, G. A., Richmond, A. S., & Gurung, R. A. R. (2015). Model teaching criteria for psychology: Initial documentation of teachers' self-reported competency. *Scholarship of Teaching and Learning in Psychology, 1*, 48-59.
- Buskist, W., Benson, T., & Sikorski, J. F. (2005). The call to teach. *Journal of Social and Clinical Psychology, 24*, 111-122.
- Buskist, W., Sikorski, J., Buckley, T., & Saville, B. K. (2002). Elements of master

- teaching. In S. F. Davis, & W. Buskist (Eds.). *The teaching of Psychology: Essays in honor of Wilbert J. McKeachie and Charles L. Brewer* (pp. 27-39). New York: Psychology Press.
- Cain, J., Noel, Z., Smith, K. M., & Romanelli, F. (2014). Four rights of the pharmacy educational consumer. *American Journal of Pharmaceutical Education*, 78, Article 15.
- Cain, J., Romanelli, F., & Smith, K. M. (2012). Academic entitlement in pharmacy education. *American Journal of Pharmaceutical Education*, 76(10), Article 189.
- Cassidy, S. (2004). Learning styles: An overview of theories, models, and measures. *Educational Psychology*, 24(4), 419-444.
- Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *Wingspread Journal*, 9(2), special insert.
- Crain, W. (2011). *Theories of development: Concepts and applications* (6th ed.). Upper Saddle River, New Jersey: Prentice Hall.
- Crawford, S. Y., Alhreish, S. K., & Popovich, N. G. (2012). Comparison of learning styles of pharmacy students and faculty members. *American Journal of Pharmaceutical Education*, 76(10), Article 192.
- De Vita, G. D. (2001). Learning styles, culture, and inclusive instruction in the multicultural classrooms: A business and management perspective. *Innovations Education Teaching International*, 38, 165-174.
- Eisenberg, A. F. (1997). Education and the marketplace: Conflicting arenas? Response to "A Postmodern Explanation of Student Consumerism in Higher Education". *Teaching Sociology*, 25(4), 328-332.
- England, J. W. (1922). The history of the Philadelphia College of Pharmacy in relation to the

- development of pharmaceutical education. *Journal of the American Pharmaceutical Association*, *XI(3)*, 198-206.
- Epting, L. K., Zinn, T. E., Buskist, C., & Buskist, W. (2004). Student perspectives on the distinction between ideal and typical teachers. *Teaching of Psychology*, *31*, 181-183.
- Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). How to design and evaluate research in education. (8th ed.). New York, NY: McGraw Hill.
- Francke, D. E., Latiolais, C. J., Francke, G. N., & Ho, N. F. H. (1964). *Mirror to Hospital Pharmacy: A report of the audit of pharmaceutical service in hospitals*. Washington DC: American Society of Hospital Pharmacists.
- Frisby, B. N., Berger, E., Burchett, M., Herovic, E., & Strawser, M. G. (2014). Participation apprehensive students: The influence of face support and instructor-student rapport on classroom participation. *Communication Education*, *63*, 105-123.
- Frisby, B. N., & Martin, M. M. (2010). Instructor-student and student-student rapport in the classroom. *Communication Education*, *59*, 146-164.
- Frisby, B. N. & Myers, S. A. (2008). The relationship among perceived instructor rapport, student participation, and student learning outcomes. *Texas Speech Communication Journal*, *33*, 27-34.
- Granitz, N. A., Koernig, S. K., & Harich, K. R. (2009). Now its personal: Antecedents and outcomes of rapport between business faculty and their students. *Journal of Marketing Education*, *31*, 52-65.
- Groccia, J. E. (2012). A model for understanding university teaching and learning.

