Teacher Professional Learning and High School Students' Mississippi Subject Area Test Performance

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TEACHER PROFESSIONAL LEARNING AND HIGH SCHOOL STUDENTS’
MISSISSIPPI SUBJECT AREA TEST PERFORMANCE

by

Christine Ann Moseley

Abstract of a Dissertation
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

December 2015
ABSTRACT
TEACHER PROFESSIONAL LEARNING AND HIGH SCHOOL STUDENTS’ MISSISSIPPI SUBJECT AREA TEST PERFORMANCE

by Christine Ann Moseley

December 2015

The purpose of this study was to determine if there was any significant relationship between specific elements of professional learning and students’ performance on the state mandated Mississippi Subject Area Testing Program (SATP2). The study includes the design qualities of professional learning, the level of teacher involvement in the professional learning process, teacher beliefs regarding professional learning, and perceived administrative support of professional learning programs. The researcher utilized an original survey instrument entitled Professional Learning Design and Perception to gather quantitative data for the study. High school teachers of Algebra I, Biology I, English II, and U. S. History in sixteen districts across coastal Mississippi during the 2013-2014 were asked to voluntarily participate in the study since their students were required to take end-of-course assessments in these subject areas. Participating districts’ percentages of passing scores in each subject area were utilized as archival data for the study.

Data indicated that while respondents’ participated in a wide variety of professional learning opportunities, peer collaboration, workshops, and PLCs were the most attended. Additionally, data revealed that a majority of respondents were not given much choice when it came to the type of professional learning they attended; however, learning did align with state curriculum standards. Respondents also indicated that they
did not have much input into their own professional learning, nor did student data play a significant role in the professional learning process.

One significant relationship revealed during the research was a slight positive correlation between teacher input in the professional learning process and students’ scores on the SATP2 assessment. Additionally, data indicated that collectively all of the professional learning elements targeted for research were significant in the prediction of SATP2 scores, while individually, the only coefficient indicating significance was respondents’ beliefs.
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AND HIGH SCHOOL STUDENTS’ MISSISSIPPI
SUBJECT AREA TEST PERFORMANCE

by

Christine Ann Moseley

A Dissertation
Submitted to the Graduate School
and the Department of Educational Leadership and School Counseling
at The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

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December 2015
DEDICATION

For ye have need of patience, that after ye have done the will of God, ye might
receive the promise. Hebrews 10:36

For never losing faith in me when I almost lost faith in myself, I dedicate this
work first and foremost to my husband, Frank Moseley. You have walked with me,
gently tugged at me, and cheered me on to the finish line. I could never have made this
long journey without you. Thank you for your unceasing love and support. Now we can
get on with the rest of our lives.

To Meagan Duncan, my daughter, thank you for encouraging me, stuffing and
stamping envelopes with me, and listening when I needed to blow off steam. You have
helped me to keep going, and now I can return the favor. There is no limit to what you
can achieve if you put your mind to it.

To every other member of my family, thank you for asking me, “How much
longer do you have?” It’s because of this statement that I never stopped.

To my friend George East, who is now walking among the angels, you can finally
call me Dr. Moseley. I hate I cannot tell you this in person, but I know you are smiling
down on me saying, “Job well done!”
ACKNOWLEDGMENTS

I would like to thank my dissertation chair, Dr. David E. Lee for assisting me through the dissertation process. Without the guidance, maneuvering through the changes would have been much more difficult.

Many thanks to Dr. Thelma Roberson and Dr. Leslie Locke who encouraged me to keep moving. I appreciate the advice and honesty as I worked through all of the technical writing. The boot camps were instrumental in keeping me on track. Also, I must thank Dr. J. T. Johnson who was such an asset regarding the statistical portion of the research process.

Finally, to Dr. James Fox, Dr. Kyna Shelley, and Dr. Richard Mohn, thank you for so graciously joining my team in the fourth quarter and making sure I crossed the finish line. Change at such a late date can be unnerving, and each of helped to make the transition an easy one.
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CHAPTER I
INTRODUCTION

The belief that all genuine education comes about through experience does not mean that all experiences are genuinely or equally educative. (Dewey, 1938, pp. 25-26)

In January 2002, the 107th Congress of the United States reauthorized the Elementary and Secondary Education Act (ESEA) of 1965 as the No Child Left Behind Act (NCLB) of 2001 in order “…to close the achievement gap with accountability, flexibility, and choice so that no child is left behind” (No Child Left Behind [NCLB], 2001). Through this landmark legislation, the federal government mandated that all children in the United States be provided a high quality education. Meeting the needs of neglected children and those in poverty, attending to those who speak limited English, and making certain children with disabilities receive first-rate instruction assumed top priority with the commencement of NCLB (2001). Congress mandated state departments of education ensure the accomplishment of this task through the implementation of rigorous student assessments, systematic pedagogical training, and the alignment of curriculum standards to states’ academic frameworks. Additionally, NCLB (2001) required that all teachers teaching a core academic subject be highly qualified in the subject area they taught. In order to be deemed highly qualified, teachers must hold bachelor’s degrees (at minimum) and state certifications, as well as demonstrate knowledge of the subject matter being taught. By far, however, the most challenging component of the NCLB (2001) mandate asserts that all children must have achieved proficiency on state assessments by the year 2014 (NCLB, 2001).
Sadly, according to the *Nation’s Report Card: Reading 2009*, reading scores at fourth grade had made no change since 2007 and eighth grade scores improved only marginally. Data from the report also indicated that three-quarters of eighth graders in the U.S. scored at or above *Basic* (limited mastery) level, while only thirty-two percent scored at or above *Proficient* (sufficient mastery), and only three percent of students scored at *Advanced* (superior mastery) levels in reading (National Center for Educational Statistics [NCES], 2010). Finally, data from the report indicated that since the inception of NCLB (2001), the achievement gaps in crucial subgroups had not changed significantly (NCES, 2010). In fact, among high schools with a large percent of students living in poverty (as evidenced by free or reduced-price lunch counts) in the U.S., only one in five entered school ready to perform at the eighth grade level (NCES, 2010). In reality, most of the incoming freshmen reached achievement levels of only a fifth or six grade equivalent in both reading and mathematics (NCES, 2010).

In 2010, with the potential reauthorization approaching, national leaders continued their efforts to raise the bar for public education by placing even more emphasis on the growth of underachieving subgroups and on college and career readiness skills (United States Department of Education [USDE], 2010). The blueprint draft for reauthorization of NCLB (2001), according to the USDE (2010), outlined the number one priority for education as working to expand principal and teacher efficacy, thus assuring every student a great teacher and every school a great leader. Even with the increased federal accountability, however, NCES (2014) data indicated that reading assessment results showed only marginal growth nationally from 2009 to 2013. In fact, eighth-grade students’ gained only two points, while fourth-grade students showed no significant gain
in reading during the same time period. Additionally, only students in Iowa, Tennessee, Washington, the District of Columbia, and Department of Defense schools recorded increases at both grade levels. With regard to specific subgroups, however, performance of White, Black, Hispanic, and Asian/Pacific Islander eighth graders revealed increases in reading in 2013 as did both the male and female subgroups (NCES, 2014). Because states failed to meet the 2014 deadline for student proficiency imposed by NCLB (2001), the U.S. Department of Education now offers flexibility waivers to states wishing to apply (U.S. Department of Education [USDE], 2014). The waivers offer states an exemption to the NCLB (2001) mandate in return for strict, state-led efforts for educational reform centering on growth in underachieving subgroups through equitable educational opportunities and quality classroom instruction. To date, 43 states, the District of Columbia, and Puerto Rico have been approved for exemption (USDE, 2014).

In addition to the NCLB (2001) requirements and subsequent ESEA flexibility waivers by the USDE (2014), the twenty-first century brings with it new educational challenges for both teachers and administrators. In June of 2010, the National Governors Association for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO) released the Common Core State Standards (CCSS). The design of these standards establishes a set of distinct, systematic markers that focus on preparing U.S. students for college and careers upon graduation (NGA Center, 2010a). The National Governors Association describes the Standards in the following statement:

The Common Core State Standards Initiative is a state-led effort to establish a single set of clear educational standards for English language arts and mathematics that states can share and voluntarily adopt. The Standards are
designed to ensure that students graduating from high school are prepared to go to
college or enter the workforce and that parents, teachers, and students have a clear
understanding of what is expected of them (NGA Center, 2011).

To date, 43 states, the District of Columbia, four territories, and the Department of
Defense schools have formally adopted the CCSS (NGA Center, 2010b). The State of
Mississippi adopted the CCSS in 2010 along with a transitional accountability and
assessment timeline for full implementation (Mississippi Department of Education
[MDE], 2010). More recently in February 2015, the State of Mississippi passed Senate
Bill 2161 (2015) establishing the Mississippi Commission on College and Career
Readiness to continue monitoring the CCSS (NGA Center, 2010b) in an effort to ensure
that Mississippi students are adequately prepared for national college entrance exams or
admission into the workforce. Additionally, Senate Bill 2161 (2015) mandated that
Mississippi learning standards be called “Mississippi College and Career Readiness
Standards,” and required the newly established commission to further research CCSS
(NGA Center, 2010b), revising any standards that do not meet educational needs as
expected.

With the adoption of the CCSS by a majority of states in the nation, educational
accountability policy continues to target increased student achievement with particular
attention being placed on underrepresented subgroups, those living in poverty, and those
performing in the lowest twenty-fifth percentile. According to Loeb, Rouse, and Shorris
(2007), any increase in student achievement will be negligible, however, unless
sustained, systematic methods are undertaken to accomplish the task. As well, student
academic growth will be minimal without a transformation in learning, which is
ultimately tied to the ability of the educational community to address the specific content and learning needs of students (Loeb et al., 2007).

Within the educational community, classroom teachers shoulder the most responsibility with regard to student academic growth; and given the increasing diversity among students and the onset of the technological age, teaching has become more complex than ever before (Loeb et al., 2007). For this reason, teacher professional learning plays a vital role in an effective educational model by creating a vehicle to examine pedagogy and subsequent changes necessary to facilitate increased student achievement (Hochberg & Desimone, 2010). NCLB (2001) requirements still advocate professional learning that expands educators’ knowledge in core subjects and skills, as well as successful approaches to instruction. In addition, a directive for rigorous state standards and student achievement benchmarks for student and teacher accountability are included as a part of both the NCLB (2001) legislation and the flexibility waivers offered by the USDE (2014).

With the adoption of new and more rigorous standards, basic principles binding the pedagogical community focus on preparing students for college or for entrance into the workforce (NGA Center, 2011). Daggett of the International Center for Leadership in Education (ICLE, 2014) points out that as a result of rapidly changing technology and the knowledge that educators will prepare students for an uncertain future, effective learning in the twenty-first century should provide rigorous learning opportunities in the classroom that can be utilized in real world situations. Rigorous and relevant teaching allows students to attain an in-depth mastery of challenging tasks through problem-solving and analysis. Furthermore, contrary to some academic models, it is the quality of
learning rather than its quantity that defines student growth (Marzano, Pickering, & Pollock, 2001). In order for students to achieve these rigorous standards, Daggett stresses that educators must be current in the knowledge and practices relating to their subject matter in order to provide instruction targeting students’ specific learning styles (ICLE, 2014). For district and building-level administrators this increased rigor and continued accountability means maintaining a knowledgeable, high-quality teaching staff that advances student learning and cultivates complex thinking skills (Loeb et al., 2007; Marzano et al., 2001).

Because of the sheer size of the U.S. pedagogical workforce, sustaining teacher quality presents itself as a massive undertaking that often leaves administrators unsure of how to approach the process (Darling-Hammond & Richardson, 2009). In fact, teachers comprise approximately 10% of all college-educated workers, and total spending on teachers’ salaries in U.S. public schools reaches close to $200,000,000.00. Moreover, payroll encumbers roughly 40% of schools’ operating budgets, often leaving little for professional learning or educational improvement (Loeb et al., 2007). In spite of the monetary barrier, teacher efficacy and student achievement remain a top priority across the nation at present, continuing its tradition of “…laying a foundation for student success in school and beyond” (Darling-Hammond & Richardson, 2009, p. 47).

Teacher professional learning programs have been an integral part of the educational community for decades and are based on the concept that a learned educator provides opportunity for student success (Hill, 2009). In fact, more than 90% of teachers participate in some type of professional learning opportunity, whether in house or sponsored by an outside entity during a single school year. Some professional learning
providers advertise exceptional increases in student achievement with the adoption of a specific set of practices (Nagel, 2013). Results from a National Center for Education Statistics survey conducted by Parsad, Lewis, and Harris (2001), however, show dismal results with regard to the effectiveness of professional learning. First, only 20% of teachers felt that participating in professional learning activities that addressed new methods of teaching helped them to greatly improve their classroom practices (Parsad et al., 2001). Additionally, in the areas of addressing the needs of students with disabilities, limited English proficiency, and diverse cultural backgrounds, the statistics fell to 17%. Finally, only 15% of educators indicated that professional learning in the areas of student performance assessment and state or district curriculum performance standards significantly impacted their teaching practices due in part to uninspiring and poor quality learning opportunities (Parsad et al., 2001).

Another major factor contributing to the dismal success of teacher professional learning may be the fragmented approach to training and the lack of clear focus on researched-based pedagogical practices. Also, when student assessment results show less than significant gains, teaching strategies obtained during professional learning are often abandoned only to move on to new, improved teaching approaches or different methods of teacher training (Perkins & Cooter, 2013). In short, the issue is not, according to Hill (2009), the lack of professional learning opportunities; it is more so that periodic training rarely provides a vehicle for a new teaching method to reach educators in a way that it maintains its integrity and effect on both the teacher and his or her students for a sustained period of time.
In addition to the lack of effective delivery methods in professional learning for teachers, Visser, Coenders, Terlouw, and Peters (2010) suggest that many professional learning opportunities lack teacher input during both the planning and implementation stages and are disconnected from classroom practice. Successfully introducing a new teaching concept or methodology means that educators have to be presented with the new strategy, understand its components, adopt the new way of thinking, and acquire the new knowledge and skills necessary to implement it in the classroom (Visser et al., 2010). In order to accomplish all of this, teachers should remain actively involved in the professional learning process. Furthermore, to enhance instructional value and student achievement, professional learning opportunities should be coordinated, focused, coherent, and sustained, as well as aligned to state and local standards (Perkins & Cooter, 2013). Finally, the successful implementation of a new teaching concept attained during professional learning is more probable if it parallels school practice; therefore, new learning should be integrated with the daily practice of individual teachers or there will be a disconnect between the learned strategy and actual implementation (Darling-Hammond, 2008).

Perhaps most importantly, effective professional learning and the subsequent implementation of new concepts depends both on the creation of new knowledge and on the motivation and commitment of participating teachers to change (Hochbert & Desimone, 2010). Unfortunately, the NCES (2001) revealed that the majority of teachers lacked interest in the professional learning they were offered. In reality, half of the surveyed teachers detailed spending one day or less in professional learning activities, doing only what was required for licensure (NCES, 2001). Rationale for the lack of
motivation and commitment to professional learning can be tied to the absence of relevant educational opportunities and the scarcity of skilled trainers to facilitate them. (Hill, 2009).

As a solution to improve the quality of teacher professional learning in the U.S., Learning Forward (2014b), formerly the National Staff Development Council, offers a universal framework centering on “…strengthening and refining the day-to-day performance of educators, realizing that professional learning is the single most accessible means teachers have to develop the knowledge, skills, and practices necessary to better meet students’ learning needs,” (para. 1) thus improving performance. These Learning Forward (2014b) principles have been labeled by the organization as Standards for Professional Learning to signal the importance of educators taking an active role in furthering their own professional knowledge. Learning Forward emphasizes that the professional learning which occurs when these standards are fully implemented enrolls educators as active participants in determining the content of their learning, how their learning occurs, and how they evaluate effectiveness. In turn, increased educator effectiveness fosters enhanced student learning—a goal to which all educators subscribe (Learning Forward, 2014b).

Statement of Purpose and Research Hypotheses

With the reauthorization of the Elementary and Secondary Education Act (ESEA) as the No Child Left Behind Act (2001) came a proposed amendment to the statute defining professional learning as “a comprehensive, sustained, and intensive approach to improving teachers’ and principals’ effectiveness in raising student achievement” (Learning Forward, 2014a, para. 1). When an educator’s knowledge, skills, and
behaviors become enhanced by new and more effective strategies for teaching, student achievement is likely to increase; and when students improve, a cycle of continuous progress is created for both the teacher and the learner (Learning Forward, 2014a). Regrettably, research with regard to professional learning and student achievement shows that results at the classroom level are often less than desirable, and it is necessary to rethink the approach in the twenty-first century. Recognizing the components of effective professional learning allow for greatly improved student achievement, pushing educational reform efforts in the right direction (Lauffer, 2010). Individual components to be investigated include styles of professional learning, methods of delivery, the amount of time spent on specific learning objectives, teachers’ input in designing professional learning opportunities, and administrative support of the professional learning program.

The following hypotheses directed the research:

H₁: There is a statistically significant relationship between the amount of time spent in professional learning and student achievement on the state mandated Mississippi Subject Area Testing Program.

H₂: There is a statistically significant relationship between the design of teacher professional learning programs and student achievement on the state mandated Mississippi Subject Area Testing Program.

H₃: There is a statistically significant relationship between the level of teacher involvement in the professional learning process and student achievement on the state mandated Mississippi Subject Area Testing Program.
H₄: There is a statistically significant relationship between teachers’ beliefs regarding professional learning and student achievement on the state mandated Mississippi Subject Area Testing Program.

H₅: There is a statistically significant relationship between perceived administrative support of the professional learning activities and student achievement on the state mandated Mississippi Subject Area Testing Program.

H₆: There is a statistically significant relationship between the amount of time spent in professional learning, the design of teacher professional learning programs, the level of teacher involvement in the professional learning process, teachers’ beliefs regarding professional learning, and perceived administrative support of the professional learning activities and student achievement on the state mandated Mississippi Subject Area Testing Program.

Limitations

Participants of the study included only high school teachers of Algebra I, Biology I, English II, and U.S. History holding valid teacher licensure issued by the Mississippi Department of Education. Participating school districts include Choctaw County, Hancock County, Harrison County, Jackson County, Stone County, Bay-Waveland, Columbia, Ocean Springs, Pascagoula, Pass Christian, Picayune, and Poplarville Special Municipal Separate.

Additionally, research was limited to an investigation of teachers’ participation in professional learning during the 2013-2014 academic year and the participating districts’ state test scores in the above referenced subject areas. For this reason, data will consist solely of teachers’ responses to surveys created by the researcher and 2013-2014 archival
data of Mississippi Subject Area Test scores obtained from the Mississippi Assessment and Accountability Reporting System (MAARS) for high schools participating in the study. Moreover, research concentrated on the relationship between professional learning and student performance on the Mississippi Subject Area mandated assessments for participating school districts.

Assumptions

For the purpose of this study, the researcher will assume that participants will follow the directions on the survey and respond honestly to all items. Additionally, the researcher will assume that MAARS data is accurate and complete.

Definition of Terms

*Advanced degrees*: college degrees beyond those required for basic teacher licensure. For the purpose of this study, that includes the master’s, specialist’s, and doctoral degree.

*Book study*: professional learning in which a trade book is chosen for extended study by a specified group (Keller, 2008).

*Collaboration*: for the purpose of this study, the practice of educators working together on a common goal for the purpose of learning from one another (Killion and Roy, 2009).

*Common Core State Standards*: an initiative spearheaded by the National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSS) that offers a consistent framework of educational standards designed to prepare students for college and career readiness (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010c).
Content: for the purpose of this study, the subject-matter presented during professional learning opportunities.

Content knowledge: for the purpose of this study, a teacher’s understanding of the subject-matter he or she is assigned to teach.

Core academic subjects: for the purpose of this study, Algebra I (mathematics), English II (language arts), Biology I (science), and U.S. History (social studies).

Culture: for the purpose of this study, a universal set of goals and values within a school or district that promotes an atmosphere of learning (Peterson, 2002).

