POST-GRADUATE PERFORMANCE, AN ACADEMIC COMPARISON

EVALUATING SITUATING LEARNING AND

LAW SCHOOL ACCEPTANCE SCORES


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by


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San Marcos, Texas

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# DEDICATION

*To my father Frank Traverse (February 19, 1932 – August 8, 2012):* A man who provided continual love and support; who gave me the confidence to move any mountain and the wisdom to know when to walk around it ~ illegitimi non carborundum.

*To my mother Ann Fici (July 5, 1930 – December 24, 2001):* Her love is everlasting.

*To Barbara Traverse:* For her understanding, support, and family love.

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- Kelsey Kistler (niece)
- Mike Watt (brother)
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- Reid Watt (nephew)
- Kate Watt (niece)

- Nathan Brown (nephew)

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# TABLE OF CONTENTS

# LIST OF TABLES

# LIST OF FIGURES

**ABSTRACT**


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Research on post-graduate performance, pertaining to law school graduates,

indicates that success in the legal profession is attributable to more than the theoretical

content or cognitive knowledge obtained through educational curricula. Research

suggests that the combination of creative and analytic thinking skills contributes to a

higher rate of academic and post-graduate success. Today's legal education system

continues to face the challenge of producing graduates who are practice-ready because

law schools tend to ignore the practical application of andragogy (i.e., adult teaching)

learning. That is, law schools have a propensity to heavily layer theoretical content and

undervalue practical skill courses. This curriculum deficiency consistently widens the

knowledge gap between the legal profession and legal education. Graduates enter the

workforce lacking the foundational skills essential for making the adjustment from

learner to practitioner.

# CHAPTER 1

# INTRODUCTION TO THE STUDY

*Law students can learn more from knowing how to ask good questions than from studying appellate briefs. To be able to make a split-second decisions, they have to feel the law in their bones.*

*Time Magazine,* 1977

Today's legal education, as an academic system, faces the challenge of producing practice-ready graduates who can enter the profession as skills-ready to essentially lessen the learning curve during the first of legal practice. According to the American Bar Association (1992), most lawyers believe their law school education was inadequate and partially irrelevant to their needs as practice-ready lawyers entering the legal industry. That legal education hinges most of their mandatory curriculum on theoretical legal content to which they ignore the practical side of legal skills training.

Research on post-graduate performance indicates that success in the legal profession (i.e., passage of the state bar examination and employment) is attributable to more than academic grades (Carnegie Foundation, 2007). That coaching communities and practical experience additionally affect the means to transform and prepare students for entry into the legal profession (Dickinson, 2009). However, the rivalry between legal education, which contends that law school is a place to "teach students how to think like

a lawyer" (Cavazos, 2011, p. 8), and the legal profession, which contends that graduates are ill-prepared continues to drive the endless debate over law school curricula reform.

It is this difference, of educational goals, that continues to widen the knowledge gap between the legal profession and legal education (ABA, 1992). This study will move beyond basic academic grading norms and theoretical content to explore how practical skills courses contribute to successful post-graduate performance of those entering into the legal profession.

**Legal Education Historical Background**

The history of American law schools and the evolution of their current teaching methodologies is traceable back mid-to late-1800s, an era that gave rise to an educational paradigm shift (Stein, 1981). During that period, the legal community, including both educators and practitioners, held conflicting opinions about the epistemological basis for legal education. Some believed it should continue primarily as a trade skill, taught in the traditional apprenticeship method while others argued for a new, rigorous scientific method approach focused on academics and theory (1981). Up to this point, the traditional grooming of trade law clerks patterned itself after apprentice models with a novice intern learning from a master teacher. The focus of this system was on the acquisition and application of legal skills rather than theoretical analysis (Hoffman, 2011; Kirkpatrick 1987). This in-house practice served the industry well. It was flexible, adapted easily to changing legal needs, and apprentice labor tasks directed to any number of necessary functions. However, as the twentieth century approached, this age-old system was about to change.

In 1870, Harvard University appointed Christopher Columbus Langdell as dean of the law school. As a practicing attorney with no judicial experience, Langdell believed that law professors should be proficient in teaching methods but did not necessarily need to be experts in the application or interpretation of law. Langdell championed the belief that the experience of learning the law was the uniting factor between teacher and student (Stein, 1981), rather than experience working in legal offices or litigating cases. On this premise, Langdell eagerly led the challenge for legal education reform and overhauled Harvard's law school to reflect a more elite curriculum that viewed legal analysis as a scientific method (Hoffman, 2011). In order to accomplish his goal to reconstruct the then prevailing educational paradigm of legal training, Langdell introduced a revolutionary technique called *black book case analysis*, now more commonly known as *case-method*. This technique utilizes a process of analysis and exploration to investigate and discover legal concepts embedded in historical cases. Specifically, a professor engages an individual student in a *Socratic Method* dialogue centered on a particular case by posing a series of questions in the classroom (Dickinson, 2009). The case questions, asked in a specific manner, use guided dialogue as stages through an analysis process of discovering subjects within larger legal premises (2009). A well-framed case dialogue should enable the student to comprehend, apply, and answer the "Socratic questioning" of legal principles (Hoffman, 2011, p. 208). In other words, the one of main benefits from case method analysis is that a student learns how to extract information based on the four complex questions: (a) basic facts of the case (i.e., parties involved and situational incident), (b) legal issue(s) in dispute, (c) court holding (i.e., the rule of law applied to the case) and, (d) legal rationale for court decision (i.e., explanation for the holding) (Garner,

1999). The professor's role in the course of the dialogue is not to teach the law itself, but to teach the student how to extract and determine issues that are relevant to a particular point of law (Hoffman, 2011). This method also teaches students to think adversarially, identify ambiguities, vagueness, or gaps in case evidence in order to exploit weaknesses, and finally, frame an argument that supports the views of law they want the courts to adopt (Slawson, 2000). Doubtless, case-method (e.g., Socratic Method) certainly teaches analytical reasoning and but the principal beneficiary of this learning is the individual student engaged in the dialogue. Other students, observers, may only benefit to the extent they can follow and comprehend the logical reasoning pattern of the questioning (Dickinson, 2009).

The impact of Langdell's philosophy of legal education elevated a vocation traditionally viewed as a trade skill to a more complex, sophisticated profession involved in the examination of legal principles. This shift of legal education to a scientific method of analysis eventually propelled the legal profession and its educators to equal status with other educational philosophers.

Regardless of the popularity of this new revolutionary approach to legal education, Langdell's case-method analysis was not without its critics. Many legal historians contend that early American legal education found itself caught in a political war between educational reformists on one side and professionals concerned with status level and content on the other (Cavazos, 2011). In the end, the 1870's model of legal education prevailed, the "case system was the inevitable accoutrement of the majority of American law schools" (Hoffman, 2011, p. 230). The paradigm shift established Harvard as one of the first universities that successfully transformed legal education and law

school curriculum that continues to be accepted across the academic community as the standard formula for teaching legal science (2011).

Today, many legal educators continue to argue that case-method analysis is not necessarily the best way to teach legal principles (Sheldon & Krieger, 2007). As proof, they point to the knowledge gap in practical skills training that law schools have struggled to bridge for almost 150 years. Educators assert that the case-method analysis is counterproductive and "proceeds through the learning process backwards" (Slawson, 2000, p. 344), which requires students to read cases blindly. As a result, students begin the learning process with no foundational knowledge of "what to look for" in the case, and therefore absent of the legal principles from which to interpret the law (2000, p. 345). Additionally, knowledge acquired on the heels of case-method analysis lacks the benefit of reinforcement because theoretical analogy in the absence of application creates a vacuum between theory and application (Fenwick, 2003). Further, some legal educators believe that case-method analysis lends itself to pragmatism (i.e., essential criterion) or is anti-conceptual because the case-method process "denies the validity of universals of any kind--concepts or principles," (Kirkpatrick, 1987, p. 5) In other words, case-method analysis is a one-way thinking process that
 mimics a *read and repeat* method of learning, which ignores the necessary skills for decision-making and problem solving (1987). According to Slawson (2000), the educational justification for teaching the case-method approach is simply that cases are the law; therefore, students must learn how to extract the law from each case. This learning structure focuses on the analysis before the basics of understanding is recognized as to how the theoretical principles are to be applied. (Clancey, 1994).

History shows us that the concept of law represents a living and breathing interpretation of legal principles. However, it appears that over time law schools have lost the idea that they are to produce legal practitioners, not legal theorists (Cavazos, 2011), nevertheless, this Socratic Method (i.e., case-method analysis) continues as the foundation of legal education that has withstood numerous challenges for well over 100 years. In fact, law schools have done very little to adjust their mandatory curriculum and its heavy emphasis on black book case-method analysis, regardless of ongoing criticisms (Dickinson, 2009).

**Current Issues with Legal Education**

Today's legal education, as an academic system, continues to face the challenge of producing graduates who are practice-ready because law schools inherently seem to have an "aversion to all things vocational" such as mandating practical skills training (Segal, 2011, p. 3). According to Richard Neumann, Hofstra University Professor of Law, legal education stands alone in its contempt for practicum training and continues to offer irrelevant curriculum that emphasizes theory over usefulness (2011). In other words, law schools have a propensity to heavily layer theoretical content and undervalue practical skill courses within their mandatory curriculum (Fines, 2008). According to Merritt (2008), the deficiency with most law schools, which consistently widens the knowledge gap between the legal professions and education, is that legal educators have little knowledge of the practical application regarding situated learning. Legal education "assumes that law is different, so unique that it cannot benefit from techniques used to teach math, chemistry, sociology, literature, medicine, or other subjects" ( 2007, p. 37). Because law schools provide limited exposure to the practical aspects of the law,

graduates enter the workforce lacking the foundational skills essential for adjusting from learner to practitioner (Sheldon & Krieger, 2007).

Defenders of legal education *status quo* argue that law schools are the wrong training ground for such technical based learning. They maintain that countless niches within the legal field and the time required for mastery of specialization content is best realized in an apprenticeship role with an employer, on-the-job (Segal, 2011). According to the MacCrate Report (1992), however, most lawyers believe their law school education was inadequate and partially irrelevant to their needs as practice-ready lawyers entering the legal industry (ABA, 1992). The rivalry between legal education, which contends that law school is a place to teach students "how to think like a lawyer" (Cavazos, 2011, p. 8), and the legal profession, which contends that graduates are ill-prepared, has driven the debate over law school reform since Langdell's introduction of case-method analysis (Hoffman, 2011).

The issue of practice-ready lawyers versus on-the-job training has created a negative trickle effect throughout the legal industry overall, especially in an economic climate where businesses are revamping their operational budgets to withstand a fluctuating marketplace. According to Cavazos, "on-the-job training for new attorneys is rapidly succumbing to economic realities," and the current "marketplace mantra for new attorneys is be prepared to hit the ground running" (2011, p. 2). An industry survey conducted by *American Lawyer*, found that 47% of law firm clients have expressed major concern over increased billing rates due to on-the-job training of new associates (Press, 2011). Clients are no longer willing to absorb the cost of training new associates who enter the legal field lacking practice-ready skills (National Association of Legal

Providers, 2010). As an industry culture, the legal community tends to navigate toward a stand-alone competitive playground. Training systems, such as mentoring and shadowing programs (e.g., targeted hands-on-training), are available for entry level associates but, client pushback, combined with today's economic restlessness, have law firms walking a fine line when evaluating training expenses (Sheldon & Krieger, 2007). Furthermore, advancement to senior associate is a system pool of ambiguity with no direct paths. As a result, new associates who possess the foundational practice skills and self-direction for learning, decision-making and problem solving rise to the top naturally, leaving others behind.

If law schools are to meet the current challenges of their profession, legal educators must reevaluate traditional, theoretically-based, curricula to consider the *value-add* related to practical skill courses (Kirkpatrick, 1987). If they should not, law schools will continue to suffer a readiness deficit with their graduates, because the case-method strategy for legal education is apparently failing to do the job of producing reliable professionals with practice-ready skills for "effective and responsible participation in the legal profession" (Katz, 2008, p. 913).

**Predictors of Post-Graduate Performance**

Legal educators have a difficult challenge in preparing students for the practice of law. Graduates must serve clients both in terms of substantive advice on legal issues and in the application of the law in legal practice. Law schools have an obligation to help students acquire core foundational skills in multiple areas essential for success: written and oral communication, research, critical and analytical thinking, as well as application-based skills for the practice of law (Merritt, 2008).

The traditional law school curriculum is lecture-based and uses performance *norm-referenced* grading to rank law students within their cohort and to measure attainment of legal concepts, as opposed to competency evaluation (Craver, 2000). Some critics of the system feel this educational structure undermines an effective learning environment in that it "militates against a cooperative learning environment" (Dickinson, 2009, p. 108). In other words, cohort ranking within law schools incites unnecessary and negative competition in a program designed to prepare individuals to serve justice (Sheldon & Krieger, 2007).

In recent years, some legal educators have started to grasp a deeper understanding of adult learning theories and now place higher priority on *competence* by embracing the fundamental concepts of situated learning (Fines, 2008). Competence-based learning values how an individual is responding to knowledge accrued and retained, as opposed to the traditional method of score-performance, which focuses on knowledge obtained quickly for an exam and, more often than not, subsequently forgotten (Christensen, 2009b). Studies conducted by Professors Sean Courtney, from Alverno College, and Cheri Maben-Crouch, representing Buena Vista University (1996) found that by combining grade performance curriculum with competency skills application inside the construct of a natural learning environment, students are more likely to absorb new knowledge, creating authentic learning because "students begin to exercise professional judgment" (Srikantiah & Koh, 2010, p. 473). According to leading psychologist Carol Dweck, strong correlations exist between teaching methods of how and why students learn. Dweck suggests that the most successful individuals "love learning" (Glenn, 2010, p. 5), and, if properly guided, learn self-direction to "persist in the face of obstacles"

(Dweck & Leggett, 1988, p. 256). A study by Seattle University law professor Anne Enquist (2008) discovered that the most successful students developed different techniques for making the material their own, adapting a personal learning style for tackling complex assignments. When the shared action of learning exists between the professor and student, the student becomes responsible for his own education (Shultz & Zedeck, 2011).

According to Clancey (1997), educators who understand cognitive learning styles understand "…a different view of how people use tools and what kinds of tools would be helpful" (p. 23) within the learning process. Mastery- oriented individuals tend to view learning as something valuable and meaningful within itself, as compared to the performance oriented individuals who tend to focus mostly on mastering the task instead of the perceptual system of understanding (Christensen, 2009b). An empirical study examining law students and practical skill courses (e.g., legal clinics and internship field placements) found that many successful law students were mastery-oriented and embraced difficult coursework as an ongoing opportunity to learn new things. Generally speaking, they are more concerned with the direction of their own progress than with others around them (Christensen, 2009b; Dweck & Leggett, 1988). By comparison, less successful law students tended to be performance-oriented and viewed difficult coursework as an obstacle, or task challenge (Enquist, 2008). Research suggests that performance-oriented students tend to possess more eidetic abilities resulting in higher LSAT (Law School Admissions Test) entrance scores on the standardized test. A 2008 study found that students who score high on the LSAT have an advantage when testing for state bar examinations because much like the LSAT, the bar exam requires similar

cognitive skills for standardized testing (Rush, 2008). Although research draws empirical evidence connecting high LSAT scores and increased state bar examination passing rates, performance on the LSAT alone is not always the strongest predictor for post-graduate performance (Christensen, 2009a).

Further research conducted by Christensen (2009a) found a correlation between student grades in practical skill courses and academic success, more so than undergraduate grade point average (UGPA) or law school admissions test (LSAT) scores (Sullivan, Colby, Wegner, Bond, & Shulman, 2007). Practical skill courses provide the foundational map for organizing descriptions (e.g., principles of law), experiences, and concepts that are the basis for knowledge-in-use (Clancey, 1995). By contrast, an earlier study conducted by Charlie Craver (2000), a law professor from George Washington University, had found little correlation between students' overall performances based upon law school GPA. He also had found that a student's ability to achieve beneficial results in practical skill courses outweighed achieved benefits found in traditional lecture style courses (2000). Craver's research suggests that law students who routinely participate in practical skill courses may not always achieve higher grades than their peers (e.g., class ranking), but are more likely to have mastery-oriented cognitive abilities and therefore display stronger interpersonal communication skills (Christensen, 2009a; Craver, 2000). Craver's (2000) research also found little correlation between performance goal-oriented attributes and year-end class ranking (Christensen, 2009b). Craver contends that performance in practical skill courses is a more "reliable predictor of future success" than performance-based courses, as with traditional case-method learning (Craver, 2000, p. 389) because of the required cognitive learning process.

Students exposed to experts and peer-learners at different stages of skill development sustain the structure of knowledge-in-use that becomes the scaffolding matrix for the building blocks of practical knowledge (Lave & Wenger, 1991; Wein, 1995). Vanderbilt Law Professor Frank Bloch (1982), contends that situated learning connects the classroom theoretical material to the application of practice by teaching law students to learn what lawyers do and thus cultivates a deeper understanding of legal principles (Srikantiah & Koh, 2010).

**Theoretical Framework**

The concepts of practical knowledge and situated learning applied through communities of practice derive from social constructionist epistemology. The constructionist theory contends that when a student participates in critical thinking "a proper prescription solution can be matched with a given diagnoses" (Ertmer & Newby, 1993, p. 51); therefore, naturally leading to new knowledge for problem solving. According to Wein (1995), the combination formula of testing ideas and approaches using prior knowledge, and experiences as well as practical knowledge creates the intellectual construct to advance adult development required for self-direction (Courtney & Maben-Crouch, 1996). Nonaka and Takeuchi (1997) identify practical knowledge as both tacit and explicit. Tacit knowledge is based on personal experience of specific context that is difficult to formulate. Explicit knowledge does not depend on specific context and is readily transferrable to the learner. Nonaka and Takeuchi's research suggest, "tacit and explicit knowledge are complementary" to each other and created by "converting one into another" (Prim & Cunha, 2006 p. 2). The epistemology of practical knowledge relates to the promotion of educational achievement through directed

experiences (Schön, 1987), much like situated learning. According to Schön, practical knowledge represents self-reflection of one's own experiences connected by the development of knowledge and practice of application (1987). Wein (1995), classifies practical knowledge instruction as "encompassing all a teacher does in her setting…includes all that the teacher brings of herself to the moment of teaching – beliefs, attitudes, feelings, reflection, gestures, temperament and personal history" (p. 12). Lave and Wenger support this idea of practical knowledge and propose that increased levels of participation in a "sociocultural community," promotes the "learning process" to become a professional, as with communities of practice (Lave & Wenger, 1991, p. 52). Henning (1998) contends that adults learn more if what they are learning applies to everyday living. Learning in this sense is a matter of creating meaning from experiences that "occurs in the context of everyday" real activities (p. 146). Knowles' theories on adult education are similar to those of Paolo Freire and Jack Mezirow, who interpret adult learning as *critical theory*, based on an adult's capacity to learn through *critical scrutiny*, using a learner's cultural values, assumptions, and beliefs within the learning experience. Freire and Mezirow both advocate the critical method of adult learning because they believe it guides the learner to question societal norms they may have assimilated unconsciously (Bransford, Brown, & Cocking 2000; Wein, 1995). This empowers the learner to think and act in opposition to the dominant culture, thus expanding the learner's cognitive abilities.

A less radical, yet similar, theorist is John Dewey (1938), considered by some as the father of modern education. Dewey's philosophy of adult education focused on the extension of life skills as a general function of education with respect to direction,

control, or guidance. Dewey distinguished between *traditional* and *new* education. In the traditional model of education, "the subject-matter of education consists of bodies of information and of skills that have been worked out in the past; therefore, the chief business of the school is to transmit them to the new generation" (1938, p. 2). The traditional model is *teacher driven* rather than *learner centered*, such that knowledge and skills are commodities delivered by the teacher to the student. In contrast, Dewey defined new education by an underlying philosophy: "there is an intimate and necessary relation between the processes of actual experience and education" (p. 7). Dewey believed knowledge of the past is not the end of education; instead, it is a means for new knowledge (1938).

If law schools are to prepare graduates to be practice-ready beyond theoretical content, the curriculum design must "supplement the dissection of the intricacies of court decisions" for practical skills application. The use of legal communities of practice, taught through the lens of situated learning, can facilitate this process (Quigley 1995). The research model designed for this study lies within the basis of the theoretical lens *situated learning* as conducted within the framework of communities of practice (e.g., practical skill courses of legal clinics and field internship placements).

**Problem Statement**

Situated learning combines theoretical concepts and legal principles in an application-based environment through communities of practice that eventually transform the student's identity into professional readiness. The concepts of practical knowledge and situated learning applied through communities of practice derive from social constructionist epistemology. Law school curriculum gives casual attention to teaching

legal knowledge on a practical skills level in the complexity of the actual practice of law (Fines, 2008). Because most law school curriculum is based on theoretical content, students lack the fundamental components required for practice-ready skills; therefore, students are graduating ill-prepared as they enter the legal industry. Situated learning environments, as with practical skill courses, such as legal clinics, field placement internships and trial skills, enable students to build a scaffolding knowledge bank while interacting within communities in practice. The knowledge acquired through a meaning-making experience provided in situated learning is applicable to future situations for decision-making and problem solving as compared to explicit knowledge gain through teaching traditional case-method analysis (Slawson, 2000). The scant empirical evidence found in the literature concerning law school curricula and situated learning and its impact on post-graduate performance, other than its association to UGPA and LSAT entrance scores, drives the research premise of how law schools are preparing students to become practice-ready upon graduation. What is needed, which this study is attempting to achieve, is the further understanding of what additional factors, besides entrance scores (e.g., UGPA and LSAT) contribute to post-graduate performance as related to passing the state bar examination and employment rates.

**Significance of the Study**

Over the two past decades theorists have concluded that situated learning plays an unique role in education and development of new knowledge (DiFrancesco, 2011), and that students learn better and retain more knowledge when they are able to connect an experience to a meaning-making learning situation. Learning within a social structure, as with practical skill courses, will be studied through the lens of situated learning. This

study will use situated learning theory to understand how practical skills context-based learning influences law school post-graduate performance. A better understanding of situated learning and its components will contribute to the law school need of producing graduates who are practice-ready as they enter the workforce to meet the strenuous challenges of the legal industry.

**Purpose of the Study**

This study seeks to explore the effect of practical skill courses within the social construct of situated learning and their potential impact on post-graduate performance. Practical skill courses in legal education represent a feature of the law school curriculum that continuously develops its learning objectives, by subject matter and activities, as part of the practical knowledge creating a meaning-making experience. The specific components of teaching practical skill courses can be complex, depending mostly on the subject matter. The impact on post-graduate performance currently unmeasured by legal education substantiates the need for researching this phenomenon and therefore is relevant to society (Cavazos, 2011).