- In J. E. Groccia, M. A. T. Alsudairi, & W. Buskist (Eds.). *Handbook of college and university teaching: A global perspective* (p. 2-13). Los Angeles, CA: Sage Publications, Inc.
- Gurung, R. A. R., Daniel, D. B., & Landrum, R. E. (2012). A multisite study of learning in introductory psychology course. *Teaching of Psychology, 39*(3), 170-175.
- Holdford, D. A. (2014). Is a pharmacy student the consumer or the product? *American Journal of Pharmaceutical Education, 78*, Article 3.
- Huguet-Termes, T. (2011). Standardising drug therapy in Renaissance Europe? The Florence (1499) and Nuremberg pharmacopoeia (1546). *Medicina & Storia, 8*(15), 77-101.
- Ismail, E. A. (2014). *Foreign and US-educated faculty members' views on what constitutes excellent teaching* (Doctoral dissertation). Retrieved from Auburn University Electronic Theses and Dissertation. (July 11, 2014).
- Ismail, E. A., & Hassan, M. M. (2012). Cultural contexts and curricular design in Saudi Arabia and other middle eastern nations. In J. E. Groccia, M. A. T. Alsudairi, & W. Buskist (Eds.). *Handbook of college and university teaching: A global perspective* (p. 279-292). Los Angeles, CA: Sage Publications, Inc.
- Jeffres, M. N., Barclay, S. M., & Stotle, S. K. (2014). Academic entitlement and academic performance in graduating pharmacy students. *American Journal of Pharmaceutical Education, 78*, Article 3.
- Jõemma, K. (2013). *Student perceptions of master teacher in Estonian universities* (master's thesis). Retrieved from <http://hdl.handle.net/10062/31057>.
- Keeley, J., Christopher, A. N., & Buskist, W. (2012). Emerging evidence for excellent

- teaching across borders. In J. E. Groccia, M. A. T. Alsudairi, & W. Buskist (Eds). *Handbook of college and university teaching: A global perspective* (p. 374-390). Los Angeles, CA: Sage Publications, Inc.
- Keeley, J., Furr, R. M., & Buskist, W. (2010). Differentiating psychology students' perceptions of teachers using the Teacher Behavior Checklist. *Teaching of Psychology, 37*, 16-20.
- Keeley, J., Smith, D., & Buskist, W. (2006). The Teacher Behavior Checklist: Factor analysis of its utility for evaluating teaching. *Teaching of Psychology, 33*(2), 84-91.
- Komaraju, M. (2013). Ideal teacher behaviors: Student motivation and self-efficacy predict preferences. *Teaching of Psychology, 40*, 104-110.
- Lancaster, J. W., Stein, S. M., MacLean, L. G., Van Amburgh, J., & Persky, A. M. (2014). Faculty development program models to advance teaching and learning within health sciences programs. *American Journal of Pharmaceutical Education, 78*(5), Article 99.
- Landrum, R. E., & Stowell, J. R. (2013). The reliability of student ratings of master teacher behaviors. *Teaching of Psychology, 40*, 300-303.
- Lin, Y. (2012). Evolution of Pharm D education and patient service in the USA. *Journal of Experimental and Clinical Medicine, 4*(4), 227-230.
- Liu, S., Keeley, J., & Buskist, W. (2016). Chinese college students' perceptions of excellent teachers across three disciplines: Psychology, chemical engineering, and education. *Teaching of Psychology, 43*(1), 70-74.
- Liu, S., Keeley, J., & Buskist, W. (2015). Chinese college students' perceptions of characteristics of excellent teachers. *Teaching of Psychology, 42*, 83-86.

- McGovern, T. V., & Miller, S. L. (2008). Integrating teacher behaviors with character strengths and virtues for faculty development. *Teaching of Psychology, 35*, 278-285.
- Micari, M., & Pazos, P. (2012). Connecting to the professor: Impact of the student-faculty relationship in a highly challenging course. *College Teaching, 60*, 41-47.
- Mowrer, R. R., Love, S. S., & Orem, D. B. (2004). Desirable teaching qualities transcend the nature of the student. *Teaching of Psychology, 31*, 106-108.
- Parpala, A., Lindblom-Ylänne, S., & Rytönen, H. (2011). Students' conceptions of good teaching in three different disciplines. *Assessment & Evaluation in Higher Education, 36*(5), 549-563.
- Piaget, J. (1955). The growth of logical thinking from childhood to adolescence. In H. E. Gruber, & J. J. Vonèche (Eds). *The essential Piaget: An interpretive reference and guide* (pp. 405-444). New York: Harper Collins, Inc.
- Poirier, T. I., & Santanello, C. (2010). Impact of a pharmacy education concentration on students' teaching knowledge and attitudes. *American Journal of Pharmaceutical Education, 74*(2), Article 23.
- Ryan, R., & Wilson, J. H. (2014). Professor-student rapport scale: Psychometric properties of the brief version. *Journal of Scholarship of Teaching and Learning, 14*, 64-74.
- Romanelli, F., Bird, E., & Ryan, M. (2009). Learning styles: A review of theory, application, and best practices. *American Journal of Pharmaceutical Education, 73*(1), Article 9.
- Schaeffer, G., Epting, L., Zinn, T., & Buskist, W. (2003). Student and faculty perceptions of effective teaching: A successful replication. *Teaching of Psychology, 30*, 133-136.