Data-driven professional learning: professional learning that centers on data collected from student assessment scores, behavior screeners, teacher interviews, or other relevant student data (Mitchell, Lee, & Herman, 2000; Schmoker, 2001).

Design: for the purpose of this study, the delivery method of professional learning opportunities.

Instructional coaches – refer to professional educators that work directly with principals and classroom teachers for the purpose of improving instructional practices (Killion & Roy, 2009).

Learning Forward (formerly the National Staff Development Council): the international organization formed in 1969 that focuses on raising student achievement through professional learning (Learning Forward, 2014a).

Mississippi Subject Area Testing Program/SATP2: state mandated assessments in Algebra I, Biology I, U.S. History, and English II that students must pass in order to meet the requirements for high school graduation. The Mississippi Subject Area Testing
Program was enacted through the Mississippi Student Achievement Improvement Act in 1999 (MDE, 2009).

*National Board Certification*: a meticulous process in which teachers earn advanced certification. National Board Certification was created as a means to improve the standards and perception of the teaching profession (National Board for Professional Teaching Standards, 2002).

*Peer Observation*: for the purpose of this study, a method in which teachers contextually learn new pedagogical techniques through observation of their colleagues (Pressick-Killborn & teRiele, 2008).

*Process*: for the purpose of this study, the manner in which professional learning opportunities are planned, implemented, and evaluated in schools or districts.

*Professional learning / Professional development*: for the purpose of this study, the means in which educators build upon their knowledge and learn pedagogical practices needed to help students achieve at desired levels (Learning Forward, 2014a).

*Professional learning communities / Teacher collaborative groups*: small, focused groups of educators working collaboratively to enhance their knowledge and pedagogical practices (Stanley, 2011).

*Research-based*: for the purpose of this study, professional learning strategies and classroom teaching methods established through sound examinations of educational practices and learning theories (Hirsh & Hord, 2012).

*Standards-based*: for the purpose of this study, teaching, learning, and planning rooted in state or locally mandated learning targets.
**Student achievement / Student proficiency**: for the purpose of this study, student performance levels on state mandated subject area tests. Categories of achievement include (a) advanced (above average mastery of content), (b) proficient (mastery of content), (c) basic (some mastery of content), and (d) minimal (non-mastery of content) (MDE, 2009).

**Technology-based professional learning**: the use of multi-media components and virtual interactivity as a source of professional learning (O’Brien, Aguinaga, Hines, & Hartshorne, 2011).

**Train the Trainer model**: sending one or more educators to a specific professional learning opportunity and requiring them to return to their own school sites to train their colleagues in the learned methodology (Pancucci, 2007).

**Workshop**: for the purpose of this study, a session in which professional learning is generally conducted by a presenter and the teacher participant assumes a passive learning role (Kennedy, 2005).

**Justification**

Practical professional learning in the field of education takes place as a continuous process designed to keep teachers abreast of current research and innovative pedagogical practices to create a culture of learning and improvement (Hord & Roy, 2014). Danielson (2007), a noted expert in the field of education, has stressed that the ongoing and cyclic nature of professional learning promotes an environment of inquiry necessary to improve teaching practices. Equally as important, professional learning requires a continuing commitment from teachers since the act of educating is intricate and never completely perfected (Danielson, 2007). For these reasons, examining
professional learning design and its relationship to student achievement may benefit school administrators and curriculum planners as they work to create effective programs to advance student learning outcomes. Furthermore, the adoption of the Common Core State Standards by 43 states in the U.S. creates the need for ongoing and in-depth training on the new, more rigorous learning standards and resulting curriculum (NGA Center, 2010b). Finally, teachers often attend professional learning activities simply to satisfy a specific requirement and deem them a waste of valuable time (Guskey, 2000). Through this investigation, the researcher will collect data regarding effective professional learning practices to create teacher buy-in and subsequently student growth.

Summary and Organization of the Study

In Chapter I, the researcher established a plan to study the methodology and practices of professional learning and their relationship to student achievement. The researcher also introduced a purpose and guiding hypotheses for investigation, as well as potential gains to the educational community resulting from the research. Chapter II will provide a theoretical framework as well as a review of the existing literature surrounding professional learning. Chapter III will present an overview of the methodology to be followed by the researcher, and in Chapter IV outcomes of the study will be offered. Next, Chapter V will contain a summary of the study and conclusions that can be drawn from the research, as well as implications for future practices regarding professional learning. Finally, the researcher will conclude Chapter V with suggestions for further research.
CHAPTER II
REVIEW OF THEORY AND RELATED LITERATURE

Theoretical Foundations

Each day in the United States, educators enter classrooms for the sole purpose of outfitting students with the knowledge and skills to become useful citizens in an ever-changing world. Accordingly, those same teachers should be equipped with the instructional tools essential to the task. Traditionally, educators have been considered lifelong learners, and professional learning often holds the key to new knowledge for both teachers and students. In fact, students’ scholarship directly correlates to the manner in which teachers embrace knowledge and new learning (Joyce & Calhoun, 2010).

However, differences between the learning methods of children and adults have long been a topic of debate (Chan, 2010). Consequently, Knowles’ theory of andragogy (1973), which introduced the idea of learning differences between adults and children, and Kolb’s Experiential Learning Theory (1984), which added the learner’s experiences as a part of the learning cycle provide a theoretical foundation for this study. Next, in laying the foundation for research, the history of teacher education in the U. S. outlines a timeline leading to the need for systematic teacher learning programs. Finally, to guide the research, Learning Forward (formerly the national Staff Development Council) provides the foundational definition of professional learning.

Andragogy versus Pedagogy

According to Knowles (1973), it was not until the early twentieth century that systematic adult education began to emerge in the U.S. Even so, it was patterned after a European educational model dating back to the Middle Ages known as pedagogy. This
pedagogical model of teaching centers around the premise that the learning acquired is that provided by the instructor. In other words, learners find themselves completely dependent upon the teacher for acquisition of knowledge. Ozuah (2005) described pedagogy as “the art and science of teaching children, placing the primary responsibility of students’ acquisition of knowledge on the instructor” (p. 83). Embracing such techniques as lecture, memorization, and rote drills, the pedagogical model provides a framework for teaching basic reading and writing skills to young children. In addition, pedagogical theory supports the beliefs that learners’ personalities are dependent upon others and that all learning is owing to an extrinsic motivator. Finally, pedagogy asserts that learning is specifically subject-oriented and that background experiences play no role in new acquisition of knowledge (Chan, 2010). The early twentieth century, however, brought with it a wave of cultural and technological change, and models of learning shifted from the simple transmittal of knowledge to the need for more sophisticated processes of ongoing inquiry (Knowles, 1973).

In 1968, Knowles introduced a theory specific to adult learning termed andragogy, borrowing from the extensive research of Dr. Dusan Savicevic (Henschke, 2011). In contrast to pedagogy, Knowles’ theory provided a framework specifically for teaching adults and outlined five defining characteristics describing the adult learner. These characteristics include self-concept, experience, readiness to learn, orientation to learning, and motivation to learn (Knowles, 1980). Merriam, Caffarella, and Baumgartner (2007) and Forrest and Peterson (2006) outline the specific ideas guiding Knowles’ theory of andragogy and identify them as

- a concept of autonomy with the ability to self-guide learning,
• a wide variety of life experiences that create a wealth of knowledge,
• a readiness to learn needed information or concepts,
• a need for learning that changes according to specific social roles,
• a problem-centered focus with the need for immediate implementation of newly acquired knowledge, and
• an intrinsic rather than extrinsic motivation for learning.

With the founding of andragogy as a specific learning theory that gave consideration to the differences in the learning patterns of adults, no longer would all learners be forced into a generic approach to gaining new knowledge (Merriam, 2001).

Much discussion and debate surrounded Knowles’ new theory of andragogy, and by the 1980’s a new school of thought emerged. Rather than separating the processes of learning in children and adults, Knowles suggested that andragogy and pedagogy functioned as more of a continuum of teacher centered instruction (pedagogy) and learner centered instruction (andragogy) on which all learners moved freely according to need (Merriam, 2001). Even though this theory that andragogy and pedagogy continually shifted throughout the learning process, major differences in adult learning emerged. Primarily, adult learners began to be viewed as goal oriented and in need of measurable outcomes to assess worth of newly acquired knowledge. Finally adult learners needed to be involved in formulating learning objectives in order to remain interested and communicative throughout the learning process (Chang, 2010).

In summation, Knowles’ theory of andragogy and some key components of the pedagogical theory, still serve as models for adult learning. Today, professional learning opportunities and in-service trainings run the gamut from one-time workshops to inquiry-
based learning experiences; however, findings from research conducted by Dunst and Trivette (2009) showed that the most effective professional learning experiences included active participation of the adult learners. Additionally, learners who took primary responsibility for the acquisition of new knowledge reported a greater retention of content. All of these reflect the main components of Knowles’ theory of adult learning.

**Experiential Learning**

According to Kolb (1984), experiential learning theory (ELT) found its roots in the pragmatic philosophy of Dewey, the social psychology of Lewin, and the cognitive knowledge theory of Piaget. Dewey (1938) theorized that optimal learning takes place when learners continually interact with that which is to be learned. In contrast, Lewin (1939) postulated that in individual’s social situation shaped learning the most. Finally, Piaget (1936) theory of development outlined learning as a series of cognitive developmental stages rooted in a basic mental structure. In theory, experiential learning embodies both a broad approach to learning and a multi-linear schema of adult development (Kolb, 1984).

Additionally, ELT incorporates research in patterns of how individuals develop and learn and recognizes the learner’s experience as the central component of the learning process (Sternberg & Zhang, 2000). A defining component of ELT is the assertion that the utilization of an individual’s specific learning need as a central focus maximizes learning, and need may be influenced by a number of factors including career choice and job role. Kolb’s (1984) theory is centered on the following six premises:
• Learning is best viewed as a process that engages learners in a specific course of action that most significantly amplifies learning and includes feedback regarding the success of learning efforts.

• The learning process is most effective when learners examine their own views about a concept and integrate them with new thoughts and ideas.

• Learning is a form of conflict resolution in which learners examine their own views about a concept and integrate them with new thoughts and ideas.

• Learning requires more than just cognition; it requires a process of thinking, feeling, perceiving, and behaving.

• Learning results from interaction between learners and their environment, incorporating new concepts into existing knowledge and experiences and vice versa.

• Learning is an active process of constructing knowledge from experience that involves thinking and subsequent reflection.

Additionally, experiential learning focuses on two targeted objectives—learning the particulars of a certain content area and identifying one’s own specific means of acquiring knowledge (Hickox, 2002). At the core of this theory lies a four-stage process: concrete experience, reflective observation, abstract conceptualization, and active experimentation. Learning may begin at any one of the four stages but must subsequently be followed in sequence for maximal acquisition of new knowledge (Healey & Jenkins, 2000). Kolb’s notion of learning styles highlights distinct variations in learning based on the point at which a learner chooses to enter the cycle (Kolb & Kolb, 2005). Through the cycle of experiential learning, reflecting on one’s conceptual
Experiences serve as a guide for the learner to actively experiment with new learning with a familiar frame of reference (Roberts, 2006). Moreover, repeatedly moving through the four-stage cycle allows the learner to construct new knowledge through the evaluation and consequences of experimentation (Healey & Jenkins, 2000). Experiential learning recognizes this developmental process of experiencing, reflecting, thinking and acting as a method of deep learning, moving from specialized knowledge to the integration of that knowledge into actions and experiences (Border, 2007).

In summation, because of experiential learning’s learner-centered approach and its identification of differences in learning patterns among people in various fields of academia, much interdisciplinary research has been conducted in the area of ELT. More than half of the documented studies focused on the concept of learning styles and their use in the field of education to determine best practices for learning. In fact, since the 1990’s ELT has been extensively utilized in modern teacher-education programs as an effectual framework for curriculum and instructional design, as well as a method of learner-centered professional education (Kolb & Kolb, 2005). Examples of Kolb’s (1984) experiential learning can be seen in teacher-led professional learning communities, inquiry-based learning, and peer observation followed by the development of new teaching strategies (Border, 2007).

The History of Teacher Education in the United States

Education during the colonial period in the United States took place in the home and can be compared to today’s home-schooling movement. As the population grew, women began converting homes into more formal educational settings termed dame schools. In 1647, passage of the Old Deluder Satan Law required towns with 50 or more
homes to provide a reading and writing teacher to residents and towns with more than 100 homes to furnish a Latin grammar school in order to prepare students for apprenticeships or university training. This new structured model of schooling within the colonies created the need for more teachers and a more structured preparatory program for those teachers (Sadker, 2006); however, it was not until the mid-nineteenth century that formal teacher education programs began to emerge (Cochran-Smith et al., 2008). Prior to this, no specific pedagogical training was required to those wishing to teach (Cochran-Smith et al., 2008). Teachers in dame schools and Latin grammar schools consisted of well-respected women whose only qualifications were their interest in education and their prior success in the trade (Sadker, 2006). In fact, two hundred years after the passage of the Old Deluder Satan Law, educators still needed only to have completed a specific level of coursework and to be modestly familiar with the subject-matter they would teach. Unlike other professions, no formal apprenticeship was required of teachers before entering the field, and anyone with basic subject-matter knowledge who was willing to take a class could become a teacher (Cochran-Smith et al., 2008).

Formal teacher licensure programs can be attributed to the work of Horace Mann, who felt strongly that the responsibility of public schools was to eradicate social discord by cultivating the abilities of all students, both rich and poor (Parkay & Stanford, 2010). Mann utilized public support of his position on education to advocate rigid standards for teacher education, leading to the creation of teacher training schools termed normal schools (Sadker, 2006). In fact, on March 30, 1910, Mississippi Normal College (renamed The University of Southern Mississippi in February 1962) was founded as a
teacher’s preparatory college. The institution was the first of its kind in the state and began holding classes in 1912 (The University of Southern Mississippi, n.d.).

In 1839 the first non-collegiate institution created to educate primary-school teachers opened its doors in Lexington, Massachusetts under the direction of Cyrus Pierce; and by 1900, more than 300 normal schools had enrolled in excess of 115,000 students (Levine, 2011). Although normal schools overwhelmingly led the movement into formal teacher education, they lacked academic rigor. While the institutions did provide courses in philosophy and some means of apprenticeship teaching, they did not provide solid academic and theoretical foundations for learning (Pulliam & Van Patten, 1999). Additionally, the normal schools adopted differing approaches to training in various regions of the country. Normal schools in Massachusetts offered short methods courses, mainly for elementary teachers, while western states offered longer academic and professional courses that prepared future educators and educational administrators (Ravitch, 2003). Conversely, in some locations, particularly in rural areas, local school boards held responsibility for maintaining teacher institutions, while large districts organized their own teacher training programs which were led by experienced teachers (Ravitch, 2003).

The beginning of the twentieth century brought a close to the era of normal schools in the U.S. for several reasons. First and foremost, teacher accreditation and professional association criterion aimed to hold educators to a higher standard (Levine, 2011). In addition, Ravitch (2003) adds that experts and professionals in the field fought for education to be regarded as a profession just as those of medicine and law. Hence, small normal schools expanded into both undergraduate and graduate training programs
for teachers consisting of more content-based courses and less vocational courses. Additionally, entrance standards for university programs became more rigorous, unlike the normal schools that often allowed entrance upon completion of the eighth grade. Finally, students were no longer allowed to leave school upon finding employment as teachers as they often did in normal schools, which increased academic rigor and mastery in subjects they would teach upon completing a university program (Levine, 2011).

Twentieth century teacher education practices continued to model the foundational practices of 19th century university programs, with the inclusion of social and cultural concepts as generations evolved (Pulliam & Van Patten, 1999). Despite the continued efforts to standardize teacher training, critics asserted that the university programs had lost touch with current societal needs and practical teaching methods and also raised the concern that admissions and graduation standards lacked the necessary rigor to produce effective teachers (Levine, 2011). By the 1930’s normal schools began to reinvent themselves as teacher colleges, which allowed the conferring of bachelor’s degrees and the bolstering of integrity within teacher education programs. The final transformation for teacher education into a modern post-secondary program came when teacher colleges restructured as state colleges and universities where teacher learning programs mirrored the configuration of other university degree programs (Labaree, 2008).

In 1983, teacher education in the U.S. came under the intense scrutiny of the National Commission on Excellence in Education (NCEE) with the publication of A Nation at Risk (1983), a report which stated that the quality of public education in the U.S. had declined as a result of complacency and mediocrity. Furthermore, evidence of
this could be seen in students’ intellectual skills and standardized test scores. According to this report released by the U.S. Department of Education, primary responsibility for the issues in U.S. education centered on a lack of unity within teacher education programs throughout the country. As a result of the government’s push for reform, the National Commission on Teaching & America’s Future (NCTAF, 1996) unveiled goal statements to promote unity in the field of teacher education. The organization asserted that by 2006 (a) all students would be provided with knowledgeable and skilled teachers, (b) all teacher training programs would be based upon specific professional standards, (c) all teachers would be provided with and take advantage of professional learning opportunities, (d) teachers and administrators would remain employed by focusing on best practices obtained during professional learning, (e) teachers’ and administrators’ compensation would be contingent upon knowledge and skills, and (f) all schools would be required to fund efforts to improve teacher quality.

In 2001, the shift toward teacher training with specific emphasis on professional learning became law with the passage of the No Child Left Behind Act (NCLB, 2001). In this landmark legislation, President George W. Bush endorsed the push toward improved student achievement by (a) requiring all educational professionals to reach highly qualified status by 2006, (b) requiring all local school districts that did not meet annual objectives and requisite growth to create improvement plans, (c) requiring the utilization of scientifically-based instructional interventions, and (d) requiring the annual public notification of teacher quality at individual school sites. In order to facilitate these accountability standards, the Improving Teacher Quality State Grants program was made
available for the recruitment, training and retention of quality educational professionals (NCLB, 2001).

In summation, beginning in 1647, the process of teacher education began a journey spanning three centuries, culminating in 2001 with the seventh reauthorization of the Elementary and Secondary Act (ESEA) as the No Child Left Behind Act (NCLB, 2001). With this reauthorization came detailed accountability standards for schools and districts in the area of student achievement that are measured with high-stakes, end-of-year assessments (NCLB, 2001). In March 2010, the U.S. Department of Education issued *A Blueprint for Reform: The Reauthorization of the Elementary and Secondary Education Act* outlining the proposed components of forthcoming reauthorization. Defining elements include raising educational standards so that all students graduate from high school deemed college and career ready. In addition, states will be called upon to implement systems of principal evaluation and support and to identify both effective and ineffective educators by measuring student growth. Finally, proposed reauthorization will utilize student assessment data and principal evaluation data to drive professional learning, helping educators to improve their learning and, in turn, improve student outcomes (U.S. Department of Education, 2010). In 2013, the U.S. Department of Education offered voluntary NCLB (2001) flexibility waivers to states requesting to be released from the 2014 proficiency requirements (USDE, 2014). In exchange for the waivers these states made assurances to the federal government that they would file extensive educational reform plans designed to promote continued student growth (USDE, 2014).
Professional Learning Defined

In the proposed amendment to the Elementary and Secondary Act reauthorized by NCLB (2001), Learning Forward outlined the process of professional learning as a means of increasing student achievement by using a broad, ongoing approach with an intensive focus aimed at improving the efficacy of teachers and principals (Learning Forward, 2011). In addition, Guskey (2000) outlined the professional learning process as practices and learning activities implemented as a means of furthering professional aptitude and opening up new ideologies to educators in an effort to increase student learning. For the purpose of this study, professional learning will be defined as a specific occasion designed to improve teacher knowledge and classroom practice for the sole purpose of enhancing student learning (Guskey, 2003; Killion & Ottem, 2002). Research indicates that classroom teachers play the definitive role in increasing student achievement; therefore, the planning and implementation of effective professional learning occupies a critical place in the educational process (Kinng & Newman, 2001).

