ABSTRACT

Mark L. Cockrell, A COMPARATIVE ANALYSIS STUDY OF PROFESSIONAL DEVELOPMENT MODELS IMPACTING STUDENT ACADEMIC ACHIEVEMENT (Under the direction of Dr. William Rouse), Department of Educational Leadership, January, 2011.

This study analyzed the impact of professional development on student achievement in eastern North Carolina high schools. The high schools studied were consistent in their student enrollment, teacher staff size, and socieo-economic status. For the purposes of this research, the characteristics of effective professional development were categorized into two types: the reform model and the traditional model (Garet, Porter, Desimone, Birman, & Yoon, 2001). Two of the schools used the traditional model of professional development while one high school used the reform model. Student achievement data were analyzed for five end of course tests: Algebra I, Biology, Civics, English 9, and U.S. History, over a three year period to draw conclusions on the impact of the professional development on student achievement. Also, a staff survey was administered to supplement the quantitative data to gauge the effectiveness of the professional development from the perceptions of the staff members.

For this study, the student achievement data were analyzed over a three year period to determine if specific teacher professional development impacted student achievement based on the North Carolina Testing and Accountability model, (ABC's), the pattern of growth for the federal Annual Yearly Progress (AYP) Target Goals by subgroup based on Reading and Math test scores, and the rate at which the subgroup scores closed towards the AYP target goals. Also, a survey was administered to gauge teacher perceptions of the impact of professional development on student achievement.

The researcher highlighted those areas of difference between the staffs of the two models and highlighted the most significant responses from each model implemented.

Results of this study were inconclusive. The pattern of student growth for the NC testing model and the AYP testing model showed no significant pattern of influence for either model implemented. The qualitative data were more conclusive as the teachers implementing the reform method of professional development reported more favorable results.

The study of professional development and the link to student achievement is difficult to determine and needs further research.

DEDICATION

First, I wish to thank God for helping me through this process. It has been a learning experience in so many ways and I could not have completed this process without your grace. Also I would like to dedicate this dissertation to my beloved family. To my parents who continue to support me, guide me, and mentor me, I continue to learn from you and appreciate you more as time goes by. Thank you for everything!

To my son, Hunter, thank you for helping me keep my focus during this trying time. I hope this process serves as an example that you can do anything if you set your mind to it and persevere. I truly admire you, love you, and will always be so proud of all you do.

To my lovely daughter, Hailee, words can't express how much I love you. You bring calmness and peace to me. Your spirit, smile, and love of life remind me how lucky I am each day to have you. You truly inspire me, and I will always be so proud of all you do.

To my many friends who have supported me through this process I say thank you for your friendship, support, and shoulder to lean on.

ACKNOWLEDGEMENTS

A COMPARATIVE ANALYSIS STUDY OF PROFESSIONAL DEVELOPMENT

MODELS IMPACTING STUDENT ACADEMIC ACHIEVEMENT

A Dissertation Proposal

Presented To

The Faculty of the Department of Educational Leadership

East Carolina University

In Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

by

Mark L. Cockrell

January, 2011

A COMPARATIVE ANALYSIS STUDY OF PROFESSIONAL DEVELOPMENT

MODELS IMPACTING STUDENT ACADEMIC ACHIEVEMENT

by

Mark L. Cockrell

APPROVED BY:

DIRECTOR OF DISSERTATION:_____
William Rouse, Jr.

COMMITTEE MEMBER:_____
Lane Mills

COMMITTEE MEMBER:_____
Harold Holloman, Jr.

COMMITTEE MEMBER:_____
Marjorie Ringler

COMMITTEE MEMBER:_____
James McDowelle

INTERIM CHAIR OF THE DEPARTMENT OF EDUCATIONAL LEADERSHIP:

_____
William Rouse, Jr.

ACTING DEAN OF THE GRADUATE SCHOOL:

_____
Paul Gemperline

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1: INTRODUCTION

Across the United States, virtually every school district has undergone some type of reform effort (Corcoran, 1995). Increased expectations for student achievement raised expectations for teachers, thus, educators were asked to master new skills, take on new responsibilities, and change instructional practices (Corcoran, 1995). Teachers have been asked to deepen their content knowledge, expand their instructional strategies to reach a more diverse student population, and incorporate more technology in their teaching practices. All of these issues emphasize the need for teacher professional development. The purpose of professional development is to bring about positive change and to improve student outcomes by altering instructional strategies (Guskey, 2000). Traditionally, political leaders have left professional development alone, thus, it became the sole responsibility of local school districts until the era of accountability evolved. Historically, states have spent from 1 to 3% of the state education budget on professional development, however, the No Child Left Behind Act demanded the allocation for professional development be increased (Corcoran, 1995). As political interest in student accountability grew and as student achievement expectations increased the significance of professional development, the delivery of professional development, and the urgency for professional development to alter instructional practices increased. As states moved to raise academic standards and increase student achievement, students were no longer passive recipients of teacher led classes where drill, practice, and worksheets are the norm, but were active participants in daily lessons (Corcoran, 1995). Learning is an active process, which calls for acquiring, creating, and using knowledge (Goudy, Fountain, & Monroe-Ossi, 2008).

The concept that learning takes place on a continuum from rote memory to being meaningful was a new paradigm shift for educators.

Professional development continued to be the cornerstone for helping teachers reach higher student achievement standards (Desimone, Porter, Garet, Yoon, & Birman, 2002). Teachers, at the center of the professional development movement, were expected to carry out the demands of higher academic student standards (Garet, Porter, Desimone, Birman, & Yoon, 2001). Research suggested that teachers agreed with higher student standards, yet were not prepared to help students obtain such higher academic achievement (Garet et al., 2001). If educators are to respond to rapidly changing technological and social structures, professional development becomes the vehicle for responding to that need Guskey (2000). Guskey noted in his evaluation framework that student learning does not automatically follow professional development and that successful professional development will follow five levels: participant's reactions, participant's learning, organizational support and change, participant's use of new knowledge and skills, and the intended student learning outcome Guskey (2000). Professional development "experts" believe the conventional methods of professional development, lectures, workshops are too top down, isolated, and too far from classroom reality to be effective (Corcoran, 1995). Minimal research has been conducted on the impact of professional development on student achievement. Guskey noted in his research that one of the primary reasons for this lack of research is the delay from the time professional development is administered to the time student achievement scores are available Harvard Family Research Project (2006). The bulk of professional development evaluation is done after the workshop is completed by

educators submitting their responses, which only relates to Guskey's model of level I and II evaluation, participant's reactions and participant's learning (Goudy et al., 2008). Therefore, showing that professional development alone will immediately lead to increased student achievement or long term changes in instructional behavior is difficult (Harvard Family Research Project, 2006). Also, previous research has mostly focused on teacher learning and teacher change primarily because the reliability of test scores alone as an indicator of teacher effectiveness is low. The linkage of student achievement to professional development is not a single cause–effect relationship (Guskey, 2000). Also, researchers have not made significant strides into analyzing professional development at the various levels of schooling; elementary, middle, and high. The bulk of the research on professional development encompasses the characteristics of effectiveness, and its delivery, not the impact it has on student achievement. Additional research is needed using comparison groups and which professional development models are more effective given the different purposes in different contexts and for teachers at different points in their career (Darling-Hammond & Richardson, 2009).

Six general approaches to creating time for staff development have been identified: (a) promote time outside the classroom during the school day, (b) refocus the purpose of existing time commitments, (c) reschedule the school day, (d) increase the amount of available time (e) promote teachers volunteering some of their time, (f) promote more efficient time use (North Carolina Regional Educational Laboratory [NCREL], 1993). In addition, Raywid (1993) cited a number of examples for creating professional development time: (a) use part or all of faculty, department, or team

meetings for professional development, (b) lengthen the school day for 20 minutes four days per week; use an early release on the fifth day to provide an extended period of time for professional development, (c) one morning per week, engage students in alternative activities such as community service that are supervised by parents, community members, or non-instructional staff; use this time for professional development (d) provide a common scheduled lunch and planning periods for teachers working on joint projects (NCREL, 1993). More professional development research may be needed to further clarify the most effective ways to deliver professional development to increase student achievement.