Stigall, L., & Blincoe, S. (2015). Student and instructor use of the teacher behavior checklist.

Teaching of Psychology, 42(4), 299-306.

Toklu, H. Z., & Hussain, A. (2013). The changing face of pharmacy practice and the need

for a new model of pharmacy education. *Journal of Young Pharmacists, 5, 38-40.*

Turnipseed, D. L., & Cohen, S. R. (2015). Academic entitlement and socially aversive

personalities: Does the dark triad predict academic entitlement? *Personality and*

Individual Differences, 82, 72-75.

Appendix A: TBC Checklist

Item Teacher Qualities and Corresponding Behaviors

1	<i>Accessible</i> (Posts office hours, gives out phone number, and e-mail information)
2	<i>Approachable/Personable</i> (Smiles, greets students, initiates conversations, invites questions, responds respectfully to student comments)
3	<i>Authoritative</i> (Establishes clear course rules; maintains classroom order; speaks in a loud, strong voice)
4	<i>Confident</i> (Speaks clearly, makes eye contact, and answers questions correctly)
5	<i>Creative and Interesting</i> (Experiments with teaching methods; uses technological devices to support and enhance lectures; uses interesting, relevant, and personal examples; not monotone)
6	<i>Effective Communicator</i> (Speaks clearly/loudly; uses precise English; gives clear, compelling examples)
7	<i>Encourages and Cares for Students</i> (Provides praise for good student work, helps students who need it, offers bonus points and extra credit, and knows student names)
8	<i>Enthusiastic about Teaching and about Topic</i> (Smiles during class, prepares interesting class activities, uses gestures and expressions of emotion to emphasize important points, and arrives on time for class)
9	<i>Establishes Daily and Academic Term Goals</i> (Prepares/follows the syllabus and has goals for each class)
10	<i>Flexible/Open-Minded</i> (Changes calendar of course events when necessary, will meet at hours outside of office hours, pays attention to students when they state their opinions, accepts criticism from others, and allows students to do make-up work when appropriate)
11	<i>Good Listener</i> (Doesn't interrupt students while they are talking, maintains eye contact, and asks questions about points that students are making)
12	<i>Happy/Positive Attitude/Humorous</i> (Tells jokes and funny stories, laughs with students)
13	<i>Humble</i> (Admits mistakes, never brags, and doesn't take credit for others' successes)
14	<i>Knowledgeable About Subject Matter</i> (Easily answers students' questions, does not read straight from the book or notes, and uses clear and understandable examples)
15	<i>Prepared</i> (Brings necessary materials to class, is never late for class, provides outlines of class discussion)
16	<i>Presents Current Information</i> (Relates topic to current, real-life situations; uses recent videos, magazines, and newspapers to demonstrate points; talks about current topics; uses new or recent texts)
17	<i>Professional</i> (Dresses nicely [neat and clean shoes, slacks, blouses, dresses, shirts, ties] and no profanity)
18	<i>Promotes Class Discussion</i> (Asks controversial or challenging questions during class, gives points for class participation, involves students in group activities during class)
19	<i>Promotes Critical Thinking/Intellectually Stimulating</i> (Asks thoughtful questions during class, uses essay questions on tests and quizzes, assigns homework, and holds group discussions/activities)
20	<i>Provides Constructive Feedback</i> (Writes comments on returned work, answers students' questions, and gives advice on test-taking)
21	<i>Punctuality/Manages Class Time</i> (Arrives to class on time/early, dismisses class on time, presents relevant materials in class, leaves time for questions, keeps appointments, returns work in a timely way)
22	<i>Rapport</i> (Makes class laugh through jokes and funny stories, initiates and maintains class discussions, knows student names, interacts with students before and after class)
23	<i>Realistic Expectations of Students/Fair Testing and Grading</i> (Covers material to be tested during class, writes relevant test questions, does not overload students with reading, teaches at an appropriate level for the majority of students in the course, curves grades when appropriate)
24	<i>Respectful</i> (Does not humiliate or embarrass students in class, is polite to students [says thank you and please, etc.], does not interrupt students while they are talking, does not talk down to students)
25	<i>Sensitive and Persistent</i> (Makes sure students understand material before moving to new material, holds extra study sessions, repeats information when necessary, asks questions to check