According to Ormiston (2011), the primary means of disseminating new professional knowledge and skills in past decades has been through workshops; short school or district mandated in-service meetings; or professional conferences, featuring learned keynote speakers. With the technological advances of the twenty-first century, however, current professional learning must broaden its scope to include technology platforms and modern, research-based methodology (Ormiston, 2011). Also, the twenty-first century has ushered in an age of rigorous educational accountability standards. For this reason, both teachers and administrators find themselves answering to federal and state governments and the general public with regard to student performance. Often
hinder the accountability equation, however, are the challenges that educators face in dealing with economic, cultural, and technological changes that may affect students over the course of their learning (Learning Forward, 2011). In light of these mandated accountability standards and the complex needs of all students, teacher professional learning in the twenty-first century is now regarded with the same seriousness as student learning. Additionally, effective professional learning opportunities are now recognized as relevant and valuable research-based best practices that address every situation an educator may encounter (Diaz, Garrett, Kinley, Moore, Schwartz, & Kohrman, 2009).

The Edna McConnell Clark Foundation’s Program for Student Achievement ushered in the first set of national professional learning standards in 1994 as a means of radically advancing achievement in urban public schools serving a majority of underprivileged students. As the wave of standards-based educational reform began to take the entire country by storm in the late 1990’s and public education began to undergo radical changes, the standards were revisited in 2000 and revamped to include grades K-12 nationwide (Mackinnon, 2001). Most recently, Learning Forward (2014b) introduced the newest revision of its Standards for Professional Learning characterizing them as “essential elements of professional learning that function in synergy to enable educators to increase their effectiveness and student learning” (p. 13). As written, the Standards describe the characteristics of effective professional learning and are intended to facilitate the decisions and pedagogical practices of all those involved in the educational process in order to promote student learning (Learning Forward, 2014b).

The Standards for Professional Learning advocate the components of effective professional learning as:
• learning communities that are focused on student achievement with a commitment to improvement through sharing of responsibility and common educational goals;
• effective leadership that facilitates, promotes, and crafts supportive professional learning opportunities;
• coordination and monitoring of resources available in a manner that maximizes professional learning;
• analysis of student, teacher, and district-level data to assess and plan effective professional learning opportunities;
• research-based adult learning theories that foster professional learning;
• implementation of learning based on goals for long-term systematic change;
• alignment of professional learning outcomes with curriculum mandates and student achievement. (Learning Forward, 2014a, p. 23).

According to Mizell, Hord, Killion, and Hirsch of the Learning Forward Foundation (2011), continuous professional learning fosters improvement of both teaching and learning, while also demonstrating a commitment to provide students with the knowledge and skills necessary to function productively outside of the school setting. Through the Standards for Professional Learning, school districts and educators are provided with a cohesive delivery system for effective professional learning (Learning Forward, 2011).

The most recent advancement in education, the Common Core State Standards (CCSS), provides a national framework for educational reform focusing on college and career readiness. As of September 2014, the CCSS have been adopted by 43 states, the
District of Columbia, various territories, and the Department of Defense schools (NGA Center, 2014). Likely the most significant educational shift with regard to the CCSS comes with its focus on the application of learning in real-life circumstances, stressing even more the need for common professional learning standards. In light of the requirements of the CCSS, teachers will be required to make use of pedagogical strategies that integrate core educational concepts with thinking and problem solving skills. In addition, more in-depth subject-area knowledge will be required in order to provide students with opportunities for advanced level learning (Hirsh, 2012). Stephanie Hirsh (2012), Executive Director of Learning Forward asserts that this radical change in teaching means the inclusion of rigorous, sustained professional learning experiences rather than single session, generic trainings exposing all participants to the same concepts. Darling-Hammond and Richardson (2009) sum up by affirming that continuous, engaging professional learning supporting educators in their endeavors to advance their pedagogy positively impacts both the teacher and the student and drives gains in student achievement.

A Framework for Professional Learning

Each year, public school systems in the U.S. spend in excess of $20 million on professional learning programs and activities designed to improve both teacher and student performance (NCES, 2001). In light of these statistics, those involved in professional learning design are charged with seeking out defining components of successful programs and then discern how to tailor those components to fit specific training needs (Darling-Hammond & Richardson, 2009). While no specific set of guidelines guarantees a program’s level of success, focusing on a set of core principles
and weaving those principles into learning experiences provides a strong foundation for professional learning (Guskey, 2009). For the purpose of this study, elements of effective professional learning will include data-driven design, research-based content, a culture of strong leadership and ongoing support, and a process of evaluation fostering reflection and redesign (Learning Forward, 2014a).

**Data-Driven**

Since the reauthorization of NCLB (2001), educational institutions have diligently struggled with the requirement to raise proficiency rates for all students. In some measure, federally mandated accountability requires that student data be used to analyze performance levels and subsequently raise proficiency rates through higher quality, focused instruction (Wayman, Spikes, & Volonnino, 2013). In many districts in the U.S., educators and administrators now track the success of teaching and learning through analysis of common assessments and state testing data. It is from the analysis of student data that educators and administrators can determine the areas of greatest academic challenge, formulate focused learning plans, and choose appropriate strategies to target areas warranting improvement (Mitchell, Lee, & Herman, 2000; Schmoker, 2001).

Considering this research as it relates to teacher learning Hayes and Robnolt (2006) state that professional learning becomes a more effective vehicle for educational improvement when student achievement data is utilized during the planning process. A flexible continuum of data-driven inquiry allows educational personnel to make more accurate judgments regarding professional learning needs for teachers that, in turn, increase student knowledge. In a case study focusing on improving reading instruction through data-driven professional learning using the Response to Intervention model (RtI),
Monaco (2011) found that traditional, workshop type professional learning opportunities had little effect on instruction. However, ongoing data collection and analyses for the purpose of shaping instructional practices demonstrated positive outcomes on both teacher and student attitudes and performance.

In utilizing a data-driven professional learning design, educators at all levels share involvement and work with a singular purpose to set goals based on review of student performance data (Schmoker, 2001). In 2002, Nicholas and Singer outlined one school district’s initiative to improve student outcomes through the use of data-filled binders to analyze individual student performance on targeted objectives. Through the analysis of data, teachers and curriculum coaches honed in on specific instructional objectives in need of more focused attention and chose relevant professional learning opportunities to accommodate students’ learning needs. Fundamentally, to be effective, Zepeda (2008) states that teachers’ professional learning opportunities must be grounded in data to frame the important issues of teaching and learning within the context of the school. Teachers do not want to waste their time sitting in a workshop that has little relevance to their daily work. Teachers want professional learning that helps them to become better teachers, engages them intellectually in the topic, and has immediate impact on the work they will do with students. (pp. 4-5)

Furthermore, it is through data-driven conversations about teaching and learning that teachers can connect their professional learning experiences to their practice and shape classroom instruction into more effective learning opportunities for students (Darling-Hammond, 2000).
According to Zepeda (2008), the analysis of pertinent student data can be considered the cornerstone of productive professional learning and should include student work samples; the results of quizzes, tests, and common assessments; the results of action research; information gathered from formal and informal observations made by administrators and/or teachers; and/or the results of state or nationally standardized tests. Data from any or all of these sources should be used continually to assist in the formulation of professional learning leading to the design of lessons and educational strategies to enhance instruction and promote student proficiency (Zepeda, 2008).

In summation, when considering the design components of professional learning, data analysis provides an effective means for improving student achievement through the identification of specific learning needs (Hayes & Robnolt, 2006; Schmoker, 2001). In addition to academic performance data, information regarding background knowledge, prior learning, and significant educational gaps form a part of the data analysis equation (Loucks-Horsley, Stiles, Mundry, Love, & Hewson, 2010). The process of analyzing relevant student data as it relates to professional learning provides a twofold return. Essentially, educational leaders can successfully plan what needs to be targeted in future professional learning while also exploring the effectiveness of strategies put into practice by teachers from prior opportunities (Joyce & Showers, 2002).

Research-Based

For more than a century, professionals in the fields of both science and education have conducted studies on the brain as it relates to learning, and this research forms the foundation of hypotheses relating to the planning of professional learning planning and its implementation (Learning Forward, 2011). Accordingly, Learning Forward’s (2011)
widely accepted Standards for Professional Learning outline the importance of research-based content by asserting that effective professional learning includes sound examinations of educational practices and learning theories as a means of achieving a projected learning goal.

In the U.S, the twenty-first century has ushered in a rigorous wave of change in education. Consequently, the American Federation of Teachers (AFT) Principles for Professional Development (2008) recognizes this current period of educational reform as one that requires more of educators now than in past decades and establishes the need for teachers to modify their instruction based on “sound evidence of what works” (p. 2). Certainly in schools across the nation, rigorous, standards-based teaching; a deeper understanding of subject-matter; the ability to make difficult decisions quickly; and the expertise to design and evaluate relevant learning opportunities and assessments all round out a day’s work for teachers and administrators alike. The challenge for educators and administrators may be in finding sound practices to concentrate on in a field filled with pedagogical choices promising stellar results. Consequently, taking action without thinking first likely sets administrators, teachers, and students up for failure (Conzemius & Morganti-Fisher, 2012).

According to Guskey and Yoon (2009), choosing practical, goal-oriented professional learning design and content requires authentic research that is relevant, reliable, and supportable, as well as data that can be confirmed and replicated in a similar setting. Educators and administrators charged with the creation and execution of professional learning programs must be knowledgeable of the process of analyzing and appraising the value of the research (Guskey & Yoon, 2009). To further the claims of
Guskey and Yoon, Killion and Roy (2009) in collaboration with Learning Forward provide a seven-step plan for improving student achievement that begins with the analysis of student learning needs and includes an intense analysis of research before selecting any professional learning or teaching strategy aimed at increasing student proficiency. Only after thorough examination of research-based evidence does the professional learning model or strategy under scrutiny become a viable candidate for educational intervention (Killion & Roy, 2009).

Many types of research should be examined when considering what constitutes gainful professional learning. Through the analyses of related research, educational theories, and relevant learning models those designing professional learning programs can approximate performance in a particular setting and project its outcomes. Due to an abundance of professional learning models and pedagogical content models, planning teams should review related research and select learning methods and subject-matter that correspond to projected learning goals (Hirsh & Hord, 2012). Once the content for professional learning has been chosen, however, a more intrinsically focused form of research analysis may well take place. Spaulding and Smith (2012) maintain that more often than not, teachers do not change their teaching strategies simply because they are told what they acquire in professional learning sessions is grounded in relevant research. For this reason, Spaulding and Smith (2012) propose a model for professional learning that includes an added component in which the teachers become researches and learn for themselves. In this model, educators are given the opportunity to field test evidence-based learning strategies obtained during professional learning and decide among themselves whether the research holds true and the strategy will be incorporated into
practice (Spaulding & Smith, 2012). Simply stated, investigation of available research when choosing design and content for professional learning in itself is not sufficient to promote change in teaching and learning. Concepts must be authentically applied and new research created and analyzed in order to determine effectiveness.

_School Culture and Leadership_

Professional learning may be viewed by teachers and administrators as a valued means for improvement or an irrelevant waste of time. For those schools that maintain a culture that supports professional learning, Peterson (2002) highlights the emergence of universal elements comprised of (a) a common set of goals or values that match school and district standards for student achievement; (b) a cyclical model of learning and improvement that includes analysis of various data sources to evaluate effectiveness; (c) an atmosphere of collaboration and collegial relationship in planning and implementing learning opportunities; and (d) a time for pedagogical reflection, group inquiry, and sharing of ideas in order to promote change in the classroom.

The only component more vital than leadership as a means of enhancing student learning is actual classroom instruction (Hirsh & Hord, 2012). Consequently, Learning Forward (2014b) includes a stringent leadership component in its Standards for Professional Learning by declaring that effective leaders value a culture of learning for students, staff members, and themselves above all else. As well, Learning Forward (2014b) emphasizes that successful professional learning calls for “skillful leaders who develop capacity, advocate, and create support systems for professional learning” (p. 23). Furthermore, these leaders value their faculty and allow them a voice in their own learning. Finally, leaders who wish to create a positive culture of learning recognize that
the process of school improvement and decision making about appropriate design and content should be done in a manner that includes all stakeholders in the process (i.e. administrators, teachers, students, and parents) (Peterson, 2002).

Strong instructional leadership consists of more than just principals; it also includes a strong instructional support team (Spaulding & Smith, 2012). First, central office administrators, principals, and instructional coaches all assume important roles as leaders in the professional learning cycle. Effective leadership at the central office level consists of finding research-based foundations to guide the professional learning process. This holds true in the identification of content as well as the choosing of a learning design specific to the stated goal (Killion & Roy, 2009).

Next, principals should support teachers in looking past their common understanding of a subject and encourage the application of new ideas and strategies. In addition, principals maintain expectations for professional learning by clearly communicating responsibilities and fielding any resistance to change that might occur (Killion & Roy, 2009). Often, however, principals face overwhelming tasks on a daily basis causing professional learning to become a second priority; and when teachers and administrators fail to work toward a common goal, the culture of professional learning can fall by the wayside (Spaulding & Smith, 2012). Conversely, teachers who have been assigned the responsibilities as instructional coaches work directly with principals and focus primarily on improving teaching quality through a variety of professional learning methods (Killion & Roy, 2009).

Finally, effective instructional coaches initiate and assist in the implementation of instructional plans that promote a more advanced level of thinking and learning skills in
both the teachers and students (Spaulding & Smith, 2012). Additionally, instructional coaches may help to reduce some of the workload placed on principals in terms of professional learning. Ultimately, however, to establish a positive culture of professional learning, a strong cadre of leaders should assist staff members in acquiring new knowledge and skills while at the same time confronting unexpected challenges in an environment that fosters growth and continuous improvement (DuFour, DuFour, Eaker, & Many, 2010). Without a doubt, establishing and maintaining a positive culture of professional learning takes hard work, cooperation, and a strong leadership community.

**Evaluation**

As a result of the educational reform movement during the last two decades, a great deal of attention has been given to professional learning and its relationship in the process of increasing student proficiency levels. This is especially true since data indicate that the quality of those entering the teaching profession has declined (Bausmith & Barry, 2011). Furthermore, the fickle and often unstable essence of public education in the U.S. poses a challenge to schools and districts that work to create positive changes. Even the most transformative educational initiatives can run aground unless a systematically focused procedure aligns professional learning with its intended outcomes (Conzemius & Morganti-Fisher, 2012).

Because of its commitment to the implementation of quality professional learning, Learning Forward (2014a) places top priority in evaluating the scope and implementation of results-based learning practices. To emphasize this, the organization formulated two standards with regard to evaluation. First, the data standard states that the effectiveness of professional learning will be demonstrated by using “a variety of sources and types of
student, educator, and system data to plan, assess, and evaluate professional learning” (p. 36). Creators of the standards indicate that individuals and teams who take leadership roles in planning and carrying out professional learning opportunities maintain rigorous guidelines for monitoring and evaluating its success. Equally important, if not more so, the outcome standard stresses that the effectiveness of professional learning will be evaluated by the alignment of “its outcomes with educator performance and student curriculum standards” (p. 48). The Learning Forward (2014a) organization claims that in order for students to gain knowledge, teacher learning opportunities must be of the highest quality and align with mandated educator performance standards. These performance standards are normally overseen by governmental agencies and outline what practitioners should know and do to provide quality learning for all students. Likewise, student curriculum standards delineate specific objectives that students should master at certain levels. Evaluating professional learning in terms of its alignment with performance and curricular standards causes the bond between educator and student learning to become interwoven; consequently, an increase in student performance is directly related to an increase in pedagogical knowledge (Learning Forward, 2014b).

Because of the rigorous, standards-based reform in education, the evaluation of professional learning can no longer be limited to a questionnaire judging participants’ satisfaction at the end of a workshop. It is the fundamental design of evaluative processes and procedures in professional learning that will ultimately determine its effects on student outcomes (Desimone, 2011). Additionally, a systematic, ongoing evaluation of professional learning offers leadership an opportunity to assess the progress toward a given goal and make any necessary adjustments without wasting valuable
learning time (Conzemius & Morganti-Fisher, 2012). Observations, interviews, and surveys constitute the most common means of evaluation, but Desimone (2011) casts doubt on the effectiveness of these methods due to the question of bias negating the validity of data. The methods do have merit, however. Observations can be used when administrators simply want to appraise the quality of professional discussions and instructional techniques or determine whether staff members are actually implementing new practices. Surveys may become valuable when comparing longitudinal data on the experiences of teachers across schools and districts. Finally, interviews provide leaders with valuable, one-on-one information regarding the successes and challenges in implementing new learning (Desimone, 2011).

One well-researched model of evaluation of professional learning originated with a study of the change that arises from learning and/or implementing a new concept. The Concerns-Based Adoption Model (CBAM) began with research outlining the developmental stages of new teachers and the concerns they exhibited at each stage. CBAM was later reframed to evaluate the concerns of educators related to learning new concepts and to examine the extent of the implementation of the new concept (Hall & Hord, 2006). Guskey (2000) extended the CBAM model by closing the divide between educational research and practice and developing an evaluative model consisting of five equally important levels:

- participants’ reactions – initial satisfaction with the learning experience,
- participants’ actual learning – assimilation of new learning,
- organizational support and changes – facilitation and recognition by the organization,
• participants’ use of new knowledge and skills – quantitative and qualitative implementation of learning by participants, and

• student learning outcomes – holistic learning in all domains by students.

Finally, in 2008 Killion added an additional measurement to the evaluative model:

• return on investment – overall impact of learning versus fiscal responsibility.

Through this very specific evaluative model, leaders can decide if a particular course of professional learning, research-based or not, has had enough of a positive impact on teacher and student outcomes to warrant its continuance (Conzemius & Morganti-Fisher, 2012). It is important to note, however, that student outcomes cannot be solely judged by the success or failure of professional learning. In fact, most school districts find themselves implementing several concurrent reform initiatives, all focused on gains in student performance. Regardless, the collection of meaningful evaluative data can discern whether a particular professional learning opportunity did or did not contribute to student gains in learning (Guskey, 2002). The most effective evaluation of professional learning, however, centers on whether or not learning opportunities have led to significant gains in student performance (Desimone, 2011).

Professional Learning Design

Learning Forward (2014b) declares that identification of a specific educational need for professional learning is the first and most vital component in determining the appropriate process for training. Those who will be affected by the training outcomes should next be factored into the decision-making equation. Finally, leadership teams need to reflect on the specific needs of staff members, small groups, or even whole schools, given that each will likely be at different starting points in their pedagogical
knowledge (Glover & Law, 2005). For the purpose of this study, seven specific professional learning processes have been selected for research: workshops, technology-based learning, collaboration, professional learning communities (PLCs), peer observation, book study, and individual learning (e.g., National Board Certification, advanced degrees).

Workshops

Traditionally, workshops have comprised the largest percentage of professional learning opportunities for educators. Usually only a day or two in duration, teacher in-service workshops provide a lecture-style format for participants and send them home with a wealth of materials and/or pedagogical strategies but little or no follow-up training (Loucks-Horsley & Matsumoto, 1999). According to Boyle, White, and Boyle (2004), global research shows while these styles of professional learning might promote an awareness or pique educators’ interests in certain concepts, they do not seem to encourage any type of true learning or change in classroom practices. In many cases, teachers participate to receive credit for attendance only for the purpose of license renewal or recertification credits (Christie, 2009). Unfortunately, even in the height of educational reform in the U.S., Boyle et al. (2004) assert that the bulk of professional learning in which educators participate occurs in the form of “fragmented ‘one-shot’ workshops at which they listen passively to ‘experts’ and learn about topics not essential to teaching” (p. 48).

The faulty foundation of the workshop method of professional learning centers on its characteristic isolated, disjointed approach. First, workshops do not provide the time necessary to scaffold learning into concepts that lead to a change in teaching practices. In
addition, workshops take place in isolation, affording no time for collaboration or
discussion with colleagues on how to implement new learning (Knapp, 2003). According
to Darling-Hammond and Richardson (2009), elemental features of the workshop model
of professional learning are unsupported by research. Workshops normally occur as
single sessions aimed at training participants on new procedures or behaviors with the
expectation of changes in teaching. Content typically lacks information related to
specific curriculum needs, as well as administrative follow-up or support (Darling-
Hammond & Richardson, 2009). Finally, the research of Lovett, Lacerenza, De Palma,
Benson, Steinbach, and Fritjers (2008) reinforces the lack of effectiveness of workshops
by affirming that the “top-down” presentations by visiting experts “remains narrowly
focused and quite disconnected from the realities of the classroom” (p. 1087).