The primary goals of this study are: first, to identify whether there are statistically significant and practically important associations between post-graduate performance as measured by passing the state bar examination and employment rates; and second, to investigate any explanatory effects that may serve as predictors of successful post-graduation performance of passing the state bar examination and employment rates.

**Research Questions**

1.      Does a statistically significant relationship exist indicating that situated learning exerts a positive influence on post-graduate performance as measured by employment rates and passing the state bar examination?

$H_0$.      A statistically significant relationship does not exist indicating that situated learning exerts a positive influence on post-graduate performance as measured by employment rates and passing the state bar examination.

2.      Does a statistically significant relationship exist indicating that law school acceptance scores exert a positive influence on post-graduate performance as measured by employment rates and passing the state bar examination?

$H_0$.      A statistically significant relationship does not exist indicating that law school acceptance scores exert a positive influence on post-graduate performance as measured by employment rates and passing the state bar examination.

3.      Does a statistical effect exist such that situated learning effectively predicts successful post-graduate performance as measured by employment rates and passing the state bar examination?

$H_0$.      A statistical effect exist does not exist indicating that situated learning can effectively predict successful post-graduate performance as measured by employment rates and passing the state bar examination.

4.      Does a statistical effect exist such that law school acceptance scores can effectively predict successful post-graduate performance as measured by employment rates and passing the state bar examination?

$H_0$. A statistical effect does not exist indicating that law school acceptance scores can effectively predict successful post-graduate performance as measured by employment rates and passing the state bar examination.

**Terms and Definitions**

The variables and terms relevant to this study are defined as follow:

1. *Andragogy.* The learner brings a larger quality of experiences to the learning process, is mostly self-directed, and takes a greater responsibility for his/her own learning in conjunction with communities of practices (Wilson & Hayes, 2000).

2. *Attrition Rate*. A gradual reduction in work force without firing of personnel, as when employees resign or retire.

3. *Case-Method*. A technique that utilizes a process of analysis and exploration to investigate and discover legal concepts embedded in historical cases. Specifically, a professor engages an individual student in a *Socratic Method* dialogue centered on a particular case by posing a series of questions in the classroom. The case questions, asked in a specific manner, use guided dialogue as stages through an analysis process of discovering subjects within larger legal premises (Slawson, 2000).

4. *Cognitive Processing.* The cognitive process (e.g., right and left-brain learning hemispheres), affecting the way an individual thinks and processes information for operational remembering and creation of new and practical knowledge for application of decision-making and problem solving (Henning, 1998).

5. *Communities of Practice*. Communities of practice are formed by people who engage in a process of collective learning in a shared domain of human endeavor: a network of individuals exploring novel techniques, shared learning and knowledge

growth to enable the learner to move from student to professional (Lave & Wenger, 1991).

6.     *Cravath Swaine & Moore Model*. The post-World War II business philosophy used by law firms was created by Paul Cravath prior to World War I. This was a hiring philosophy that placed greater emphasis on educational credentials, such as membership in Phi Beta Kappa, when hiring associates as an attempt to establish leverage in the marketplace and to distinguish legal services above and beyond those who were considered competitors (LaPiana, 1998).

7.     *Elite Law School.* Relating to Ivy League educational institution such as, Brown, Columbia, Cornell, Dartmouth, Harvard, Princeton, the University of Pennsylvania, and Yale.

8.     *Field Placements (Internships).* A type of student class (e.g., practical skill course) in which the student receives academic credit for part-time legal work for non-profits and government agencies under the supervision of an attorney or judge. Field placement internship credits are normally applied toward law school residency in the semester when the placement is taken (ABA, 2012).

9.     *Law School Admission Test [LSAT].* An exam designed to measure skills considered essential for success in law school and comprised of five sections covering (a) reading comprehension, (b) two sections on logical reasoning, (c) a pre-test section, and (d) analytical reasoning, to measure cognitive abilities of academic aptitude (American Bar Association and Law School Admission Council, 2012).

10.    *Law School Faculty.* The type of faculty that law schools consider as principal instructors, as listed by individual academic institutions. Some faculty may have

practiced law in the fields in which they now teach, been judges, or may have served as judicial clerks before beginning their teaching careers (ABA, 2012).

11.     *Legal Clinic Courses.* A type of student class (e.g., practical skill course) that include includes course surrounding legal skills training, work experience with real clients, and an introduction to the ethics of the legal profession (ABA, 2012).

12.     *Pedagogy.* The learner has little life experience and is dependent upon the instructor/teacher for all learning and instruction relating to the education process. The instructor/teacher evaluates the learner's progress and assumes the main role for what is taught and how the learning is assimilated (Wilson & Hayes, 2000).

13.     *Situated Learning.* An educational methodology that utilize cooperative and participatory teaching techniques to stimulate interactions for learning and development (Henning, 1998). For the purposes of this study, situated learning examples are legal courses that relate to trial skills, legal clinics, and field internship placements as defined in this section.

14.     *State Bar Licensing Exam.* The minimum passing scores (cut scores) are set by individual states to ensure the minimal competence of persons admitted to the practice of law.

15.     *Student Selectivity.* The median LSAT and UGPA score of entering students as related to admission.

16.     *Undergraduate Grade Point Average (UGPA).* Pre-law school grades that are a cumulative calculation of undergraduate scoring.

**Summary**

When examining practical skill courses and knowledge transfer, the research suggests that skill courses lead to higher conceptual understanding of practical knowledge for applying legal principles because the course design utilizes situated learning as the framework inside communities of practice. In addition, situational learning enables students to absorb practical knowledge (i.e., knowledge-in-use) from the *meaning-making* experience. It adopts an activity-based curriculum that focuses the student on legal decision-making and problem solving for practical application. Situated learning incorporates collaborative team learning along with individual responsibility for assignments and involves cognitive exercises for processing of information, facts and principles. Practical skill courses combine case-method analysis with logical reasoning for effective practical decision-making and problem solving skills (Moens, 2007). Additionally, situated learning fosters mastery-oriented skills because the main objective is to teach students how to apply legal concepts to the actual practice of the law (2007) bringing abstract notions of the law to life, which is the nexus of legal training for practice-ready graduates entering the legal industry (Quigley,1995).

# CHAPTER 2

## LITERATURE REVIEW

*It should be the role of the universities to constantly explore the possibilities of improving the rule of law, of constantly studying the extension of the rule of law, and to constantly study the principles of law to uphold the justice system.*

*Robert Henle, President of Georgetown University,* 1972

Prior to meeting the goals of this study, a cogent review of literature is essential. Specifically, the empirical and conceptual literature of situated learning as related to legal education and post-graduate performance are reviewed (DiFrancesco, 2011) in order to provide the requisite foundation to examine the stated research problem, guide the model design, and answer the hypotheses questions. Besides the main theoretical premise of situated learning, which centers on the social framework of communities of practice (Lave & Wenger, 1991), related legal education theories of cognitive apprentice, practice-ready instruction, and authentic learning (DiFrancesco, 2011) are also covered. These theories all derive from the foundational paradigm of social constructivism, which is also reviewed.

In order to place the theoretical premise of learning in an association context to post-graduate performance, a brief overview of law school admissions and standardized testing requirements is provided.

This is followed by a focused review of post-graduate performance specific to employment and passing of the state bar. Finally, the structure and rationale of practice-ready graduates is discussed. The rivalry between legal education, which contends that law school is a place to teach students "how to think like a lawyer" (Cavazos, 2011, p. 8) and the legal profession, which contends that graduates are ill-prepared, has driven the debate over law school reform since Langdell's introduction of case-method analysis (Kirkpatrick, 1987). Research suggests that performance-oriented students tend to possess more eidetic abilities resulting in higher LSAT (Law School Admissions Test) entrance scores on the standardized test. A 2008 study found that students who score higher on the LSAT have an advantage when testing for state bar examinations because much like the LSAT, the bar exam requires similar cognitive skills as those required for standardized testing (Rush, 2008). Although research supports empirical evidence connecting high LSAT scores to increased state bar examination passing rates, IQ alone is not always the strongest predictor for post-graduate performance (Christensen, 2009a). While evidence supports the predictive value of the LSAT as related to state bar examination scores, critics argue the relationship is primarily driven by the test measuring similar cognitive abilities. The cognitive abilities in question involve the ability to identify patterns and apply logical reasoning to analyze legal issues. However, neither standardized test measures the ability to move from theory to practical application of knowledge in negotiation competencies, interpersonal communication skills, decision-making or creative problem solving for "ensuring minimum competence among licensed attorneys" (Hunt, 1996, p. 762). Overall, the research literature identifies a *narrow* range of predictors utilized by the LSAT and state bar examinations to measure analytical

cognitive abilities, while no attempt is made to evaluate more creative factors associated with post-graduate effectiveness or practice-ready competency skills (Pinder,1998; Suto, Norton, & Reese, 2010).

**Law School Admission Test (LSAT**)

The development and implementation of a standardized admission test for law school admission was merely one of the tidal waves affecting legal educational, societal, cultural, and economic changes resulting from World War II. Following the end of the War, institutions of higher education across the country were faced with soaring applications and antiquated admissions procedures. The result was that institutions failed to cope because of unprecedented and unanticipated levels of demand. In response, several elite law schools in 1945, led by Columbia, Harvard and Yale, in cooperation with the College Entrance Examination Board, worked to develop a standardized test, used in conjunction with other admissions criteria, to improve the efficacy and efficiency of the admissions and selection process (LaPiana, 1998)

To refine academic admission procedures, law school administrators wanted a tool that would accomplish three main objectives: a) minimize discrepancies in the interpretation of undergraduate records, b) estimate academic success over legal aptitude (therefore, the aptitude test matrix needed to support predictions of first-year grades rather than future certainty of passing a licensing exam) and, c) serve as a main catalysis for admission requirements (1998). In 1948 the academic tool for applicant selection became the Law School Admission Test (LSAT). Implementation of the LSAT fundamentally realigned law school admission's criteria specifically because of its ability to perform as a comparative screening and leveling device that mediates applicants'

backgrounds and university grading systems (Rush, 2008). The LSAT is comprised of

five sections covering (a) reading comprehension, (b) two sections on logical reasoning,

(c) a pre-test section, and (d) analytical reasoning, to measure cognitive abilities of

academic aptitude (ABA-LSAC, 2012). Although the original intent of the LSAT was to

evaluate academic aptitude relating to first-year grades many within the legal education

system also view LSAT scores as valid predictors for one's future ability to pass the bar

examination.

Recently, a three-year study was conducted by the Law School Admission

Council (LSAC) as part of an ongoing task to (a) measure the validity and reliability of

the exam (i.e., LSAT exam), and (b) ensure the fairness and appropriateness of using the

LSAT and undergraduate grade point average (UGPA) as combined equalizers for law

school admissions. Their report concludes the LSAT "compares very favorably with

admission tests used in other graduate and professional fields of study" (LSAC, 2012, p.

10). This is in concert with earlier studies conducted by Suto, Norton, and Reese (2010)

that support LSAT results as accurate predictors of first-year grade performance and

maintain the combination of the LSAT and UGPA precludes any concerns of unfairness

connected to the standardized test.

According to LaPiana (1998), the established evidence of reliability of the LSAT

and UGPA as firm predictors of first-year grades mainly stem from the fact that most

first-year law school curricula are similar. This unofficial conformity during the first-year

enhances the predictive efficacy of the LSAT and UGPA (Rush, 2008). The evidence for

the predictive of the LSAT and UGPA resides in the fact that the cognitive abilities

measured by the LSAT are the same ones that tend to produce satisfactory performance

on first-year curriculum-based examinations. Therefore, the high correlation between the

LSAT and first-year performance should not be surprising (LaPiana, 1998; Rush, 2008).

As students move into the third year of law school, when the curriculum shifts from

logical reasoning to theoretical content, the predictive ability of the LSAT deteriorates.

Measuring the aptitude to grasp complex theoretical concepts exceeds the design and

evaluative ability of the LSAT (Shultz & Zedeck, 2011). As we move beyond law school

to investigate the correlation between the LSAT and performance on state bar exams an

interesting disparity emerges. While evidence supports the predictive value of the LSAT

as related to state bar examination scores, critics argue the statistical relationship is

manifested by the tests measuring similar cognitive abilities. These measures include the

ability to identify patterns and apply logical reasoning to analyze legal issues. Further,

neither standardized test measures the ability to move from theory to practical application

of knowledge in negotiation competencies, interpersonal communication skills, decision-

making or creative problem solving (2011). According to Pinder (1998), the overall

research literature indicates a narrow range of predictors utilized by the LSAT and state

bar examination to measure analytical cognitive abilities while no attempt is made to

evaluate more creative factors associated with post-graduate effectiveness or practice-

ready competency skills (Suto, Norton, & Reese, 2010).

      The original purpose of the LSAT was simply to develop a supplemental tool to

assist in the admissions process, not to predict or measure post-graduate performance

(LaPiana, 1998). Nonetheless, with the passage of time, and the fact that positive

statistical relationships (i.e. correlations) often exist between the LSAT and standardized

state bar examinations, it is not uncommon for many in the legal academic community to view the LSAT as a valid indicator of post-graduate performance (Rush, 2008).

**Post-Graduate State Bar Licensing Examination**

In order to practice law in the United States a person must be licensed and admitted to a state bar agency with jurisdiction to practice law. All U.S. state courts require applicants to pass a written bar examination. According to *Standards for Educational and Psychological Testing* (1999), the state bar examination qualifies to draw the line between the law student and the professional attorney (ABA, 2012; Rush, 2008). Its primary goal is to ensure a minimum competence level for individuals licensed to practice law (Rosin, 2008). As such, the bar exam stands as the final hurdle that determines the employability of law school graduates.

Research conducted by the California State Bar (2012) analyzed national and state bar passage rates from 2005 to 2010 and found the overall average passage rate stood at an astonishing 67.5% during that period. A study conducted by the National Conference of Bar Examiners (2012), discovered that between 1997 and 2006 the overall state bar passage rate of first time test takers decreased by 1%, moving from 79% to 78%. During the same period, the passage rate for first time and repeat test takers combined, fluctuated even more, decreasing from 70% to 67 % (Rush, 2008). Statistics for individual states often reveal an even higher degree of volatility and variation in success rates. For instance, the average passage rate for New York reached an all-time high of 90% in 2008. Yet, in 2002, 2003, and 2005, the passage rate for the state was a much lower 76% (Adcock, 2010).

Of course, a number of factors may contribute to these fluctuations. Some argue that fluctuations may be a reflection of an unstable economy. While some law schools require mandatory bar courses for second and third year students, other schools merely offer bar exam prep-courses as part of their general curriculum (Rush, 2008). As a result, even though the bar exam subject matter is openly advertised to applicants and rarely changes, many law graduates feel ill prepared and frequently enroll in custom tailored bar examination review courses. The largest commercial provider of bar preparation review courses, BarBri, (the result of a 1967 merger between San Francisco based Bay Area Review and Chicago-based Bar Review Institute) saw a 3% decrease in subscriptions in 2009 (Adcock, 2010). Given the insecure job market, and a higher than normal level of anxiety among students, according to Steven Rubin, Regional Senior Vice-President for BarBri, the $3,150 enrollment fee may have been beyond the financial wherewithal for some students (2010).

Another potentially significant contributor to highly fluctuating passage rates may be the way in which law schools report bar examination results to the ABA. In accordance with ABA accreditation regulations, law schools are-required to report only 70% of their students taking the bar for the first time (ABA, 2012). This leaves a significant 30% of first time test takers unaccounted for in the tracking system. Obviously, the distribution of high and low scores within the 70% of reported results could account for some of the variation in passage rates from year to year.

Critics of the current legal education system also point to law school curricula as the source for low levels of success on the bar exam. Additionally, they blame the ABA for overly permissive guidelines that produce an educational system lacking in content

relevant to the bar examination. ABA standard 301(a) directed towards curriculum, merely states that a "law school shall maintain an education program that prepares its students for admission to the bar and responsible participation in the profession" (ABA 2012, p. 18). The ABA does not mandate specific legal content directly linked to subject areas tested on state bar examinations. As a result, much of the curricula past the first year of law school does not adequately reflect the topics tested on the state bar examination (Rush, 2008).

Opponents of the bar examination itself maintain that it does not, and cannot, evaluate competency to practice law. As a standardized instrument, critics contend the design of the exam is more of an assessment tool measuring specific acquisition of legal knowledge rather than legal competency to practice law. Stated more bluntly, they argue it is "simply a memory test" of legal rules, facts, and principles (Hunt, 1996, p. 765). They characterize it as "nothing more than an achievement test" that is completely irrelevant for assessing the practice readiness that potential employers are focused on (Hunt, 1996, p. 765). Clearly, to be a "legitimate test of minimum practice-ready competency," the "bar exam must be rooted in a reasonable definition of the very quality it professes to measure" (p. 764). In other words, the state bar examination is "indefensible, a psychometric anachronism, on the grounds that it assuredly fails to satisfy the minimum requirements of test validity" (p. 765). In defense of their stance regarding standardized testing, the ABA admits that leading researchers have concluded that "the bar examination does not assure competence in basic lawyering skills, although it does test knowledge of the law and the ability to analyze legal problems" (p. 765). The accounting requirements set forth by the ABA for accreditation have become the *norm*

for the law school community of practice, even though many legal educational advocates continue to appeal to the ABA for "a re-evaluation of the methods they employ" for legal curriculum standards, reporting requirements, and assessment procedures for law schools (Cavazos, 2011, p. 5).

In conclusion, even though state bar exams directly measure an individual student's ability to apply facts of law as to "ensure minimum competency" standard, many critics of the system contend that law schools are ultimately responsible for preparing students to be practice-ready, (i.e., novice) attorneys (Rosin, 2008, p. 67). In response to the concerns about low bar examination scores and passage rates, law schools admit the situation deserves scrutiny. Nonetheless; most ABA accredited schools remain unconvinced that these outcomes are their responsibility, and see little or no reason to change their culture. Exacerbating this position of *no fault* are faculty members who resist what they see as interference with their teaching methods and dismiss testing of practical ability to apply legal knowledge (Hunt, 1996; Rush, 2008).

Despite the critical implications of this condition for both law schools and their graduates, few have within the legal education community has been willing to spearhead an effective investigation into factors contributing to the success or failure of graduates once they have left the academy (Kaufman, LaSalle-Ricci, Glass, & Arnkoff, 2007).

**Post-Graduate Employment**

The ultimate goal of every law school student is to walk across the stage to collect a diploma on Friday, and report to work at a new job on Monday. When legal jobs were plentiful in the marketplace, this was often possible, and therefore few paid serious attention to the underlying unemployment rates of graduating law students. In modern

times, the economic decline that has affected the U.S. labor market for the last five or six years has made it difficult for many graduates from top tier law schools to find jobs in the legal field (Bureau Of Labor, 2012). Graduates from lower-ranked schools face even greater obstacles. Legal industry watchdog agencies, such College, Career and Law (2012), continues to warn that high profile law firms remain influenced by the tier ranking system and prefer candidates who graduate from elite schools because of the reputation factor, which leads to skewing of hiring statistics and off-scale reporting (2012).

Further aggravating a shrinking job pool over the past few decades, are law schools and the ABA ignorance of balancing the numbers of graduates versus the economics of marketplace sustainment. For example, between 1963 and 2012, the number of ABA approved law schools increased from 135 to 204, representing slightly more than a 50% increase (Rush, 2008). Obviously, the growth in the number of schools also increased the number of graduates. Even now, law schools continue to admit increasing numbers of students apparently disregarding past and present economic restlessness and dramatically declining jobs within the legal profession (Rush, 2008; Segal, 2011).

The American Bar Association (ABA) requires each law school to report annual employment status for graduates. Unfortunately, the guidelines governing the reporting process are not clear enough to avoid ambiguous interpretations on the part of law schools as to what constitutes valid industry-related employment status. For example, ABA regulations allow temporary positions and employment completely outside the legal profession as valid numbers for law schools reporting successful job placement (ABA,

2012). Additionally, similar ABA requirements for reporting state bar examination statistics convolute the validity of post-graduate employment, because the ABA requires law schools to report only 70% of first time bar exam test takers, which by default alters employment status rates as compared to employment of those passing the bar.

In demonstrating compliance under sections (1) (a) and (b), the school must report bar passage results from as many jurisdictions as necessary to account for at least 70% of its graduates each year, starting with the jurisdiction in which the highest number of graduates took the bar exam and proceeding in descending order of frequency (ABA, 2012). Furthermore, because the ABA definition of employment status has varying categories and definitions, law schools can avoid direct clarification of reported statistics (2012). Lately in the face of dwindling opportunities for legal jobs, growing numbers of recent graduates have raised their voices in protest. They question the rosy picture of future prospects that influenced their choice to enter law school, suspect employment statistics have been candy-coated, and question job placement reporting practices. These factors combine to produce a set of false pretenses that creates high expectations that many graduates never realize (Bureau of Labor Statistics, 2012; National Association of Legal Providers (NALP, 2011)

The National Association of Legal Providers and the Foundation for Law Career Research and Education conducted a two-year study on new associate attrition between 2002 and 2004. During this period, they found the national average for entry-level associates departing within two years of initial employment was 15%, but when the measurement extended to include the first four years of employment, the number of departures jumped to 62% (NALP, 2005). Furthermore, the report also discovered that

100% of entry-level minority female associates left their employment within five years. As compared to entry-level minority males, whose attrition rate for the first five years was 82%. In 2008, the national average attrition rate for entry-level associates, those working at a private law firm five years or less was 79%, as compared with 60% in 2000 (NALP, 2009). According to the latest national figures compiled by the Bureau of Labor Statistics (2012), lawyers hold about 728,200 jobs (i.e., 51%) in the United States with approximately 22% of lawyers being self-employed as solo practitioners. Since 2008, the legal industry has seen roughly 15,000 attorneys and legal-staff jobs at law firms of all sizes vanish (Segal, 2011). Many of those reductions, of course, resulted in associate layoffs; furthermore, this significant reduction in positions has also affected the number of law firm partners and resulted in recruitment programs being scaled back or eliminated (NALP, 2011).

Figures released in 2011 by NALP indicated that the overall employment rate (any type of job, full-time, part-time or temporary) for the 2010 graduating class was 87.6%. This represents the lowest employment rate since 1996, when job placement for graduates stood at 87.4% (NALP, 2010). The NALP report also stated that the employment profile for the 2010 class "marks the interruption of employment patterns that have been undisturbed for decades" (NALP, 2010, p. 1) when employment rates for new associates typically ranged between 89% - 90.1%. The outstanding exception during this period was 2007 when the rate hit an all-time high of 90.5% (NALP, 2010).