	student understanding)
26	<i>Strives to Be a Better Teacher</i> (Requests feedback on his/her teaching ability from students, continues learning [attends workshops, etc. on teaching], and uses new teaching methods)
27	<i>Technologically Competent</i> (Knows how to use a computer, knows how to use e-mail with students, knows how to use overheads during class, has a Web page for classes)
28	<i>Understanding</i> (Accepts legitimate excuses for missing class or coursework, is available before/after class to answer questions, does not lose temper at students, takes extra time to discuss difficult concepts)

Appendix B: Faculty Survey Instrument

Default Question Block

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

**INFORMATION LETTER
for a Research Study entitled
“Identifying Essential Teaching Behaviors of Pharmacy Faculty Master Teachers”**

You are invited to participate in a research study to assess the preferred teaching behaviors of student pharmacists and Pharmacy faculty. The study is being conducted by Channing R. Ford, Associate Director, Office of Teaching, Learning and Assessment, HSOP OTLA, under the direction of James Groccia, PhD, Professor in the Auburn University Department of Education. You are invited to participate because you are a student or faculty member in a school of pharmacy and are age 19 years of age or older.

What will be involved if you participate? Your participation is completely voluntary. If you decide to participate in this research study, you will be asked to identify the top 10 teaching qualities and behaviors from a list of 28. Your total time commitment will be approximately 10 minutes.

Are there any risks or discomforts? The risks associated with participating in this study are minor. To minimize these risks, we will de-identify all data for analysis and provide all reported data in aggregate form.

If you change your mind about participating, you can withdraw at any time by closing your browser window. If you choose to withdraw, your data can be withdrawn as long as it is identifiable. Once you've submitted anonymous data, it cannot be withdrawn since it will be unidentifiable. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University, the School of Pharmacy or School of Education.

Any data obtained in connection with this study will remain anonymous. We will protect your privacy and the data you provide by presenting only aggregate data. Information collected through your participation may be published in a dissertation, professional journal or presented at a professional meeting.

If you have questions about this study, please contact Channing R. Ford at (334) 844-8306 or cford@auburn.edu.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334) 844-5966 or e-mail at IRBadmin@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION ABOVE, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, PLEASE CLICK ON THE LINK BELOW. YOU MAY PRINT A COPY OF THIS LETTER TO KEEP.

Investigator Date

The Auburn University Institutional Review Board has approved this document for use from _____ to _____. Protocol # _____

My faculty rank is...

- Adjunct
- Facilitator
- Assistant Professor
- Associate Professor
- Full Professor
- Other _____

I currently serve as a faculty member in a School of Pharmacy located in the...

- Midwest
- Northeast
- South
- West

I am...

- Male
- Female

My age range is...

- 20 or less
- 21-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70+

I identify my race/ethnicity as...

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White
- Hispanic/Latino

Listed below are 28 teacher qualities and the behaviors that define them. Please indicate the top 10 qualities and behaviors you feel are essential in quality teaching.