From the limited pool of rigorous quantitative studies, one study described a meta-analysis of 1,300 research studies and evaluation reports from which researchers identified nine experimental or quasi-experimental studies using control groups with pre- and post-test designs that could evaluate impacts of professional development on student achievement. This study showed that the control group whose teachers were subjected to professional development, which employed the reform characteristics of professional development, the students grew academically at a greater rate than those who did not utilize the reform model characteristics of professional development (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009). Furthermore, Garet et al. (2001) suggested that student achievement could be increased if the delivery of professional development focuses on increasing teacher content knowledge and how students learn. Another study of mathematics teaching in California based on teacher's professional development experience and school student achievement data, found that student test scores were higher when teacher professional development focused on

subject content and how students learned compared to control groups of students where professional development only focused on subject content (Garet et al., 2001). Other studies suggested when professional development offered substantial contact hours (ranging from 30 to 100 hours in total) spread over six to 12 months, a positive and significant effect on student achievement gains occurred (Darling-Hammond et al., 2009). Research also suggested intensive professional development efforts that averaged 49 contact hours in a year increased student academic achievement by approximately 21 percentile points. Research indicated that professional development must be sustained on average 50 hours to have a positive impact on student achievement (Darling-Hammond et al., 2009). Research noted that in the United States the average teacher receives only 16 hours of professional development each year (Darling-Hammond et al., 2009). This research suggested that students of teachers who participated in professional development for a limited amount of time (ranging from 5 to 14 hours in total) showed no statistical gains in student achievement (Darling-Hammond et al., 2009). A study of classroom libraries and elementary-level literacy development found that reading comprehension among students whose teachers had received 30 hours of professional development in reading instruction and library use in addition to being donated-250 book classroom libraries, achieved at much higher levels than students whose teachers who simply received the classroom libraries. Taken together, these studies indicate the importance of sustained, content-focused professional development for changing instructional practices in ways that ultimately improve student learning (Wei, Darling-Hammond, Andree, Richardson, & Orphanos, 2009). The research also suggested a strong correlation between professional development and

student achievement when professional development focused on the teachers' ability to engage students in specific pedagogical skills and how to engage students in content over longer periods of time (Wei et al., 2009). Unfortunately, while there is greater understanding of what constitutes high quality professional development, and while more professional development opportunities are being offered in the United States, surveys find that well-designed, effective opportunities are not representative of most U.S. teachers' professional development experiences (Wei et al., 2009).

Effective professional development involves ongoing and sustained activities. In the Joyce and Showers Model, there are 5 components of effective professional development. Component 1 consists of the presentation of theory or the description of a new skill or behavior, which is typically presented in 30 minutes to 2 hours in length from a one-way delivery mode to a passive audience. Joyce and Showers research suggested that most professional development offerings only reach this level with only 10% retention from its participants. Component 2 is the demonstration or modeling of the new skill. Similar to the first component, the delivery is one way and there is no audience participation. When this level is reached, there is only a 12-13% retention rate from participants. Component 3 includes the initial practice of the new skill or concept in a protected or simulated setting. This most often occurs with a role play during the workshop. This level of professional development only ensures 14% - 16% retention rate of its participants. Component 4 consists of structured and open ended feedback about the performance of the practice or skill during the workshop. This level ensures a participant retention rate of 16 – 18%. Coaching and providing follow up attention to help the teacher apply the new skill is the fifth component and ensures a 95% retention

rate (Hord, 1994). This seminal research performed by Joyce and Showers confirmed the need for sustained and ongoing professional development embedded during the school day.

The length of time also plays into the effectiveness of the professional development. For example, in analyzing national professional development survey results, Birman, LeFloch, Klekotka, Ludwig, Taylor, Walters, Wayne, and Yoon (2007) found that mathematics teachers averaged 13 hours of professional development on mathematics content and pedagogical skills during 2003-04. Fewer than 10% of participants experienced more than 24 hours of professional development on mathematics content or pedagogy during the year (Wei et al., 2009). This research supported previous research from Wei et al., which suggested that professional development must be sustained at least 50 hours to have an effect on student achievement.

Professional development is the avenue to improve teachers for a new generation of students, a new economy, and to transform learning from being passive to active (Darling-Hammond et al., 2009). Teacher surveys show that 9 out of 10 teachers participate in professional development that consists primarily of short-term conferences or workshops, 1-2 days, focusing on content knowledge rather than sustained professional development, focusing on learning strategies (Darling-Hammond et al., 2009). Also, research revealed that teachers in Europe and Asia spend 15-25 hours per week in joint planning and collaboration, this is approximately 5 times the amount U.S. teachers spend (Darling-Hammond & Richardson, 2009). The average U.S. teacher spends 1,080 hours an instructional year with students whereas teachers from Europe

and Asia only spend 803 and 664 hours respectively with students. The difference in hours is spent in professional development (Darling-Hammond & Richardson, 2009).