Even though the legal industry may be facing the same kind of tectonic shift that crushed the U.S. steel industry decades ago, with employment rates for lawyers plunging, law schools do not seem to be scaling back on student enrollment. According to numbers

reported by *The Wall Street Journa*l (Lee, 2011), close to 43,000 J.D.'s were granted in 2009, representing an 11% increase over the decade. This apparent mismatch between student expectations and the likelihood of post-graduate employment may be early signals of tsunami-like changes yet to come that will impact law firms, recruiting strategies, and perhaps most importantly, the educational methods law schools will use to produce practice-ready novice attorneys.

**Constructivism**

Situated learning combines theoretical concepts and legal principles in an application-based environment through communities of practice that eventually transform the student's identity into professional readiness. The concepts of practical knowledge and situated learning applied through communities of practice derive from social constructionist epistemology. The research model designed for this study lies within the basis of the theoretical lens *situated learning* as conducted within the framework of social constructivism (Ertmer & Newby, 1993).

The foundational principle of constructivism is that learners play a pivotal role in constructing their own knowledge (1993). As such, ways of knowing are perforce contextual, individualized, and influenced by previous experiences (Mackeracher, 2010). Constructivism further posits that learners contribute to their own reality of knowledge transfer through a personal process of self-reflection that enables them to anchor new knowledge within the present situation and the context of previously known experiences (Difrancisco, 2011). The central theme of social constructivism understands that learning is a collaborative process between the community and the individual that enables the learner to construct knowledge through a series of social processes (Ertmer & Newby,

1993; Henning, 1998). Within the legal context, the process of translating legal theory to practical application of the law defines the learning process. This process constructs a foundational understanding of the law that results in an authentic meaning-making experience (Clancey, 1994; Merritt, 2008). In other words, the social construct is considered a mediated process (Merritt, 2008) that connects the premise of prior knowledge resulting in cognitive development. As suggested by Clancey (1995), collaborative tools allow the social constructivist the opportunity of scaffolding instructional activities that enhance the individual's concept of new knowledge being learned (Henning, 1998; Jonassen, 1994).

Two main pioneers of constructivist social learning theory are Jean Piaget (1896-1980) and Lev Vygotsky (1896-1934). Both made significant contributions to the epistemology of constructivism, reasoning that learning is continuous as individuals adapt to ongoing changes in their environments and that knowledge is transferred directly from one individual to another through its active use or application. The primary distinction between these two philosophers relates to the catalyst that triggers the learning process. Piaget believed that the stimulus of learning is primarily rooted in the needs of the individual, while Vygotsky placed more emphasis on social needs and communities of practice (Fenwick, 2003). This constructivist social learning theory is particularity relevant to the field of legal education. By way of illustration, one might argue that the traditional case-method of teaching law is a style of learning that focuses on the learning needs of the individual. On the other hand, practical skill courses reflect an approach to learning grounded in the social needs of communities of practice.

**Situated Learning**

Beginning with that critical need, situated learning progresses through a series of problem-based activities that provide opportunities for cognitive development, facilitating interpretation and integration of both new and prior knowledge. According to Giles (1991), situational learning can develop deductive reasoning and problem-solving skills only when it establishes firm connections between past experience and the current environment. This process of making connections between old and new generates a cognitive map that enables the learner to apply new knowledge. With regard to the field of legal education, providing students with opportunities to engage actively in the process of problem identification and solution development strengthens the process of learning. In turn, this hands-on approach, or apprentice-like opportunities to practice, enhances the prospect of future success in dealing with legal dilemmas and challenges. Lave and Wenger (1991) propose that providing ample opportunities to participate in a "sociocultural community of practice" (e.g., situated learning), promotes the "learning process" to become a professional" (p. 52). This type of environment develops higher-order thinking skills rather than the simple accumulation of facts, independent from the learner's real life (Choi & Hannafin, 1995). This focus on complex, realistic problem-orientated activities encourages the learner to think critically and apply knowledge on expanded cognitive levels (Young, 1993). Further, situated learning facilitates "thought and action in a specific place and time" (Lave & Wenger, 1991 p. 32) by involving other learners in the process, using cooperative and participatory teaching and stimulating interactions and dialogue. The construction of situated learning is more dependent on practical experience than traditional instructor-led courses (Wein, 1995). Proponents of

situated learning claim that knowledge is more than a set of descriptions or a collection of facts and rules (Clancey, 1995). Mackeracher (2010) supports the theory of *apprentice cognition* (i.e., authentic learning) and that learning constructs facilitate the progression from conceptualizing the legal theory to the application-in-us of practical knowledge. Within the law school environment, practical skill courses like legal clinics, field internships, and trial skills incorporate the principles of situated learning by not only allowing students to reflect on or draw implications from past experiences, but by simultaneously immersing them in real world (i.e., authentic learning) legal experiences (Fines, 2008).

Lave and Wenger (1991) further contend that successful acquisition of new knowledge and the ability to use or apply practical knowledge is best accomplished when the learning environment reflects a hybrid method of social interaction and individual reflection. This approach to learning, which uses an academic cohort to emulate communities of practice, is particularly relevant to adult learning because it simultaneously encourages self-directed learning while providing social support to minimize fears and insecurities as learners jointly engage the process of new identity formation. Of course, the desired evolution of identity that law schools hope to achieve is to move the individual from *learner* to *professional*. This progressive development is best achieved by the extensive use of adult *student centered* theory (e.g., situational learning) combined with traditional *teacher centered* instruction (e.g., case method analysis). The key to successful implementation and use of communities of practice depend on maintaining a sensitive balance between the use of teaching methods that involve direct

instruction and supervision as well as undirected assignments that require students to develop solutions independently (Clancey, 1995; Dewey, 1938).

Lave and Wenger's research (1991) on communities of practice is directly applicable to legal education especially in the areas of trial skills, legal clinics, and internships, which have been part of legal education since the mid-1960's, but not fully integrated as mandatory instructional courses (Kirkpatrick, 1987). Michael Eraut (2004) and Donald Schön (1987), leaders in researching workplace learning, share the view that, although characteristics of situated learning are of practical importance to professional education, educators must avoid total reliance on it; arguing for balance between the provision of technical knowledge and theoretical content. Schön (1987) whose epistemology rests on the principle of practical knowledge, believes that reflective practices as part of the learning process provide a critical step toward delivering a well-rounded education. In other words, an individual, under the guidance of a professional within their discipline, must thoughtfully consider his or her own experiences in order to make reliable and consistent connections between new knowledge and practice. According to Schön, professional knowledge encompasses a two-prong meaning. The first prong is professional knowledge focusing on private or personal experience, and the second is process knowledge, which represents critical thinking and decision-making. It is crucial for these two to work together for a professional to function at the highest levels of effectiveness his or her individual field (1987).

According to Henning (1998), the everyday life activities of individuals interacting within social communities filter opportunities to construct practical knowledge that is interrelated to individual and social experiences. Saltmarsh (1997)

contends that learning does not begin or end with formal education, and experience alone neither guarantees nor necessarily results in learning. Yet, when experience becomes part of the tandem process involving critical thinking and reflective dialogue it leads to the meaning-making of new and practical knowledge (Bransford, Brown & Cocking, 2000 & Mezirow, 2000). Furthermore, some theorists (Lave & Wenger) believe that learning is more context-based in a particular situated learning experience, which is present in community of practice environments (1991). Lave and Wenger explain that context-based learning as the nature of interactions among the learning, the tools used within these interactions, the activity itself and the social context in which the activity takes place shape the final learning outcome for application of new knowledge (Hansman, 2001). As stated previously, the specific content of knowledge determines the individual applicability and relativity to the learner's environment (Wein, 1995). It should be noted that if the connection to known reality should be broken, then knowledge becomes decontextualized from the learner's experience, meaning is lost, and it becomes inert for the learner. As a result, we see that while all learning starts with experience, it may not always result in meaning that has applicability if the learner is unable to connect new knowledge to existing knowledge (Jonassen, 1999). Evaluating formal and informal teaching methodologies has become an extended form of quality assessment for incidental social learning within higher education (1999). The two basic learning metaphors that form the way we think about learning are:

a.      Acquisition learning: social learning understood in terms of individuals acquiring knowledge from social interaction (Warhurst, 2006).

b.        Participatory: situated learning, which predicts an understanding of knowing and practice, as socially situated and contextually distributed (Clancey, 1994).

Clearly, knowledge is interrelated and contextual and, learning is part of the everyday life of individuals and social community. Further, learning, understood as a process of participation in authentic practice, is not an activity distinct from practice. Additionally, learning does not begin and end with formal education; instead, education is only of many avenues an individual may take to achieve the necessary steps of being a self-directed lifelong learner (Saltmarsh, 1997).

**Lawyering Skills for Practice-Ready Graduates**

As the 20th century approached, Edward J. Phelps, Yale Professor of Economics and Law, warned educational institutions about the consequences of indifference to, or ignorance of, the practical needs of the legal industry. In a law review article Phelps wrote, "…institutions must meet the demands of their time, right or wrong, or they will soon cease to be institutions, for the lack of disciples" (1892). Today, the tension between proponents of the Socratic Method and those who espouse practical skills training continues as legal scholars' debate the necessary knowledge and skill sets that define competencies that reflect readiness for law practice. This knowledge and skill set readiness to practice law is commonly referred to in the legal field as being practice-ready.

The definition of practice-ready is undoubtedly complex and perhaps even ambiguous given the vast array of specialty areas in the legal field (ABA, 1992; Katz, 2008; Torres, 1998). Proponents of the idea that new graduates should enter their first job as practice-ready lawyers argue that law schools should focus also on developing

practical skills rather than only theoretical concepts (Torres, 1998). Recently, this argument has gained significant footing as a feeble economy increases competition for low-cost legal services. As a result, the economic realities of the early 21st century, combined with Phelps challenge issued in the late 19th century constitute a compelling argument for curriculum reform. If law schools continue to ignore and thereby negate the voice of the industry, they will continue the present practice of contributing to the deficit of practice-ready graduates.

In 1992, the American Bar Association Section of Legal Education and Admissions to the Bar commissioned a special investigation, chaired by committee member Robert MacCrate to review issues associated with legal competencies affecting law schools as an educational system. The results, published as the part of the *Task Force on Law Schools and the Profession: Narrowing the Gap Report*, informally known as the *MacCrate Report*, provide a comprehensive outline concerning legal competencies and details as how law schools could incorporate skills training into substantive and other nontraditional skills-related courses (ABA, 1992; Torres, 1998). Since the *MacCrate Report*, two other publications have further emphasized that preparation of students as practice-ready, competent and ethical lawyers should constitute the central mission of legal education (Katz, 2008). Both reports, *Carnegie Report, Educating Lawyers: Preparation for the Professional of Law* (2007) [hereinafter *Carnegie Report*] and *Best Practices for Legal Education* (2007) [hereinafter *Best Practices*], examine the andragogy approach used throughout "law school curriculum in light of the ambitious goals of preparing students for ethical and competent practice" (2008, p. 909).

The reports call for (a) greater emphases on the professional identity and purpose of lawyers, (b) more integration of practical skills as preparation for the practice of law and, (c) how to utilize situated learning communities of practice to create an authentic meaning-making experience. All three reports, *MacCrate, Carnegie* and *Best Practice,* explore the analysis of balance between theoretical context and skills characteristics most common to the practice of law (Torres, 1998). The following components, which are original research items as part the *MacCrate Report* and secondary analysis foundation for the *Carnegie* and *Best Practices Report*, outline ten fundamental competencies essential for producing law school graduates who are practice-ready:

> *Problem Solving.* Incorporates skills and concepts involved in problem solving and understanding the client's situation and objectives. Skills include: identifying and diagnosing the problem; generating alternative solutions and strategies; developing a plan of action; implementing the plan; and keeping the planning process open to new information and ideas. (Torres, 1998, p. 15)
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> *Legal Analysis*. Involves effectively analyzing the application of legal rules and principles specific to a client's problems. Skills include: identifying and formulating legal issues and distinguishing all relevant facts; formulating relevant legal theories and synthesizing pertinent legal rules; elaborating legal theory and identifying arguments from different perspectives; evaluating legal theory for applications and implications; and criticizing and synthesizing legal argumentation to objectively evaluate theories and arguments. (p. 25)
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> *Legal Research*. To effectively conduct legal research, a working knowledge of the nature of legal rules and institutions including case law, statutes,

administrative decisions, rules of the court, restatements, and legal remedies are necessary skills. In addition, knowledge of and an ability to use the most fundamental tools of legal research both primary, secondary, and alternative sources-are required. Furthermore, conducting legal research requires an understanding of the process of devising and implementing a coherent and effective research design. (p. 31)

*Factual Investigation.* There is little doubt that most practitioners consider the skill of factual investigation a key element of the lawyering process. The central components of effective factual investigation entails knowing when and in what context factual investigation is needed, planning the investigation process, implementing a plan, organizing the information in an accessible form, knowing when to stop, and evaluating the information gathered. (p. 38)

*Communication.* Communication skills are essential. Lawyers communicate in a wide range of contexts: written briefs or oral arguments to advocate or persuade; opinion letters or counseling to advise or inform; interviews or discovery letters to elicit information; and drafting contracts, wills, trusts, statutes, or administrative regulations to establish legal obligations or effectuate legal transactions. Types of communication may differ, but there are skills fundamental in effective communication: assessing the perspective of the recipient of the communication with the knowledge of one's own perceptions; using effective methods of communication by presenting ideas logically and appropriately; attending to detail; effectively using factual material; and tailoring the nature, form, or content whether it be drafting or listening receptively. (p. 47)

*Counseling.* Counseling clients about decisions they must make or courses of action they are considering may occur in a litigation context; for example, counseling a client about a settlement offer in a civil case or plea in a criminal case. Counseling may also take place from a non-litigation context, for example, estate planning or filing a bankruptcy petition. Skills and concepts include: understanding the proper nature and bounds of the lawyer's role in a counseling relationship, taking into account ethical rules and safeguarding the client's best interests while maintaining legal information and client's perspective; analyzing the decision to be made, including addressing alternative options; presenting all options in a comprehensible fashion to the client; and ascertaining and implementing the client's decisions, identifying changes and circumstances, and maintaining constant communication. (Torres, 1998, p. 37)

*Negotiation.* Negotiation skills encompass these elements: preparing for a negotiation effectively and evaluating strategies, alternatives, and the "settling point"; analyzing objectives from a competitive or cooperative perspective; and planning for all realistic contingencies. Conducting a negotiation session effectively involves communication, analyzing relevant information, and modifying strategies based on the other side's negotiation behavior. Finally, competency in negotiation requires counseling the client about terms obtained from the other party and implementing the client's acceptance or rejection decision. (p. 60)

*Litigation and Alternative Dispute Resolution Procedures.* In order to develop an appropriate course of action and safeguard the client's best interest, attorneys must

have fundamental understanding of the litigation, appellate, administrative, and alternative dispute resolution procedures. Specifically, lawyers should have an understanding of: (1) all steps of the litigation process, including pre-trial, trial and post-trial techniques; (2) appellate procedures, such as oral argument, procedural rules, and brief writing; (3) functions and structures of administrative law and procedures; and (4) alternative forms of dispute resolution and when to pursue options such as arbitration, mediation, and conciliation. (Torres, 1998, p. 67)

*Organization and Management of Legal Work.* To effectively organize and manage legal work. Skills and concepts include: formulating goals and principles for effective practice management; developing systems and procedures to ensure that time, effort, and resources are allocated efficiently; developing systems and procedures to ensure that work is performed and completed at the appropriate time; developing systems and procedures for effectively working with people; and effectively administering a law office, from handling cases to attending to the financial aspects. (p. 76)

*Recognizing and Resolving Ethical Dilemmas*. Involves familiarity with the nature and sources of ethical standards, including primary sources of ethical rules and the duties owed to a client. In addition, familiarity with the means by which ethical standards are enforced and the ability to guard against unethical conduct. Furthermore, familiarity with the processes for recognizing and resolving ethical dilemmas includes identifying warning signs, solutions, and appropriate responses. (p. 80)

The overall goal in evaluating competency levels, as outlined above, is to view legal education as a whole experience by incorporating a combined approach of case-method analysis and practice skill courses. In other words, situated learning connected to andragogy of communities of practice exposes the learner to an authentic meaning-making experience, which in turn creates the scaffolding for applying practical knowledge-in-use. It is understandable that the recommendations for realigning legal education curriculum is not merely adding in practical skill courses, but deciding which skills are more relevant, because as a practical matter, law schools cannot teach them all. The underlying challenge the law profession is requesting from legal education is skills forecasting. In other words, requesting that law schools take on more of the shared burden of "preparing law students for the future without knowing what the future holds" as an economic system affecting the legal industry (Konefsky & Sullivan, 2011, p. 3).

**Summary**

The review of literature has revealed that post-graduate performance is attributable to more than the theoretical legal content obtained through educational curricula. Research suggests that the combination of creative and analytical thinking skills contributes to a higher rate of academic and post-graduate success. These findings also contend a high correlation with performance demonstrated in practical skill courses in the situational framework of communities of practice, rather than traditional case-method analysis (Christensen, 2009a; Craver, 2000; Enquist, 2008; Moens, 2007).

Finally, learning is critically influenced by the *experience itself;* if the experience is successfully connected to prior experiences, practical knowledge is then constructed to create a sustained meaning of the new experience. While learning can certainly result

from individual experience, communities of practice can significantly enrich the learning

experience as the community shares insights, makes connections, and identifies new

application as they continually modify their cognitive matrices (Dewey, 1938; Henning,

1998; Lave & Wenger, 1991; Merritt, 2008; Mezirow, 2000).

# CHAPTER 3


# METHODOLOGY

*Laws and institutions must go hand in hand with the progress of the human mind.*
*Thomas Jefferson,* 1819


This chapter discusses the research objectives and criteria crucial to the selection of the appropriate methodology to test the hypotheses presented in Chapter One. This chapter also includes details regarding how each of the latent variables were constructed, using data from the American Bar Association (ABA) law school annual accreditation questionnaire. The chapter includes the following sections: (a) research objectives, (b) structural equation modeling, (c) key terms, (d) population and sample, (e) variables used in the study, (f) instrumentation, (g) data screening (h) method of analyses, and (i) summary.

## Research Objectives

This research addressed two specific objectives; first, it identified whether statistically significant practical associations existed between the observed and unobserved variables that exert a positive influence on post graduate performance, measured by employment rates and passing the state bar examination; second, it will investigate the relationship between the observed and unobserved variables relative to

their ability to predict successful post-graduation performance. Examination of the first objective, relevance and statistical significance, proceeded by using structural equation modeling (SEM), a multivariate regression technique that is extended in a way that includes latent variables to measure unobservable constructs. Specifically, the observed variables within the construct of law school acceptance scores and situated learning served as indicators on post-graduate performance of employment rates and passing the state bar examination. Additionally, structural equation modeling was used to examine the premise of the second objective, predictive efficacy, for studying the relationships between observable and unobserved constructs. Specifically, the unobserved variables law school acceptance scores and situated learning served as predictors of post-graduate performance. Post graduate performance is composed of the variables employment rates and passing the state bar examination.

**Structural Equation Modeling**

Structural equation modeling (SEM) is a statistical technique that relies on a general, yet efficient approach to assess the plausibility of a posited research-based model. Using multivariate analysis (i.e., observations based on multiple independent and/or dependent variables in a single study), SEM statistically evaluates the tenability of a hypothesized model to predict or reproduce observed variances and/or covariances in empirical data (Byrne, 2010).

When researchers use structural equation modeling, they take an *a priori* approach. Such an approach allows the researcher to specify causal or exploratory rational models based on current knowledge, theory, and hypotheses. *A priori* takes into account what is already known about certain components related to the research problem

and allows the researcher to pre-select relationships of significance interest (Byrne, 2010). As suggested from the literature review, the evidence supports the hypothesis that situated learning produces has a higher performance impact on post-graduate outcome than law school acceptance scores (Christensen, 2009a; Craver, 2001).

Structural equation modeling enables the researcher to investigate a phenomenon and its underlying factors by testing both observed variables and unobserved or latent variables. It significantly enhances a researcher's ability to analyze phenomena that we believe exert influences on a specific outcome. The ability to statistically examine multiple phenomena and their influence on outcomes simultaneously is particularly relevant to this study because law school acceptance scores, situated learning, and post-graduate performance are all hypothetical constructs, or latent variables.

Structural equation modeling also functions effectively as both a confirmatory, (i.e., *a priori* hypothesis) and an exploratory (i.e., model generating) statistical tool (Ader, 2006). This dual analytic approach enables the researcher to evaluate the model to ascertain the degree to which it accurately reflects the empirical data. Structural equation modeling allows the researcher to refine the initial *a priori* model to test variances and covariances between variables to maximize model fit.

Practical advantages of using SEM for statistical analysis include its capability to simultaneously assess validity and reliability of scores that comprise the data. Because SEM estimates the manifest and latent variables simultaneously the analysis provides rich information that in turn leads to increased validity evidence for interpretation (Engel, Moosbrugger, & Muller, 2003). Additionally, SEM takes in to account the "the imperfect nature of measurements" and specifically identifies the uniqueness errors (i.e. random

and non-random errors due to the measurement process) while "traditional methods assume measurement occurs without error" (Suhr, 2006, p. 1).