- Accessible (Posts office hours, gives out phone number and email information)
- Approachable/Personable (Smiles, greets students, initiates conversations, invites questions, responds respectfully to student comments)
- Authoritative (Establishes clear course rules; maintains classroom order; speaks in a loud, strong voice)
- Confident (Speaks clearly, makes eye contact, and answers questions correctly)
- Creative and Interesting (Experiments with teaching methods; uses technological devices to support and enhance lectures; uses interesting, relevant, and personal examples; not monotone)
- Effective Communicator (Speaks clearly/loudly; uses precise English; gives clear, compelling examples)
- Encourages and Cares for Students (Provides praise for good student work, helps students who need it, offers bonus points and extra credit, and knows student names)
- Enthusiastic about Teaching and about Topic (Smiles during class, prepares interesting class activities, uses gestures and expressions of emotion to emphasize important points, and arrives on time for class)
- Establishes Daily and Academic Term Goals (Prepares/follows the syllabus and has goals for each class)
- Flexible/Open-minded (Changes calendar of course events when necessary, will meet at hours outside of office hours, pays attention to students when they state their opinions, accepts criticism from others, and allow students to do make-up work when appropriate)
- Good Listener (Doesn't interrupt students while they are talking, maintains eye contact, and asks questions about points that students are making)
- Happy/Positive Attitude/Humorous (Tells jokes and funny stories, laughs with students)
- Humble (Admits mistakes, never brags, and doesn't take credit for others' successes)
- Knowledgeable About Subject Matter (Easily answers students' questions, does not read straight from the book or notes, and uses clear and understandable examples)
- Prepared (Brings necessary materials to class, is never late for class, provides outlines of class discussion)
- Presents Current Information (Relates topic to current, real-life situations, uses recent videos, magazines, and newspapers to demonstrate points; talks about current topics; uses new or recent texts)
- Professional (Dresses nicely [neat and clean shoes, slacks, blouses, dresses, shirts, ties] and no profanity)
- Promotes Class Discussion (Asks controversial or challenging questions during class, gives points for class participation, involves students in group activities during class)
- Promotes Critical Thinking/Intellectually Stimulating (Asks thoughtful questions during class, uses essay questions on tests and quizzes, assigns homework, and holds group discussions/activities)
- Provides Constructive Feedback (Writes comments on returned work, answers students' questions, and gives advice on test-taking)
- Punctuality/Manages Class Time (Arrives to class on time/early, dismisses class on time, presents relevant materials in class, leaves time for questions, keeps appointments, returns work in a timely way)
- Rapport (Makes class laugh through jokes and funny stories, initiates and maintains class discussions, knows student names, interacts with students before and after class)
- Realistic Expectations of Students/Fair Testing and Grading (Covers material to be tested during class, writes relevant test questions, does not overload students with reading, teaches at an appropriate level for the majority of students in the course, curves grades when appropriate)
- Respectful (Does not humiliate or embarrass students in class, is polite to students [says thank you and please, etc], does not interrupt students while they are talking, does not talk down to students)
- Sensitive and Persistent (Makes sure students understand material before moving to new material, holds extra study sessions, repeats information when necessary, asks questions to check student understanding)
- Strives to Be a Better Teacher (Requests feedback on his/her teaching ability from students, continues learning [attends workshops, etc., on teaching], and uses new teaching methods)
- Technologically Competent (Knows how to use a computer, knows how to use e-mail with students, knows how to use overheads during class, has a Web page for classes)
- Understanding (Accepts legitimate excuses for missing class or coursework, is available before/after class to answer questions, does not lose temper at students, takes extra time to discuss difficult concepts)

Appendix C: Student Survey Instrument

Default Question Block

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

**INFORMATION LETTER
for a Research Study entitled
“Identifying Essential Teaching Behaviors of Pharmacy Faculty Master Teachers”**

You are invited to participate in a research study to assess the preferred teaching behaviors of student pharmacists and Pharmacy faculty. The study is being conducted by Channing R. Ford, Associate Director, Office of Teaching, Learning and Assessment, HSOP OTLA, under the direction of James Groccia, PhD, Professor in the Auburn University Department of Education. You are invited to participate because you are a student or faculty member in a school of pharmacy and are age 19 years of age or older.

What will be involved if you participate? Your participation is completely voluntary. If you decide to participate in this research study, you will be asked to identify the top 10 teaching qualities and behaviors from a list of 28. Your total time commitment will be approximately 10 minutes.