As the global economy evolved, centered on knowledge with access to technology, education realized teachers roles were expanded to prepare students to work, live, and learn using 21st century tools and digital resources (Rivero, 2006). Schools faced a new mission to stop preparing students for jobs that do not exist or do not have a sufficient wage to support a family. In 2005, six out of ten of the fastest growing occupations required post secondary training indicating that high schools were preparing students for a work world that did not include fax machines, email, teleconferencing, or the internet (Daggett, 2005). The key to meeting the demands of an ever-evolving economy and society may be effective teacher professional development (Daggett, 2005). In examining the characteristics of teacher professional development, seven characteristics emerged: (a) collaborative approaches to professional learning can promote school change that extends beyond individual classrooms, (b) effective professional development must be intensive, (c) must be ongoing, (d) must be connected to teacher practices, (e) must focus on the teaching and learning of specific academic content, (f) must be connected to other school initiatives, and (g) must build strong working relationships among teachers (Wei et al., 2009).

Joyce and Showers (n.d.) also identified six indicators of effective continuous professional development: (a) practice and feedback which refers to the opportunity to engage in practice and feedback, (b) coaching and expert modeling where teachers are given feedback on their ideas of implementation to build confidence, (c) instructional leadership where the principal supports the teachers in solving problems as they arise

from implementing new ideas to maintain the sustainability of the professional development, (d) whole school and administrative support which addresses management structures and decision making processes, which refers to the ability of staff members to communicate issues as they arise, (e) collegiality, where teachers engage in frequent, continuous talks, plan, design, evaluate lessons and prepare materials together, (f) quality information is presented and demonstrated using technology, up to date strategies while providing links to research and allowing input from staff.

Teacher professional development may be delivered in a variety of means such as study groups, peer coaching, induction training for new teachers and principals, mentoring for beginning teachers, peer observation, networking, conferences, workshops, and institutes. However, the researcher discovered in the related literature, professional development activities can be classified into two categories, reform types and traditional types (Garet et al., 2001).

The reform types of professional development are a focused set of activities designed to coach and provide feedback that ensures classroom implementation of an innovation. Characteristics of the reform model include being sustainable, ongoing, and embedded in classroom practice. Examples include study groups or networking which occur during the school day in the teacher's classroom or during their planning time. Research suggested this type of professional development was more effective because it made connections with classroom teaching and usually occurred over a longer period of time (Garet et al., 2001). With these offerings occurring over a longer period of time,

9

teachers were more likely to discuss concepts, issues, share materials, and discuss common student needs (Garet et al., 2001).

The second type of professional development are the traditional forms which are episodic, fragmented, one time approaches with a leader or expert doing the training. Examples include, but are not limited to workshops, institutes, courses, conferences and usually consist of a structured approach to professional development that occurs outside the teacher's classroom. Participants attended sessions at scheduled times often after or outside of school hours (Garet et al., 2001).

Teacher professional development is delivered in a variety of settings using a variety of methods. This comparative analysis study will attempt to add to the limited research of the connection between professional development and its impact on student achievement. This study will classify the professional development offerings of three eastern North Carolina high schools over a three year period into 2 comparison groups, reform and traditional, to determine which model was more effective in altering instructional strategies and positively influencing student achievement.

Statement of the Problem

Since the release of *A Nation at Risk* in the 1980s, stakeholders such as politicians, business leaders, educators, students, and parents called for the reform of schools in America resulting in an increased emphasis on teacher professional development and student academic achievement (Wei et al., 2009). The emphasis on teacher professional development has continued over the years as educators have inundated high schools with initiatives focused on improving student achievement (Wei et al., 2009). In a 2005 survey, the National Association of Manufacturers reported 84%

of American employers, business leaders and industry; believe students were ill prepared to enter the work place and to meet the technology demands of 21st century jobs (McClure, 2006). This required additional schooling or training upon employment. Students' perceptions from various sources list they are "bored and tired" of school while others say they "just don't like school," therefore teacher professional development has become one avenue to improve teaching methods thus impacting students academic performance (Garet et al., 2001).

Therefore, the problem of this study was to examine two types of school wide professional development over a 3-year academic period to determine if teachers who received professional development with the reform or traditional characteristics impacted student performance at a greater rate.