Technology-Based Professional Learning

According to Borko, Whitcomb, and Liston (2009), technology can be broadly
defined as “the knowledge, creation, and use of tools and techniques to control and adapt
to our environment” (p. 4). For the purpose of this study, computer-based learning and
video technology constitute technology-based professional learning.

With the wealth of available technology and exponential growth of Internet
resources within the last decade, innovative professional learning that capitalizes on these
means finds itself among top competitors for teachers’ attention (Couchenour & Diminio,
2012). Available training through a network-style environment includes innovations
such as inquiry-based learning, access to digital teaching exhibitions and libraries of
streaming videos, as well as participation in training webinars (Walker, Recker,
Robertshaw, Olsen, & Leary, 2011). The Learning by Design model (Koehler & Mishra,
2005) provides one example of technology-based professional learning in which educators can increase content knowledge through taking part in purposeful design projects, while at the same time increasing technological awareness. An example provided by Hatch and Grossman (2009) highlights a digital experiment in which two novice teachers, a veteran teacher, and a veteran teacher educator produce a digital exhibition of their teaching practices. Through this use of technology, teachers view various teaching formats and strategies available through access to a webpage. Previewing the teaching methodology of others provides an outlet for viewers to critique pedagogical practices for the purpose of integrating new techniques within their own classrooms (Hatch & Grossman, 2009). In actuality, videos as professional learning can be traced back to the late 1960s and early 1970s when teachers discovered new techniques through watching small snippets of classroom instruction modeled by veteran teachers (Santagata, 2009). Twenty-first century video instruction, however, finds itself set in the context of multimedia databases that frequently include additional resources such as transcripts and handouts provided to participants. Professional learning objectives also differ from those of past decades, focusing on attaining a more complex pedagogical content knowledge while also increasing reflective knowledge of teaching and learning processes (Santagata, Gallimore, & Stigler, 2005).

Finally, online professional communities offer learning in a mode that fits well with educators’ rigorous daily routines and allows them to utilize resources that would not be available at their school sites. Rapidly gaining momentum in the realm of professional learning, online learning communities present a methodology in which educators can benefit from concurrent, work-embedded pedagogical support in an
inexpensive format (Dede, Ketelhut, Whitehouse, Breit, & McCloskey, 2008). Likewise, online communities of learning also afford time for reflection due to their asynchronous nature; one may not counter a thought or idea until the previous participant has completed his or her response. Another benefit on an online professional community is its providing an outlet of expression for those educators who may not feel comfortable interacting during face-to-face professional learning activities but find it less difficult to respond in an online situation facilitated by a mediator (Dede, 2004).

Technology, although innovative and convenient, remains less than perfect as a vehicle of professional learning in the educational realm. First is the fact of its instability due to the rapid manner in which new technologies are produced and distributed. Often to remain on top of the market, developers release new platforms for technology before they have been fully tested (Borko, Whitcomb, & Liston, 2009). Another drawback to the use of technology in professional learning manifests itself in the fact that educational institutions often have limited resources to maintain the level of technological infrastructure and staff training needed to fully realize learning potential. For this reason, technology-based professional learning often remains at the center of uncertainty and frustration (Koehler & Mishra, 2009).

**Collaboration and Professional Learning Communities**

The collaborative genre of professional learning stresses the value of community within a school or district as educators learn new concepts or attempt new pedagogical strategies. Collaboration allows for the collegial co-construction of knowledge about teaching and learning and promotes a culture in which meaningful change can be initiated in an authentic learning environment (Butler, Lauscher, Jarvis-Selinger, & Beckingham,
According to Eastwood and Seashore-Lewis (1992), collaboration within the school organization takes priority when realigning schools to foster academic success. Killion and Roy (2009) outline important elements marking productive collaboration, while warning the importance of distinguishing between professional collegiality and true collaborative learning. Dynamic collaboration that promotes improvement consists of (a) ongoing discussion about specific pedagogical practices; (b) observation and evaluative feedback of colleagues’ teaching; (c) collective researching, planning, preparing, and evaluating pedagogical materials; and (d) teachers and administrative personnel instructing one another in the best practices of teaching. Killion and Roy (2009) also stress that truly constructive collaboration should be learner-centered with a sense of trust and shared leadership between teachers and administrators.

Like other forms of professional learning, the mere implementation of a collaborative culture within a school or district does not automatically guarantee achievement results (DuFour, DuFour, Eaker, & Many, 2010). School administrators can make significant contributions to successful outcomes, however, by providing time within the school day for collective learning and asking teachers to create products resulting from their collaboration (DuFour, 2004). Additionally, teachers who set collaborative goals and adhere to those goals foster gains in student achievement (DuFour, DuFour, Eaker, & Many, 2010). Finally, along with fostering student achievement, collaboration among diverse faculty members encourages collegial conversations that also address cultural awareness and sensitivities among students (Voltz, Sims, & Nelson, 2010). Most importantly, teachers and administrators who participate in authentic collaborative discussions should do so with a mindset “to help
more students achieve at higher levels” in order to bring about significant change (DuFour, DuFour, Eaker, & Many, 2010, p. 114).

Distinguishing themselves from the more traditional approaches to professional learning like off-site workshops and conferences, professional learning communities (PLCs) provide educators with site-based, ongoing learning opportunities in a collaborative environment (Linder, Post, & Calabrese, 2012). The concept of PLCs made its initial appearance in the 1990s as an attempt to create a continuous approach to professional learning that promoted school improvement via collaboration and inquiry. Unfortunately, widespread implementation of PLCs did not materialize as the actuality of their demands emerged and anticipated achievement results came in as less than stellar. In reality, PLCs necessitated more than conducting department meetings and participating in book studies (Brindley & Crocco, 2009).

At the onset of the twenty-first century, with a more defined framework, PLCs again began to gain momentum as a useful means of supporting ongoing professional learning in education (Stoll, Bolam, McMahon, Wallace, & Thomas, 2006). Researchers Borko (2004) and Lambert (2003) asserted that while ongoing professional learning enhanced teachers’ knowledge by providing them with access to professional learning at different stages in their career, an important link also existed between student performance and the collegial learning environment. To support this notion, in 2008, Hord and Sommers cited the context of PLCs as the single most effective learning environment for continuous professional learning.

While no specific definition of PLCs has been formally adopted, for the purpose of this study they will be defined as groups of educators working in a collegial manner to
construct new knowledge regarding content and instructional practices, while at the same
time examining existing educational beliefs and values in order to work toward a
common goal of increased student achievement (DuFour, 2005; Little, 2003). Brindley
and Crocco (2009) warn, however, that teachers simply meeting as a group with the
intention of talking about and sharing teaching strategies will not increase student
achievement. It is only when the group addresses specific questions about teaching and
learning aimed at student outcomes that authentic change takes place. DuFour (2006)
offers the following guiding questions for professional learning communities:

- What knowledge and/or skills will students obtain from the unit in question?
- What will the measure be to verify that individual students have attained the
  knowledge and/or skills?
- What action will be taken when some students do not attain the knowledge and/or
  skills?
- What action will be taken when some students do attain the knowledge and/or
  skills?

After addressing these specific questions, teachers then respond by redesigning
instruction to meet the needs of individual learners. In a cyclical fashion, through the use
of PLCs, teachers engage in collective learning that turns knowledge into action
(Brindley & Crocco, 2009).

Likewise, Tobia and Hord (2012), outline a framework for effective PLCs made
up of six specific elements:
- **structural conditions** – Administrators provide teachers with a specific time set aside for examination of multiple sources of student data in order to isolate areas in need of improvement.

- **intentional collective learning** – After the areas of concern have been targeted, the learning community discusses ways in which to address student needs. This is done in an atmosphere of support and mutual respect.

- **supportive relational conditions** – Authentic PLCs function in an atmosphere of mutual respect in which teachers converse, interact, and positively deal with conflict in order to promote a sense of trust and community.

- **peers supporting peers** – In order to maximize success of targeted instructional strategies, teachers observe one another in order to learn and hold each other accountable for high standards of performance.

- **shared values and vision** – Central to the function of a PLC is its shared sense of values and vision with regard to the direction and implementation of high-quality teaching and learning strategies.

- **shared and supportive leadership** – Administrators create opportunities for teachers to take on leadership responsibilities and support them in developing leadership skills. In addition, shared decision-making becomes an integral part of the inner workings of the PLC with regard to vision and direction (Tobia & Hord 2012).

Finally, the research of Linder, Post, and Calabrese (2012) noted that while providing support with PLCs in order to maintain a specific focus was essential, allowing teachers the autonomy to form their own opinions regarding direction and subject-matter
determined the ultimate success or failure of the group. In fact, teachers participating in the study cited the most critical components in the success of the PLCs as the ability to select, share, implement, and discuss the results of learning activities alongside administrative leaders. When considering the success of PLCs in relationship to increasing student achievement, teachers also cited the ability to focus on specific topics in an in-depth fashion as a critical component (Linder, Post & Calabrese, 2012).

Peer Observation

According to Darling-Hammond (2008), in order to cultivate and perfect instructional practices educators need to take the time to analyze and reflect on their pedagogy and change it accordingly. Authentic analysis and reflection leading to the transformation of practices should take place in a contextual setting rather than in an isolated workshop environment, eliminating the divide between the educational concept and the actual teaching experience (Hargreaves, 2007). Peer observation provides an opportunity for teachers to evaluate their own instructional practices through the observance of colleagues. Pressick-Killborn and teRiele (2008) define the process of peer observation as a means of self-study allowing teachers to evaluate their own teaching practices by paralleling them with those of their peers. In addition, peer observation offers affirmation of effective pedagogical practices while at the same time presenting alternative methodology and instructional strategies (Pressick-Killborn & teRiele, 2008).

In order for peer observations to be useful tools of professional learning, they should be designed with specific learning targets in mind. Covey (1997) related that examining the specific practices of one’s peers in an authentic environment promotes an
increase in knowledge and skill proficiency. In addition to the contextual environment, Hutson and Weaver (2008) offered teacher choice as a key component in the observation process. In their three-year research study, teachers were allowed to choose a specific focus for their observations rather than being assigned a specific teacher to observe. The study revealed increased learning took place when participants centered observations around a perceived need rather than on an area of improvement identified by an administrator. Finally, peer observation follows a servant leadership model, encouraging a team mentality in which members capitalize on strengths of colleagues to address their own weaknesses (Covey, 1997).

Although peer observation offers a valid means of professional learning, its widespread usage remains limited for several reasons. First, a three-year study led by Adshead et al., (2006) showed that peer observation lacked popularity due to a fear of negative scrutiny in both the observed and the observer. In addition, school administrators often use observations, whether in the form of walkthroughs or in more formal settings, as evaluative and diagnostic tools for teacher improvement (Bell, 2002). Thus unlike other forms of professional learning, peer observation is often highly personal in nature (Huston & Weaver, 2008).

**Book Studies**

Due to the increased focus on accountability over the last decade, professional learning has begun moving in the direction of a more collaborative approach (Lauer & Matthews, 2007). Book studies, also termed professional book clubs, have recently become popular because of their relatively inexpensive, extremely flexible, and collegial means of professional learning. Members choose texts to address targeted academic
needs, to highlight social issues that hinder learning, or to investigate research-based best practices (Keller, 2008). According to Darling-Hammond and McLaughlin (1995), the collegial analysis of text by teachers and administrators facilitates learning that moves beyond the instructional setting to build relevant knowledge in a collaborative environment. Additionally, book studies provide authentic professional learning that integrates acquisition of new knowledge into the daily pedagogical experiences of its participants (Keller, 2008). Finally, through interaction during book studies, teachers can compare their perspectives to those of their colleagues and, in turn add to their professional knowledge base (Burbank, Bates, & Kauchak, 2010).

According to the National Council of Teachers of English (2007) the most effective book study groups consist of approximately ten members who candidly discuss the assigned material and then set aside time at the conclusion of the meeting to talk about the connection to students and teaching practice. Within the group, differences of opinion and even small periods of silence are encouraged; it is at these times that learning takes place (NCTE, 2007). Burbank, Bates, and Kauchak (2010) propose two theories of textual interaction when considering book study as professional learning: reader-response theory and a cognitive approach. The reader-response type of textual analysis centers on an affective response to ideas posed during discussions, targeting the emotions and feelings experienced during the reading of text. Most often, the reader-response theory emerges as the dominant form of book discussion when analyzing literature or poetry rather than examining pedagogy. Conversely, the cognitive-based approach focuses primarily on the main ideas of the text and how those ideas can be incorporated into teachers’ professional practices (Burbank, Bates, & Kauchak, 2010).
To illustrate the process of book study as professional learning, Hoerr (2009) outlined the ongoing process that New City School in St. Louis, Missouri followed to advance school culture, climate, and achievement. Beginning in 1988, the faculty members of the school were invited to participate in a book study at the close of summer. They met to read and talk about a specially selected text and, in turn, made specific plans for implementing ideas formulated from discussions of the text. Once the school year began, book studies were again offered based on the changing needs of faculty and students. Twenty years later, the book studies remain a vital part of the school’s culture of professional learning, and it is through lively discussions and analyses of texts that New City School continues to grow and adapt through changes in curriculum and student population (Hoerr, 2009). Additionally, Lauer and Matthews (2007) described Conrad Ball Middle School in Loveland, Colorado as an institution that moved from seeing its test scores reach their lowest point in history in 2002 to earning an award in 2005 for its rapid increase in student achievement. After making a decision to force change, teachers and administrators began formulating a plan for a turnaround in student achievement. Through stringent data analysis and the collegial analysis of professional educational literature, Conrad Ball Middle School began to see immediate results simply by using professional learning time in a more efficient and effective manner (Lauer & Matthews, 2007).

Simply stated, book studies allow participants to delve deeply into specific texts and form ideas and opinions based on collegial discussion. It is through these teacher-centered conversations that new ideas form and changes take place, all for a fraction of
the cost of traditional workshop style professional learning models (Burbank & Kauchak, 2010).

**Advanced Degrees**

After completing the required licensure process, teachers may choose to pursue advanced college degrees as a means of professional learning. In fact, because of the increased emphasis on student accountability within the last decade, the teacher’s level of education and its correlation to student performance has come under close scrutiny (Darling-Hammond, 2006). NCLB (2001) and more recently the Common Core State Standards (2010) have forced educators and administrators to focus on deeper and more relevant content in order to prepare students for life beyond the classroom.

Unfortunately, the research on teachers with advanced degrees provides mixed reviews in terms of the relationship to student achievement. In his *White House Conference on Preparing Tomorrow’s Teachers*, Whitehurst (2002) asserted that the relationship between teacher education and student outcomes becomes clearer when the area of subject-matter knowledge is the key focus. Whitehurst’s (2002) research centered on mathematics and science teachers at the secondary level and outcomes showed that the teachers with majors in the area of their instruction generated more positive student achievement outcomes than those who taught out of their area of expertise. Additionally, the study indicated that the student effects became more pronounced in advanced mathematics and science courses (Whitehurst, 2002). Prior to this research, Goldhaber and Brewer (1997) found that the level of education in general did not correlate to positive student outcomes in the core subjects but that advanced degrees reaffirm the findings of the positive impact of a subject-specific degree on high school student
outcomes (Croninger, Rice, Rathbun, & Nishio, 2007). Research by Clotfelter, Ladd, and Vigdor (2010), however, asserted that obtaining graduate degrees made no significant impact on student outcomes; and in the case of specialist and doctoral degrees the impact was actually negative. Whitehurst (2002) further stated that even though data indicated positive gains in students whose teachers taught within their area of proficiency, no significant gain materialized in students whose teachers held advanced degrees in general education. It should be noted, however, that even though higher salaries as incentives for earning advanced degrees served no purpose in advancing teacher effectiveness, the practice should not be discounted since the higher compensation may keep experienced educators from leaving the profession (Clotfelter, Ladd, & Vigdor, 2007).

*National Board Certification*

The creation of the National Board for Professional Teaching Standards (NBPTS) came as a response to a report from The Carnegie Corporation of New York (1986) that examined the downturn in student performance in U.S. schools and stressed the importance of creating a non-profit organization to formulate a process of teacher certification separate from that governed by individual states. Because competent, highly qualified teachers are the number one indicator of positive student achievement (*55,000 Reasons*, 2007), the rigorous assessment process of National Board Certification set in motion a national process for educators to reflect on both content knowledge and pedagogical practices. Although content knowledge takes top priority, instructional delivery methodology also plays a crucial role in student achievement. Simply put, teachers should be able to deliver content in a fashion that students understand in order to
change learning outcomes and the National Board Certification process focuses on both equally (Pennucci, 2012).

National Board Certification centers around Five Core Propositions: (a) a commitment to student learning, (b) a knowledge of subject-matter and relevant teaching practices, (c) an obligation to supervise student learning, (d) a systematic mindset about teaching that includes learning from experience, (e) and membership in a community of professional learners (National Board for Professional Teaching Standards [NBPTS], 2002). Educators may seek certification in one of sixteen different subject areas by completing a rigorous, portfolio-based assessment comprised of twenty-four individual areas of focus. The highly individualized focus of the National Board Certification process provides a uniform procedure for educators throughout the U.S., rather than relying on differing standards of state departments of education (55,000 Reasons, 2007).

Proponents of National Board Certification state that the overall rigor of the standards and the thorough assessment process required to obtain certification is designed to promote educational excellence in U.S. classrooms. As well, supporters affirm that the identification and utilization of expert teachers in leadership and supporting roles in schools will usher in positive educational reform (Boyd & Reese, 2006). In 2004, Vandervoot, Amrein-Beardsley, and Berliner (2004) conducted a four-year longitudinal study of students in fourteen Phoenix, Arizona elementary schools to compare students who received instruction from National Board Certified teachers to those students who did not. This particular study found that National Board Certified teachers made a significant difference in their students’ learning outcomes noting that seventy-five percent of students made gains equivalent to spending an extra four weeks in school.
(Vandervoort et al., 2004). Finally, advocates of National Board Certification assert that the cost of obtaining certification compares to that of other high-quality forms of professional learning and costs less than earning a master’s degree (Rice & Hall, 2008).

More recent research indicates, however, that even though the National Board Certification process may be rigorous and specialized, its effects have yet to materialize with regard to overall student achievement. A 2008 study carried out by the National Center for Analysis of Longitudinal Data in Education Research (NCALDER) indicated somewhat disappointing results with regard to National Board Certification and its relationship to increased student achievement. The Center’s analysis showed that in schools where National Board Certified teachers were paid to serve in a support capacity to their colleagues, teacher productivity increased; however, student achievement did not increase even as the number of National Board Certified teachers in the school did (Harris & Sass, 2009). Hunderdosse (2012) conducted a study that produced mixed results. No significant difference in graduation rate, dropout rate, or Measures of Academic Progress (MAP) scores in the area of language and communication was found in students whose teachers were Nationally Board Certified as compared to those teachers who were not. Conversely, composite ACT scores in mathematics and MAP scores in mathematics both indicated significance with regard to improved student achievement (Hunderdosse, 2012). Because National Board Certification can still be considered relatively new in the field of educational research, its long term impact may not yet be realized; however, the NBPTS asserts that its continued presence in the field of education will provide a meaningful, ongoing professional learning opportunity that leads to an increase in student achievement (NBPTS, 2013).
Teachers, Administrators, and the Professional Learning Process

All too often, conventional methodology for professional learning means rounding up a group of educators for a short period of time, disseminating information, and hoping that some portion of what was seen or heard will take shape and transform classroom practice (Brooks-Young, 2007). Due in part to educational reform legislation and a national mandate to increase student achievement in all sub-groups, a shift in focus toward effectual professional learning has taken top priority in schools and districts across the country. This shift in focus, however has moved at a snail’s pace because of lack of ample research at the teacher level focusing on what really works (Fullan & Hargreaves, 2002). One noteworthy study conducted by Garet, Porter, Desimone, Birman, and Yoon (2001), examined a national sampling of teacher responses in order to distinguish the components of professional learning most likely to bring about a change in professional practice. The teacher’s responses revealed specific design elements of effective professional learning. First, the study revealed that teachers identified a departure from traditional professional learning methods (e.g., workshops) and a gravitation toward a more collegial collaboration (e.g., professional learning communities) as valuable learning. Teachers also recognized the need for a continuum of learning that included group participation from colleagues at the same school site. Lastly, while some teachers reported significant learning and made changes in professional practice, others noted that professional learning had little to do with changes in classroom practice (Garet et al., 2001).