Are there any risks or discomforts? The risks associated with participating in this study are minor. To minimize these risks, we will de-identify all data for analysis and provide all reported data in aggregate form.

If you change your mind about participating, you can withdraw at any time by closing your browser window. If you choose to withdraw, your data can be withdrawn as long as it is identifiable. Once you've submitted anonymous data, it cannot be withdrawn since it will be unidentifiable. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University, the School of Pharmacy or School of Education.

Any data obtained in connection with this study will remain anonymous. We will protect your privacy and the data you provide by presenting only aggregate data. Information collected through your participation may be published in a dissertation, professional journal or presented at a professional meeting.

If you have questions about this study, please contact Channing R. Ford at (334) 844-8306 or cford@auburn.edu.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334) 844-5966 or e-mail at IRBadmin@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION ABOVE, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, PLEASE CLICK ON THE LINK BELOW. YOU MAY PRINT A COPY OF THIS LETTER TO KEEP.

Investigator Date

The Auburn University Institutional Review Board has approved this document for use from _____ to _____. Protocol # _____

I am currently a ...

- First-year pharmacy student
- Second-year pharmacy student
- Third-year pharmacy student

I am attending pharmacy school in the ...

- Midwest
- Northeast
- South
- West

I am...

- Male
- Female

My age range is...

- 20 or less
- 21-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70+

I identify my race/ethnicity as...

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White
- Hispanic/Latino

Listed below are 28 teacher qualities and the behaviors that define them. Please indicate the top 10 qualities and behaviors you feel are essential in quality teaching.

- Accessible (Posts office hours, gives out phone number and email information)
- Approachable/Personable (Smiles, greets students, initiates conversations, invites questions, responds respectfully to student comments)
- Authoritative (Establishes clear course rules; maintains classroom order; speaks in a loud, strong voice)
- Confident (Speaks clearly, makes eye contact, and answers questions correctly)
- Creative and Interesting (Experiments with teaching methods; uses technological devices to support and enhance lectures; uses interesting, relevant, and personal examples; not monotone)
- Effective Communicator (Speaks clearly/loudly; uses precise English; gives clear, compelling examples)
- Encourages and Cares for Students (Provides praise for good student work, helps students who need it, offers bonus points and extra credit, and knows student names)
- Enthusiastic about Teaching and about Topic (Smiles during class, prepares interesting class activities, uses gestures and expressions of emotion to emphasize important points, and arrives on time for class)
- Establishes Daily and Academic Term Goals (Prepares/follows the syllabus and has goals for each class)
- Flexible/Open-minded (Changes calendar of course events when necessary, will meet at hours outside of office hours, pays attention to students when they state their opinions, accepts criticism from others, and allow students to do make-up work when appropriate)
- Good Listener (Doesn't interrupt students while they are talking, maintains eye contact, and asks questions about points that students are making)
- Happy/Positive Attitude/Humorous (Tells jokes and funny stories, laughs with students)
- Humble (Admits mistakes, never brags, and doesn't take credit for others' successes)
- Knowledgeable About Subject Matter (Easily answers students' questions, does not read straight from the book or notes, and uses clear and understandable examples)
- Prepared (Brings necessary materials to class, is never late for class, provides outlines of class discussion)
- Presents Current Information (Relates topic to current, real-life situations; uses recent videos, magazines, and newspapers to demonstrate points; talks about current topics; uses new or recent texts)
- Professional (Dresses nicely [neat and clean shoes, slacks, blouses, dresses, shirts, ties] and no profanity)
- Promotes Class Discussion (Asks controversial or challenging questions during class, gives points for class participation, involves students in group activities during class)
- Promotes Critical Thinking/Intellectually Stimulating (Asks thoughtful questions during class, uses essay questions on tests and quizzes, assigns homework, and holds group discussions/activities)
- Provides Constructive Feedback (Writes comments on returned work, answers students' questions, and gives advice on test-taking)
- Punctuality/Manages Class Time (Arrives to class on time/early, dismisses class on time, presents relevant materials in class, leaves time for questions, keeps appointments, returns work in a timely way)
- Rapport (Makes class laugh through jokes and funny stories, initiates and maintains class discussions, knows student names, interacts with students before and after class)
- Realistic Expectations of Students/Fair Testing and Grading (Covers material to be tested during class, writes relevant test questions, does not overload students with reading, teaches at an appropriate level for the majority of students in the course, curves grades when appropriate)
- Respectful (Does not humiliate or embarrass students in class, is polite to students [says thank you and please, etc], does not interrupt students while they are talking, does not talk down to students)
- Sensitive and Persistent (Makes sure students understand material before moving to new material, holds extra study sessions, repeats information when necessary, asks questions to check student understanding)
- Strives to Be a Better Teacher (Requests feedback on his/her teaching ability from students, continues learning [attends workshops, etc., on teaching], and uses new teaching methods)
- Technologically Competent (Knows how to use a computer, knows how to use e-mail with students, knows how to use overheads during class, has a Web page for classes)
- Understanding (Accepts legitimate excuses for missing class or coursework, is available before/after class to answer questions, does not lose temper at students, takes extra time to discuss difficult concepts)