Research Questions

This study addressed three research questions. The research questions are as follows:

Research Question #1: Is there a difference in student proficiency for the Academic years of 2005-2006, 2006-2007, 2007-2008, based on the five End of Course core courses, Algebra I, Civics, Biology, English 9, and U.S. History, for the three schools whose teachers participated in traditional and reform types of professional development?

Research Question #2: Is there a difference in student proficiency for the academic years of 2005-2006, 2006-2007, 2007-2008, for the AYP Target Goals by subgroup based on Grade 10 Reading / English and Math for the three schools whose teachers participated in traditional and reform types of professional development?

11

Research Question #3: Is there a difference in the teacher perceptions of the impact of traditional and reform types of professional development offerings on student achievement?

Purpose of the Study

It has been well documented in the literature that professional development is the catalyst for improved student academic achievement Killion (2002) Sparks and Loucks-Horsey (1989), Hirsh (2009a) Hord (1994) Darling-Hammond and Ball (1997) Corcoaran (1995) (Garet et al., 2001). Not simply professional development, but professional development delivered consistently over time Killion (2002) Sparks and Loucks-Horsey (1989), Hirsh (2009a) Hord (1994) Darling-Hammond and Ball (1997) Corcoaran (1995) (Garet et al., 2001). Too few teachers experience the quality of professional development and teamwork that enable them to be more effective educators (Hirsh, 2009a). Effective teaching occurs when educators on teams are involved in a cycle in which they analyze data, determine student learning goals based on that analysis, design joint lessons that use evidence-based strategies, have access to coaches for support in improving their classroom instruction, and then assess how their learning and teamwork affects student achievement. Recognizing the need to ensure high-quality professional learning for every educator is a new paradigm of professional development based on the theory of continuous improvement (Hirsh, 2009a).

The premise of professional development is about evoking teacher change to improve student outcomes by altering instructional strategies to increase teacher's skills and abilities so that they are able to transfer what they have learned to positively impact student academic performance (Guskey, 2000). Therefore, the purpose of this study

12

was to examine the impact of two types of professional development offerings used in three high schools in eastern North Carolina to determine if these types of professional development activities altered instructional practices of teachers and positively impacted student academic achievement.

Significance of the Study

Since the 1990s, educational reform efforts focused on school structure, design, and instructional delivery changes as a means for increasing student academic achievement (Dorio, 2006). There are many different reform initiatives, which have provided much student success during this time (Dorio, 2006). For example, school districts have begun Early College High schools, Career Academies, Wall to Wall Academies, 9th grade Academies, implemented home grown reform initiatives, and chosen to employ external providers to deliver professional development to influence and alter instructional methods (Dorio, 2006). Even though these reform efforts resulted in mixed results, the literature consistently suggested the teacher continues to be the most important aspect associated with student achievement (Dorio, 2006). Therefore, providing teachers with the professional development needed to meet the student academic demands of today's society is an important endeavor. There are many characteristics of effective professional development that have evolved as education has progressed. The findings of this study will attempt to establish the connections between school wide professional development and its effect on student achievement. By studying reform and traditional models of professional development, this study also attempts to link the sustainability of the professional development offered, teacher attitudes, and perceptions about the professional development they participated in.

13

Overview of the Methodology

Trochim (2000) stated the research design is thought of as the structure of the research project. It is the substance that holds the research project together and allows one to show how all of the major parts of the research—participants, treatments, measures, and methods of assignment—work together to address the research question or questions. There are many types of research designs available to investigators, which assist the researcher in answering research questions. Huch, Cormier, and Bounds (1974) stated that the purpose of the research design is to establish the basis for tests of statistical significance. Thus, the research design serves two purposes—first, to assist the researcher in answering the research question; and secondly, to control for variables that might affect the cause-effect relationship. Due to the method of the collection of data, it was determined that a comparative analysis study was the most appropriate design for completing the study.