In 2003, Porter, Garet, Desimone, and Birman conducted additional research to examine professional learning by focusing on the Eisenhower Professional Development
Program, established by the federal government for the sole purpose of funding educational professional learning. The Eisenhower Development Program was added as a part of the Elementary and Secondary Act of 1983 and is today known as Title II funding (NCLB, 2001). Similar to the study by Garet et al. (2001), and analysis of teacher responses in a subsequent study revealed specific factors linked to professional learning that supported changes in teaching and subsequent student achievement. These included (a) a reform style (e.g., study group or internship) as opposed to a traditional style (workshop or course), (b) an ongoing timetable with sufficient time to collaborate during individually scheduled meetings, (c) a collaborative effort as opposed to individual learning opportunities, (d) an opportunity to be actively involved in learning rather than passive participants, and (e) a cohesive, relevant subject matter that transfers to classroom practice (Porter et al., 2003).

More recent research by Penuel, Fishman, Ryoko, Yamaguchi, and Gallagher (2007) maintains that while structural elements play a vital role in the success of professional learning, the “perceived coherence of the professional development activities with teachers’ own districts’ goals for student learning” (p. 952) have the most potential to bring about change. Additionally, allowing teachers the time to plan engaging, inquiry-based strategies for students based on professional learning improves a program’s overall impact (Penuel et al., 2007).

In addition to incorporating specific design qualities and selecting cohesive, relevant content, ongoing administrative support also strengthens the validity of professional learning. When teachers know that administrators support specific content-knowledge and instructional techniques obtained during professional learning, sustained
usage is more likely, especially if those same administrators frequently observe classroom practices (Klingner, 2004).

**Summary**

Beginning in the early twentieth century, the concept of systematic adult learning became a part of the educational landscape in the U. S. bringing with it the idea that acquisition of knowledge required ongoing inquiry rather than rote drills, lectures, and memorization of facts (Knowles, 1973). In fact, Kolb (1984) theorized that a fundamental element of the learning process lay in the ongoing, authentic experiences of the learner. During this same time period, teacher accreditation requirements grew from a simple process of vocational style training to a practice intent on holding teachers to a higher standard of licensure like that of doctors and lawyers (Ravitch, 2003; Levine, 2011).

Even with this transformation in thinking and subsequent efforts to improve education through more focused teacher preparatory programs, public education began to weaken according to the NCEE (1983). The publication of *A Nation at Risk* (1983) outlined complacency and mediocrity in schools as well as a continued lack of unity in teacher education as an indication of this deterioration (NCEE, 1983). In an effort to reverse the educational decline, NCTAF (1996) revealed goal statements centering on the creation of professional learning opportunities for teachers based on specific learning objectives, as well as the requirement of schools to fund improvement efforts. This trend continued with the passage of the No Child Left Behind Act (2001) which required all teachers to be highly qualified by 2014 and required the implementation of research-based instructional interventions to improve student achievement. Finally, also in 2014,
the federal government allowed states to apply for waivers to NCLB student achievement requirements by providing educational reform plans outlining methodologies for continued student growth (USDE, 2014).

Central to an increase in student achievement and subsequent educational reform is a process of professional learning that furthers academic aptitude and fosters new teaching methodologies (Guskey, 2000). Consequently, Learning Forward (2011) developed a set of professional learning standards focusing on research-based, ongoing practices aligned with curriculum directives and student growth. For the purpose of this study, the specific elements of professional learning to be examined include data-driven design, research-based content, a culture of strong leadership and ongoing support, and a process of evaluation fostering reflection and redesign (Learning Forward, 2014a). Finally, Learning Forward (2014a) and Penuel et al. (2007) outline the necessity of administrative support, the identification of specific learning targets, and the selection of the most effective training methods as vital components of successful professional learning. For the purpose of this study, seven specific training methods were examined including workshops, technology-based learning, collaboration, professional learning communities (PLCs), peer observation, book studies, and individual learning via National Board Certification and/or advanced degrees.
CHAPTER III

METHODOLOGY

Chapter III begins with an outline of the research design for the study and details the research questions along with their corresponding hypotheses. Next, all professional learning elements and student outcome variables that were utilized for the purpose of the study are identified. Finally, Chapter III delineates structural elements of the study including the participants, instrumentation, and procedures and concludes by outlining specific procedures for data collection and analysis.

Research Design

Utilizing research-based methods of professional learning provide an entry point for increased student achievement, but these methods should be adapted to a school’s specific learning culture to be successful (Chynoweth, Gruits, Holloway, & Hughes, 2008). Therefore, this study examines the relationship between specific aspects of teacher professional learning and student achievement. Guided by particular research questions and hypotheses, the study was non-experimental and quantitative in nature and consisted of the analysis of both original and archival data from participating schools. Original data was gathered via questionnaire completed by Algebra I, English II, Biology I, and United States History instructors. The questionnaire centered on varied aspects and perceptions of professional learning as it related to pedagogy and subject matter knowledge. After obtaining authorization from superintendents of participating school districts, data gathered from SATP2 teachers who completed the questionnaire was then compared to corresponding SATP2 assessment results provided by the Mississippi Department of Education.
Research Questions and Hypotheses

Although the study of the process underlying effective professional learning is a developing area of research, any knowledge gained provides opportunity for school leaders to make decisions that result in optimal student learning (Klute, 2013). According to Reeves (2010), enabling teachers to provide high quality learning for all students requires administrative support through useful professional learning opportunities delivered in a relevant manner. With this in mind, the study was guided by the following research questions:

1. Is there a statistically significant relationship between the amount of time spent in professional learning and student achievement on state mandated Mississippi Subject Area Testing Program?

2. Is there a statistically significant relationship between the design of teacher professional learning and student achievement on the state mandated Mississippi Subject Area Testing Program?

3. Is there a statistically significant relationship between the level of teacher involvement in the professional learning process and student achievement on the state mandated Mississippi Subject Area Testing Program?

4. Is there a statistically significant relationship between perceived administrative support of the professional learning activities and student achievement on the state mandated Mississippi Subject Area Testing Program?
5. Is there a statistically significant relationship between the amount of time spent in professional learning, the design of teacher professional learning programs, the level of teacher involvement in the professional learning process, teachers’ beliefs regarding professional learning, and perceived administrative support of the professional learning activities and student achievement on the state mandated Mississippi Subject Area Testing Program?

Corresponding research hypotheses were as follows:

   H1: There is a statistically significant relationship between the amount of time spent in professional learning and student achievement on the state mandated Mississippi Subject Area Testing Program.

   H2: There is a statistically significant relationship between the design of teacher professional learning programs and student achievement on the state mandated Mississippi Subject Area Testing Program.

   H3: There is a statistically significant relationship between the level of teacher involvement in the professional learning process and student achievement on the state mandated Mississippi Subject Area Testing Program.

   H4: There is a statistically significant relationship between teachers’ beliefs regarding professional learning and student achievement on the state mandated Mississippi Subject Area Testing Program.

   H5: There is a statistically significant relationship between perceived administrative support of the professional learning activities and student achievement on the state mandated Mississippi Subject Area Testing Program.
H₆: There is a statistically significant relationship between the amount of time spent in professional learning, the design of teacher professional learning programs, the level of teacher involvement in the professional learning process, teachers’ beliefs regarding professional learning, and perceived administrative support of the professional learning activities and student achievement on the state mandated Mississippi Subject Area Testing Program.

Participants

The purpose of this research study was to obtain information regarding professional learning design, teacher perception of professional learning, and perceived administrative support of professional learning in order to analyze influences on student learning. In order to collect relevant data, the appropriate population for the study was comprised of secondary general education teachers who taught subject-area courses during the 2013-2014 school year. Subject area courses are those which require end-of-course exams and include Algebra I, English II, Biology I, and United States History. In an effort to procure data regarding teacher professional learning from a representative sample of schools performing at varied achievement levels, a convenience sample of 197 teachers in twelve participating school districts in the southern region of Mississippi were utilized in the study. Of the 197 teachers selected, 117 returned completed surveys. To obtain the names of specific participants, the researcher contacted high school principals in participating districts and requested a list of those teaching subject-area courses. The researcher clarified that participation in the study was voluntary in nature and that there was no penalty for nonparticipation. Finally, the researcher made clear that all data
would be kept confidential and utilized in aggregate form with no specific identifying markers.

Instrumentation

For research purposes, quantitative data was gathered in two ways. First, data was collected through the use of an original survey created by the researcher; and second, archival data was collected from the Mississippi Department of Education’s (MDE) Subject Area Testing Program. Creating an original survey entitled *Professional Learning Design and Perception* (Appendices A & B) was necessary due to a lack of an applicable instrument to fully gather data needed for the study.

The *Professional Learning Design and Perception* survey instrument utilized a six point Likert type Scale as follows: 1 = “Strongly Disagree,” 2 = “Disagree,” 3 = “Slightly Disagree,” 4 = “Slightly Agree,” 5 = “Agree,” 6 = “Strongly Agree.” Design of the six-point scale prohibited a neutral response from participants. Furthermore, the instrument was divided into three specific parts: Section I: Demographics Information, Section II: Time Spent in Professional Learning, and Section III: Professional Learning Design. Also, for the purpose of confidentiality, the survey instrument included a school code identifier in the top right corner rather than including the school name.

Section I, which included questions 1 – 5, provided the researcher with general demographic information about teachers including gender, years of general teaching experience, and level of education. Also, this section included information relating to the specific subject area taught and the years of experience teaching that subject. Section II included items 6 and 7 and supported Research Question 1, addressing the amount of time spent in professional development. Section III supported multiple research
questions. First, items 8 - 15 consisted of stems addressing the specific design of professional learning and supported Research Question 2. Next, items 16 – 19 supported Research Question 3 and related to the level of teacher involvement in the professional learning process. Items 20 - 22 supported Research Question 5 and centered on the perceived administrative support of professional learning. Finally, items 23 – 29 focused on teachers’ beliefs regarding professional learning and supported Research Question 4.

Along with the teacher survey, archival data was provided through the Mississippi Department of Education’s Office of Student Assessment. Retrieved from SATP2 Public Reports, the percentage of students passing and the percentage of students scoring proficient or above on the Algebra I, English II, Biology I, and United States History state assessment were collected for participating school districts.

To establish content validity of the survey instrument, the researcher formed a diverse panel of experts and asked each member to provide feedback on a specified validity questionnaire (Appendices C & D). Members included the principal of a high-performing school who utilized teacher leaders and in-house administrators to design professional learning opportunities, a curriculum coordinator from a coastal school district whose job responsibility consisted primarily of designing professional learning for a specific subject area, and a classroom teacher who was named Mississippi Teacher of the Year for his outstanding experience and ability in teaching and mentoring struggling students in English II. Specifically, panel members examined item stems for clarity and for their direct relationship to the research hypotheses. Finally, they provided suggestions for changes to improve the overall quality and function of the survey. The
only suggestion from panel members indicated a typographical error, which was subsequently corrected.

_Pilot Study_

Upon completion of review by the panel of experts, the researcher obtained approval from superintendents of the school districts included in the study. A letter outlining the purpose of the survey instrument and requesting approval to survey teachers within the respective schools (Appendix E) was sent to superintendents along with an informed consent document and instructions for return (Appendix F). Once the necessary permissions were secured, the researcher requested approval from the Institutional Review Board (IRB) at The University of Southern Mississippi (Appendix G). Finally, a pilot study of the survey instrument was conducted. During the pilot study, fifteen teachers employed in one specific school district that took part in the larger study participated. Once the surveys were completed, data was compiled in spreadsheet form and input into SPSS.

Using this statistical software, a Cronbach’s alpha tested the reliability of the survey instrument. The time spent in professional learning subscale consisted of 12 items and Cronbach’s alpha was .740. Additionally, Cronbach’s alphas for the 8 design quality items, 4 teacher involvement items, 3 perceived administrative support items, and 7 beliefs items were .834, .528, .900, and .920, respectively. Although the reliability of the teacher involvement subscale (4 items; $\alpha = .528$) is lower than would be desired ($\alpha = .7$), the scale was nonetheless used and the results should be interpreted with caution.
Procedures

Upon completion of the pilot study, the researcher procured a list of general education Algebra I, English II, Biology I, and U. S. History teachers within the participating school districts. E-mail correspondence from the researcher to principals of participating high schools were used to request the names of teachers who taught subject-area courses during the 2013-2014 school year and included a copy of the appropriate superintendent’s authorization to conduct research.

To capitalize on survey return, Dillman, Smyth, and Christian (2009) recommend a specific protocol that includes personalization and multiple contacts from the researcher. For the purpose of this study, a similar procedure was followed to maximize teacher participation. First, the researcher made pre-contact with respective teachers via school e-mail to indicate that they had been selected for voluntary, confidential participation in research and that they would receive further information in the mail within a week. One day after the pre-contact e-mail, the researcher mailed a letter to teachers at their respective schools thanking them for their potential participation and providing directions for completion of the survey, the survey and closing date, and a self-addressed, stamped envelope for document return. The cover letter attached to the survey informed participants that their responses would remain confidential and that the only identifying marker on the instrument would be a school code. Approximately one week before the closing date of the survey, the researcher sent a thank you postcard to participants. The postcard also served as a reminder for those who had not returned the surveys. Finally, three days after sending the thank you postcards, the researcher sent a
final e-mail to again thank participants and remind them of the closing date indicated on
the survey’s directions.

Once the survey closed, data was organized and input into an Excel spreadsheet
for examination by the researcher and doctoral committee members. Although
participating districts’ data was not be delineated as a part of the study, the researcher did
notify superintendents, building principals, and teachers associated with the study that
written results were available upon request. For general information or further
explanation, the researcher’s contact information was provided to all participants.

Data Analysis

For the purpose of the research study, the variables tested included design
qualities of teacher professional learning programs, teacher involvement in the
professional learning cycle, amount of time teachers participated in professional learning,
teachers’ beliefs regarding professional learning, and the level of administrative support
for professional learning activities. Conversely, outcome variables included the percent of
students passing the Algebra I, English II, Biology I, or U. S. History components of the
Mississippi Subject Area Testing Program.

For survey items in Section I of the instrument related to years of overall teaching
experience and years of experience teaching the subject area specified in Item 3, as well
as all items in Section II related to the amount of time spent in professional learning, a
nominal scale was constructed. Additionally, value codes were assigned for the analysis
of Likert Scale survey items. All data was then compiled in SPSS using school codes
rather than specific school names for identification purposes to maintain confidentiality.
Descriptive statistics for both demographic and categorical variables were examined.
Finally, using operations in SPSS, a correlational analysis was performed to test all research hypotheses both individually and collectively relating to the significance of varied aspects of professional learning and students’ performance on Mississippi Subject Area Testing assessments.

Summary

Chapter III outlines the research study and the methodology used in examination of the relationship between teacher professional learning and student achievement on the Mississippi Subject Area Testing Program’s required assessments. Research questions and corresponding hypotheses are listed and subsequently, student outcome variables and professional learning elements are identified. The researcher identified participants included in the study and provided a detailed account of the instrumentation and procedures for testing validity and reliability. Finally, specific procedures for both data collection and data analysis related to the research study are included. Chapter IV will present the research findings; and lastly, Chapter V will include a final summary of the research study, a discussion of the significance of the results, conclusions, implications for practice and recommendations for future research.
CHAPTER IV
RESULTS

Within the educational community, classroom teachers assume the greatest responsibility for student academic growth; and given the increasing diversity among students, the rapid expansion of technology, and the expectations of increased rigor in the classroom, teaching has become more complex than ever before (Loeb et al., 2007). The purpose of this study was to evaluate components of teacher professional learning and determine their relationship to students’ performance on end-of-course assessments required by the State of Mississippi. Hypotheses that were developed to guide the research centered on specific styles of professional learning, methods of delivery, the amount of time spent on specific learning objectives, teachers’ input in designing professional learning opportunities, and administrative support of professional learning programs. Chapter IV begins with a brief description of the target population of study participants. Next, follows a more comprehensive explanation of descriptive data identifying specific characteristics of study participants and includes gender, overall years of teaching experience, specific subject area teaching assignments, years in teaching in subject areas, and highest levels of education completed. Finally, the chapter concludes with a summary of findings related to each research hypothesis.

Study Participants

In April 2015, a survey instrument entitled Professional Learning Design and Perception was mailed to 195 high school teachers employed in the participating school districts in the southern region of Mississippi. Those receiving surveys taught one of four subjects: Algebra I, Biology I, English II, or U.S. History. Teachers in the twelve
participating districts, which included seventeen high schools, were asked to voluntarily complete the survey and return to the researcher by mail. Of the 195 questionnaires, 117 were returned, equating to 60% of the survey’s target population.

Demographic Data

Females (n=89) comprised 76.1% of total survey respondents, whereas males (n=28) comprised 23.9% of the total. With respect to subject-area, 30.8% of respondents taught Algebra I (n=30), 21.4% taught Biology I (n=25), 29.1% taught English II (n=34), and 18.8% taught U.S. History (n=18). Furthermore, demographic data relating to highest level of education completed revealed that 24.8% (n=29) of respondents held bachelor’s degrees, 22.2% (n=26) had completed some master’s level coursework, 35% (n=41) had completed master’s degrees, 16.2% (n=19) had completed some coursework beyond master’s degrees, and 1.7% (n=2) had completed a degree beyond the master’s degree.

For the respondents returning questionnaires, years of teaching experience ranged from less than six to more than 20 (Table 1). Approximately 20% (19.7%) of teachers completing the surveys had less than six years of experience, whereas 16.2% indicated more than 20 years of experience. When asked how many years of experience respondents had in the specific subject-area courses (Algebra I, Biology I, English II, U.S. History) they were teaching, 46.2% indicated 0-5 years and 21.4% indicated 6-10 years (Table 1).
Table 1

Teaching Experience of Respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years of Teaching Experience</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5</td>
<td>23</td>
<td>19.7</td>
<td>19.7</td>
</tr>
<tr>
<td>6-10</td>
<td>28</td>
<td>23.9</td>
<td>43.6</td>
</tr>
<tr>
<td>11-15</td>
<td>25</td>
<td>21.4</td>
<td>65.0</td>
</tr>
<tr>
<td>16-20</td>
<td>22</td>
<td>18.8</td>
<td>83.8</td>
</tr>
<tr>
<td>Beyond 20</td>
<td>19</td>
<td>16.2</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Years in Subject Area</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>54</td>
<td>46.2</td>
<td>46.2</td>
</tr>
<tr>
<td>6-10</td>
<td>25</td>
<td>21.4</td>
<td>67.5</td>
</tr>
<tr>
<td>11-15</td>
<td>16</td>
<td>13.7</td>
<td>81.2</td>
</tr>
<tr>
<td>16-20</td>
<td>9</td>
<td>7.7</td>
<td>88.9</td>
</tr>
<tr>
<td>Beyond 20</td>
<td>13</td>
<td>11.1</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Quantitative Results

Time Spent in Professional Learning

Table 2 illustrates the total number of hours that respondents participated in various types of professional learning during the 2013-2014 school year. Nearly half (47.9%) of the respondents reported they had participated in more than thirty hours of
professional learning, whereas one (.9%) individual indicated that he or she had not participated in any form of professional learning. Table 2 shows additional responses.