Finally, a structural equation model uses graphical language to diagram constructs and depict the interrelationships among latent variables, which can then be transformed into a set of mathematical equations (Suhr, 2006). The specific structural equation model used herein will test the premise that situated learning is a stronger predictor of post-graduate performance than law school acceptance entrance scores. The summary concept map (Figure 1) illustrates the analytic model that was used to determine the number of parameters for the model.
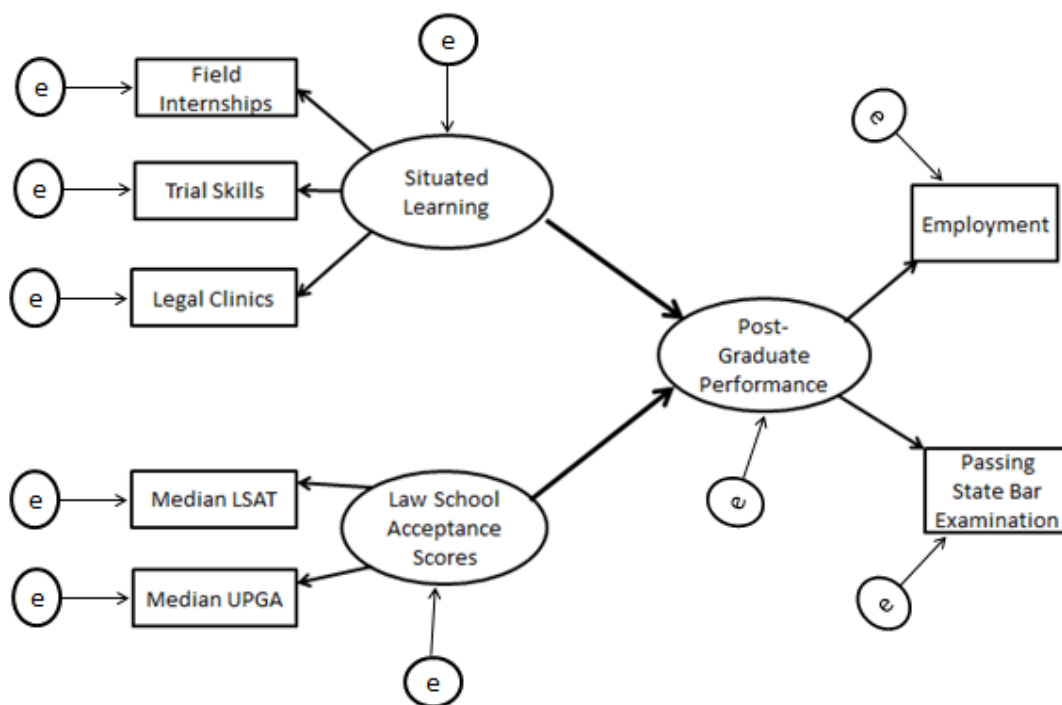
**Figure 1. Summary Concept Map and Analytic Model**. Diagram of the concept map illustrating the theoretical constructs for this study. All endogenous and exogenous variables are shown as well as causal relationships, correlations, and residual errors.

**Key Terms**

The following terms are commonly associated with structural equation modeling. The terms provided below are specific to this study.

1.      *A priori*. An approach to research that allows the researcher to specify a causal or exploratory rational model based on current knowledge, theory, and hypotheses (Byrne, 2010).

2.      *Bias*. A term used to describe deviated results between the statistical average value and the value in the population, which may result in misleading information if not properly accounted for in the data (Hopkins, 1999).

3.      *Causal inference.* A relationship that cannot be defined from the distribution alone because the outcome is affected by various causes that depend on each other (Ragin, 1999).

4.      *Chi-square.* A traditional fit index that evaluates overall model fit. Chi-square also calculates the degrees of freedom and corresponding $p$ value $= 0.05$ for model statistical probability (Hooper, Coughlan, & Mullen, 2008).

5.      *Complete-case analysis.* A data screening technique that excludes any cases if missing values are present for that case (Little & Rubin, 1990).

6.      *Correlation*. A statistical measurement of the relationship between two variables. A number that is situated between -1 (negative relationship) and $+ 1$ (positive relationship) and where zero (0) indicates no relationship between the variables (Krathwohl, 2004).

7.      *Covariate.* An independent variable within the construct that has not been manipulated during the structural equation model but still exerts an influence on the dependent or criterion (Lomax, 1998).

8.      *Criterion variable.* In linear regression analysis, the criterion variable within the construct is the variable being predicted. It is also known as the dependent variable (Key, 1997).

9.      *Data.* The observational units tied directly to a measurement of the observed variables in a quantitative study that is obtained from either the sample or entire population (Byrne, 2010).

10.      *Degrees of freedom.* A statistic derived from chi-square that indicates the number of values that are free to vary when calculating a given mean (Hurlburt, 2006).

11.    *Dependent variable*. The outcome variable that is determined by the assumed values in the independent variables (McDonald & Ringo Ho, 2002).

12.    *Effect size*. A measurement that denotes the strength of the relationship between two or more observed variables. An effect size smaller than 0.2 is considered small (Field, 2000).

13.    *Endogenous variable*. The dependent variable representing the outcome in a structural equation model (Kline, 2010).

14.    *Exogenous variable*. The independent variable represented in a structural equation model that is not measured directly (Kline, 2010).

15.    *Factor Analysis*. A multivariate analysis (e.g., quasi-judicial) within the structural equation modeling family that tests the model's relationship between the latent variables and indicators to study the pattern of relationships on the predictive outcome (Ader, 2006; Kline, 2010).

16.    *Goodness-of-fit (GOF).* Determines the degree to which the structural equation model fits the population or sample data (Hans & Muller, 2003).

17.    *Independent variable*. A variable that is presumed to affect the criterion (dependent) variable under study (Fraenkel & Wallen, 2009).

18.    *Latent construct*. An unobserved variable with two or more indicators that may account for variation in the relations between observed variables (Loehlin, 2006).

*19.*    *Measurement Model*. The component of the model that represents the *a priori* hypothesis that measures the relations between the indicators and latent variable (Kline, 2010).

20.     *Model appropriate for associational inference*. A statistical model that relates two variables over a population (Holland, 1986).

21.     *Non-recursive*. An assessment model term indicating that the path of influence is reciprocal (e.g., contains a feed-back loop) and the construct errors are correlated (Lewis-Beck, 2004).

22.     *Recursive*. An assessment model term indicating that the path of influence moves in only one direction and the construct errors are not correlated (Lewis-Beck, 2004).

23.     *Reliability*. The extent to which scores on the instrument yield consistent results over repeated trials (Key, 1997).

24.     *Residuals*. The difference between values of the outcome predicted by the model versa the values of the outcome from the population or sample (Field, 2000).

25.     *Root mean square error approximation (RMSEA).* A fit index that calculates confidence intervals around the point estimates. The recommended cut-off point associated with RMSEA has a range from 0.06 to an upper limit less than 0.08 (Hooper, Coughlan, & Mullen, 2008).

26.     *Structural Equation Modeling*. A statistical technique that assesses the plausibility of the research model as a whole (Byrne, 2010) to test hypothesized directional and non-directional relationships between variables (Suhr, 2006).

27.     *Type I error rate*. A level of significance, typically 5%, that declares the results as significant because there were no prior relationships associated with the population before the study (Hopkins, 1999).

28.     *Type II error rate.* A level of significance, typically 10%, that declares the results to have no significance when in fact a relationship my exist (Hopkins, 1999).

29.     *Predictor variable*. A variable that can be used to predict the value of another variable, which is either manipulated by the researcher or simply observed by the researcher (Lewis-Beck, 2004).

30.     *Secondary data*. Primary data originally collected by for purposes other than the current research under study (Lewis-Beck, 2004).

31.     *Unit*. The objects of study in the research investigation (Holland, 1986).

32.     *Validity*. The extent to which an instrument accurately indicates the values are close to the true values for the measurements represented (Tabachnick & Fidell, 2007).

**Population and Sample**

The population data used in this study were based on aggregate data from the American Bar Association's (ABA) 2008 law school annual accreditation questionnaire. Because the data used here are aggregate (e.g., summary measures such as a mean or proportion), an individual data point is represented by a single institution. Furthermore, variables within a single institution are represented by an aggregate score such as mean LSAT score. To this end, the data used in this study includes the entire population rather than a sample derived from the population. The composition of this population data includes (n=196) individual law schools with a mean student enrollment of 722. Of these, 115 are public law schools and 81 are private law schools representing the entire 2008 population of U.S. accredited law schools. The population included one or more law schools from all 50 states and Puerto Rico. Since the focus of this study was post-graduate performance, the population for this research was limited to first-time state bar examination test takers and employment status nine months after graduation. Table 1,

post below, displaying the enrollment demographics based on institutional type.

**Table 1**

*Law School Enrollment Demographic Profile Based on Institutional Type*

| Law School Classification | Number of Schools | Student Enrollment (N) | | | |
|---|---|---|---|---|---|
| | | Low | Mean | High | Total Students |
| Private Law Schools | 102 | 331 | 839 | 3,606 | 85,584 |
| Public Law Schools | 75 | 231 | 620 | 1,364 | 46,543 |
| Combined Law Schools | 177* | 231 | 746 | 3,606 | 132,127 |

Please note: Population Total Size n=196. Total Analysis Sample Size n=177.

Data from the ABA law school accreditation questionnaire used in this study are classified as secondary data and linked for coding by a school identification number. The unit of analysis for this study is organization level (i.e., academic institution). The goal of using an academic institution as the unit of analysis is to investigate the educational methodology of situated learning as manifested at the institutional level and its impact on post-graduate performance.

As with any statistical design, adequate sample size, or for the purpose of this study, population size is critical for SEM application and assessment of model fit. Because some relevant statistics and fit indices potentially are affected by the population or sample size, careful attention was given to the criteria to avoid any unintended bias. According to Barrett (2008), a sample size less than 200 should "simply be rejected outright" (p. 820) for research purposes *unless* the researcher employs acceptable

corrective measure(s) to account for the limited sample size. Therefore, due to the numerical nature of the data and limited analysis sample size ($n = 177$) a bootstrap analysis was conducted to further refine the final model-based parameter estimates. Bootstrapping is a statistical technique that calculates the estimated standard error of the mean for a parameter based on N=1,000 (or other specified sample size) by repeatedly drawing *bootstrap samples* from the original data, reevaluating the median for each bootstrap sample, and then estimates the standard error of the original median by the observed variability in the bootstrap medians (Yung & Bentler, 1996). Bootstrapping provides an empirical investigation of the variability of parameters estimates and fit indices to compare the parametric values for the repeated samples. This process allows the researcher to assess the stability of the parameter estimates and report values with greater accuracy (Cheung, & Lau, 2008). However, Yung and Bentler (1996) do extend some caution regarding bootstrapping and assert that it is not a panacea for all small population samples sizes because the results depend heavily on the accuracy of the estimates which are derived from the original data (1996). But, for the purposes of this study, the advantages attributed to the bootstrapping, as mentioned above, provide an empirical foundation supporting the use of this method.

Nevertheless, there are three issues in this population that may present threats to the internal validity of the study thereby reducing the generalizability of results. Furthermore, the potential for some degree of systematic bias (e.g., inherent tendency to favor a particular outcome due to data constraints or design issues) cannot be remedied with bootstrapping (Shadish, Cook & Campbell, 2002). The three validity-related threats include: (a) undergraduate grade point average (UGPA), (b) standardized tests used for

law school entrance, and (c) the post-graduate examination for jurisdictional state bar licensing requirements. A standardized test instrument designed to measure knowledge and skill mastery relevant to analytical inference and logical reasoning will likely pre-select individuals destined to perform well subsequently on standardized state bar exams. As part of the process of application for law school, students must submit their UGPA and LSAT scores for academic pre-screening and admission purposes. This type of traditional student evaluation based on the Henry Cravath model, a recruiting philosophy that places substantially more weight on academic grades and LSAT scores as predictors for success, is an integral part of the law school acceptance process (La Piana, 1998). Research conducted by the Law School Admission Council (LSAC), a regulatory agency for legal education, suggests that the academic achievement due to underlying grades and standardized test scores contribute to passing of the state bar examination but should not be considered as the sole predictor (1998). In other words, even though standardized tests scores supposedly provide more objective, less ambiguous evidence for comparing student grade performance across different education systems, they cannot guarantee success for post-graduate performance (Kaufman, LaSalle-Ricci, Glass, & Arnkoff, 2007).

The annual accreditation requirements for tracking academic grades and LSAT test scores tend to artificially cluster aggregated data reported to the ABA. The system is designed to reflect naturally a predisposition to high achievers (2007), who are also more likely to perform well on the state bar examination, regardless of the academic environment.

**Variables Used in the Study**

The analytic model used this study included one endogenous variable and two exogenous variables. The endogenous variable, *Post Graduate Performance* reflects the employment rate nine months after graduation and passing rate of the state bar examination for first time test takers. The exogenous variables, *Situated Learning* and *Law School Acceptance Scores*, are made up of composite variables. A composite variable represents a variable that has internal components for data analysis identified as manifest or indicator variables as part of overall model construct as shown in Table 2 (Lewis-Beck, Bryman, & Llao, 2004). For the purposes of this study, the exogenous variable *Situated Learning* (e.g., independent composite variable) is comprised of *legal clinics, trial skills courses*, and *field placement internships*. The second exogenous variable *Law School Acceptance scores* (e.g., independent composite variable) is comprised of *Median UGPA* and *Median LSAT* scores. All the variables in the study are continuous representing an interval level of measurement (e.g., ability to reproduce the same calculations as with mean, median or mode as desired) qualifying population type as a reliable (Loehlin, 2004). Variables identified as *continuous* represent equal units of measurement between the numerical values, meaning that the distance between 1 and 2 is the same as between 2 and 3. Additionally, because measurements of continuous variables can be infinite (e.g., continuous distribution), they are normally rounded off to make the data easier to evaluate. Table 2 provides a listing of the manifest variables,

measurement scale type, which manifest variables are linked to their respective

composite variable, and how the composite variable is represented in the model.

**Table 2**

*List of Variables and How They are Employed*

| Manifest Variable Name | Measurement (Interval, Ordinal, Nominal) | Composite Variable | Fit in Model |
| --- | --- | --- | --- |
| Field Placement Internships | Interval | Situated Learning | Exogenous |
| Trial Skills | Interval | Situated Learning | Exogenous |
| Legal Clinics | Interval | Situated Learning | Exogenous |
| Median LSAT | Interval | Law School Acceptance Scores | Exogenous |
| Median UGPA | Interval | Law School Acceptance Scores | Exogenous |
| Employment | Interval | Post Graduate Performance | Endogenous |
| Passing State Bar Examination | Interval | Post-Graduate Performance | Endogenous |

**Instrumentation**

The American Bar Association (ABA) established the first council governing

legal education and accreditation during the turn of century in1893. The Council is

recognized by the United States Department of Education (DOE) as the governing body

for academic institutions' granting Juris Doctor (JD) degrees (2011). The Council

promulgates the Standards and Rules of Procedure for Approval of Law Schools and

mandates annual reporting. The questionnaire instrument developed by the ABA for data

collection is intended to obtain non-measured qualitative and quantitative data regarding

academic curriculum, faculty, facilities, fiscal and administrative capacity, technology

resources, student profiles, bar passage rates, and student employment that is

electronically reported to the Accreditation Committee (2011). For the purposes of this

study, only the quantitative responses collected through the ABA questionnaire were

selected as secondary data for SEM analysis. The quantitative variables derived from

certain sections of the questionnaire that were used to create the latent variables are

displayed in Tables 3, 4, and 5.

**Table 3**

*Construction of Situated Learning Variable*

| ABA/Manifest Variable Name | ABA Question | Response Type | Latent Variable Name |
|---|---|---|---|
| FIELDINTERN | Number of students involved in field placements? | Total/ Numerical | Situated Learning |
| TRIALSKILLS | Number of positions available in simulation courses? | Total/ Numerical | Situated Learning |
| LEGALCLINIC | Number of positions available in faculty supervised Clinical Courses? | Total/ Numerical | Situated Learning |

**Table 4**

*Construction of Law School Acceptance Scores Variable*

| ABA/Manifest Variable Name | ABA Question | Response Type | Latent Variable Name |
|---|---|---|---|
| MLSAT | First year enrollment Median LSAT? | Median/Numerical | Law School Acceptance Scores |
| MUGPA | First year enrollment Median UGPA? | Median/Numerical | Law School Acceptance Scores |

**Table 5**

*Construction of Post-Graduate Performance Variable*

| ABA/Manifest Variable Name | ABA Question | Response Type | Summed Variable Name |
|---|---|---|---|
| Employment | The total number of graduates from the class for whom employment status is known | Total/ Numerical | Post Graduate Performance |
| Passing State Bar Examination | Passage Rate: Number of previous and/or graduates who took the bar exam for the *first* time | Total/ Numerical | Post Graduate Performance |

The issues of adequate instrument validity and reliability are essential to ensure

the quality of the results gleaned from any data analysis. Validity refers to the "degree to

which a test [instrument] accurately measures what it is supposed to measure" (Key, 1997 p. 1) or simply, the extent that the "interpretations of the results of a test [instrument] are warranted" (p. 1). Reliability of an instrument is determined by the "extent to which the instrument yields the same results on repeated trials" (p. 3). In other words, reliability upholds a certain element of a test's integrity by evaluating the instrument's consistency of measurement.

The instrument-related issues that may affect validity and reliability relating to secondary data are associated with self-reported information. The use of self-reported information for secondary research can affect the final analysis if the instrument and its results are not properly evaluated for applicability and potential bias (Key, 1997). Self-reporting data collected by surveys are subject to discrepancies, such as measurement errors, because it relies completely on the participant's interpretation of the survey questions versus objective adherence. Self-reporting responses can be altered unintentionally due to (a) how the participant comprehends the survey questions and/or (b) transformation of data units to create a more positively response set reflecting the institution. For the purposes of this analysis, to reduce the potential measurement error, complete-case analysis will be used for data screening, which utilizes exclusion of non-complete data sets. The data used in the analysis contained accurate and complete information in every field. It should be noted, the participants' interpretation of the survey questions were out of the researcher's control to the due to the natural of the data (e.g., secondary data).

**Data Screening**

A critical issue relating to all statistical analysis is data integrity. The data screening process safeguards the data set by ensuring that a "verification procedure is followed that checks for the appropriateness of data units for the values of each variable in the study" (Tabachnick & Fidell, 2007, p. 44). Specifically, the screening process detects incomplete or missing data within the measurement units of the variables. The screening process must be employed prior to the analysis in order to confirm that the data is useful, reliable and valid for testing the proposed hypotheses (2005).

Data screening for missing information can be conducted several different ways. The two relatively simple approaches that deal with cases containing missing data are complete-case analysis (e.g., direct approach) and imputation (e.g., indirect approach). The direct approach to missing data is to exclude the unit from the dataset. Complete-case analysis, in the regression context, means excluding all units for which any of the values are missing (Little & Rubin, 1990). To avoid measurement errors when conducting a complete-case analysis the researcher must take into account whether missing values greatly differ systematically from the completely observed cases (Gelman & Hill, 2007).

The indirect approach for dealing with missing data is imputation to replace the missing values within the case. Optional steps for data imputing include population mean substitution, variances and covariances, maximum likelihood estimation, or use of a matching response pattern for data replacement (Schumacker & Lomax, 2004; Werner & Schermelleh-Engel, 2009). In this analysis, because all indicators used to construct the unobserved (latent) variables are quantitative, complete-case analysis was used for data screening (Byrne, 2010). Outliers are identified, evaluated, and possibly deleted during

the initial evaluation unless their inclusions in the analysis are determined to be of value

(Tabachnick & Fidell, 2007). The result associated with complete-case analysis may be a

reduction in population size.

An additional issue related to data integrity, as noted in the population

description, is the pre-selection of units within the primary dataset. Any measurement

errors occurring in the primary collection of data may lead to the presence of

confounding variables when conducting a secondary data analysis (Altman, Diggory,

King, Sone, Verba, Kiskis & Krot, 2001). If not carefully screened for missing

information and evaluated for applicability the possibility of drawing a biased inference

increases when using secondary data (2001). In other words, primary data associated with

pre-selected units used for secondary statistical analysis are subject to unintended

measurement errors or biased results.

Data were screened for normality and linearity. Homoscedasticity for ungrouped

data or homogeneity of variance for grouped data were evaluated as part of the initial

data analysis. To ensure that the variables in the study were not too highly correlated (i.e.

$> r = .85$), the initial output of the data was analyzed for issues regarding multicollinearity

and singularity (Tabachnick & Fidell, 2007).

Neither of the two issues: (a) complete-case analysis for data screening, reduction

of cases; and (b) pre-selected units of measure within the secondary data source affected

the analytic model. Nonetheless, as indicated above, the model was evaluated for any

unintended measurement errors in the final analysis.

**Methods of Analyses**

To test the overall empirical relationships between all observed variables and the implied structure of the theoretical *a priori* premise, a general three-pronged evaluation approach was used (Arbuckle, 1996; Werner & Schermelleh-Engel, 2009). Arial levels of model evaluation include: (a) global assessment to determine overall how well the model fits the data, (b) local assessment of analysis variances and covariance in order to specify areas of deficient, and (c) evaluation of modification indices to explore suggestions for potential model improvement (2009). To test the null hypothesis the following model fit statistical assessments and their recommended cut-off points were evaluated (Marsh, Hau & Wen, 2004). Further, as mentioned earlier in the chapter, an additional goodness-of-fit index will be applied by conducting a bootstrap and resampling procedure to aid in the overall evaluation of the model fit.

**$X^2$, df, p, and CMIN/df**. These four model fit indices (e.g., chi-square, degrees of freedom, *p value* and minimum discrepancy), which are normally combined for goodness of fit purposes, provide a statistic foundation for evaluating model-data fit in SEM because each individual index relates to the *chi-square* statistic. Chi-square is a traditional *a priori* hypothesis test that calculates the degrees of freedom and corresponding *p-value* for statistical probability to indicate whether a model should be accepted or rejected. As common practice, the chi-square statistic denotes a significant overall departure of the model-data fit (i.e. lack of fit) when the observed probability level or *p-value* is ($p < 0.05$).

**Root mean square error approximation (RMSEA).** The RMSEA is a population-based measure of error between the model and the actual data (i.e., how close the fit of the model is to the actual data). It includes confidence intervals around the point-values

(MacCallum, Browne & Sugawara, 1996). RMSEA threshold ranges from 0.06 (Marsh, Hau & Wen, 2004) to an upper limit less than 0.08 (Hooper, Coughlan, & Mullen, 2008) to qualify the model as well fitting. RMSEA represents a widely used fit index due to its acuteness towards the number of estimated parameters in the model (Diamantopoulos & Siguaw, 2000).

**Comparative fit index (CFI).** CFI index assumes that all latent variables are uncorrelated to compare the covariances to the null hypothesis (Boomsma, 2000). Advantages related to CFI are its association to all structural equation modeling programs and insensitivity to population size criteria (Fan, Thompson & Wang, 1999).

**Baseline comparison of parsimony normed fit index (PNFI).** According to Mulaik, James, Van Alstine, Bennet, Lind, & Stilwell (1989), it is best to use PNFI in association with other goodness-of-fit indices because there are no established norm values for this particular fit index (Diamantopoulos & Siguaw, 2000).

**Akaike's Information Criterion (AIC).** According to Everitt & Skrondal (2006), Akaike's Information Criterion evaluates both the statistical goodness of fit and the number of parameters that need to be estimated in order to achieve a particular degree of fit and imposes a penalty for increasing the number of parameters. The recommended cut-off points for AIC model fit indices are the lower values of the index, which indicates a preferred model. Meaning, the model with the fewest parameters that still provides an adequate fit to the data.