Przeworski and Teune (1970) define comparative analysis as "where a societal characteristic is shown to have an effect on the variable or relationship of interest" (Pickvance, 2001). All analysis can be defined as being comparative, therefore comparative research is described as being broad (Pickvance, 2001). There are several varieties of comparative analysis, which are defined by whether or not they aim to explain differences or similarities and / or if they attempt to make assumptions about the underlying causal patterns that exist (Pickvance, 2001). Analysis is defined as an attempt to identify relationships (Pickvance, 2001). In this comparative analysis study, the researcher identified the relationship between two types of professional development offerings implemented at three different schools over a three- year

academic period to potentially identify the effects it had upon student achievement, therefore the method used will be variation-finding (Pickvance, 2001). Variation-finding comparison involves investigating two or more cases or schools that have undergone the same phenomenon. In this study, the phenomenon is professional development. Furthermore, this study sought to establish that a principle of variation in the character or intensity of a phenomenon by examining the systematic difference between instances (Pickvance, 2001). The variation in this study is how the professional development is delivered. One must note in comparative analyses there are "precipitating causes" as there are in this study. These causes will be mentioned later in the limitations section of this study. Regardless of the form of comparative analysis used, there are various contingent causes that may appear simultaneously, which makes it difficult to draw clear conclusions about the cause and effect of the analyses. In this comparative analysis study, data were gathered on the five NC core End-of Course tests for Algebra I, Biology, Civics, U.S. History, English 9 and student test data on the NC Grade 10 reading, English 10, and mathematics test, Algebra I. Student test data were gathered and compared for each respective school highlighting the different types of professional development offered over a three-year academic period. The researcher examined the causal relationships, which include similarities and differences, between the professional development offerings and the three-year trend in student achievement.

A second comparative analysis used data gathered from the state reports on Adequate Yearly Progress, AYP. School AYP data were compared for each respective school over a three year academic period to determine success towards target goals.

The professional development offerings used by each respective high school is the common causal relationship for this study.

A third comparative analysis used survey data gathered from each respective staff to compare teacher perceptions about the professional development offerings. The survey allowed the researcher to compare teacher perceptions on the effective characteristics of professional development depending on which model they participated in.

The professional development offerings used by each respective high school is the common cause in this comparative study; therefore it is important to note that comparative analyses do not require each object studied, the respective high schools, to use the identical approach, professional development participated in, as long as the professional development is commensurable (Pickvance, 2001). For the purposes of this study, the characteristics of the professional development implemented will be examined to determine if the professional development with reform or traditional characteristics had the greatest impact on student achievement.

Methodological Assumptions

The following assumptions were made:

1. Participants have the same level of expertise relating to professional development offered in the school.

2. Students of the participants in study are comparable—they have the same level of academic ability, socieo-economic status, and geographical location.

3. Professional development was implemented as prescribed by the provider.

16

Methodological Limitations

The following limitations were made to assist in the design and execution of the study.

1. Participants in this study were limited to one local educational agency in eastern North Carolina.

2. Participants in this study were limited to individuals who taught courses associated with the North Carolina accountability program.

3. The results are limited to the participants in this study.

Summary

As the economy and society has progressed, professional development has become the avenue for retooling teachers and for meeting the demands of high stakes testing and higher academic standards (Garet et al., 2001). Garet et al. (2001) define professional development as the continuing education of teachers, administrators, and school employees and has been characterized by teachers attending workshops, institutes, conferences, collaborating, networking, and activities occurring inside and outside of the classroom and school day. While there has been research on the effective qualities of professional development, there has been little research on the impact of professional development and its influence on student achievement (Garet et al., 2001; Guskey, 2000).

This study explored the impact of professional development on student academic achievement as reported by the five core North Carolina End-of-Course tests, the AYP student academic achievement results as reported in reading and mathematics, and the overall perceptions and attitudes of teachers regarding student academic achievement

based on two types of professional development, traditional and reform, over the three

year academic period of 2005-2006, 2006-2007, 2007-2008 in three high schools in one

district in eastern North Carolina.

CHAPTER 2: REVIEW OF THE LITERATURE

Much of the research on professional development focuses on the teacher and his or her effect on student achievement. Darling-Hammond and Ball (1997) concluded that teacher expertise is the most important factor in determining student achievement. Additional data shows that 42% of the variation in student achievement is based on teacher qualifications, which is double the next factor of parent's education (Killion, 2002). Even though teacher quality is referred to in the literature there is a lack of quantitative studies to support the claim of its influence. This research study explored the impact of teacher professional development on student achievement. The review of literature obtained information from various sources that is presented in 10 major sections: (a) Evolution of Professional Development, (b) Professional Development, (c) Models of Professional Development (d) Connection Between Professional Development and Student Achievement (e) Reform Models, (f) The QuEST Model, (g), Effective Schools Model, (h) "High Stakes" testing, (i) North Carolina Testing and Accountability, (j) No Child Left Behind.