Table 2

*Overall Hours in Professional Learning During the 2013-2014 School Year*

<table>
<thead>
<tr>
<th>Professional Learning 2013-2014 School Year</th>
<th>n</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>1</td>
<td>.9</td>
<td>.9</td>
</tr>
<tr>
<td>10 or less</td>
<td>12</td>
<td>10.3</td>
<td>11.1</td>
</tr>
<tr>
<td>11-20</td>
<td>17</td>
<td>14.5</td>
<td>25.6</td>
</tr>
<tr>
<td>21-30</td>
<td>31</td>
<td>26.5</td>
<td>52.1</td>
</tr>
<tr>
<td>More than 30</td>
<td>56</td>
<td>47.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Question 7 on the questionnaire asked participants to relate the number of hours they had spent in each of 10 specific types of professional learning during the 2013-2014 school year. Data regarding the types of professional learning and respondents’ participation rates are reported in the order of most to least prevalent in terms of hours (Table 3).

According to the data (Table 3), peer collaboration ranked first in terms of hours of participation. For the purpose of this study, peer collaboration was defined as professional learning conversations taking place in a collegial environment in an effort to enhance professional practice. Unlike the professional learning community (PLC),
ongoing peer collaboration does not necessarily center on a specific, predetermined topic but focuses on learning needs as they arise. Seventy-seven respondents (65.8%) indicated more than 6 hours of time spent in professional collaboration regarding their pedagogical practices, while only 40 (34.2%) indicated fewer than 5 hours of participation. More specifically, 4.3% (n=5) indicated no participation in peer collaboration, 29.9% (n=35) indicated 5 hours or less hours of participation, 13.7% (n=16) indicated 6-10 hours of participation, 6.8% (n=8) indicated 11-15 hours, and 45.3% (n=53) indicated more than 15 hours of peer collaboration during the 2013-2014 school year.

Next in terms of respondents’ participation came traditional workshops and conferences. Fifty-four percent of respondents reported more than six hours (n=71) of time spent in professional learning workshops; and of those respondents 21.4% (n=25) reported participation in excess of 15 hours. Conversely, 8.5% (n=10) reported spending no time participating in workshops, and 30.8% (n=36) reported spending 5 or less hours participating in workshop style professional learning.

Professional learning communities (PLCs) ranked after workshops and conferences according to responses. Similar to peer collaboration, the PLC entails collegial support and discussion; however, unlike peer collaboration, PLCs involve long-term discussion and examination of a predetermined learning topic. According to survey respondents, 50.4% (n=59) indicated more than 6 hours of participation in a PLC during the 2013-2014 school year. Included in that number, 7.7% (n=9) reported between 11-19 hours of participation and 21.4% (n=25) reported more than 15 hours of participation in some type of PLC. Conversely, 19.7% (n=23) indicated no participation in a PLC.
Next, data indicate that out of 117 respondents, 34 (29%) participated in book studies for more than 6 hours during the 2013-2014 school year, 29 (24.7%) participated in technology-based learning for more than 6 hours, 24 (20.6%) spent more than 6 hours working toward advanced degrees, and 22 (18.8%) spent more than 6 hours mentoring peers as a means of professional learning. On the contrary, 63 participants (53.8%) reported no participation in book studies, 34 (29.1%) reported no participation in technology-based learning, 85 (72.6%) reported no time devoted to earning advanced degrees, and 48 (41%) reported no time spent mentoring peers as a form of professional learning.

Finally, respondents reported very little participation in peer observation, National Board Certification, or internships. Ten respondents (8.5%) indicated spending more than six hours observing peers, whereas 53 (45.3%) indicated no time spent observing peers. Those devoting more than 6 hours working toward National Board Certification amounted to 9 participants (7.7%), whereas 104 (88.9%) devoted no time to National Board Certification. Finally, 4 respondents (3.4%) spent 6 or more hours participating in internships, whereas a vast majority (88.9%) was not involved in any type of internships as professional learning experiences.

Table 3

Prevalence of 6 or More Hours in a Specific Professional Learning Style

<table>
<thead>
<tr>
<th>Type</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer Collaboration</td>
<td>77</td>
<td>60.0</td>
</tr>
<tr>
<td>Workshops</td>
<td>71</td>
<td>54.0</td>
</tr>
</tbody>
</table>
Table 3 (continued).

<table>
<thead>
<tr>
<th>Type</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLCs</td>
<td>59</td>
<td>50.4</td>
</tr>
<tr>
<td>Book Studies</td>
<td>34</td>
<td>29.0</td>
</tr>
<tr>
<td>Technology-Based Learning</td>
<td>29</td>
<td>24.7</td>
</tr>
<tr>
<td>Advanced Degrees</td>
<td>24</td>
<td>20.6</td>
</tr>
<tr>
<td>Mentoring</td>
<td>22</td>
<td>18.8</td>
</tr>
<tr>
<td>Peer Observation</td>
<td>10</td>
<td>8.5</td>
</tr>
<tr>
<td>National Board Certification</td>
<td>9</td>
<td>7.7</td>
</tr>
<tr>
<td>Internships</td>
<td>4</td>
<td>3.4</td>
</tr>
</tbody>
</table>

*Professional Learning Design and Perceptions*

Section III of the survey instrument utilized a six-point Likert scale with the following values: 1 indicated strong disagreement, 2 indicated disagreement, 3 indicated slight disagreement, 4 indicated slight agreement, 5 indicated agreement, and 6 indicated strong agreement. This section of the instrument was designed to determine respondents’ views regarding design (questions 8-15), level of involvement (questions 16-19), and perceived administrative support (questions 20-22) of the professional learning programs in which they participated. Finally, using the same scale, questions 23-29 attempted to ascertain teachers’ overall beliefs regarding professional learning. The means and standard deviations for each professional learning element are outlined in Table 4.
In the professional learning design category, the mean for all of the respondents was 3.83. Question 14, “Teachers were given a choice regarding the types of professional learning in which they participated (e.g. book study groups, observations, technology-based learning),” showed the lowest mean of 2.89. Conversely, question 11, “Professional learning was designed to align with state curriculum standards (e.g. Mississippi Language Arts Frameworks, Common Core State Standards),” reflected the highest mean of 4.83. These responses indicate that although teachers agreed with the alignment of professional learning, they agreed less when asked about their level of input in choosing professional development in which they participated.

Next, the mean for all questions relating to the level of teacher involvement in professional learning was 3.897, indicating that they somewhat agreed they were involved with administrators and colleagues when planning and participating in professional learning. Question 16, which addressed teachers and administrators working together to plan professional learning, received the lowest mean score of 3.01. However, question 17 addressed teachers working together to improve teaching and learning and received the highest mean score of 4.33. In effect, while respondents basically agreed they were involved with colleagues, they indicated less agreement when asked about their level of involvement with administrators when planning learning opportunities. With regard to the perceived level of administrative support in professional learning, respondents only somewhat agreed, reflecting a mean score for all questions relating to perceived administrative support as 3.38. The range was between 3.26 and 3.44, indicating little variance among responses. Question 20, dealing with administrative follow-up after profession learning, received the lowest mean of 3.26.
Finally, questions 23-29 center on respondents’ overall beliefs regarding professional learning and its effect on student achievement. The mean for all questions was 3.97, indicating teachers’ agreement that their learning does have some effect on student achievement. The highest mean of 4.53 came from question 23, “In general, professional learning of teachers is an effective way to increase student achievement.” Question 27 had the lowest mean at 3.93, asking respondents about specific professional learning in which they participated and its effect on student achievement. Essentially, teachers reported that their learning could have an effect on student achievement, but learning occasions attended in 2013-2014 only slightly affected student performance.

Table 4

*Means and Standard Deviations of Professional Learning Elements*

<table>
<thead>
<tr>
<th>Professional Learning Elements</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Design</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aligned with Standards (Q11)</td>
<td>4.83</td>
<td>1.16</td>
</tr>
<tr>
<td>Based on sound educational principles (Q9)</td>
<td>4.28</td>
<td>1.32</td>
</tr>
<tr>
<td>Teachers’ experience and knowledge considered (Q8)</td>
<td>4.07</td>
<td>1.45</td>
</tr>
<tr>
<td>Variety of learning methods (Q10)</td>
<td>3.86</td>
<td>1.42</td>
</tr>
<tr>
<td>Clear Expectations for Implementation (Q13)</td>
<td>3.80</td>
<td>1.41</td>
</tr>
<tr>
<td>Included Ongoing Support and Follow-up (Q12)</td>
<td>3.55</td>
<td>1.50</td>
</tr>
<tr>
<td>Teachers Given a Choice of Learning Experiences (Q14)</td>
<td>2.89</td>
<td>1.73</td>
</tr>
<tr>
<td><strong>Level of Teacher Involvement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers discussed ways to improve through professional learning together (Q17)</td>
<td>4.33</td>
<td>1.54</td>
</tr>
<tr>
<td>Teachers met and shared knowledge (Q19)</td>
<td>4.30</td>
<td>1.55</td>
</tr>
<tr>
<td>Teachers worked together to find learning opportunities based on student need (Q18)</td>
<td>3.95</td>
<td>1.64</td>
</tr>
<tr>
<td>Teachers and administrators worked together to plan professional learning (Q16)</td>
<td>3.01</td>
<td>1.54</td>
</tr>
</tbody>
</table>
Table 4 (continued).

<table>
<thead>
<tr>
<th>Professional Learning Elements</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative Support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrators knowledgeable about professional learning (Q21)</td>
<td>3.44</td>
<td>1.58</td>
</tr>
<tr>
<td>Administrators valued faculty and staff opinions (Q22)</td>
<td>3.44</td>
<td>1.58</td>
</tr>
<tr>
<td>Administrators provided follow-up and support (Q20)</td>
<td>3.26</td>
<td>1.58</td>
</tr>
<tr>
<td>Beliefs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional learning is effective in increasing student achievement (Q23)</td>
<td>4.53</td>
<td>1.33</td>
</tr>
<tr>
<td>Professional learning was relevant (Q25)</td>
<td>4.01</td>
<td>1.38</td>
</tr>
<tr>
<td>Professional learning was challenging but not stressful (Q24)</td>
<td>3.96</td>
<td>1.36</td>
</tr>
<tr>
<td>Professional learning had an impact on classroom practices (Q28)</td>
<td>3.93</td>
<td>1.52</td>
</tr>
<tr>
<td>Sufficient time for participation in professional learning was provided (Q29)</td>
<td>3.86</td>
<td>1.58</td>
</tr>
<tr>
<td>Professional learning promoted deep understanding of topics (Q26)</td>
<td>3.81</td>
<td>1.48</td>
</tr>
<tr>
<td>Professional learning had an impact on student achievement (Q27)</td>
<td>3.69</td>
<td>1.54</td>
</tr>
</tbody>
</table>

Note. 6 Point Likert scale (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree, 6 = strongly agree

**Mississippi Subject Area Test Scores**

The student outcome variables for the purpose of this study were the Mississippi Subject Area Test Scores that corresponded to the subject taught by the 117 survey respondents. Scores from the participating school districts were averaged and the descriptive statistics for each subject area are outlined in Table 5. The Algebra I test had the highest mean score of 89.60% passing with a range of 80.77% to 98.5% passing. Next, the percent passing for the Biology I test ranged from 79.67% to 96.69%, with a
mean percent passing of 86.99%. The mean percent passing of the U.S. History test was 85.81% and percent passing ranged from 77.38% to 93.98%. Finally, the English II test had the lowest percent passing mean of 80.89%. The lowest minimum percentage passing for the English II test was 68.82% and the maximum percent passing was 89.61%.

Table 5

Means and Standard Deviations for Student Outcome Variables

<table>
<thead>
<tr>
<th>Student Outcome Variable</th>
<th>Minimum Percent Passing</th>
<th>Maximum Percent Passing</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algebra I</td>
<td>80.77</td>
<td>98.50</td>
<td>89.60</td>
<td>5.80</td>
</tr>
<tr>
<td>Biology I</td>
<td>79.67</td>
<td>96.69</td>
<td>86.99</td>
<td>5.64</td>
</tr>
<tr>
<td>English II</td>
<td>68.82</td>
<td>89.61</td>
<td>80.89</td>
<td>6.02</td>
</tr>
<tr>
<td>U.S. History</td>
<td>77.38</td>
<td>93.98</td>
<td>85.81</td>
<td>4.27</td>
</tr>
</tbody>
</table>

Tests of Hypotheses

Hypothesis<sub>1</sub> and Hypothesis<sub>2</sub>

Section II of the survey concentrated on the amount of time spent in professional learning collectively and in specific types. Hypothesis<sub>1</sub> tested the total amount of time spent in professional learning and its relationship to student achievement on the SATP2 standardized assessments. A Pearson correlation coefficient was calculated and data showed a nominal negative correlation, \( r (115) = -.019, p = .840 \) and was not statistically significant. Therefore, the amount of time respondents spent in professional learning was not related to students’ performance on SATP2 assessments.
For Hypothesis 2 two tests were completed. First, with regard to Question 7 on the instrument, “How many hours did you spend in the following *specific* types of professional learning,” a multiple linear regression was calculated to determine if a significant relationship existed between the design of professional learning in which respondents participated and students’ scores on state mandated Algebra I, Biology I, English II, and U.S. History assessments. The regression equation was not significant ($F(10,106) = 1.251, p = .268$) with an $R^2$ of .106. Data revealed no significant relationship between peer collaboration, workshops, PLCs, book studies, technology-based learning, advanced degrees, mentoring, peer observation, National Board Certification, internships and students’ SATP2 assessment scores. Next, Questions 8 – 15 on the instrument also related to program design elements and were included in an effort examine content, methodology, follow-up support, expectations for learning, and choice regarding professional learning and their effect on students’ SATP2 assessment scores. A Pearson correlation coefficient was calculated and no significant correlation was found ($r(115) = .120, p = .198$). In summary, data from both the multiple linear regression and the correlational analysis showed no significant relationships with respect to the design of teacher professional learning; therefore Hypothesis$_1$ was not supported.
Table 6

*Professional Learning Styles as Predictors of SATP2 Achievement*

<table>
<thead>
<tr>
<th></th>
<th>$B$</th>
<th>$SE, B$</th>
<th>$\beta$</th>
<th>$t$</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(constant)</td>
<td>86.677</td>
<td>1.513</td>
<td></td>
<td>57.280</td>
<td>.000</td>
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<tr>
<td>Workshop</td>
<td>-.724</td>
<td>.494</td>
<td>-.146</td>
<td>-1.465</td>
<td>.146</td>
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<tr>
<td>PLC</td>
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<td>.485</td>
<td>-.062</td>
<td>-.576</td>
<td>.566</td>
</tr>
<tr>
<td>Peer Obs</td>
<td>.309</td>
<td>.789</td>
<td>.043</td>
<td>.391</td>
<td>.696</td>
</tr>
<tr>
<td>Mentoring</td>
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<td>.592</td>
<td>-.185</td>
<td>-1.715</td>
<td>.089</td>
</tr>
<tr>
<td>Technology</td>
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<td>.586</td>
<td>.116</td>
<td>1.087</td>
<td>.279</td>
</tr>
<tr>
<td>Book Study</td>
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<td>.452</td>
<td>-.030</td>
<td>-.273</td>
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<td>Peer Coll</td>
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<td>.153</td>
<td>1.450</td>
<td>.150</td>
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<tr>
<td>Internship</td>
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<td>.028</td>
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<td>.792</td>
</tr>
<tr>
<td>Natl Board</td>
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<td>.598</td>
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<td>.846</td>
<td>.400</td>
</tr>
<tr>
<td>Adv Deg</td>
<td>-.881</td>
<td>.423</td>
<td>-.214</td>
<td>-2.085</td>
<td>.039*</td>
</tr>
</tbody>
</table>

*Note.* N = 117. Student Outcome Variable = SATP2 Score. *p < .05

**Hypothesis 3 - 5**

Hypothesis 3 through Hypothesis 5 were formulated to determine the relationship between respondents’ involvement in the professional learning process, their overall beliefs related to professional learning, and respondents’ attitudes with respect to the administrative support of professional learning experiences in which they participated. A Pearson correlation was calculated for the data corresponding to each
hypothesis. First, the test of Hypothesis 3 indicated a weak positive statistically significant correlation \( r(115) = .184, p = .048 \). Hence, when teachers were involved in the professional learning process, students’ SATP2 scores tended to be higher; however, these significant findings should be interpreted with caution given the low reliability of this subscale.

Next, Hypothesis 4 indicated no significant relationship \( r(115) = -.003, p = .972 \) between the respondents’ beliefs regarding professional learning and student performance on SATP2 assessments. Finally, for Hypothesis 5, the result was the same. Data indicated a weak positive correlation, but no statistically significant result was found \( r(115) = .132, p = .157 \); therefore, reported administrative support of professional learning activities was not related to students’ performance on SATP2 assessments.

**Hypothesis 6**

Unlike Hypothesis 1 through Hypothesis 5, Hypothesis 6 was designed to analyze as a whole the professional learning process in which teachers participated. In order to accomplish this, a multiple linear regression was calculated to predict SATP2 assessment scores based on the design of teacher professional learning programs, the level of teacher involvement in the learning process, the amount of time spent in professional learning, teachers’ beliefs regarding professional learning, and perceived administrative support of the professional learning activities. A significant regression equation was found \( F(5, 111) = 2.504, p = .035 \), with an \( R^2 \) of .101. When all variables were combined, the relationship to participants’ SATP2 scores was significant; however, of all variables included in the multiple regression analysis, only teacher beliefs regarding professional learning was a significant predictor.
Table 7

All Professional Learning Elements as Predictors of SATP2 Achievement

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(constant)</td>
<td>83.362</td>
<td>2.304</td>
<td>36.176</td>
<td>.000</td>
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</tr>
<tr>
<td>Design</td>
<td>1.672</td>
<td>.963</td>
<td>.277</td>
<td>1.736</td>
<td>.085</td>
</tr>
<tr>
<td>Involvement</td>
<td>1.191</td>
<td>.632</td>
<td>.247</td>
<td>1.886</td>
<td>.062</td>
</tr>
<tr>
<td>Total Hours</td>
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<td>.101</td>
<td>-.128</td>
<td>-1.314</td>
<td>.191</td>
</tr>
<tr>
<td>Beliefs</td>
<td>-2.027</td>
<td>.900</td>
<td>-.381</td>
<td>-2.253</td>
<td>.026*</td>
</tr>
<tr>
<td>Adm. Support</td>
<td>.280</td>
<td>.660</td>
<td>.062</td>
<td>.425</td>
<td>.672</td>
</tr>
</tbody>
</table>

Note. N = 117. Student Outcome Variable = SATP2 Score. *p < .05

Summary

The purpose of this research study was to determine if specific elements of teachers’ professional learning experiences had any significance on students’ SATP2 assessment (Algebra I, Biology I, English II, and U. S. History) scores. An original survey instrument entitled Professional Learning Design and Perception was used for the data collection. Analysis of data was completed through the use of the Pearson correlation coefficient and the multiple linear regression. Data indicated that while respondents’ participated in a wide variety of professional learning opportunities, peer collaboration, workshops, and PLCs were the most frequented, respectively. Additionally, data revealed that although a majority of respondents indicated that they were not given much choice when it came to the type of professional learning they
attended, they indicated that learning did align with state curriculum standards. One significant relationship revealed during the study was a weak correlation between teacher input in the professional learning process and students’ scores on the SATP2 assessment. Finally, data indicated that collectively all of the professional learning elements targeted for research were significant in the prediction of SATP2 scores, while individually, the only coefficient indicating significance was respondents’ beliefs.
CHAPTER V

CONCLUSIONS AND IMPLICATIONS

Chapter V presents a summary of the research study, as well as an explanation and implications of the research findings. Also included in Chapter V are recommendations for educational practice and procedures regarding professional learning. Finally, limitations and delimitations of the study are outlined and recommendations for future research are provided.