The structural equation modeling software used for this study was Analysis of Moment Structures (AMOS) version 19.0, which is the compatible SEM software for the Statistical Package for the Social Sciences (SPSS) version 19.0, originally developed by

SPSS, Inc. The results of the analyses will be used to examine the statistically significant and practical importance, related to the direct, indirect and total predictive effects between or among the exogenous variable and endogenous variables (Barrett, 2008; Byrne, 2010).

**Summary**

This research was designed to provide empirical data regarding situated learning and its impact on post-graduate performance as a predictor of employment and passing of the state bar examination. As part the overall analytical strategy, an *a priori* approach was employed to allow for pre-selection of relationships, and structural equation modeling allowed for decomposition of the correlations (e.g., predictions) specific to their effect on the endogenous variable outcomes.

# CHAPTER 4

# RESULTS

*. . . the Constitution of the United States is not a mere lawyer's document:*
*it is a vehicle of life that reveals the spirit of reality.*

*Woodrow Wilson,* 1908

Chapter Four provides the results of the structural equation model analysis and discusses the interactions of the variables and their influences on post-graduate performance. The chapter is organized according to the following subject areas: (a) data screening, (b) descriptive statistical analyses, (c) assessing overall model fit, (d) hypothesis testing, (e) research questions and hypotheses, (f) statistical and practical significance, (g) bootstrapping results, and (h) summary.

## Data Screening

Data screening was used to detect and address the assumption of incomplete or missing data within the measurement units of the variables and account for any outliners (e.g., Mahalanobis distance, the range of distance a case is from the centroid of remaining cases) and errors in the data set due to entry or transcription mistakes. Data screening was employed prior to the analysis to evaluate the data useful, reliable and valid for testing the hypothesis theory. In order for the data units to be included in this analysis, each record was required to include accurate and complete information in every field that was

used in the statistical equations. Therefore, both the analyses and the demographic

information presented in the following tables are based on complete records for 177 law

schools out of 196 records that were available as part of the law school population.

Next, variables in the structural equation model were evaluated for

multicollinearity among observed variables to evaluate the regression estimates for

stability. Multicollinearity can be problematic because it has the potential to adversely

affect the regression estimates, and occurs when one or more of the independent variables

are highly correlated with each other (e.g., r>=.85). As a rule of thumb, multicollinearity

can be detected in the model when the *Variance Inflation Factors* (VIF) values are

greater than 3.00, which indicates that the regression estimates are possibly unstable

(Ethington, 2012). For the purposes of this study, the results detected some

multicollinearity in the observed variables, as shown in Table 6. Multicollinearity was

present among independent variable 1(median UGPA) and independent variable 2

(median LSAT) when regressed on to independent variable 3 (trial skills), independent

variable 4 (legal clinics), and independent variable 5 (field internship placements), which

had similar VIF measurements ranging from 3.056 to 3.260. Table 6, below, displays the

*Variance Inflation Factors* (VIF) for each observed independent variable in relation to the

presence of multicollinearity within the model.

**Table 6**

*Variance Inflated Factors (VIF) in Relation to Multicollinearity*

| *Variable* | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1. MUGPA | 1.00 | 1.305 | **3.136** | **3.074** | **3.056** |
| 2. MLSAT | 1.362 | 1.00 | **3.260** | **3.138** | **3.211** |
| 3. Trial Skills | 1.088 | 1.084 | 1.00 | 1.085 | 1.024 |
| 4. Legal Clinics | 1.358 | 1.329 | 1.381 | 1.00 | 1.356 |
| 5. Field Placements | 1.00 | 1.108 | 1.062 | 1.103 | 1.00 |

*Note:* Values in bold indicate the *Variance Inflated Factors* (VIF) for each observed independent variable in relation to the presence of multicollinearity within the model.

Finally, testing the data for normal distributions levels (i.e., as in a baseline comparison represented by the standard normal distribution) is a routine analysis in the beginning stages of data screening – particularly when the analytic approach one plans to use requires that data follow a normal distribution. Additionally, testing the individual data sets for univariate normality distribution is also a standard practice related to the data screening process for determining the presence of multivariate normality. Meaning, individual data sets are evaluated for coefficients of skewness and kurtosis.

However, even though normality testing on individual variables (univariate) separately is a necessary as part of the data screen process, but not a sufficient condition for validating that a set of variables (e.g., multivariate) normality holds consistent across the model. In other words, each of the individual variables must represent a normal distribution curve for the variables to follow a legitimate multivariate normality distribution.

- S*kewness*.  A measure of symmetry or the lack of symmetry associated to the left or right relative to a normal distribution, which has standard z-score range of $-3.0$ to $+3.0$.

- K*urtosis*.  A measure of peakedness or flatted spread relative to a normal distribution, which has standard z-ordinate value critical point of 8.0.

The data screening results indicated that only two univariate data sets represented in model, MUGPA (k-0.302) and MLSAT (k-0.107), fall within the acceptable standard of error range for kurtosis. All other univariate data sets associated with the model are classified as distributions that are significantly non-normal. Therefore, it can be concluded that the model does not reflect a multivariate normal distribution. Table 7, below, displays the measurements for each univariate distribution as related to coefficients of skewness and kurtosis within the model.

**Table 7**

*Univariate Distribution Related to Assessment of Normality*

|  | Mean | Std. D | Skewness | Kurtosis |
|---|---|---|---|---|
| Field Placement Internship | 101.10 | 79.049 | 2.138 | 8.200 |
| Trail Skills | 343.19 | 244.164 | 1.659 | 3.574 |
| Legal Clinics | 97.80 | 79.406 | 2.150 | 6.671 |
| Median UGPA | 3.417 | .18900 | -.023 | **-.302** |
| Median LSAT | 158 | 5.851 | .383 | **-.107** |
| Employment | 209.46 | 102.502 | 1.171 | 1.590 |
| Passage of the State Bar Examination | 134.27 | 78.506 | 1.128 | 1.236 |

*Note:* Values in bold indicate a *Kurtosis* measure spread that is relative to a normal distribution, which has standard z-ordinate value critical point of 8.0 for the measurement criteria.

**Descriptive Statistical Analysis**

Tables 8, 9, and 10 present the demographic characteristics of these law schools in the form of three different profiles: (a) a situated learning profile, (b) an acceptance score profile, and (c) a post-graduate performance profile. Each of these tables is discussed briefly, below.

The situated learning profile of the law schools is presented in Table 8. The information in this table reflects the frequency of classes offered (trial skills and legal clinics) or internships that incorporate the characteristics of situated learning. The mean frequency of classes and internships is presented, as well as the range from low to high, and total numbers of classes and internships.

**Table 8**

*Law School Profile Based on Situated Learning Opportunities*

| Types of Classes or Placements | Numbers of Classes or Placements | | | |
|---|---|---|---|---|
| | Low | Mean | High | Total |
| Legal Clinics Classes | 1 | 98 | 540 | 22,244 |
| Trial Skills Classes | 26 | 343 | 1,406 | 60,744 |
| Field Internship Placements | 5 | 101 | 560 | 19,316 |
| Total | | | | 102,304 |

Examining Table 8, trial skills classes represent a substantial proportion of the situated learning opportunities available to students. In fact, trial skills courses comprise 59% of all situated learning types of classes or internships. The other two situated learning opportunities examined in this study, legal clinics and field internship

placements, represent 21% and 18% respectively. Combined, they comprise only 39% of the total situated learning opportunities. This discrepancy can be attributed to a law school's foundational premise of course design. In other words, concentration of curriculum towards litigation education than civil and contract law (Katz, 2008).

Table 9 presents a profile for the law school population based on median undergraduate grade point average (UGPA) and the median score on the Law School Acceptance Test (LSAT). Please note, in this case, the mean scores presented represent the averages for the median scores that were provided in the raw data. Once again, the low and high range for both UGPA and LSAT scores are also reported to provide context for the mean scores.

**Table 9**

*Law School Profile Based on Acceptance Scores*

| Test | Low | Mean | High |
|------|-----|------|------|
| Median UGPA | 2.91 | 3.31 | 3.91 |
| Median LSAT | 143 | 158 | 173 |

*Note:* For the purposes in this case, the mean scores presented represent the averages for the median scores that were provided in the raw data.

Examining the second demographic dataset in Table 9, law school acceptance scores, the average *median* UGPA (3.31) reveals a slight percentage difference between the high (3.91) and low (2.91) MUGPA mean count, which indicates a one-point movement. Although a single point does not seem to be notable, on a 4.00 GPA scale, a one-point movement represents 25%. In this perspective, the one-point movement is a sizable difference for comparison. This discrepancy can be attributed to the type of law

school applicants are applying to for admission, in conjunction with the school's status ranking that influences the acceptance level score for admission (Choi, Baker, & Gulati, 2005). The average *median* LSAT score of 158 does represent a standard score that most law schools adhere to for admission practices. Yet when examining the 2008 dataset, 93 schools out of the178 dataset fell below the mean of 158, compared to 76 schools with scores above the mean.

As stated above, this discrepancy can be attributed to the type applicants that are applying, in conjunction with the school's ranking, which influences the acceptance level scores for admission (2005).

Finally, Table 10 represents the third profile of U.S. law schools based on the post-graduate performance of students nine months after graduation. The number of students passing their state bar exam is presented in conjunction with the number of students taking the test for the first time as well as the total number of law school graduates.  In the same manner, the number of students employed after nine months can also be compared to total graduates. The range, mean, and total are presented for comparison purposes.

**Table 10**

*Law School Profile Based on Post-Graduate Performance*

|  | Low | Mean | High | Total |
|---|---|---|---|---|
| Number of Graduates | 38 | 233 | 665 | **41,318** |
| Number of First Time State Bar Test Takers | 22 | 168 | 475 | **29,770** |
| Number of First Time Test Takers Passing State Bar Examination | 11 | 134 | 409 | **23,810** |
| First Time Passage Rate | 27% | 80% | 99% | |
| Number Employed Nine Months After Graduation | 41 | 202 | 608 | **35,781** |
| Employment Status Rate | 9% | **89%** | 99% | |

*Note:* The figures in bold reflect the total counts for first time test takers and number of graduates compared to the number of graduates passing the state bar examination and employment status as explained in the below section.

First, examining the state bar exam section of Table 10, the results indicate that of the 29,770 first time test takers in 2008, 79% (23,810) actually passed the bar exam. When comparing the number of total graduates (41,318) to the number of first time test takers (29,770), the percentage rate changes to 72% of those who graduated and then proceeded to final examination for licensing, revealing a 7% difference from the total number of graduates (41, 318) taking the examination, compared to those who actually passed the exam (23,810).

Finally, the last portion of Table 10 analyzes employment status. This demographic dataset indicates that of the 41,318 graduates from 2008, 86% (35,781) were classified as employed nine months after graduation, with a mean count of 89%.

However, law school practices for reporting valid employment status has been under question for inflated numbers because the American Bar Association (ABA) guidelines governing the reporting process are ambiguous as to the interpretations of what constitutes a valid industry-related employment status. Table 11, below, provides a descriptive summary of tables 8, 9, &10 and includes the mean, standard deviation, skewness, kurtosis and z-scores.

**Table 11**

*Descriptive Analysis of Model Frequencies*

|  | Mean | Std. D | Skewness | Kurtosis | Z Score |
|---|---|---|---|---|---|
| Situated Learning |  |  |  |  |  |
| Field Intern. | 101.10 | 79.049 | 2.138 | 8.200 | 11.683 |
| Trail Skills | 343.19 | 244.164 | 1.659 | 3.574 | 9.065 |
| Legal Clinics | 97.80 | 79.406 | 2.150 | 6.671 | 11.748 |
| Law School Acceptance Scores |  |  |  |  |  |
| Median UGPA | 3.417 | .18900 | -.023 | -.302 | **-1.25*** |
| Median LSAT | 158 | 5.851 | .383 | -.107 | **2.092*** |
| Post-Graduate Performance |  |  |  |  |  |
| Employment | 209.46 | 102.502 | 1.171 | 1.590 | 6.398 |
| Passage of the State Bar Examination | 134.27 | 78.506 | 1.128 | 1.236 | 6.163 |

*Note:* Z scores falling within the range of > +/- 3.00 are considered statistically significant and such are indicated with an asterisk (*).

**Assessing Overall Model Fit**

Structural equation modeling (SEM) statistically evaluates the ability of the model to predict observed variances and/or co-variances (Byrne, 2010). SEM takes an *a priori* approach to research and allows the researcher to specify qualification for either a causal or exploratory model based on current knowledge. Therefore, evaluating the efficacy of the model fit is a core element in determining if any discrepancies exist within the relationships and serves as a reference point for the researcher when evaluating the data associated to the model fit. Table 12, below, provides an overview of the descriptive measures utilized to assess the model's goodness of fit by comparing the observed data relative to the expected outcome. The model fit indices provide an array of options to evaluate the data from multiple viewpoints to assess goodness of fit in comparison to the acceptable cutoff points (Arbuckle, 1996; Werner & Schermelleh-Engel, 2009). Table 12, below, provides a summary overview of the model fit indices.

**Table 12**

*Model Fit Indices and Recommended Cutoff Points*

| Model Fit Indices | Recommended Cut-off Point | Research Model Fit Indices Results | Results Meaning |
|---|---|---|---|
| Chi-Square $X^2$ | Smaller Value | 17.807 | Deviation is less significant, and the data seems to support the expectations and/or hypothesis. |
| *df* | Smaller Value | 9 | Deviation is less significant, and the data seems to support the expectations and/or hypothesis. |
| *p-value* | <.05 | .037 | Significant – meaning the data does not fit the model exactly |

**Table 12, continued**

| | | | |
|---|---|---|---|
| RMSEA | .06 - .08 | .075 | Acceptable |
| CFI | .90 | .978 | Excellent |
| PNFI | Lower values closer to zero (0) | .410 | Cautiously-Acceptable |
| AIC | Lower values closer to zero (0) | 55.807 | Reasonable given the model complexity |
| Hoelter's N | .05 | 168 | N/A |
| Hoelter's N | .01 | 215 | N/A |

**X², df, p, and CMIN/df**. These four model fit indices (e.g., chi-square, degrees of freedom, *p value* and minimum discrepancy), which are normally combined for goodness of fit purposes, provide a statistic foundation for evaluating a dataset because each individual index relates to the *chi-square* statistic. Chi-square is a traditional *a priori* hypothesis test that calculates the degrees of freedom and corresponding *p-value* for statistical probability to indicate whether a model should be accepted or rejected. As common practice, the chi-square statistic denotes the significance of the data when the observed *p-value* is ($p < 0.05$).

The equation for chi-square is:

$$d = \frac{\chi^2 - df}{N - 1}$$

When p-value results are less than .05, it indicates that the model does not fit the data. In this case, although the indices report (p=.037) , which falls very close to p<.05, there is

little concern because the degrees of freedom register at 9, and chi-square at 17.8, which are the two main outcomes from CMIN that are evaluated for model significance (Byrne, 2010). Table 12, above, provides a complete overview of the CMIN model fit indices.

**RMSEA Root Mean Square Error Approximation.** RMSEA is also an important model fit index because of its ability to calculate confidence intervals around the values (MacCallum, Browne & Sugawara, 1996) as well as its acuteness towards the number of estimated parameters in the model (Diamantopoulos & Siguaw, 2000). RMSEA threshold ranges from 0.06 (Marsh, Hau & Wen, 2004) to an upper limit less than 0.08 (Hooper, Coughlan, & Mullen, 2008) to qualify the model as well fitting. The computational equation for RMSEA is:

$$\frac{\sqrt{(\chi^2 - df)}}{\sqrt{[df(N - 1)]}}$$

This index an acceptable model fit with a RMSEA value of .075, which falls within the acceptable range of .06 to .08.

**Baseline Comparison Comparative fit index (CFI).** The comparative fit index is an additional test to assess the goodness of fit, which is normally used in conjunction with confirmatory factor analysis and SEM modeling. CFI indicates the percent to which the covariance(s) can be reproduced in the hypothesized theoretical model and assumes that all latent variables are uncorrelated to compare the covariances to the null hypothesis (Boomsma, 2000). Advantages related to CFI are its association to all structural equation modeling programs and insensitivity to population size criteria (Fan, Thompson & Wang, 1999). The CFI cutoff point value is best ascertained if above .90 (Bentler, 1990). The CFI basic formula for computing CFI is:

$$\frac{\left(\dfrac{\hat{C}_b - \hat{C}}{d_b - d}\right)}{\left(\dfrac{\hat{C}_b}{d_b} - 1\right)}$$

The results for this index measurement indicate an acceptable model fit with a CFI value

of .978, which falls above the acceptable point value above .90. Table 10, below,

provides a complete overview of the Baseline Comparison CFI model fit indices.

**Baseline Comparison of Parsimony Normed Fit Index (PNFI).** According to Mulaik,

James, Van Alstine, Bennet, Lind, & Stilwell (1989), it is best to use PNFI in association

with other goodness-of-fit indices because there are no established norm values for this

particular fit index (Diamantopoulos & Siguaw, 2000). However, according to Mulaik,

James,Van Alstine, Bennet, Lind, & Stilwell, (1989), the smaller of the value for PNFI

indicates a more favorable goodness of fit measurement. The PNFI is the result of

applying the James, Mulaik and Brett analysis (1982) to the parsimony adjustment in the

comparative fit index (CFI), which as mentioned above relates to goodness of fit. PNFI

takes the $d_b$ (e.g., $d$-degrees of freedom) for the model under evaluation and uses the $df$

as part of the baseline model assessment. The formula for PNFI is:

$$\mathrm{PNFI} = (\mathrm{NFI})(\mathrm{PRATIO}) = \mathrm{NFI}\,\frac{d}{d_b}$$

 The baseline index result offers no concern for model fit with a PNFI value of .410

because measurement hovers close to the saturated model value of .000. Table 12, below,

provides a complete overview of the Baseline Comparison CFI model fit indices.

**Akaike's Information Criterion (AIC).** Akaike's Information Criterion index is an

absolute fit index, meaning that is does not use an alternative model as a baseline for

comparison**.** AIC index is the result from the fit of the obtained and implied covariance

matrices and the maximum likelihood (ML) minimization function. According to Everitt

& Skrondal (2006), AIC evaluates both the statistical goodness of fit and the number of

parameters that need to be estimated in order to achieve a particular degree of fit and

imposes a penalty for increasing the number of parameters (2006). The recommended

cut-off points for AIC model fit indices are the lower values of the index closer to zero

(0), which indicates a preferred model. The formula for AIC is:

$$-2*\ln(\text{likelihood}) + 2*K.$$

The Akaike's Information Criterion index result offers some concern for the model fit

with an AIC value of 55.807 because measurement defaults from the recommended cut-

off point of lower values closer to zero (0), for a preferred model fit.

**Hoelter's N**. The Hoelter's N is also considered an absolute fit index and evaluates the

model fit differently than most fit indices because it only assesses properties that identify

adequacy of the sample size. AMOS 19, used in this analysis, reports a critical *n* level for

evaluating the model fit and significance of sample size between the point values of .05

and .01 (Hoelter, 1983). According to Hoelter (1983), the acceptable level for adequate

sample size is one that points to a value of >200.

As with any statistical design, adequate sample size, or for the purpose of this

study, population is critical for SEM application and assessment of model fit. However,

due to the nature of this study, which utilizes an entire population versus a finite sample,

Hoelter's index is not a relevant statistic for assessing the overall model fit. According to

Barrett (2008), a sample size less than 200 should "simply be rejected outright" for

research purposes *unless* the population size directly represents the entire sample size in

the hypothesis (p. 820). Therefore, questions related to Hoelter's sample size and

concerns as to how well a sample "might be said to contain all likely members of a specified population" (p. 821) are moot. Hoetler's goodness of fit measure was included in this chapter to address the criteria related to sample size versus a population.

**Standardized Direct, Indirect, and Total Effects**

To assess a meaningful comparison across variables within unstandardized coefficients requires a different approach because the measurement metrics for the manifest variables differ. The SEM used in this study includes three measurement models (see Figure 2) where the manifest variables serve as indicators to the three latent variables. Note also, there is one parameter estimate that reflects an informative path (i.e., flows from a manifest to a latent variable). In Figure 1, the path from legal clinics to the latent variable law school acceptance scores is a formative path used for exploratory purposes in the model. This formative path does not indicate a causal relationship between the variables because of the temporal (i.e. one variable occurs before the other in time) issue related to law school acceptance scores and participation in legal clinic courses, which is not part of the law school admissions process. Converting the coefficients to a standardized form allows the researcher to assess the effect each variable has on the dependent outcome (Loehlin, 2004); therefore, making it possible to identify both the direct and indirect paths that influence the results of the analysis. When examining the structural elements of the model design (see Figure 2 below), two direct path arrows pointing to post-graduate performance ($a^1$, $b^2$) are present. The direct effects exerted on post-graduate performance represent the contribution of situated learning and law school acceptance scores to the outcome.
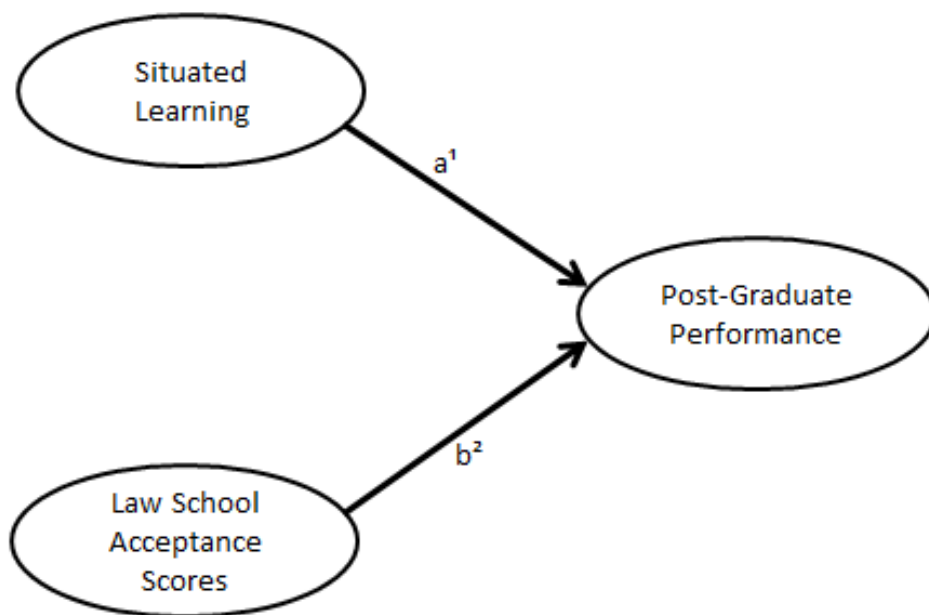
**Figure 2. Structural Model Elements Representing Direct Paths.** This above model diagram represents the core element portions of the structural equation model. It also identifies the direct and indirect paths exerted on the dependent variable. Further discussions in this chapter utilizes Figure 2 to identify regression weights by path presented in Tables 13 through 15.