Evolution of Professional Development

Professional development much like education has evolved over the years. Just as the 1950s saw classroom instruction mostly led by the teacher who was deemed the subject expert, professional development was delivered in the same manner. As instructional practices grew and progressed so did the evolution of professional development to more of a team, collaborative approach Joyce and Showers (1996).

The processes of professional development and implementation have come under close scrutiny only in last few decades. The 1950s saw national movements to

improve education that focused on academic quality and social equality. By the early

1970s, educators recognized that many of those efforts, even when well-funded and

approved by the public, seldom led to changes (Joyce & Showers 1996). The lack of

research on how people learn teaching strategies and how schools successfully

disseminate innovations contributed to the failures. Educators assumed by sending

teachers to workshops that would improve teaching. Professional development was

considered finished at the conclusion of the workshop and teachers were equipped to

implement new strategies upon their return to the classroom. The organization of the

schools did not support the intensive training efforts that occurred in summer institutes

or episodic workshops during the year. There were no guarantees the new strategies

would become part of the teacher's teaching strategy. These failures in professional

development were linked to motivation, effort, and attitudes of the teachers rather than

to the state of the organization or the design of professional development.

In the 1970s, evaluations of professional development focused on teaching

strategies and curriculum. Research suggested that as few as 10% of the participants

implemented what they had learned (Joyce & Showers, 1996). Rates of transfer were

low even for those who had volunteered for the training. Well-researched professional

development models and methods did not find their way into general practice and thus

could not influence students' learning environments (Joyce & Showers, 1996). In the

1980s educators began to believe that changes in the school organization and in

professional development design could solve implementation problems and that

teachers were not the sole issue (Joyce & Showers, 1996). The study of how teachers

learn new behaviors and put them into practice has continuously evolved over time.

In a series of studies beginning in 1980, researchers tested hypotheses related to the proposition that sustained (weekly) seminars would enable teachers to practice and implement the content they were learning (Joyce & Showers, 1996). The professional development components discussed in that early work grew from what researchers found in the literature: theory presentation, modeling or demonstration, practice, structured and open-ended feedback, and in-class assistance with transfer (Joyce & Showers, 1996). In 1980, Joyce and Showers believed that modeling, practice under simulated conditions, and practice in the classroom, combined with feedback was the most productive training design. Joyce and Showers hypothesized that teachers attempting to master new curriculum and teaching approaches would need continued technical assistance at the classroom level. For purposes of research, Joyce and Showers distinguished between the initial development of a skill that would permit a teacher to experiment with new teaching strategies, and the classroom practice of that skill until it had become a part of the teacher's repertoire (Joyce & Showers, 1996). At that time, professional development models for skill development were better developed than were designs for conditions that would lead to transfer. The seminars, or coaching sessions, focused on classroom implementation and the analysis of teaching, especially students' responses. The results were consistent: implementation rose dramatically, whether experts or participants conducted the sessions. Thus researchers recommended that teachers who were studying teaching and curriculum form small peer coaching groups that would share the learning process (Joyce & Showers, 1996). This research benefited student achievement by teachers improving their practices. The byproduct of this research was the evolution of peer coaching. Several characteristics

came from this early work such as the key elements of sustainable and continuous learning on the part of the educators. Results of Joyce and Showers studies showed that teachers who had a coaching relationship, who shared aspects of teaching, planned together, pooled their experiences, practiced new skills and strategies more frequently, and applied them, more appropriately than did their counterparts tended to expand their repertoires. Members of teacher coaching groups exhibited greater long-term retention of new strategies and more appropriate use of new teaching strategies over time. Professional development had moved from the 1950s and 1960s, where the probability of implementation was extremely low to a strategy that virtually guaranteed implementation.

Since the 1980s there was much growth in the area of professional development, and the era of accountability heightened its importance. In the 2000s, there were several elements that researchers suggested and educators looked for in deciding to implement any type of professional development. These elements include, but are not limited to (Joyce & Showers, 2002): if the professional development engages the participants in continuous professional development during the year in the study of a curriculum area or teaching strategy, if the professional development regularly studies and reviews implementation and student learning, if the professional development includes a community of professionals that come together to study and practice what they are learning and shares the results, and if the professional development addresses a weakness of the school. The content of the professional development is built around curricular and instructional strategies. The underlying purpose of using professional development as the change agent is to alter student achievements. The assumption is

that professional development will enable educators to progress and practice the skills they are learning, if so then the odds are that student achievement will increase.