Introduction

The main purpose of this research study was to determine if there was any significant relationship between specific elements of professional learning and students’ performance on the state mandated Mississippi Subject Area Testing Program (SATP2). Any significance that emerged with regard to design, level of teacher involvement, time spent in professional learning, teacher beliefs, and perceived administrative support could be utilized as a basis for planning and development of effective professional learning at both district and school levels to foster an increase in students’ academic achievement. Additionally, comparing specific elements of professional learning that indicated significance to those that did not would provide a basis for realignment of professional learning programs, placing more emphasis on elements with the most impact on student achievement.

Summary of the Study

With the adoption of the Common Core State Standards in a majority of states in the U.S. and the rigorous assessments accompanying those standards, emphasis on student growth and the acquisition of college and career readiness skills continue to
remain a priority in education (NGA Center, 2011). Additionally, pending reauthorization of the No Child Left Behind Act (USDE, 2014) specifically narrows the scope of academic growth to place emphasis on students in underachieving subgroups. According to Learning Forward (2014a), when teachers’ reinforce their pedagogical knowledge through the acquisition of new, research-based strategies, gains in student achievement across all boundaries are probable. As a result, this successful student achievement through ongoing teacher learning fosters a cyclical state of progress in which both students and teachers experience growth (Learning Forward, 2014a). Finally, Guskey (2000) states that effective professional learning lies at the center of student achievement and subsequent educational reform.

Review of Related Literature

The concept of organized adult learning materialized in the field of education in the early twentieth century. According to Knowles (1973) and Kolb (1984), memorization and lecture solely as a means of acquiring knowledge gave way to the idea of ongoing inquiry as a valid form of learning, drawing on the authentic experiences of the learner. At the same time, the process of teacher accreditation grew from basic, vocational style training to a process in which teachers were held to the same standards of licensure as doctors and lawyers (Levine, 2011; Ravitch, 2003). In 1983, however, the publication of A Nation at Risk (1983) indicated that mediocrity and a lack of unity in teacher education programs was contributing to the deterioration of public education in the U.S. In an effort to improve public education, NCTAF (1996) provided goal statements which highlighted focused teacher learning and required the funding of such efforts. In 2001, The No Child Left Behind Act required that all teachers be highly
qualified by 2014 and required research-based practices to improve student achievement. At present, with reauthorization of NCLB still in the discussion phase, the federal government has provided a process in which states can apply for waivers by outlining detailed plans for continued student growth through teacher learning and intensive student intervention.

Since the key element of student achievement and educational reform hinge on an effective process of teacher professional learning (Guskey, 2000), a unified and specific set of standards is necessary to promote maximum growth. As a result, Learning Forward (2011) created professional learning standards centering on research-based, ongoing practices designed to align with curriculum standards and student growth models. In addition, Learning Forward (2014a) specified the need for the identification of learning targets, the selection of effective training methods, and the importance of ongoing administrative support. For the purpose of this study, seven training methods were examined and included workshops, technology-based learning, collaboration, professional learning communities (PLCs), peer observation, book studies, and individual learning by earning credits toward advanced degrees, and/or National Board Certification.

**Methodology**

For this non-experimental, quantitative study, the researcher designed a survey instrument to gather data relating to the professional learning experiences of Mississippi Subject Area Testing Program (SATP2) teachers of Algebra I, Biology I, English II, and U.S. History. The research instrument entitled Professional Learning Design and Perception (Appendix A) included three sections: Part I consisted of demographic items,
Part II consisted of items relating to the amount of time spent in professional learning, and Part III consisted of items relating to professional learning design and perception. A six point Likert type scale was utilized in order to avoid neutral responses from participants.

Next, the researcher obtained permission from superintendents of sixteen school districts within the southern region of Mississippi to administer the survey (Appendix A) to teachers who taught SATP2 courses during the 2013-2014 school year. Upon receipt of signed consent from district superintendents, the researcher procured a list of 2013-2014 SATP2 teachers from principals within the selected districts. Next, the surveys, along with detailed instructions for completion and self-addressed, stamped envelopes for return were mailed to prospective participants. A total of 195 surveys were mailed to teachers in participating school districts, and 117 (60%) were returned. Finally, quantitative data obtained from survey respondents was compared to archival SATP2 student assessment data acquired from the public records of the Mississippi Department of Education. The purpose of the comparison was to determine the correlation, if any, between the design of teacher professional learning experiences and student achievement on SATP2 end-of-course assessments.

*Research Hypotheses*

For the purpose of this study, the following hypotheses were designed to guide the research. Based on the analysis of all data, the researcher was able to decide whether to accept or reject each hypothesis.
H₁: There is a statistically significant relationship between the amount of time spent in professional learning and student achievement on the state mandated Mississippi Subject Area Testing Program.

H₂: There is a statistically significant relationship between the design of teacher professional learning programs and student achievement on the state mandated Mississippi Subject Area Testing Program.

H₃: There is a statistically significant relationship between the level of teacher involvement in the professional learning process and student achievement on the state mandated Mississippi Subject Area Testing Program.

H₄: There is a statistically significant relationship between teachers’ beliefs regarding professional learning and student achievement on the state mandated Mississippi Subject Area Testing Program.

H₅: There is a statistically significant relationship between perceived administrative support of the professional learning activities and student achievement on the state mandated Mississippi Subject Area Testing Program.

H₆: There is a statistically significant relationship between the amount of time spent in professional learning, the design of teacher professional learning programs, the level of teacher involvement in the professional learning process, teachers’ beliefs regarding professional learning, and perceived administrative support of the professional learning activities and student achievement on the state mandated Mississippi Subject Area Testing Program.
Major Findings

Based the compilation and analysis of both quantitative and archival data, the following is a summary of findings for each research hypothesis.

*Hypothesis*$_1$

Although data revealed that approximately 75% of respondents spent from 21 to more than 30 hours during the 2013-2014 school year in professional learning, no significant correlation emerged when examining the relationship between the amount of time that teachers spent in professional learning and student achievement on the mandated assessments. Therefore, Hypothesis$_1$ was rejected.

*Hypothesis*$_2$

With respect to professional learning design, a majority of respondents reported participating in a wide variety of experiences such as peer collaboration (60%), workshops (54%), and/or PLCs (50.4%), but none were significant indicators of students’ outcomes on mandated assessments. The same was true when examining the content, methodology, follow-up support, expectations for learning, and participants’ choice regarding learning experiences. For this reason, Hypothesis$_2$ was rejected.

Although the research findings were not significant, respondents did indicate their agreement (4.83 mean score on a 6 point Likert-type scale), that professional learning experiences in which they participated were designed to align with state curriculum standards. Conversely, those same respondents indicated a degree of disagreement (2.89 mean score on a 6 point Likert-type scale) when asked if they were given a choice regarding the types of professional development in which they participated.
Hypothesis 3

Survey respondents indicated slight agreement when asked if they worked together to discuss ways to improve teaching and learning and if they met regularly to share knowledge and ideas gained from professional learning. Conversely, those same respondents indicated slight disagreement when asked if they worked together with administrators to plan effective professional learning. Hence, analysis of data regarding teacher involvement in the professional learning process and its relationship to students’ outcomes on mandated assessments revealed a weak positive correlation. Data indicated that when teachers were given the opportunity to take part in the decision-making process regarding their professional learning, student achievement increased slightly; therefore, Hypothesis 3 was accepted. It should be noted, however, that due to the low reliability of the teacher involvement subscale (4 items; \( \alpha = .528 \)), the significance of these findings should be carefully interpreted.

Hypothesis 4 and Hypothesis 5

In general, respondents agreed that professional learning was an effective way to increase student achievement; however, they only slightly agreed when asked if professional learning in which they participated was relevant, promoted deep understanding, or had any effect at all on student learning. When asked if their administrators provided follow-up to professional learning; if administrators were knowledgeable regarding effective professional learning practices; and if administrators valued their input regarding professional learning, respondents showed more disagreement than agreement. Finally, examination of data related to Hypothesis 4 and Hypothesis 5 revealed no correlation between the teachers’ beliefs regarding professional
learning or their perceived administrative support for learning activities in which

Hypothesis 6

Hypothesis 6 combined all of the elements of professional learning examined during the research process to determine if collectively they had any effect on student achievement. The regression equation was significant indicating that together the design of teacher professional learning programs, the level of teacher involvement in the professional learning process, the amount of time spent in professional learning, teachers’ beliefs regarding professional learning, and perceived administrative support of the professional learning activities were significant in the prediction of student achievement on SATP2 assessments. Individually, however, only one variable was significant and that was teachers’ beliefs regarding professional learning. Hence, teacher professional learning considered as a unit was a significant predictor of student achievement.

Discussion of Findings

Professional Learning Design

Numerous findings ascertained from this study are consistent with prior research centering on teacher professional learning programs. While over half of respondents reported their participation in some type of workshop, PLC, or peer collaboration experience, research indicated that their participation had no effect on student performance. Consistent with these findings, Boyle et al. (2004) contend that since workshops are normally short in duration and presented in a whole-group format with little or no follow up, they rarely foster a change in teaching and learning. With regard to PLCs and peer collaboration, Brindley and Crocco (2009) claim that unless teachers meet
regularly and talk about and share specific teaching strategies related to targeted student outcomes, very little change will materialize.

While data indicated that respondents agreed for the most part that professional learning aligned with state and local curriculum standards, they related slight disagreement when asked if they were given a choice as to the types of professional learning in which they participated. According to Glover and Law (2009), unless leadership teams consider the specific needs of participants, who are likely at different points in their pedagogical career, professional learning has little or no relevance. Again, data from this study indicated no correlation between student achievement and teacher participation in different styles of professional learning. One of the many contributing factors may be due to the respondents’ lack of choice.

Level of Teacher Involvement

When considering the level of teacher involvement, data indicated a slight correlation between the amount of input teachers had when planning and participating in professional learning. Respondents indicated agreement when asked if they met regularly to share knowledge and ideas gained from professional learning. According to Butler et al. (2004), meaningful change happens when a co-construction of knowledge in a collegial environment takes place. Likewise, Brindley and Crocco (2009) relate that teacher engagement in collective professional learning experiences turn conversations into learning experiences. Conversely, respondents indicated less agreement when asked if they worked together with administrators to plan professional learning opportunities. A higher level of correlation may have been indicated had teachers been given more of a say in their own learning. This is consistent with the research of Tobia and Hord (2012)
who state that shared decision-making and teacher autonomy are vital components of any
professional learning program.

Time Spent in Professional Learning

In 2001, the National Center for Education Statistics reported that school districts in the U.S. allocated in excess of $20 million on teacher professional learning. In 2013, Nagel reported that more than 90% of U.S. teachers participated in some type of professional learning either inside or outside of school with the hope of bolstering their own teaching knowledge and skills to further student achievement. During the analysis of data pertaining to the amount of time teachers spent in professional learning and its relationship to student achievement on Mississippi subject-area assessments, no significance emerged. Even though approximately 75% of survey respondents spent from 21 to beyond 30 hours of time in professional learning during the 2013-2014 school year there was no significant effect on their students’ achievement. Darling-Hammond and Richardson’s (2009) research support this finding by citing that a major reason for the lack of success of professional learning is the absence of curriculum based on participants’ needs and a lack of follow-up. In further support, DuFour, et al. (2010) and Butler et al (2004) note that simply establishing a culture of collaboration within a school or district does not assure an increase in student achievement; it is the construction of knowledge based on specific student needs that initiates growth.

Beliefs and Perceived Administrative Support

Although no significant relationship existed between student achievement and teacher beliefs regarding professional learning, responses from the quantitative data revealed mixed results. Respondents agreed that professional learning in general held
significant role in the improvement of student achievement. On the other hand, respondents’ reported modest disagreement when asked if their specific professional learning experiences may have had an impact on students. Furthermore, data indicated no significant relationship between perceived administrative support and student achievement. In fact, teachers indicated a slight disagreement with the perceived level of support from administrators with regard to professional learning in which they participated. In support of these findings data, Garet et al. (2001) indicate that unless the subject-matter is relevant to the curriculum and teachers are actively involved in the process, professional learning produces little change in classroom practice. Darling-Hammond and Richardson (2009) also state that since the subject-matter of professional learning routinely lacks pertinent information related to the specific needs of teachers and comes with no administrative support or follow-up, participants feel as if it has no relevance to their pedagogy. Hence, when planning professional learning, both teachers and administrators must play an active role in the process to maximize its effect on student achievement.

Comprehensive Professional Learning Programs

The final stage of research focused on professional learning programs as a whole, examining all components inclusively to determine the correlation to student achievement. According to the results of the linear regression, the design of professional learning, the level of teacher involvement, the amount of time spent in professional learning, respondents’ beliefs, and perceived administrative support of professional learning when considered together did reveal a significant relationship to student achievement on SATP2 assessments. This finding paralleled research by Learning
Forward (2014b) who state that effectual professional learning must incorporate “essential elements of professional learning that function in synergy to enable educators to increase their effectiveness and student learning” (p. 13). Likewise, although no one protocol guarantees the success of professional learning, selecting one set of guiding principles and creating a culture of learning based on those principles provides a strong cornerstone for a cycle of professional learning and increased student achievement (Guskey, 2009).

**Recommendations for Policy and Practice**

With the continued focus on student accountability and ever changing standards aimed at preparing students for life after high school in an increasingly complex society, effective teacher learning programs remain a fundamental component of the educational equation (Hill, 2009). Initiatives such as the USDE (2010) blueprint for reauthorization of NCLB (2001) and the CCSS (NGA Center, 2011) now require a more narrow accountability focus centering on students in poverty and in underrepresented sub-groups. In Mississippi, Senate Bill 2161 (2015) established a commission to examine college and career readiness standards in an effort to make sure students are adequately prepared for post-secondary education or entry-level careers upon high school graduation. Essentially, educational accountability is here to stay and every teacher will be expected to provide excellence in the classroom and every administrator to provide exceptional leadership to promote student achievement.

Examining the individual components of teacher professional learning allowed the researcher to compile and analyze data regarding its design and style, as well as methods of delivery. Also the researcher examined the amount of time teachers spent on
professional learning as participants and as a part of planning teams. Finally, teachers’ perceptions of administrators’ support provided data related to the sense of community responsibility that was present with regard to professional learning and its function of promoting students’ academic growth.

The results of this study indicate that although teachers may be spending quite a bit of time in professional learning, those experiences may not always be producing the desired results. When considering the design and content during the planning stages of professional learning, including teachers’ knowledge and subject-matter experience as well as their understanding of learning methods may increase its effectiveness. Also, since teachers were not very satisfied with their ability to choose professional learning that was the most relevant to their teaching, allowing them to do this would cultivate a more positive attitude toward professional learning and, in turn, increase the likelihood of incorporating new practices into their teaching. Finally, in order to promote a school and district culture of continuous learning, administrators should become active participants in professional learning required of teachers and provide follow-up for all learning opportunities.

Over half of respondents indicated participating is some type of peer collaboration, yet this collaboration showed no significance in relationship to student achievement. As well, respondents indicated a slight level of dissatisfaction when asked if student growth data was used in planning professional learning. Thus, in order to promote more effectual collaboration, utilizing a data driven planning process would allow professional learning to be geared specifically to students’ educational needs. To back this up, Hayes and Robnolt (2006) indicate that during the planning phase of
professional learning, utilizing student data to drive decision-making provides a much more effective means of improving student achievement.

Finally, data indicated that all of the professional learning components taken as a unit considered throughout this research were a significant predicator of student achievement outcomes. For this reason, taking time to create specific professional learning plans that include the input of all stakeholders at both district and school levels would be beneficial. According to Learning Forward (2011), employing professional learning standards that are cohesive and ongoing assure that learning experiences center on outcomes based on specific student needs. Learning design grounded in sound educational principles that include a wide range of topics and methodology would be beneficial in promoting student learning growth. Also, targeted professional learning that is designed based on student data and sound educational principles and includes administrative support and follow-up, provides a cyclical system in which both teachers and students are learners. Without a specific, narrowly focused plan for professional learning in which teachers and administrators are willing to actively participate, little change will ever take place and only minimal student growth will ever be realized.

Limitations

1. The participants in this study were limited to high school teachers of Algebra I, Biology I, English II, and U. S. History in twelve public school districts in coastal Mississippi.

2. The SATP2 assessment data included in this study was limited to school-level scores reported by the Mississippi Department of Education.
3. The findings of this study are generalizable only to those high schools in coastal Mississippi which were selected and chose to participate in the study.

4. The findings of this study were limited to self-reported data and archival data assessment data provided by the Mississippi Department of Education for the coastal Mississippi high schools participating in the study.

5. The findings of this study may be limited in connection with respondents’ beliefs regarding professional learning. Those who participated in multiple professional learning experiences may hold differing beliefs regarding each experience rather than a single belief regarding their professional learning as a whole.

Recommendations for Future Research

1. Expand research to an area wider area than coastal Mississippi high schools to include data from a larger group of respondents.

2. Expand research to elementary, middle, and high school participants to include data from a more diverse group of respondents.

3. Limit research to the components of a targeted professional learning plan in a single school district for an extended period of time in order to gather longitudinal data.

4. Limit research to a specific style / type of professional learning in order to investigate content and methodology and its relationship to student achievement.

5. Include additional data such as ACT and SAT scores or other standardized test scores to measure student achievement.
Summary

The purpose of this research study was to examine the design elements of professional learning, along with teachers’ beliefs and perceptions of administrative support to determine if there was any significant effect on student achievement. After a brief introduction to the study in Chapter I, the researcher included the theoretical foundations of adult learning, a brief history of teacher education, and a review of relevant literature regarding professional learning in Chapter II. Next, Chapter III provided an introduction to the proposed study and outlined the research methodology.

Original data was gathered using a survey created by the researcher entitled Professional Learning Design and Perceptions. These surveys were disseminated to teachers who were asked to respond on a voluntary basis. Additionally, archival SATP 2 student assessment data was accessed through public records provided by the Mississippi Department of Education. Research hypotheses were then developed using the following professional learning elements: design qualities of teacher professional learning, teacher involvement in the professional learning cycle, amount of time teachers participated in professional learning, teachers’ beliefs regarding professional learning, and the level of administrative support for professional learning activities. Student outcome variables included the percent of students in participating school districts who passed the Algebra I, Biology I, English II, and U.S. History components of the Mississippi Subject Area Testing Program. To ascertain the significance of any or all research hypotheses in relationship to student achievement on SATP2 assessments, an analysis that included both a multiple regression and Pearson Correlation was performed.
Data revealed in Chapter IV and discussed in Chapter V indicated a slight correlation between teacher input in the professional learning process and student achievement. Additionally, data indicated that when considered as a whole, all of the components of professional learning that were examined were significant predictors of student achievement. Survey respondents also indicated that as a whole they did not have much input into their own professional learning, nor did student data play a significant role in the professional learning process. The researcher’s policy and procedural recommendations proposed that planning and implementation of professional learning be shared by both administrators and teachers. Furthermore, the researcher suggested that student growth data be the focal point when planning professional learning in order to maximize teacher learning and student achievement. Finally, proposals for further research include expanding to include additional grade levels, additional school districts, and/or additional assessment data to create a more inclusive study. Conversely, limiting research to a specific type of professional learning across districts or focusing on one district’s professional learning plan over an extended period of time would create a more targeted study of professional learning and its relationship to student achievement.
# APPENDIX A

## SURVEY INSTRUMENT

School Code: ________

**PROFESSIONAL LEARNING DESIGN AND PERCEPTION**

### Section I: Demographic Information

**Directions:** Read each question and darken the response that best describes you.

<table>
<thead>
<tr>
<th>1. What is your gender?</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Male</td>
</tr>
<tr>
<td>☐ Female</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. How many years of <em>overall</em> teaching experience did you have at the beginning of the 2013-2014 school year?</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ 0-5</td>
</tr>
<tr>
<td>☐ 6-10</td>
</tr>
<tr>
<td>☐ 11-15</td>
</tr>
<tr>
<td>☐ 16-20</td>
</tr>
<tr>
<td>☐ More than 20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. In which subject area did you teach during the 2013-2014 school year?</th>
</tr>
</thead>
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<tr>
<td>☐ Algebra I</td>
</tr>
<tr>
<td>☐ English II</td>
</tr>
<tr>
<td>☐ Biology</td>
</tr>
<tr>
<td>☐ U.S. History</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. At the beginning of the 2013-2014 school year, how many years had you previously taught the subject you marked in question 3?</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ 0-5</td>
</tr>
<tr>
<td>☐ 6-10</td>
</tr>
<tr>
<td>☐ 11-15</td>
</tr>
<tr>
<td>☐ 16-20</td>
</tr>
<tr>
<td>☐ More than 20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. What is the highest level of education you have completed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Bachelor’s Degree</td>
</tr>
<tr>
<td>☐ Bachelor’s Plus some Master’s Level Coursework</td>
</tr>
<tr>
<td>☐ Master’s Degree</td>
</tr>
<tr>
<td>☐ Master’s Degree Plus Some Coursework Beyond Master’s Level</td>
</tr>
<tr>
<td>☐ Degree Beyond Master’s (e.g. Specialist or Doctoral)</td>
</tr>
</tbody>
</table>
Section II: Time Spent in Professional Learning

Directions: Read each question and darken the response that best describes the amount of time you spent in professional learning.