In the present study, total effects on post-graduate performance were evaluated by computing the sum of the standardized direct and indirect effects. Standardized weights presented in Tables 13, 14, and 15 represent the complete analysis results for direct, indirect and total effects. The path identifiers ($a^1$ and $b^2$), aid in the interpretation of these tables and help to explain related answers for each research question presented in the next section. Please note, Tables 13, 14 and 15 include individual factor loading (e.g., also known as regression weights) for each observed variable associated to the hypothetical construct are discussed as seen in Figure 3.
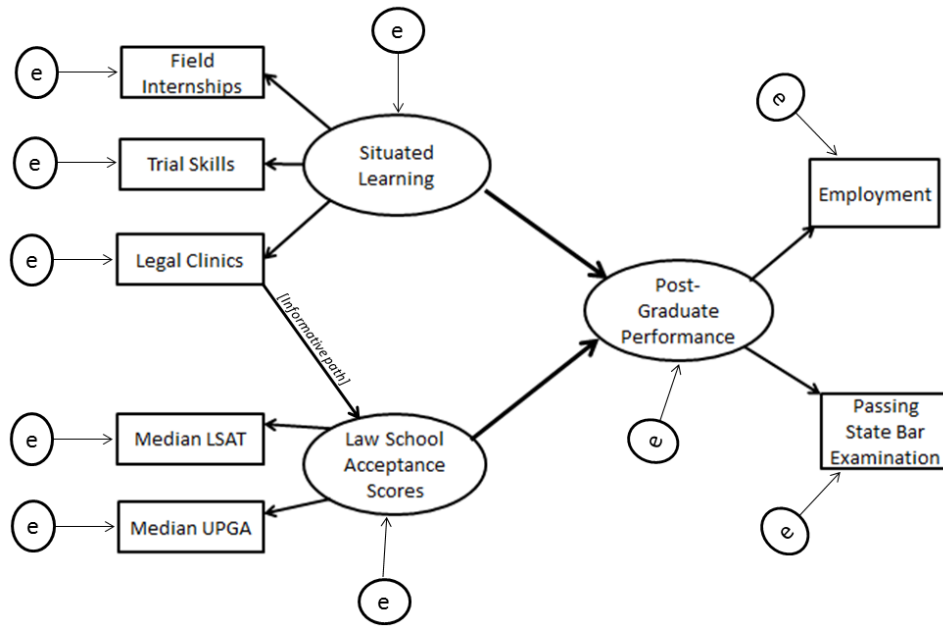
**Figure 3. Complete Structural Equation Model.**

Referring to the overall model, the direct effects calculated for each single-headed solid arrow included in Figure 4 below, provides an avenue for determining the validity of the dependent or outcome variable (post-graduate performance) relative to the latent variables (situated learning and law school acceptance scores). The coefficients represent the structural relations within the model are displayed in Figure 4.
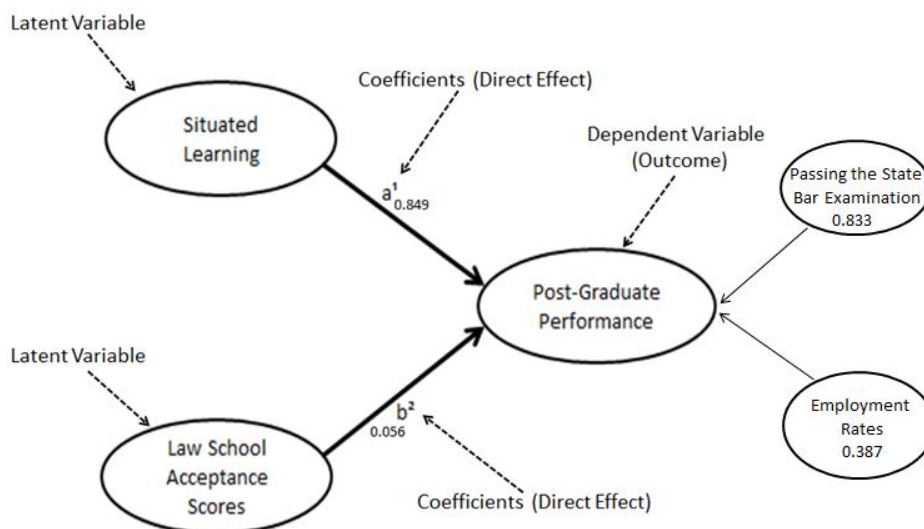
**Figure 4. Overall Structural Model.**

When examining the standardized direct effects, the researcher is looking for a measurement value similar to those in the range exhibited by a correlation coefficient (e.g. regression weight/factor loading between -1.00 to1.00). When a value of 1.00 is observed, there is a perfect correlation (e.g., no error) in relation to the influence of the predictor variable on the criterion or dependent variable(s). Reviewing Table 13, listed below, the first column labeled as situated learning indicates the latent variable (e.g., situated learning) has very low contribution level on post-graduate performance (POSTG) with a direct effect of 0.056, compared to law school acceptance scores in the second column, which indicates a strong direct effect of 0.849.

The last column, post-graduate performance, indicates that the latent variables (situated learning and law school acceptance scores), have a higher contribution on the dependent outcome (post-graduate performance), as related to passage on the state bar examination (SCHPFTT), indicating a direct effect weight of 0.833, compared to employment rates, which lists a direct effect weight of 0.387.

**Table 13**

*Standardized Direct Effects*

|  | Situated Learning | Law School Acceptance Scores | Post-Graduate Performance |
|---|---|---|---|
| FIELDINTERN | **0.758\*\*\*** |  |  |
| TRIALSKILLS | 0.336 |  |  |
| LEGALCLINIC | 0.220 |  |  |
| MUGPA |  | **0.942\*\*\*** |  |
| MLSAT |  | **0.822\*\*\*** |  |
| EMPL |  |  | 0.387 |
| SCHPFTT |  |  | **0.833\*\*\*** |
| POSTG | 0.056 | **0.849\*\*\*** |  |

*Note:* Coefficients in bold register values closest to -1.00 to 1.00 and are considered statistically significant. Corresponding p-values for the figures in Table 13 are indicated by *= p< .05; ** = p< .01; *** = p< .001.

Traditionally indirect effects assert less influence on the dependent outcome(s), as is found in this case. The manifest variables listed under situated learning in column one, all present indirect effects with little contribution to the dependent outcome (post-graduate performance), listing weight values between a low of 0.057 to a high of 0.123.

The exception to this tradition is the latent variable law school acceptance scores, located in the second column, which indicates a high indirect effect (0.707) on the dependent outcome (post-graduate performance) as related to passage of the state bar examination for first-time test takers. As stated earlier, the informative (indirect) path flowing from the manifest variable legal clinics to the latent variable law school

acceptance scores (0.490) represented in the second column does not indicate a causal relationship between the variables due to the temporal issue related to admission scores and participation in legal clinic courses. Additionally, because there are no indirect effects for post-graduate performance (e.g. straight arrow(s) to an associated latent variable), review of this column is not relevant.

**Table 14**

*Standardized Indirect Effects*

|  | Situated Learning | Law School Acceptance Scores | Post-Graduate Performance |
|---|---|---|---|
| FIELDINTERN |  |  |  |
| TRIALSKILLS |  |  |  |
| LEGALCLINIC |  | 0.490 |  |
| MUGPA | 0.102 |  |  |
| MLSAT | 0.089 |  |  |
| EMPL | 0.057 | 0.329 |  |
| SCHPFTT | 0.123 | **0.707***** |  |
| LSP | 0.108 |  |  |
| PostG | 0.092 |  |  |

*Note:* Coefficients in bold register values closest to -1.00 to 1.00 and are considered statistically significant.

Finally, when examining the standardized total effects (e.g., standardized regression weights), the relationship between the latent variables and manifest variables, displayed in Figure 5, below, are reviewed to compare the continued effects between the direct and indirect paths within the measurement model.
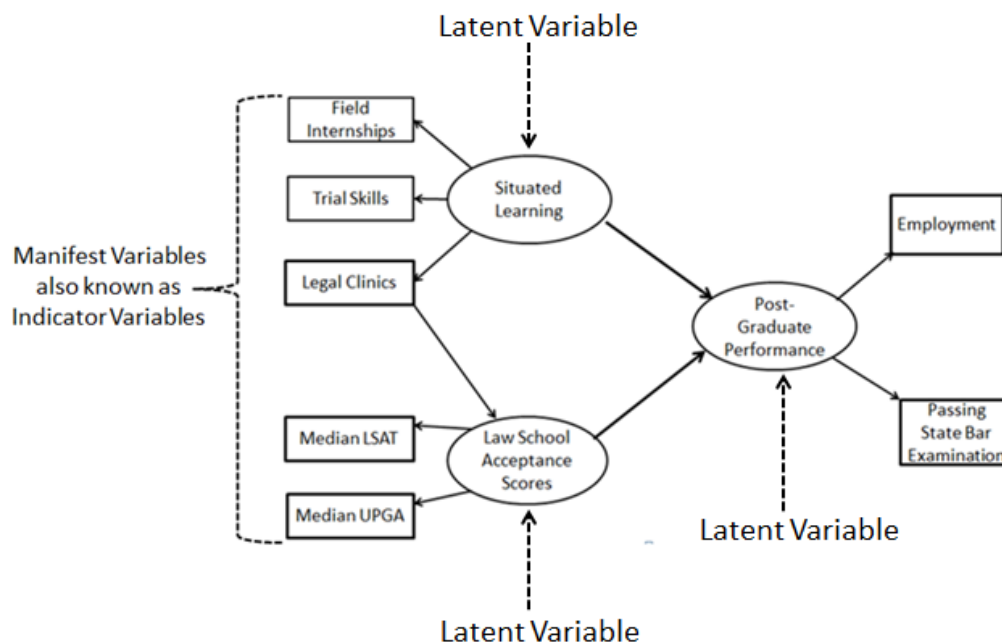
**Figure 5. Manifest Variables within Full Structural Equation Model.**

The relationship results provided in this section include collaborating evidence of the validity of the model by examining the combined weights for the direct and indirect effects. As with the prior standardized effects, the desirable value (e.g., standardized regression weight) approaches 1.00. In Table 15, listed below, the first column labeled situated learning continues to indicate the same type contribution relationship between situated learning and post-graduate performance (e.g., total effect weight of 0.147), as compared to law school acceptance scores, which sustains a strong total effect weight of 0.0849.

However, the data also indicates several additional strong relationships between the latent and manifest variables. For example, the relationship between field internship placements (manifest variable) and situated learning (latent variable) reveals a high contribution (0.758) not seen previously in either the direct or indirect effect results. Additionally, the relationship between manifest variables MUGPA and MLSAT with

latent variable law school acceptance scores, indicates a strong contribution with

MUGPA reporting a total effect weight of 0.942 and MLSAT reporting a similar weight

of 0.822.

**Table 15**

*Standardized Total Effects*

|  | Situated Learning | Law School Acceptance Scores | Post-Graduate Performance |
|---|---|---|---|
| FIELDINTERN | **0.758*** | | |
| TRIALSKILLS | 0.336 | | |
| LEGALCLINIC | 0.220 | | |
| MUGPA | 0.102 | **0.942*** | |
| MLSAT | 0.089 | **0.822*** | |
| EMPL | 0.057 | 0.329 | 0.387 |
| SCHPFTT | 0.123 | **0.707*** | **0.833*** |
| LSP | 0.108 | | |
| PostG | 0.147 | **0.849*** | |

*Note:* Coefficients in bold register values closest to -1.00 to 1.00 and are considered statistically significant. Corresponding p-values for the figures in Table 15 are indicated by *= p< .05; ** = p< .01; *** = p< .001.

The total effect coefficients outlined in Table 15 and model diagram displayed in

Figure 6, shown below, provide the data analysis required to answer each research

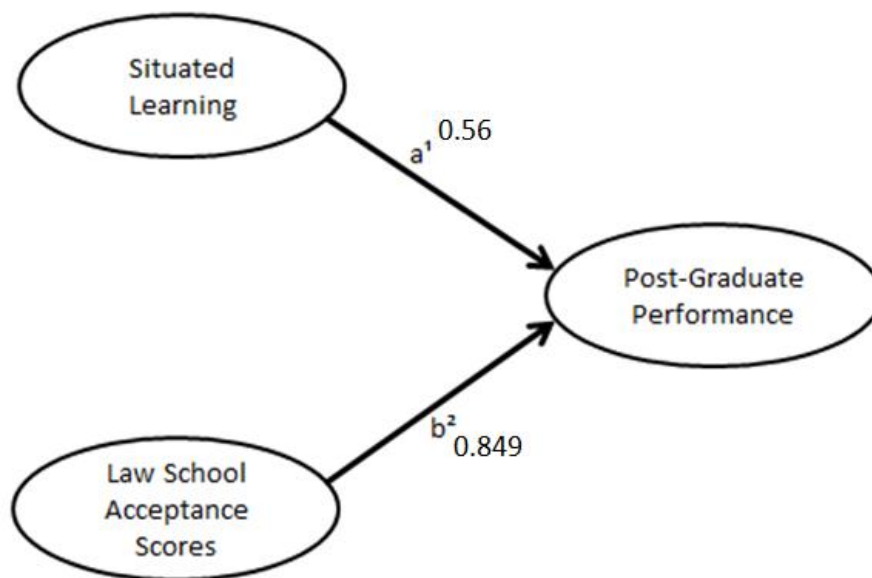question and its corresponding hypotheses.

**Figure 6. Structural Model with Regression Coefficients.** This model diagram shows the core elements of the structural equation model. In addition to the direct and indirect paths, (as first shown in Figures 2 and 3), it also includes the regression weight for each paths.

**Definitions**

The following definitions apply to all equations in the section.

$Y=$ the dependent variable Post-Graduate Performance
$SL=$ the latent variable Situated Learning
$LSAS =$ the latent variable Law School Acceptance Scores
$LC =$ the manifest variable Legal Clinics
$a^1 =$ the relation between SL and Y
$b^2 =$ the relation between LAS and Y
$c^3 =$ the relation between LC and LAS
$df =$ degrees of freedom ($df = 9$)
$LN =$ the natural logarithm
$N =$ sample size

**Hypothesis Testing**

To answer to the research questions each path coefficient is evaluated according to (a) a hypothesis test and associated level of statistical significance and (b) practical significance with population correlation ($\rho$) value ranges of small ($\rho=.10$ to .29); medium

(ρ=.30 to .49), and a large effect (ρ > .50) size (Hurlburt, 1998, p. 391). The above

criteria is applied in determining whether there is *insufficient evidence* to reject the null

hypothesis (stated as a *failure to reject* in statistical terms) or, *sufficient evidence* to reject

the null hypothesis. *Failure to reject*, does not necessarily mean that there is no

relationship whatsoever between the variables. It simply indicates that in this particular

observational study a statistically significant relationship was not detected (Simon, 2006).

Table 16, below, provides a simplified matrix for examining the null hypothesis and

corresponding error type.

**Table 16**

*Null Hypothesis Decision Matrix and Error Types*

|  | Decision: | Decision: |
|---|---|---|
|  | $H_0$ True | $H_0$ False |
| Accept Null Hypothesis=<br>To the Research Question | Correct Decision | Type II Error<br>(β - beta) |
| Reject Null Hypothesis=<br>To the Research Question | Type I Error<br>(α - alpha) | Correct Decision |

**Research Questions and Hypothesis**

The first set of hypotheses considers the *relationship strength* and *predictive*

*power* between situated learning and post-graduate performance (e.g., as measured by

employment rates and passing the state bar examination).

1A.     Does a statistically *significant relationship* exist indicating that situated learning

exerts a positive influence on post-graduate performance as measured by employment

rates and passing the state bar examination?

$H_0$.     A *statistically significant* relationship does not exist indicating that situated

learning exerts a positive influence on post-graduate performance as measured by

employment rates and passing the state bar examination.

2A.     Does a statistical effect exist indicating that situated learning can *effectively*

*predict* successful post-graduate performance as measured by employment rates and

passing the state bar examination?

$H_0$.     A statistical effect does not exist indicating that situated learning can *effectively*

*predict* successful post-graduate performance as measured by employment rates and

passing the state bar examination.

The results indicate no *statistical significance* (p = 0.537) and virtually

no *predictive power* (i.e., standardized path regression weight estimate = 0.056) between

situated learning and post-graduate performance. Therefore, the null hypothesis had

*sufficient evidence* and *failed to reject* the posited relationship. The statistical equation

used to answer the research question relating to the first hypothesis is provided below.

$$Y = SL$$

### Situated Learning

| | |
|---|---|
| Path Regression Coefficient | Y = 0.056 |
| Fisher's *Z'* | 0.056 |
| Z = 0.537; p = ns | |

*Note:* A Fisher's Z with a corresponding p-value of no statistical significance is
represented as p = ns (i.e., no significance).

The second set of hypotheses consider the *relationship strength* and *predictive power* between law school acceptance scores and post-graduate performance (e.g., as measured by employment rates and passing the state bar examination).

1B.    Does a statistically *significant relationship* exist indicating that law school acceptance scores exert positive influence on post-graduate performance as measured by employment rates and passing the state bar examination?

$H_0$.    A *statistically significant* relationship does not exist indicating that law school acceptance scores exert a positive influence on post-graduate performance as measured by employment rates and passing the state bar examination.

2B.    Does a statistical relationship exist indicating that law school acceptance scores can *effectively predict* successful post-graduate performance as measured by employment rates and passing the state bar examination?

$H_0$.    A statistical relationship does not exist indicating that law school acceptance scores can *effectively predict* successful post-graduate performance as measured by employment rates and passing the state bar examination.

The results indicate a high *statistical significance* and *predictive power* ($p<0.000$ and standardized path regression weight estimate = 0.849) between law school acceptance scores and post-graduate performance (e.g., as measured by employment rates and passing the state bar examination). This result is interpreted as a statistically significant effect on the outcome variable post-graduate performance.  Therefore, the analysis provides *sufficient evidence* to reject the null hypothesis.  Below, is the statistical equation used to answer the overall research question relating to the second hypothesis.

$$Y = LSAS$$

## Law School Acceptance Scores

Path Regression Coefficient          Y = 0.849

Fisher's *Z'*                        0.849

Z=.000; p < .001

## Statistical and Practical Significance

The next step in the analysis process, after examining the model for acceptable

goodness of fit, is the *Test of Significance*. Significance testing provides an objective

measure to determine if the data supports the theoretical hypothesis. That is, the

researcher must demonstrate that the differences in correlation coefficients are reliable

(Lewis-Beck, Bryman, & Liao, 2004).

The factor loading (e.g., regression weight) for each path (a[1] and b[2]) in Figure 6, posted

above, are referred to as Pearson's correlation coefficients and are noted

as (*r*). Pearson's correlation coefficients do not suggest a cause-and effect relationship

among the latent variables, it merely denotes that a relationship exists. The main

drawback of Pearson's measurement, is that even though the correlation (path)

coefficients relay the presence of a relationships between the latent variables (situated

learning and law school acceptance scores) to the dependent outcome (post-graduate

performance), the path coefficients are not standardized scores because they indicate the

raw score metrics or units, which are not standardized measurements. Therefore, it is

virtually impossible to determine if the relationship is statistically significant (Lewis-

Beck, Bryman, & Liao, 2004).

In order to test for significance, because the sampling distribution of the Pearson r

is not normally distributed, the correlation (path) coefficients must first be transformed

into a new variable by using Fisher's *Z'* transformation equation, as shown below, which

is also based on the natural logarithm (*LN*) denoted as 0.5 x log*e* ( $\frac{1+r}{1-r}$ ).

$$Z' = .5[LN(1 + Y) - LN(1-Y)]$$

The resulting *v*alue noted as Z*r,* then becomes a (normally distributed) standardized

measure that possesses familiar properties as to the normal curve, with a mean value of 0

and a standard deviation of 1. The new standardized measurement then makes it possible

to compare results to test for significance. The test for significance between the latent

variables (situated learning, law school acceptance scores, and post-graduate

performance) with the independent population computes a value for (*Z=)* by using the

below formula.

$$Z = (Zr \ - Zr \ \emptyset) \ \sqrt{(n - 3)}$$

According to Lewis-Beck, Bryman, and Liao (2004), significance is tested at the

level of *a* = .05, with a *Z value* $\geq \pm 1.96$, which indicates a significant difference between

the results of the models as reflected to the population data.  The results of the Fisher's *Z'*

equation are discussed in the next section.

**Total Variance**

The estimate of total variance relates to the direct path for each coefficient, and is

ascertained by converting the path regression coefficient to the coefficient of

determination (*R²*). This conversion is calculated by squaring each of the path coefficients

(e.g., a¹ 0.056 and b² 0.0868). The *R²* coefficients represent the entire percent of the

variance in the dependent outcome (post-graduate performance) that attributes to each

unique path. Table 17, below, illustrates these calculations.

**Table 17**

*Conversion of Regression Coefficients to R² Coefficients of Determination and Percent Variance Explained*

| Path Identifier | Regression Coefficient | $R^2$ | % Variance Explained |
|---|---|---|---|
| $a^1$ | 0.056 | 0.0031 | < 1 % |
| $b^2$ | 0.849 | 0.7208 | 72.08% |

To aid in the interpretation of the variance percentage's associated with each path ($a^1$ and

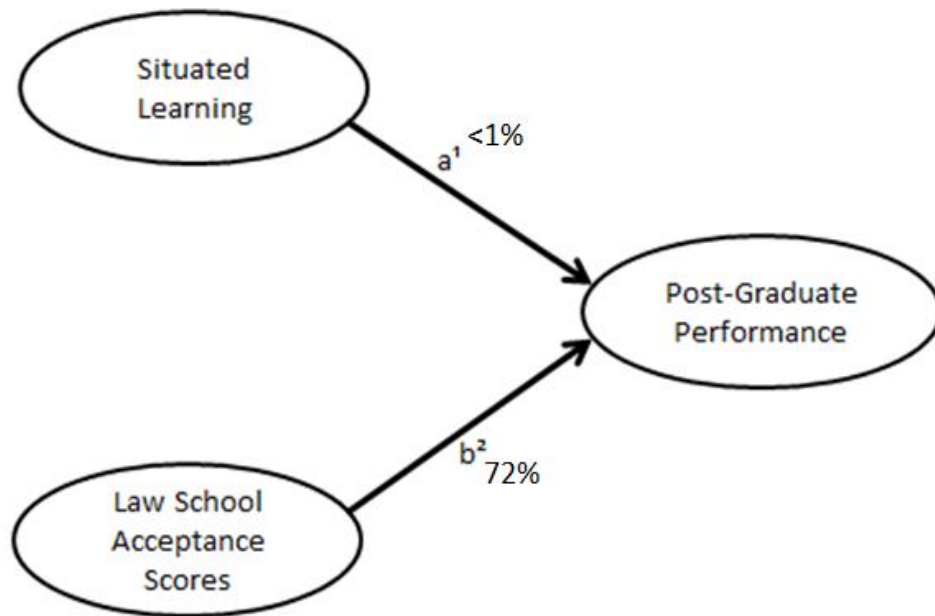$b^2$) Figure 7, below, displays a graphical representation of the data.