Appendix D: IRB Approval Form

**AUBURN UNIVERSITY INSTITUTIONAL REVIEW BOARD for RESEARCH INVOLVING HUMAN SUBJECTS
REQUEST FOR EXEMPT CATEGORY RESEARCH**

For information or help completing this form, contact: **THE OFFICE OF RESEARCH COMPLIANCE**, 115 Ramsay Hall
Phone: 334-844-5966 **e-mail:** IRBAdmin@auburn.edu **Web Address:** <http://www.auburn.edu/research/vpr/ohs/index.htm>

Revised 2/1/2014 Submit completed form to IRBsubmit@auburn.edu or 115 Ramsay Hall, Auburn University 36849.

Form must be populated using Adobe Acrobat / Pro 9 or greater standalone program (do not fill out in browser). Hand written forms will not be accepted.

Project activities may not begin until you have received approval from the Auburn University IRB.

1. PROJECT PERSONNEL & TRAINING

PRINCIPAL INVESTIGATOR (PI):

Name Channing R. Ford, MPA, MA **Title** Assistant Director **Dept./School** School of Pharmacy
Address 2316 Walker Building **AU Email** cford@auburn.edu
Phone 334-844-8306 **Dept. Head** Dan Surrey, Ed.D.

FACULTY ADVISOR (if applicable):

Name James Groccia, PhD **Title** Professor **Dept./School** _____ **Education** _____
Address 8084 Haley Center
Phone 334-844-5038 **AU Email** groccje@auburn.edu

KEY PERSONNEL: List Key Personnel (other than PI and FA). Additional personnel may be listed in an attachment.

Name	Title	Institution	Responsibilities
<u>Maria Witte, PhD</u>	<u>Professor</u>	<u>Auburn</u>	<u>Project Development</u>
<u>Kristen Helms, PharmD</u>	<u>Assoc Professor</u>	<u>Auburn</u>	<u>Project Implementation</u>
<u>David DiRamio, PhD</u>	<u>Assoc Professor</u>	<u>Auburn</u>	<u>Data Analysis</u>

KEY PERSONNEL TRAINING: Have all Key Personnel completed CITI Human Research Training (including elective modules related to this research) within the last 3 years? YES NO

TRAINING CERTIFICATES: Please attach CITI completion certificates for all Key Personnel.

2. PROJECT INFORMATION

Title: Identifying Essential Teaching Behaviors of Pharmacy Faculty Master Teachers

Source of Funding: Investigator Internal External

List External Agency & Grant Number: N/A

List any contractors, sub-contractors, or other entities associate with this project.

N/A

List any other IRBs associated with this project (including those involved with reviewing, deferring, or determinations).

N/A

FOR ORC OFFICE USE ONLY

DATE RECEIVED IN ORC: _____ by _____ **APPROVAL #** _____
DATE OF IRB REVIEW: _____ by _____ **APPROVAL CATEGORY:** _____
DATE OF ORC REVIEW: _____ by _____ **INT:** _____
DATE OF APPROVAL: _____ by _____
COMMENTS: _____

The Auburn University Institutional Review Board has approved this document for use from
9/11/15 to 9/10/18
 Protocol # 15-388 EX 1509