6. How many hours did you spend in professional learning during the 2013-2014 school year?
   - None
   - 10 or less
   - 11-20
   - 21-30
   - More than 30

7. How many hours did you spend in the following specific types of professional learning?

<table>
<thead>
<tr>
<th>a. Workshops or Conferences</th>
<th>b. Professional Learning Communities</th>
</tr>
</thead>
<tbody>
<tr>
<td>- None</td>
<td>- None</td>
</tr>
<tr>
<td>- 5 hours or less</td>
<td>- 5 hours or less</td>
</tr>
<tr>
<td>- 6-10 hours</td>
<td>- 6-10 hours</td>
</tr>
<tr>
<td>- 11-15 hours</td>
<td>- 11-15 hours</td>
</tr>
<tr>
<td>- More than 15 hours</td>
<td>- More than 15 hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>c. Peer Observation</th>
<th>d. Mentoring or Coaching</th>
</tr>
</thead>
<tbody>
<tr>
<td>- None</td>
<td>- None</td>
</tr>
<tr>
<td>- 5 hours or less</td>
<td>- 5 hours or less</td>
</tr>
<tr>
<td>- 6-10 hours</td>
<td>- 6-10 hours</td>
</tr>
<tr>
<td>- 11-15 hours</td>
<td>- 11-15 hours</td>
</tr>
<tr>
<td>- More than 15 hours</td>
<td>- More than 15 hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>e. Technology-Based Learning (e.g. online courses, webinars, virtual instruction)</th>
<th>f. Book Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>- None</td>
<td>- None</td>
</tr>
<tr>
<td>- 5 hours or less</td>
<td>- 5 hours or less</td>
</tr>
<tr>
<td>- 6-10 hours</td>
<td>- 6-10 hours</td>
</tr>
<tr>
<td>- 11-15 hours</td>
<td>- 11-15 hours</td>
</tr>
<tr>
<td>- More than 15 hours</td>
<td>- More than 15 hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>h. Peer Collaboration</th>
<th>i. Internships</th>
</tr>
</thead>
<tbody>
<tr>
<td>- None</td>
<td>- None</td>
</tr>
<tr>
<td>- 5 hours or less</td>
<td>- 5 hours or less</td>
</tr>
<tr>
<td>- 6-10 hours</td>
<td>- 6-10 hours</td>
</tr>
<tr>
<td>- 11-15 hours</td>
<td>- 11-15 hours</td>
</tr>
<tr>
<td>- More than 15 hours</td>
<td>- More than 15 hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>j. National Board Certification Process</th>
<th>k. Advanced Degree Coursework (e.g. master’s, specialist, doctoral)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- None</td>
<td>- None</td>
</tr>
<tr>
<td>- 5 hours or less</td>
<td>- 5 hours or less</td>
</tr>
<tr>
<td>- 6-10 hours</td>
<td>- 6-10 hours</td>
</tr>
<tr>
<td>- 11-15 hours</td>
<td>- 11-15 hours</td>
</tr>
<tr>
<td>- More than 15 hours</td>
<td>- More than 15 hours</td>
</tr>
</tbody>
</table>
### Section III: Professional Learning Design and Perceptions

**Directions:** Rate the following statements based on the professional learning program as a whole in your school or district during the 2013-2014 school year.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Professional learning was designed with teachers’ experience and subject-matter knowledge in mind.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>9. Professional learning decisions were made based on sound educational principles.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>10. Professional learning included a wide range of learning methods (e.g., hands-on activities, group collaboration, demonstrations).</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>11. Professional learning was designed to align with state curriculum standards (e.g., Mississippi Language Arts Frameworks, Common Core State Standards).</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>12. Professional learning included ongoing support and follow-up sessions.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>13. Expectations for implementing concepts acquired in professional learning clearly outlined.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>14. Teachers were given a choice regarding the types of professional learning in which they participated (e.g., book study groups, observations, technology-based learning).</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>15. Student growth was used to determine the level of success of professional learning.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>16. Teachers and administrators worked together to plan effective professional learning.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>17. Teachers worked together in discussing ways to improve teaching and learning through professional learning.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>18. Teachers worked together in finding new professional learning opportunities that addressed students’ needs.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>19. Teachers met regularly to share knowledge and ideas gained during professional learning.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>20. Administrators provided follow-up and support of professional learning.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>21. Administrators were knowledgeable in the area of effective professional learning practices.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>22. Administrators’ valued the input of faculty and staff when making professional learning decisions.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>23. In general, professional learning of teachers is an effective way to increase student achievement.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
</tbody>
</table>
Section III: Professional Learning Design and Perceptions (Continued)

**Directions:** Please rate the following statements based on the professional learning participated in during the 2013-2014 school year.

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>24. Professional learning was challenging and thought-provoking, but not overwhelming or stressful.</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>25. The professional learning was relevant to my teaching.</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>26. The professional learning promoted a deep understanding of the topic presented.</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>27. The professional learning had an impact on student achievement.</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>28. The professional learning had an impact on my classroom practices.</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>29. I was provided with sufficient time to participate in professional learning.</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
APPENDIX B

COVER LETTER FOR SURVEY INSTRUMENT

Dear Participant:

At present, I am conducting doctoral research on the relationship between professional learning design, teacher perception, and student performance on Mississippi Subject Area assessments. Results of the research study will be provided to schools and districts to assist in planning effective and efficient professional learning for teachers. For the purpose of this study, data must be collected from Algebra I, Biology I, English II, and U.S. History teachers in participating districts.

The attached survey is divided into three sections and should take approximately 10 minutes to complete. Section I provides basic demographic information to the researcher. Sections II and III deal specifically with the design of professional learning you have participated in and your perception of that same professional learning. Sections II and III use a 6 point Likert scale where one (1) means that you strongly disagree and six (6) means that you strongly agree with the statement.

Please note that all data collected is intended to be confidential; therefore, please do not write your name on the survey. To provide additional confidentiality, a school code will be utilized rather than the name of the high school in which you teach. Also note that your participation is voluntary, and the completed surveys will be considered as your consent to participate. There is no penalty if you wish to withdraw from participation.

The Human Subjects Protection Review Committee has approved this research, insuring its adherence to federal guidelines for research involving human subjects. Any questions about your rights as a participant can be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS 39406-0001. The contact phone number is 601-266-5997.

I appreciate your willingness to participate in this survey, for I know your time as a “core subject area” teacher is valuable. As soon as you have completed the survey, simply mail it back in the self-addressed stamped envelope by __________.

If you have any questions, please contact me at christine.moseley@eagles.usm.edu. My research is being conducted under the supervision of Dr. David E. Lee at The University of Southern Mississippi. His contact email is david.e.lee@usm.edu.

Sincerely,

Christine A. Moseley
Doctoral Candidate
The University of Southern Mississippi
APPENDIX C

LETTER TO PARTICIPATE IN EXPERT REVIEW PANEL

Date

Dear colleague,

I would like to invite you to consider being a part of an expert review panel to evaluate the content validity of a questionnaire related to a research study I am conducting. The purpose of the study is to assess the relationship between professional development and student performance on the Mississippi Subject Area Testing Program required assessments.

Your voluntary participation as a part of the expert review will provide useful information regarding the questionnaire’s contents prior to its execution. Your years of experience as an educator or educational administrator qualify you for participation, and your insight will assist me in aligning the research hypotheses to their respective questions or statements.

Please complete the enclosed Validity Questionnaire and return to me via e-mail by December 31, 2013. If you have any questions about any aspect of the study, please contact me at mose2576@bellsouth.net or call 228-324-6234.
APPENDIX D

EXPERT REVIEW PANEL VALIDITY FORM

Professional Learning Survey Validity Questionnaire

Directions: Please provide the information in the box below and then and then respond to the Validity Questions as you review the research questionnaire.

Date:
Name:
Address:
Title/Position:
Years of Teaching/Administrative Experience:

2. Do the survey items address specific and appropriate issues related to obtaining data regarding participation in professional learning and teacher attitudes toward professional learning? If no, please explain.

3. Do you find any of the questions offensive or obtrusive? If yes, please explain.

4. Are there any questions that you would exclude from the survey? If yes, please explain.

5. Are there any other statements that you would include that are not a part of the survey?

6. Please make any other comments or suggestions regarding the survey below.
APPENDIX E

SUPERINTENDENT’S AUTHORIZATION TO CONDUCT RESEARCH

Date: 
Name of Superintendent 
Name of School District 
Address 

RE: Permission to Conduct Doctoral Research Study 

Dear Superintendent ________________:

My name is Christine Moseley, and I am the Federal Programs Director and ELA/Social Studies Curriculum Coordinator for the Hancock County School District. I am currently enrolled in the doctoral program in Educational Leadership at The University of Southern Mississippi. At this time, all of my coursework has been completed and I will be conducting research for the required dissertation. My study focuses on the relationship between professional learning design, teacher perception, and student performance on Mississippi Subject Area assessments. Findings will be useful to schools and districts to assist in planning effective and efficient professional learning.

In order to collect the data, I am asking your permission to allow me to contact a specific population of teachers at high schools within your jurisdiction. Included will be Mississippi Subject Area teachers in Algebra I, Biology I, English II, and U. S. History. Participants will be asked to complete a survey taking no more than ten minutes. With your consent, the surveys will be hand delivered during a regular faculty meeting and returned via mail in self-addressed, stamped envelopes to maintain confidentiality. All data will be reported in numeric form and held in the strictest of confidence. All findings from the study will be provided to participating districts.

If you will grant approval to conduct this research with teachers in your district, please copy and paste the text of the enclosed consent form onto your district’s letterhead, sign it, and return it in the self-addressed, stamped envelope or fax it to 228-255-0378.

If you have questions please contact me at christine.moseley@eagles.usm.edu. My research is being conducted under the supervision of Dr. David Lee at the University of Southern Mississippi. His contact email is david.e.lee@usm.edu.

Sincerely,

Christine A. Moseley 
Doctoral Candidate 
The University of Southern Mississippi 
Enclosure 
Cc: Dr. David Lee, Committee Chair
APPENDIX F

SUPERINTENDENT’S AUTHORIZATION TO CONDUCT RESEARCH

CONSENT FORM

BAY ST. LOUIS – WAVELAND SCHOOL DISTRICT
201 CARROLL AVENUE
BAY ST. LOUIS, MISSISSIPPI 39520

Rebecca Ladner, Ph.D.  Rusty Dempsey, Ph.D.
Superintendent  Assistant Superintendent
Telephone (228) 467-6621  Fax: (228) 467-1230

SUPERINTENDENT’S AUTHORIZATION TO CONDUCT RESEARCH CONSENT FORM

As superintendent of the Bay-Waveland School District, I hereby grant Christine A. Moseley authorization to conduct educational research in the district during the final semester of the 2013 – 2014 school year. The purpose of this research is to determine the significance of teacher professional development as related to scores on Mississippi Subject Area tests. Authorization is given for Mrs. Moseley to dispense surveys to specific teachers at the high school(s) within the district. I understand that participation in the survey is voluntary and that all responses will be held in the strictest of confidence. No survey participants will be specifically identified in the research study.

Superintendent’s Signature

Date  4-10-14

Due to deadline to be on letterhead.
SUPERINTENDENT’S AUTHORIZATION TO CONDUCT RESEARCH CONSENT FORM

As superintendent of Columbia School District, I hereby grant Christine A. Moseley authorization to conduct educational research in the district during the final semester of the 2013 – 2014 school year. The purpose of this research is to determine the significance of teacher professional development as related to scores on Mississippi Subject Area tests. Authorization is given for Mrs. Moseley to dispense surveys to specific teachers at the high school(s) within the district. I understand that participation in the survey is voluntary and that all responses will be held in the strictest of confidence. No survey participants will be specifically identified in the research study.

[Signature]

Superintendent’s Signature

04/01/2014

Date
SUPERINTENDENT'S AUTHORIZATION TO CONDUCT RESEARCH
CONSENT FORM

As superintendent of Hancock County School District, I hereby grant Christine A. Moseley authorization to conduct educational research in the district during the final semester of the 2013 – 2014 school year. The purpose of this research is to determine the significance of teacher professional development as related to scores on Mississippi Subject Area tests. Authorization is given for Mrs. Moseley to dispense surveys to specific teachers at the high school(s) within the district. I understand that participation in the survey is voluntary and that all responses will be held in the strictest of confidence. No Survey participants will be specifically identified in the research study.

Superintendent’s Signature

Date

4/10/14
Harrison County School District

HENRY A. ARLEDGE
Superintendent of Education

11072 Highway 49
Gulfport, Mississippi 39503
(228) 539-6500

E. MITCHELL KING
Assistant Superintendent

SUPERINTENDENT’S AUTHORIZATION TO CONDUCT RESEARCH CONSENT FORM

As superintendent of Harrison County School District, I hereby grant Christine A. Moseley authorization to conduct educational research in the district during the final semester of the 2013 – 2014 school year. The purpose of this research is to determine the significance of teacher professional development as related to scores on Mississippi Subject Area tests. Authorization is given for Mrs. Moseley to dispense surveys to specific teachers at the high school(s) within the district. I understand that participation in the survey is voluntary and that all responses will be held in the strictest of confidence. No survey participants will be specifically identified in the research study.

Superintendent’s Signature

Date

4/3/14
SUPERINTENDENT'S AUTHORIZATION TO CONDUCT RESEARCH CONSENT FORM

As Superintendent of the Jackson County School District, I hereby grant Christine A. Moseley authorization to conduct educational research in the District during the final semester of the 2013-2014 school year. The purpose of this research is to determine the significance of teacher professional development as related to scores on Mississippi Subject Area tests. Authorization is given for Mrs. Moseley to dispense surveys to specific teachers at the high school(s) within the District. I understand that participation in the survey is voluntary and that all responses will be held in the strictest of confidence. No survey participants will be specifically identified in the research study.

[Signature]
Dr. Barry Amacker, Ed.D.
Superintendent Jackson County School District
SUPERINTENDENT'S AUTHORIZATION TO CONDUCT RESEARCH CONSENT FORM

As assistant superintendent of Ocean Springs School District, I hereby grant Christine A. Moseley authorization to conduct educational research in the district in the final semester of the 2013-2014 school year. The purpose of this research is to determine the significance of teacher professional development as related to scores on Mississippi Subject Area tests. Authorization is given for Mrs. Mosley to dispense surveys to specific teachers at the high school within the district.

I understand that participation in the survey is voluntary and that all responses will be held in the strictest of confidence. No survey participants will be specifically identified in the research study.

Assistant Superintendent Signature

Date
SUPERINTENDENT’S AUTHORIZATION TO CONDUCT RESEARCH
CONSENT FORM

As superintendent of Pascagoula School District, I hereby grant Christine A. Moseley
authorization to conduct educational research in the district during the final semester of
the 2013-2014 school year. The purpose of this research is to determine the
significance of teacher professional development as related to scores on Mississippi
Subject Area tests. Authorization is given for Mrs. Moseley to dispense surveys to
specific teachers at the high schools within the district. I understand that participation in
the survey is voluntary and that all responses will be held in the strictest of confidence.
No survey participants will be specifically identified in the research study.

[Signature]
Superintendent’s Signature

[Date]
4/2/14

PASCAGOULA SCHOOL DISTRICT
SUPERINTENDENT'S AUTHORIZATION TO CONDUCT RESEARCH
CONSENT FORM

As superintendent of Pass Christian School District, I hereby grant Christine A. Moseley authorization to conduct educational research in the district during the final semester of the 2013 – 2014 school year. The purpose of this research is to determine the significance of teacher professional development as related to scores on Mississippi Subject Area tests. Authorization is given for Mrs. Moseley to dispense surveys to specific teachers at the high school(s) within the district. I understand that participation in the survey is voluntary and that all responses will be held in the strictest of confidence. No survey participants will be specifically identified in the research study.

Beth John

Superintendent's Signature

4/1/14

Date

BETH JOHN, Superintendent
6457 KILN-DELISLE ROAD • PASS CHRISTIAN, MISSISSIPPI 39571
PHONE (228) 255-6200 • FAX (228) 255-9302
SUPERINTENDENT’S AUTHORIZATION TO CONDUCT RESEARCH CONSENT FORM

As superintendent of Picayune School District, I hereby grant Christine A. Moseley authorization to conduct educational research in the district during the final semester of the 2013 – 2014 school year. The purpose of this research is to determine the significance of teacher professional development as related to scores on Mississippi Subject Area tests. Authorization is given for Mrs. Moseley to dispense surveys to specific teachers at the high school(s) within the district. I understand that participation in the survey is voluntary and that all responses will be held in the strictest of confidence. No survey participants will be specifically identified in the research study.

Superintendent’s Signature

Date
SUPERINTENDENT’S AUTHORIZATION TO CONDUCT RESEARCH CONSENT FORM

As superintendent of Poplarville School District, I hereby grant Christine A. Moseley authorization to conduct educational research in the district during the final semester of the 2013 – 2014 school year. The purpose of this research is to determine the significance of teacher professional development as related to scores on Mississippi Subject Area tests. Authorization is given for Mrs. Moseley to dispense surveys to specific teachers at the high school(s) within the district. I understand that participation in the survey is voluntary and that all responses will be held in the strictest of confidence. No survey participants will be specifically identified in the research study.

Superintendent’s Signature 4.2.14

Date
SUPERINTENDENT’S AUTHORIZATION TO CONDUCT RESEARCH CONSENT FORM

As superintendent of Stone County School District, I hereby grant Christine A. Moseley authorization to conduct educational research in the district during the final semester of the 2013 – 2014 school year. The purpose of this research is to determine the significance of teacher professional development as related to scores on Mississippi Subject Area tests. Authorization is given for Mrs. Moseley to dispense surveys to specific teachers at the high school(s) within the district. I understand that participation in the survey is voluntary and that all responses will be held in the strictest of confidence. No survey participants will be specifically identified in the research study.

Superintendent’s Signature

Date
APPENDIX G

INSTITUTIONAL REVIEW BOARD APPROVAL

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS  39406-0001
Phone: 601.266.5997 | Fax: 601.266.4377 | www.usm.edu/research/institutional.review.board

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the “Adverse Effect Report Form”.
- If approved, the maximum period of approval is limited to twelve months. Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 15030303
PROJECT TITLE: The Effect of Teacher Professional Learning on High School Students’ Mississippi Subject Area Assessment Performance
PROJECT TYPE: New Project
RESEARCHER(S): Christine A. Moseley
COLLEGE/DIVISION: College of Education and Psychology
DEPARTMENT: Educational Leadership and School Counseling
FUNDING AGENCY/SPONSOR: N/A
IRB COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 03/04/2015 to 03/03/2016
Lawrence A. Hosman, Ph.D.
Institutional Review Board
REFERENCES


*Teacher College Record, 105*(6), 913-945. doi: 10.1011/1467962000273


Ozuah, P. O. (2005). First there was pedagogy and then came andragogy. Einstein Journal of Biology & Medicine, 21(2), 83-87.