**Figure 7. Structural Model with Proportions Explained Variances**. This diagram reflects the core elements of the structural equation model and displays the relating percentage of total variance as indicated by each path.

**Bootstrapping Results**

As with any statistical design, adequate population sample size is critical for structural equation analysis and assessment of model fit because some relevant statistics and fit indices are potentially affected by the population sample size. As noted in chapter three, due to the numerical nature of the data and limited analysis sample size ($n = 177$) the data required a bootstrap resampling procedure to refine the final solution for each model-based parameter estimate. The main component of bootstrap is the statistical ability for resampling to test the reliability and accuracy of the dataset in an attempt to determine the probability distribution. Bootstrapping uses the original data as a *surrogate population* for approximating the sampling distribution in order to create a *phantom sample* replication (e.g., resampling) of the data (Fox, 2002). In other words, bootstrapping is an analytic process that calculates the estimated standard error of the mean based on N=1,000 by repeatedly drawing *bootstrap samples* from the original data (Efron, 1993). It should be noted, bootstrapping methodology is not used to reduce measurement errors but simply estimates the probability of errors and/or bias associated with the data (Fox, 2002).

The first portion of the bootstrap analysis evaluated the data for any measurement errors or potential bias. Table 18, below, display the bootstrap results for the standard error(s), mean, and bias computed from 1,000 samples as are the adjusted results from the original analysis sample.

**Table 18**

*Bootstrap Standard Errors*

| Parameter Path | S.E.[1] | S.E.[2]-S.E.[1] | Mean | Bias | S.E.-Bias |
|---|---|---|---|---|---|
| Situated Learning (a[1]) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Law School Acceptance Scores (b[2]) | 0.049 | 0.001 | 0.165 | 0.005 | 0.002 |

Column 1 display results for the bootstrap estimate of standard error *(S.E.[1])*, which indicates a squared multiple correlation for *Situated Learning* as having standard deviation of .000 across 1,000 bootstrap samples, whereas *Law School Acceptance Scores* reported a squared multiple correlation for 0.049 standard deviation across the bootstrap samples. In comparison, column 2 represents the approximation of the standard error (S.E.[2]) for the standard error reported in column one (S.E.[1]). The results indicate that *Situated Learn*ing has a standard error (S.E.[1]) estimation of 0.000 with a joint approximated standard error (S.E.[2]) of 0.000. Similarly, *Law School Acceptance Scores* reported a standard error estimation of 0.049 (S.E.[1]), which relates to the standard error approximation of 0.001 (S.E.[2]).

Column 3 reports the mean across the 1,000 bootstrap samples and indicates a mean for *Situated Learn*ing as.000, compared to *Law School Acceptance Scores,* which reporting a mean of 0.165.

Column 4 displays the difference between the averages of the bias estimated in the original data compared to the bias estimation obtained from the bootstrap samples. The results indicated that *Situated Learn*ing had a mean of .000 (column 3) across the bootstrap samples, while *Law School Acceptance Scores* reported a value of 0.05.

The last column of Table 18 approximated the standard error for the bias estimate reported in the previous column 4. This calculation value represents the approximated standard error from the S.E[1]. (column 1) and Bias (column 4) across the bootstrap samples. The S.E. Bias for *Situated Learn*ing has an estimation of 0.000 (column 4) with a standard error of approximately 0.000 (column 5). Whereas, *Law School Acceptance Scores* has an estimated bias of 0.005 (column 4) with a standard error of approximately 0.002 (column 5).

The results gleaned from the bootstrap analysis suggested little evidence of bias in within the data. It should be noted, the difference in bias estimates is due to the random nature of the bootstrap and data, not the number of observations taken for each resampling (William & Pitblado, 2010). These results indicated that the estimates of bias computed in column 4 (BIAS) were smaller in magnitude than the standard error reported in column 1 (S.E.), which is the measurement level guiding the comparison for estimating potential bias.

We now turn to the standard error for parameter estimates by comparing the standard error variance estimates of maximum likelihood theory (e.g., a measure for assessing normality distribution for continuous data) to the standard errors variance estimates obtained from the bootstrap analysis (Ullman,1996). For this portion of the model assessment, the ML parameter estimates represented in Table17 (a[1] and b[2]) are the same for the evaluation criteria.

A basic tool for finding the number of standard errors between sample point estimate and $H_0$ value of the parameter are p-values ($p < 0.05$) and confidence intervals. The p-value identifies statistically significant probability as measurement evidence

against the null hypothesis, where confidence intervals (CI) provide information on the range as to where the true population mean lies with a certain degree of probability (Wellek & Blettner, 2012). For the purposes of this study, the researcher selected a confidence level of 95%, which denotes that the CI covers the true value in 95 of 100 independently replicated studies performed. As a general rule, if the confidence interval does not include the value of zero effect, it can be assumed that there is a statistically significant result. The main advantage of utilizing confidence intervals in comparison with p-values are the interval results at the level of data measurement (e.g., mean standard deviation, correlation, regression, and analysis of variance) (Greenfield, Kuhn, & Wojtys, 1999).

Tables 19 and 20, below, provide a summarized results of the bootstrap standard error (s) and variance estimations (p-values and confidence intervals) compared to the maximum likelihood results from the original data.

**Table 19**

*Bootstrap Variance Estimation*

| Parameter Path | Estimate | Lower | BC-CI | Upper | P-value |
|---|---|---|---|---|---|
| Situated Learning (a¹) | 0.000 | 0.000 | 95% | 0.002 | **0.342** |
| Law School Acceptance Scores (b²) | 0.160 | 0.040 | 95% | 0.239 | **0.006** |

*Note:* Figures in bold represent the bootstrap results for the p-value associated to the parameter paths a¹ and b².

**Table 20**

*Maximum Likelihood Variance Estimation*

| Parameter Path | Estimate | P-value |
|---|---|---|
| Situated Learning ($a^1$) | 0.056 | **0.537** |
| Law School Acceptance Scores ($b^2$) | 0.849 | **0.000** |

*Note:* Figures in bold represent the maximum likelihood results for the p-value associated to the parameter paths $a^1$ and $b^2$.

As shown in Tables 19 and 20, the p-value results yielded from the bootstrap analysis fell within similar comparative measurement levels supporting the results of the maximum likelihood estimates, which indicated that *Law School Acceptance Scores* (ML $p < .000$ and BS $p < .006$ ) has a greater impact on *Post-Graduate Performance* than *Situation Learning* (ML $p = .537$ and BS $p = .342$).

On a lesser grand scale, the standard error estimates from the bootstrap results for the confidence intervals continued to support the above findings but only reported an estimate measurement level of 0.160 for *Law School Acceptance Score,* which represents a 95% CI between 0.040 and 0.239. In comparison to the bootstrap results for *Situation Learning, w*hich revealed once again, an insignificant correlation (0.00) to *Post-Graduate Performance*.

**Summary**

To test the overall empirical relationships between all observed variables to the implied structure of the theoretical *a priori* premise, the researcher used a full structural equation modeling approach that included key variables in the measurement model.

The overall review of the model evaluation included: (a) global assessment to determine overall how well the model fit the data, (b) local assessment of analysis variances and covariance in order to specify areas of deficient, and (c) evaluation of modification indices to explore suggestions for potential model improvement (2009).

More specifically, the researcher used goodness of fit indices to evaluate the complete model design and test of significance to assess the theoretical hypothesis in determining the validity of the independent outcome (post-graduate performance) as related to the construct of the latent variables (situated learning and law school acceptance scores). To directly test the null hypothesis, the research followed the recommended model fit statistical cut-off points and bootstrap analysis, which provided the foundation for interpreting the results of this study (Marsh, Hau & Wen, 2004).

The researcher's analysis concluded that situated learning opportunities have substantially less contribution (e.g., total standardized effect weight of 0.056) on post-graduate performance, as compared to law school acceptance scores (e.g., total standardized effect weight of 0.868), which overall concludes *insufficient evidence* to support rejection of the null hypothesis concerning the final outcome of this study.

# CHAPTER 5

## DISCUSSION

*If law school graduates, like cars, could be recalled for failure to meet
commercial standards, the recall rate would be very high on those who go
into courts without substantial added training. We must require some form of
internship before lawyers claim a right to represent clients in the trial of courts.*
*Warren Burger, 15th Chief Justice of the United States,* 1978

The purpose of this study focused on identifying and understanding the social

constructs of situated learning and law school acceptance scores that influence post-

graduate performance expressed as passing the state bar examination and employment

rates for law school graduates nine months after graduation. The primary goals of this

study were twofold. The first goal was to identify whether there are statistically

significant and practical associations between situated learning and/or law school

acceptance scores on post-graduate performance (e.g., as measured by passing the state

bar examination and employment rates). The second goal was to investigate any

explanatory effects that served as predictors of successful post-graduation performance

expressed as passing the state bar examination and employment rates - specifically

related to situated learning and/or law school acceptance scores. To meet the goals of the

study, structural equation modeling was used to explain and/or predict post-

graduate performance from situated learning and school acceptance scores. The theoretical framework employed involved using a lens of situated learning grounded in the epistemology of constructivism. An extant review of the literature focused on context-based adult pedagogy as viewed through the lens of situated learning and communities of practice. Data analysis included using an *a priori* approach to explore the relationships between situated learning and law school acceptance scores on post-graduate performance. The data used in the study were secondary in nature and provided by the American Bar Association (ABA) for all U.S. law schools accredited in 2008. These data represented results for the 2008 law school self-reporting process required by the ABA for accreditation purposes. All variables used in the study were continuous (n=177) representing an interval-level of measurement (*I deleted part of a sentence here…it's unnecessary). Because of the small population size (N=177), the analyses included a bootstrapping technique to examine the performance of the parameter estimates based on a larger random sample. The results of the analytic model were evaluated by assessing standardized and unstandardized regression coefficients (factor loadings), standardized effects, exploratory hypotheses tested with Fisher's Z, explained variances, means, standard deviations, skewness, kurtosis and Z-scores. The demographic characteristics of the population were examined by frequency counts, means and ranges for number of students passing the bar and employed status nine months after graduation. The structural equation model used for analyses included one endogenous variable (post-graduate performance) and two exogenous variables (situated learning and law school acceptance scores).

**Review of the Research Study**

Situated learning combines theoretical concepts and legal principles in an application environment through communities of practice that eventually transform the student's knowledge, understanding, and abilities into professional readiness. The concepts of practical knowledge and situated learning applied through communities of practice derive from social constructionist epistemology. Because most law school curricula are based on theoretical content, students often lack the fundamental and essential components required to develop practice ready skills. As a result, graduates are often ill-prepared to enter the legal industry. Situated learning environments that include practical skill courses, legal clinics, field placement internships and trial skills, enable students to build a scaffolding knowledge bank while interacting within communities of practice. The knowledge acquired through these kinds of meaning-making experiences equips students with the ability to practically apply theoretical learning to future situations where effective decision-making and problem solving are required (Slawson, 2000). The empirical evidence in the extant literature on situated learning and the impact it has on post-graduate performance is scant. To this end, this study adds to the literature by providing quantitative evidence related to the impact of certain practices prevalent in law schools regarding how they prepare students to become practice-ready upon graduation. This study provides new insights specific to what additional factors, besides entrance scores (e.g., LSAT and UGPA) contribute to post-graduate performance as measured by passing the state bar examination and employment rates.

**Significance of the Study**

Over the two past decades theorists have concluded that situated learning plays a unique role in education and development of new knowledge (DiFrancesco, 2011), and that students learn better and retain more knowledge when they are able to connect an experience to a meaning-making learning situation. This study used situated learning theory as an attempt to understand how practical skills courses and context based learning influences law school post-graduate performance.

Practical skill courses in legal education require academic educators who develop legal skills curricula based on knowledge that continuously reconstructs learning as part of the meaning-making experience. The specific components of teaching practical skill courses can be complex, depending mostly on the subject matter. Ideally, better understanding situated learning and its components will contribute to law schools that produce graduates who are practice ready and able to meet the strenuous challenges of the legal industry.

**Discussion of Results**

The discussion in this section provides an overview of the results followed by a summary discussion for each research question and its corresponding result. The standardized regression coefficient for each latent variable path was derived along with the level of statistical significance for each path. Out of the two directional paths in the structural (i.e. inner) portion of the model, only one yielded a significant result. . As mentioned in Chapter Four, the informative path from manifest variable legal clinics to the latent variable law school acceptance scores does not indicate a causal relationship between the variables, which is related to the temporal issue of law school acceptance

scores for admission purposes and participation in legal clinic courses during law school attendance. This path was included to increase the explanatory power of the model – a major goal of this study.

Within the full structural equation model, factor analysis was to fit the measurement models (i.e., for each construct) in the structural equation model, all paths (e.g., relationships) in the model were calculated simultaneously. This statistical program allows for each relationship in the model to be evaluated, in consideration of the other, simultaneously, rather than as an isolated path. Utilizing this type of analytical procedure results in a more reliable predictive model because it accounts for any intricacies present in the construct therefore, the true effect of each relationship on the dependent outcome are revealed. Further, the bootstrap analysis indicated little evidence of bias in within the limited analysis sample data (n=177) and confirmed the study results by comparing the standard error variance estimates of maximum likelihood theory to the standard errors variance estimates obtained from the bootstrap analysis.

Only one of the exogenous independent observed variables (law school acceptance scores) had a regression weight (factor loadings) that was significant. This result indicates that the exogenous variable (law school acceptance scores) had a strong predictive influence on post-graduate performance.

Additionally, the number of students passing their state bar exam indicate that of the 29,770 first time test takers in 2008, 79% (23,810) actually passed the bar exam. When comparing the number of total graduates (41,318) to the number of first time test takers (29,770), the percentage rate changes to 72% of those who graduated and then proceeded to final examination for licensing, revealing a 7% difference from the total

number of graduates (41, 318) taking the examination, compared to those who actually

passed the exam (23,810).

Finally, the total number of graduates 41,318 from 2008, 86% (35,781) were

classified as employed nine months after graduation, with a mean count of 89%.

However, as noted in chapter four, law school practices for reporting valid employment

status have been under question for inflated numbers because the American Bar

Association (ABA) guidelines governing the reporting process are vulnerable to

ambiguous interpretation.

The results of the analysis, using AMOS and SPSS Version 19.0 were used to

examine the statistically significant and practical importance, related to the direct,

indirect, and total predictive effects between the exogenous variables and endogenous

variable (Barrett, 2008; Byrne, 2010).

*Overall Research Question #1:* The first hypothesis question considered the *relationship*

*strength* and *predictive power* between situated learning and post-graduate performance

(e.g., as measured by employment rates and passing the state bar examination).

1A. Does a statistically *significant relationship* exist indicating that situated learning exerts

a positive influence on post-graduate performance as measured by employment rates

and passing the state bar examination?

2A. Does a statistically significant effect exist indicating that situated learning can

*effectively predict* successful post-graduate performance as measured by employment

rates and passing the state bar examination?

The path ($a^1$) between the independent endogenous variable *Situated Learning* and

dependent exogenous variable *Post-Graduate Performance* had a standardized regression

weight (factor loading) of 0.056 and a non-significant score of P=0.537. The path (a$^1$) had a relatively low relationship value in the analytical model with a percent of variance at < 1%.

However, examination of situated learning courses revealed that trial skills classes represent a substantial proportion of the situated learning opportunities available to students. In fact, trial skills courses comprise 59% of all situated learning types of classes or internships. The other two situated learning opportunities examined in this study, legal clinics and field internship placements, represent 21% and 18% respectively. Combined, they comprise only 39% of the total situated learning opportunities. This discrepancy, as noted in chapter four, can be attributed to a law school's foundational premise of course design, which may have a greater concentration of curriculum towards litigation education than civil and contract law.

*Overall Research Question #2:* The second hypothesis question considered the *relationship strength* and *predictive power* between law school acceptance scores and post-graduate performance (e.g., as measured by employment rates and passing the state bar examination).

1B. Does a statistically *significant relationship* exist indicating that law school acceptance scores exert positive influence on post-graduate performance as measured by employment rates and passing the state bar examination?

2B. Does a statistically significant effect exist indicating that law school acceptance scores can *effectively predict* successful post-graduate performance as measured by employment rates and passing the state bar examination?

The path (b²) between the independent endogenous variable *Law School Acceptance Scores* and the dependent exogenous variable *Post-Graduate Performance* had a standardized regression weight (factor loading) 0.868 and significant at p<0.001. This path was the only significant relationship in the structural or core portion of the analytical model with a percent of variance explained of .72%.

When examining law school acceptance scores for related information to aid in explaining the high level of statistical significance, the average *median* UGPA (3.31) reveals a slight percentage difference between the high (3.91) and low (2.91) MUGPA mean count, which indicates a one-point movement. Although a single point does not seem to be practically important, on a 4.00 GPA scale, a one-point movement represents 25%. In this perspective, the one-point movement is a sizable difference for comparison. The average *median* LSAT score of 158 does represent a standard score that most law schools adhere to for admission practices. Yet when examining the 2008 dataset, 93 schools out of the178 dataset fell below the mean of 158, compared to 76 schools with scores above the mean. As noted in chapter four, this discrepancy can be attributed to the type applicants that are applying to a particular law school, in conjunction with the school's ranking, which may influence the acceptance level scores for admission.

**Discussion of Literature Review**

As discussed in the previous section, the data analysis concluded from this study provided *insufficient evidence* to support rejection of the null hypothesis. The results indicated that situated learning opportunities have substantially less contribution on post-graduate performance, as compared to law school acceptance scores. These results negated the researcher's original hypothesis for conducting this study. The research

model designed for this study was based on the theoretical lens of *situated learning* as conducted within the framework of *communities of practice.* The foundational premise of constructivist social learning theory guided the literature review to help provide empirical and conceptual evidence to support the theoretical framework. However, direct studies of adult andragogy and situated learning in conjunction with law school curriculum were limited in the field and created a narrow scope when researching this subject.

The literature review did provide solid evidence associated with situated learning and communities of practice as a collaborative process related to adult education**.** The seminal research conducted by Christensen (2009a) and Craver (2000) provided the beginning framework for developing the conceptual model. Their studies proposed a relationship exists between student grades in practical skill courses and academic success, more so than UGPA or LSAT. According to leading psychologist Dweck, strong correlations exist between teaching methods of how and why students learn, that the most successful individuals "love learning," (Glenn, 2010, p. 5) and, if properly guided, learn self-direction to "persist in the face of obstacles" (Dweck & Leggett, 1988, p. 256). Schön's (1987) theory on self-reflection and Wein's (1995) description of practical knowledge-experience connects the development of knowledge to situated learning by examining the "relationship between thought and action in teaching" (Wein, 1995, p. 10). Wein continues this relationship connection to situated learning by stating, "performance is enabled by a combination of conscious know-how and tacit or hidden knowledge" (1995, p. 11), which is a learning theory also supported by Nonaka and Takeuchi (1997). Nonaka and Takeuchi contend that practical knowledge is represented by both tacit and explicit ways of learning; "tacit and explicit knowledge are complementary" to each other

and created by "converting one into another" (Prim & Cunha, 2006, p. 2). Lave and Wenger provided additional support to the idea of practical knowledge building and proposed that increased levels of participation in a "sociocultural community," promotes the "learning process" to become a professional, as with communities of practice (Lave & Wenger, 1991, p. 52). Choi and Hannafin's (1995) work on realistic problem-orientated activities and transformation of the learner implied that situated learning combines theoretical concepts and legal principles in an application-based environment through communities of practice that eventually transform the student's identity into professional readiness. Knowles (1980), opinion on adult andragogy learning provided grounding for Choi and Hannafin's work by concluding that the psychological intersection of understanding self-directional learning defines the readiness level of an adult.

The literature review connected the concepts of practical knowledge and situated learning applied through communities of practice, without regard to the educational institute, and confirmed that participation in adult activities for critical thinking contributes practical knowledge relevant to the decision-making and problem solving skills. Additionally, social constructivism theory proposed that the combination formula of testing ideas and approaches using prior knowledge, and experiences as well as practical knowledge (Courtney & Maben-Crouch,1996; Wein, 1995) creates the intellectual construct to advance adult development required for self-direction (DiFrancesco, 2011).

The overall goal of exploring legal education as a whole experience provided *academic validity* for law schools to incorporate a combined approach of case-method analysis and practice skill courses to address the issue of practice-ready graduates. It is

understandable that the recommendations for realigning legal education curriculum are
not merely adding in practical skill courses, but deciding which skills are more relevant,
because as a practical matter, law schools cannot teach them all. The underlying
challenge confronting legal education is skills forecasting. In other words, requesting that
law schools take on more of the shared burden of "preparing law students for the future
without knowing what the future holds" creates an imbalance in the established economic
system that exists between law schools and the legal industry (Konefsky & Sullivan,
2011, p. 3).

**Limitations to the Study**

For the purposed of this study, the following limitations were identified:

1.      The annual accreditation requirements for tracking academic grades and LSAT
test scores tend to cluster aggregated data reported to the ABA. The system is designed to
reflect a predisposition to high achievers who are also more likely to perform well on the
Law School Admission Test (LSAT), regardless of the academic environment. For
example, the LSAT, a test used for law school entrance, is a standardized test instrument
designed to measure knowledge and skill mastery relevant to analytical inference and
logical reasoning. Students who possess more eidetic abilities have a tendency to score
higher on the LSAT entrance exam, thus possibly inflating the aggregated entrance mean
for the law school reporting because students are pre-select individuals destined to
perform well subsequently on standardized state bar exams.

2.      The American Bar Association (ABA) requires each law school to report annual
employment status for graduates. Unfortunately, the guidelines governing the reporting
process are not clear enough to avoid ambiguous interpretations on the part of law

schools as to what constitutes valid industry-related employment status. For example, ABA regulations allow temporary positions and employment completely outside the legal profession as valid numbers for law schools reporting successful job placement (ABA, 2011).

3.      Additionally, similar ABA requirements for reporting state bar examination statistics convolute the validity of post-graduate employment, because the ABA requires law schools to report only 70% of first time bar exam test takers. Almost by default, this alters employment status rates as compared to employment of those passing the bar. Furthermore, because the ABA definition of employment status has varying categories and definitions, law schools can avoid direct clarification of reported statistics (ABA, 2011).

4.      The ABA secondary data selected was not originally intended for this study, however due to the alternative direction of the research topic the data units for situated learning manifest variables (e.g., legal clinics, trial skills and field internship placements) represent the *total number* of situated learning courses offered by each law school. Compared to the manifest variables for law school acceptance scores (i.e., MUPGA and MLSAT), which represents the *aggregate median* score for each law school. Therefore, due to the numerical value difference represented in manifest variables the analysis of this study may reflect inconclusive results.

**Implications for Future Research**

Based on the results of this study, the following areas are subjective in nature for future research. The findings reported serve only as a general guide for replicating this study due to the uncertainties of the secondary data.

1.      The theoretical assumption was found to be inadequate for this study therefore, future research in this area based on the current model construct should include the following modifications to improve the over model design and implications of the results. For law school curricula research to progress, it is important for researchers to assess the type of data units (e.g., sample or population) they employ. The impact of law school curricula and situated learning studies depend upon the appropriateness of the data to fit the research in order to draw a more valid conclusion from the analysis. Results obtained from replication testing that incorporates appropriate data (e.g., matching data units of grades per situated learning courses to UGPA and LSAT scores) will serve to inform further research (e.g., more comprehensive models).

2.      Based on the literature review, situated learning appears to play a crucial role in the transforming of the student's identity into professional readiness. Additional research in this area should include a concentration of individual law schools for the sample rather than a nationwide population. The narrow focus of an individual law school will allow the researcher greater access to students and faculty that may glean a better understanding of how situated learning affects the student directly compared to nine months after graduation. Incorporating a narrow focus to an individual school will also allow the researcher to conduct a mixed-method study utilizing both qualitative and quantitative data providing a more comprehensive insight to situated learning and its impact on law school curricula.

3.      Finally, an area that warrants future research, which requires a longitudinal study related to situated learning, is the social cognitive approach as to how law school students become self-regulated learners. Social cognitive views self-regulation (i.e., self-regulated

student learner), as a triadic process that involves the interlacement of self-efficacy (e.g., the personal view of self-beliefs concerning capabilities to learn or perform behaviors at designated levels) to the environment that influences our behavior; therefore, affecting the way an individual learns. Further research focusing on situated learning, knowledge application and sense of self-efficacy as key components, may answer the question(s) as to what influences the student learner (self-regulation) regarding choices of tasks, motivational factors, and determination level leading to successful post-graduate performance.

**Summary**

This research provided an initial investigation that examined the relationship among situated learning, law school acceptance scores, and post-graduate performance that related to employment rates and passage of the state bar examination nine months after graduation. Despite the limitations of the study, due to unmatched data sets for unit values, and working with the constraints of the data obtained from the American Bar Association, the research yielded useful insight into the conceptual blending of situated learning, communities of practice, and law school curricula. The main theoretical assumption driving the literature review and hypothesis theory, which found to be inadequate for this study, positioned that situated learning has a greater influence on post-graduate performance than law school acceptance scores. Even in the light of results, these findings have the potential to affect future research in this area especially with data modification for replication testing.

# REFERENCES

Adcock, T. (2010, December 8). Most new york law schools see lower pass rate for july bar exam. *New York Law Journal.* Retrieved from http://www.law.com/jsp/law/article.jsp?id=1202475862493&Most_NY_Law_Schools_See_Lower_Pass_Rate_for_July_Bar_Exam

Ader, H. (2006, July). *Factor analysis and structural equation modeling*. Paper presented at the meeting of Department Clinical Epidemiology and Biostatistics. Amsterdam, Holland.

American Bar Association and Law School Admission Council. (2012). *Official guide to ABA approved law schools.* Chicago, IL: American Bar Association.

American Bar Association. (1992*). Report of the task force on law schools and the legal profession: Narrowing the gap.* Chicago, IL: American Bar Association.

American Bar Association. (2008). *The value proposition of attending law school: Commission on the impact of the economic crises on the profession and legal needs.* Chicago, IL: American Bar Association.

American Bar Association. (2011). *Standards for approved law schools*. Chicago, IL: Chicago, IL: American Bar Association.

American Bar Association. (2012). *Standards of rules and procedures for approval of law schools*. Chicago, IL: American Bar Association.

American Psychological Association (1999). *Standards for educational and psychological testing*. Washington, DC: American Psychological Association.

Arbuckle, J. L. (1996). Full information estimation in the presence of incomplete data. In G.A. Marcoulides & R.E. Schumacker (Eds.). *Advanced structural equation modeling: Issues and techniques* (pp. 243 - 277). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Barrett, P. (2007). Structural equation modeling: Adjudging model fit. *Personality and Individual Differences*, 42, 815–824.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107, 238-246.

Bloch, F. S. (1982). The anagogical basis of clinical legal education. *Vanderbilt Law Review*, 35, 321.

Boomsma, A. (2000). Reporting analyses of covariance structures. *Structural Equation Modeling Multidisciplinary Journal*, 7(3), 461-83.

Bransford, J. D., Brown, A., & Cocking, R. (2000). *How people learn: Brain, mind, experience, and school*. Washington, DC: National Research Council and National Academy Press.

Bureau of Labor. Lawyer Employment Statistics. (2012). *Report of the lawyer and occupational outlook handbook*. Retrieved from http://www.bls.gov/ooh/Legal/Lawyers.htm#tab-3

Byrne, B. M.  (Ed.). (2010). *Structural equation modeling with AMOS*. New York, NY: Taylor and Francis Group.

California State Bar. State Bar Examination. (2012). *Report of the state by state bar exam passage rates*. Retrieved from http://www.california-bar-exam-pass.com/bar-exam-pass-rates-by-state.html

Carnegie Foundation. (2007). *Educating lawyers: Preparation for the profession of law*. New York, NY: Taylor &Francis Group.

Cavazos, A. M. (2011). Demands of the marketplace require practice skills: A necessity for emerging practitioners and its clinical impact on society. *Journal of Legislation*, 37, 1-37.

Cheung, G. W., & Lau, R. S. (2008). Testing mediation and suppression effects of latent variables: Bootstrapping with structural equation models. *Organizational Research Methods,* 11(2), 296-325.

Choi, J., & Hannafin, M. (1995). Situated cognition and learning environments: Roles, structures, and implications for design. *Educational Technology Research and Development*, 43(2), 53-69.

Choi, S., Baker, S. A., and Gulati, M. (2005). The rat race as an information forcing device. *New York University Law and Economics Working Papers.* Paper 8. Retrieved from http://lsr.nellco.org/nyu_lewp/8

Christensen, L. (2009a). The power of skills: An empirical study of lawyering skills grades as the strongest predictors of law school success. *St. John's Law Review*, 83(3), 795-826.

Christensen, L. (2009b). Enhancing law school success: A study of goal orientations, academic achievement and the declining self-efficacy of our law students. *Law and Psychology Review*, 33, 57-92.

Clancey, W. J. (1994). Situated cognition: How representations are created and given meaning. In: R. Lewis and P. Mendelsohn (Eds.), *Lessons from Learning* (231-242). Amsterdam: North-Holland.

Clancey, W. J. (1995). A tutorial on situated learning. In J. Self (Ed.), *Proceedings of the international conference on computers and education* (49-70). Charlottesville, VA: AACE.

Clancey, W. J. (1997). *Situated cognition: On human knowledge and computer representations.* Cambridge: Cambridge University Press.

College, Career & Law. (2012, January 31). *Problems with law schools*. Retrieved from http://collegecareerlife.net/problems-law-school

Courtney, S., & Maben-Crouch, C. (1996*). Beyond the sixth floor: Redesigns for learning*. Paper presented at the 15th annual Midwest research-to-practice conference in adult, continuing, and community education, Lincoln, NE.

Craver, C. (2000). The impact of student passage and a pass/fail option on clinical negotiation course performance. *Ohio State Journal on Dispute Resolution*, 15, 373-389.

Dewey, J. (1938). *Experience and education*. West Lafayette IN: Kappa Delta Pi.

Diamantopoulos, A., & Siguaw, J. A. (2000). *Introducing LISREL*. London: Sage Publications.

Dickinson, J. A. (2009). Understanding the socratic method in law teaching after the carnegie foundation's educating lawyers. *New England Law Review*, 97(31).

DiFrancesco, P. (2011). *The role of situated learning in experiential education: An ethnographic study of the knowledge-construction process of pharmacy students during their clinical rotations.* (Doctoral dissertation). Retrieved from http://scholarworks.umb.edu/doctoral_dissertations/29

Dimitrov, D. M. (2010). Testing for factorial invariance in the context of construct validation. *Measurement & Evaluation in Counseling & Development*, 43(2),121-149.

Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, 95, 256-273.

Engel, K., Moosbrugger, H., & Muller, H. (2003). Evaluating the fit of structural equation models: Test of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research*, 8(2), 23-74.

Enquist, A. M. (2008). Unlocking the secrets of highly successful legal writing students. *St. John's Law Review*, 82(3), 609-672.

Eraut, M. (2004). Transfer of knowledge between education and workplace settings. In H. Rainbird, A. Fuller, & H. Munro (Eds.), *Workplace learning in context* (pp. 201–221). London: Routledge.

Ertmer, P., & Newby, T. (1993). Behaviorism, cognitivism, constructivism: Comparing critical features from an instructional design perspective. *Performance Improvement Quarterly*, 6(4), 50-72.

Ethington, B.(n.d.) Retrieved from https://umdrive.memphis.edu/yxu/public/Multicollinearity.pdf

Everitt, B. S., & Skrondal, A. (Ed.). (2006). *Cambridge dictionary of statistics*. Cambridge, GBR: Cambridge University Press.

Fan, X., Thompson, B., & Wang, L. (1999). Effects of sample size, estimation methods, and model specification on structural equation methods. *Structural Equation Modeling*, 6(1), 56-83.

Fenwick, T. J. (2003). *Learning through experience: Troubling orthodoxies and intersecting questions*. Malabar, FL: Krieger Publishing Company.

Field, A. P. (2000). *Discovering statistics using SPSS for windows: Advanced techniques for the beginner.* London: Sage.

Fines, B. (2008). Fundamental principles and challenges of humanizing legal education. *Washburn Law Journal*, 47, 313-326.

Fox, J. (2002). *An R and S-PLUS companion to applied regression*. Thousand Oaks CA: Sage Publishing.

Fraenkel, J. R., & Wallen, N. E. (Ed.). (2009). *How to design and evaluate research in education*. Boston, MA: McGraw Hill Higher Education.

Freire, P. (2004). *Pedagogy of Indignation*. Boulder: Colorado, Paradigm.

Garner, B. (1999). *The winning brief*. New York, NY: Oxford University Press.

Gelman, A. & Hill, J. (2007). *Data analysis using regression and multilevel/hierarchical models*. New York, NY: Cambridge University Press.

Giles, D. (1991, October). *The process of experience: A case study in international service learning, report no. 1*. Research report paper presented at the Partnership for Service-Learning, New York, New York.

Glenn, D. (2010, May 14). It's not about how smart you are. *The Chronicle of Higher Education*, 56(35), p.B6-B9, 2p.

Greenfield, M. L., Kuhn, J. E., & Wojtys, E. M. (1998). A statistics primer: Corrrelation and regression analysis. *The American Journal of Sports Medicine,* 26(2), 338-343.

Hansman, C. A. (2001). Context-based adult learning. *New Direction for Adult and Continuing Education*, 89, 43-51.

Henning, P. (1998). Everyday cognition and situated learning. In D. Jonassen (Ed.), *Handbook of research on educational communications and technology*. New York: Simon & Schuster.

Hoelter, J. *(*1983*)*. The analysis of covariance structures: goodness-of-fit indices. *Sociological Methods & Research,*11, 325-344.

Hoffman, P. T. (2011). Law schools and the changing face of practice. *New York Law School Law Review*, 56 (2011/12), 204-231.

Holland, P. W. (1986). Statistics and causal inference. *Journal of the American Statistical Association*, 81(396), 945-960.

Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modeling: Guidelines for determining model fit. *The Electronic Journal of Business Research Methods*, 6(1), 53-60.

Hunt, J. C. (1996). Guests in another house: An analysis of racial disparate bar performance. *Florida State University Law Review*, 23, 721-790.

James, L. R., Mulaik, S. A., & Brett, J. M. (1982). *Causal analysis: Assumptions, models, and data.* Beverly Hills: Sage.

Jonassen, D. H. (1994). Thinking technology: Toward a constructivist design model. *Educational Technology,* 34(4), 34-37.

Katz, H. N. (2008). Evaluating the skills curriculum: Challenges and opportunities for law schools. *Mercer Law Review*, 59(3), 909-939.

Kaufman, K. A., LaSalle-Ricci, V. H., Glass, C.R., & Arnkoff, D. B. (2007). Passing the bar exam: Psychological, educational, and demographic predictors of success. *Journal of Legal Education*, 57(2), 205 - 223.

Key, J. P. (1997). *Research design in occupational education*: *Reliability and validity*. Retrieved from http://www.okstate.edu/ag/agedcm4h/academic/aged5980a/5980/newpage18.htm

Kirkpatrick, J. (1987). Why case method teaching does not make good history. In T. Nevett & S. Hollander (Eds.), *Marketing in three eras* (pp. 201–214). East Lansing, MI: Michigan State University.

Kline, R. B. (2010). *Principles and practices of structural equation modeling*. New York, NY: The Guilford Press.

Konefsky, A. S., & Sullivan, B. (2011, October 23). There's more to the law than practice- ready. *The Chronicle of Higher Education*. 58(10), pA30-30, 1p. Retrieved from http://chronicle.com/article/Theres-More-to-the-Law-Than/129493/

Knowles, M. S. (1980). *The modern practice of adult education: From pedagogy to andragogy*. Englewood Cliffs, NJ: Cambridge.

Krathwohl, D. R. (Ed.). (2004). *Methods of educational and social science research*. Long Grove, Ill: Waveland Press.

LaPiana, W. P. (1998, May 26). *A history of the LSAC and the LSAT*. Paper presented at the meeting of Law School Admission Council. New York, NY.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation* Cambridge: Cambridge University Press.

Lee, P. G. (2011, July 11). Law schools get practical. *Wall Street Journal Online - WSJO000020110710e77b005pr. Retrieved from* [http://global.factiva.com/ha/default.aspx](http://global.factiva.com/ha/default.aspx)

Lewis-Beck, M. S., Bryman, A., Llao, T. F. (Ed.). (2004). *The SAGE encyclopedia of social science research method*. London: Sage Publications.

Little, R. J. A., & Rubin, D. B. (1990). The analysis of social science data with missing values. *Sociological Methods and Research*, 18, 292–326.

Loehlin, J. C. (Ed.). (2004). *Latent variable models: An introduction to factor, path and structural equation analysis*. Hillsdale, NJ: Lawrence Erlbaum.

Lomax, R. G. (1998). *Statistical concepts: A second course for education and the behavioral sciences*. New Jersey: L. Erlbaum Associates.

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods*, 1(2), 130-49.

Mackeracher, D. (Ed.). (2010). *Making sense of adult learning*. Toronto, CA: University of Toronto Press.

Marsh, H. W., Hau, K., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes, and dangers in overgeneralizing Hu and Bentler's (1999) finding. *Structural Equation Modeling*, 11, 320-341.

McDonald, R. P., & Ringo Ho, H. M. (2002). Principles and practice in reporting structural equation analyses. *Psychological Methods*, 7(1), 64–82.

Merritt, D. J. (2008). Legal education in the age of cognitive science and advanced classroom technology. *Boston University Journal of Science & Technology Law*, 14(1), 39-72.

Mezirow, J. (*2000*). Learning to think like an adult: Core concepts of transformation theory. *In* J. Mezirow & Associates *(Eds.), Learning as transformation (pp.* 3-34*).* San Francisco*:* Jossey-Bass.

Moens, G. A. (2007). The mysteries of problem-based learning: Combining enthusiasm and excellence. *University of Toledo Law Review*, (38)623, 624-625.

Mulaik, S. A., James, L. R., Van Alstine, J., Bennet, N., Lind, S., and Stilwell, C. D. (1989). Evaluation of goodness-of-fit indices for structural equation models. *Psychological Bulletins*, 105 (3), 430-45.

The NALP Foundation for Law Career Research and Education. (2005). *Toward effective management of associate mobility: A status report on attrition*. Overland Park KS: NALP Publishing.

National Association of Legal providers. (2009). *NALP employment class for 2009*. Washington DC: NALP Publishing.

National Association of Legal Providers. (2010). *Law firm diversity among associates erodes in 2010*. Washington DC: NALP Publishing.

National Association of Legal Providers. (2010). *Class of 2010 national summary report*. Washington DC: NALP Publishing.

National Conference of Bar Examiners. (2012). 2011 Statistics. *The Bar Examiner*, 6-28. Madison, WI: NCBE Publishing.

Nevitt, J., & Hancock, G. R. (2001). Performance of bootstrapping approaches to model test statistics and parameter standard error estimation in structural equation modeling. *Structural Equation Modeling, 8,* 353–377.

Nonaka, I., & Takeuchi, H. (1997). *A new organizational structure*. In J. Prusak (Ed.), Knowledge in organizations. Boston, MA: Butterworth-Heinemann.

Phelps, E. J. (1892). Methods of legal education. *Yale Law Journal*, 139(1), 143.

Piaget, J. (1974). *Experiments in contradiction*. Chicago: University of Chicago Press.

Pinder, K. A. (1998). Street law: Twenty-five years and counting. *Journal of Law & Education*, 27, 211-233.

Press, A. (2011, September 1). The law school troubles. *American Lawyer.* Retrieved from http://www.americanlawyer.com/PubArticleTAL.jsp?id=1202511941503&The_Law_School_Troubles

Prim, H. C., & Cunha, C. H. (2006). *Implications of phenomenological epistemology for organizational development*. Paper presented at Third International Conference on Production Research. Americas, Region.

Quigley, F. (1995). Seizing the disorienting moment: Adult learning theory and the teaching of social justice in law school clinics. *Clinical Law Review*, 2(37), 37-72.

Rosin, S. G. (2008). Unpacking the bar: Of cut scores, competence and crucible. *Journal of the Legal Profession*, 32(67), 67-96.

Rush, D. (2008). *Does law school curriculum affect bar examination passage? An empirical analysis of the factors which were related to bar examination passage between 2001 – 2006 of Midwestern Law School*. (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3351879)

Saltmarsh, J. (1997). Ethics, reflection, purpose, and compassion: Community service learning. *New Directions for Student Services*, 77, 81–93.

Schön, D. A. (1987). *Educating the reflective practitioner*. San Francisco: Jossey-Bass.

Segal, D. (2011, November 19). What they don't teach law students: Lawyering. *New York Times*, pp. A1. Retrieved from http://www.nytimes.com/2011/11/20/business/after-law-school-associates-learn-to-be-lawyers.html?pagewanted=all

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. New York: Houghton Mifflin Company.

Sheldon, K. M., & Krieger, L. (2007). Understanding the negative effects of legal education on law students: A longitudinal test of self-determination theory. *Personality and Social Psychology Bulletin*, 33, 883-897.

Shultz, M. M., & Zedeck, S. (2011). Predicting lawyer effectiveness: Broadening the basis for law school admission decisions. *Law & Social Inquiry*, 36(3), 620–661.

Simon, M. (2006). Dissertation and scholarly research: Recipes for success Dubuque, IA: Kendall Hunt Pub Co.

Slawson, D. (2000). Changing how we teach: A critique of the case method. *Southern California Law Review*, 74, 343-346.

Srikantiah, J., & Koh, J. L. (2010). Teaching individual representation alongside institutional advocacy: Pedagogical implications of a combined advocacy clinic. *Clinical Law Review*, 16, 451-486.

Stein, R. M. (1981). *The path of legal education from edward I to langdell: A history of insular reaction*. Pace University: Pace Law Faculty Publications.

Suhr, D. (2006, September 27). *The basics of structural equation modeling*. Paper presented at the SAS User Group Western Region (WUSS) Cary, NC.

Sullivan, W. M., Colby, A., Wegner, J. W., Bond, L., & Shulman, L. S. (2007). *Educating lawyers: Preparation for the profession of law*. San Francisco, CA: Jossey-Bass.

Suto, D. A., Norton, L. L., & Reese, L. M. (2010). *Analysis of differential prediction of law school performance by racial/ethnic subgroups based on 2005–2007 entering law school classes*. Newton, PA: Law School Admission Services.

Tabacknick, B. G., & Fidell, L. S. (Ed.). (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Allyn & Bacon.

Torres, A. L. (1998). MacCrate goes to law school: An annotated bibliography of methods for teaching lawyering skills in the classroom. *Nebraska Law Review*, 77(132), 133 - 199.

Ullman, J. B. (1996). Structural Equation Modeling. In B. G. Tabachnick & L. S. Fidell (Eds.), *Using Multivariate Statistics* (pp. 709-812). New York: Harper Collins.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, Massachusetts: Harvard University Press.

Warhurst, R. P. (2006). We really felt part of something: Participatory learning among peers within a university teaching-development community of practice. *International Journal for Academic Development*, 11(2), 111-122.

Wein, C. A. (1995). *Developmentally appropriate practice in "real life"- Stories of teacher practical knowledge*. New York: Teachers College Press.

Wellek, S., & Blettner, M. (2012). On the proper use of the crossover design in clinical trials: part 18 of a series on evaluation of scientific publications. *Dtsch Arztebl International (Int.)*, 109 (15), 276-81.

Werner, C., & Schermelleh-Engel, K. (2009). *Structural equation modeling: advantages, challenges, and problems.* Frankfurt, Germany: Goethe University.

Wilson, A. L., & Hayes, E. R. (2000). *Handbook of adult and continuing education*. San Francisco, CA: Jossey-Bass.

Young, F. Y. (1993). Instructional design for situated learning. *Educational Technology Research and Development*, 41 (1), 43-57.

Yung, Y. F., & Bentler, P. M. (1996). Bootstrapping techniques in analysis of mean and covariance structures. *In G. A. Marcoulides & R. E. Schumacker (Eds.), Advanced structural equation modeling: Issues and techniques* (pp. 195-226). Mahwah, NJ: Erlbaum.

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