Professional Development

Professional development has been referred to as the skills and knowledge attained for personal and professional advancement (Killion, 2002). The National Staff Development Council defined professional development as "high quality" or "effective" professional development that result in improvements in teachers' knowledge and instructional practice, as well as improved student learning outcomes (Wei et al., 2009). Guskey (2000) noted the purpose of professional development was about change that improves student outcomes by altering instructional strategies. While there are several definitions of professional development, the professional development definition used for this study was the continuing education of teachers, administrators, and school employees (Garet et al., 2001). Little research has been conducted on effects of professional development on student achievement, but rather on teacher learning and teacher change (Corcoran, 1995; Darling-Hammond & Ball, 1997; Garet et al., 2001; Hirsh, 2009b; Hord, 1994; Killion, 2002; Sparks & Loucks-Horsey, 1989). An analysis of 1,343 studies to address the effects of professional development on student achievement shed new light on complex relationships between professional development and student achievement. Only 9 of the 1,343 studies met the criteria standards for credible evidence from What Works Clearinghouse. These 9 studies were all elementary school studies: there were no middle or high school studies that met the criteria. These 9 studies focused on improving teacher content and pedagogy (Guskey & Yoon, 2009). The research from these 9 studies suggested that one- day workshops

could be useful if they focused on active learning. Also professional development

should be site based and build on building level experts (Guskey & Yoon, 2009). There

was no research to support effectiveness of train the trainer, peer coaching,

collaborative problem solving or other forms of school based professional learning. The

studies also showed that professional development over 30 hours affected student

achievement (Guskey & Yoon, 2009).

Additional research is needed using comparison groups and which types of

professional development and characteristics are more effective given the different

purposes in different contexts and for teachers at different points in their career

(Darling-Hammond & Richardson, 2009). There is a need for quantitative research to

establish measures to set goals, to determine growth, to draw comparisons, and to

celebrate results (Hirsh, 2009a). Effective professional development is not about

meeting the requirements of a list, but about planning and considering desired

outcomes and standards. Effective professional development should increase and

improve the teacher's knowledge of the subject and become a part of school

improvement plan (Hirsh, 2006).

Proving that professional development will translate into increasing student

achievement poses challenges, despite the logical connection (Yoon, Duncan, Lee, &

Shapley, 2008). The link between professional development, teacher learning, student

learning and student achievement needs more research. Teacher professional

development affects student achievement through 3 areas: teacher knowledge, teacher

skills, and teacher motivation. As teachers improve their knowledge and skills,

motivation to improve will enhance classroom teaching and improve student achievement (Yoon et al., 2008).

There are four elements to establishing the empirical link between professional development and student achievement (Yoon et al., 2008): (a) a rigorous research design that ensures the internal validity of causal inferences about the effectiveness of professional development. If the study design consists of strong internal validity (a randomized controlled trial, for example), this can rule out competing explanations for gains in student academic achievement. The research design should be able to measure the value that professional development adds to student learning separately from the value added by innovative curriculum, instruction, or materials. A rigorous research design will also have externally valid findings, adequate statistical power to detect true effects, and sufficient time between the professional development and the measurement of teacher and student outcomes, (b) the study design will be executed with high fidelity and sufficient implementation of professional development, (c) psychometric properties of measures will be adequate (measures of classroom teaching practices, of student achievement, and of teacher knowledge, beliefs, and behaviors. These measures should be valid, reliable, age-appropriate, and sensitive to and aligned with the professional development, (d) analytical models will be well-specified and statistical methods will be appropriate. Given these requirements, it is not surprising there are few studies on the effects of professional development on student achievement.

The 1996 report *What Matters Most: Teaching for America's Future* concluded what teachers know and do is the most important influence on what students learn. The

most direct way to improve the quality of education is therefore to improve the knowledge base of teachers, and to provide professional development opportunities, which help teachers learn to facilitate student learning (Rollins, n.d.). This includes professional development activities, which are of high quality, sustained over time, intensive, and classroom focused in order to have a lasting impact on classroom instruction (Hirsh, 2006). Teachers unlike other professionals improve their instructional methods or content knowledge in isolation (Rollins, n.d.). Research suggested that when teachers attend one-day workshops, they will incorporate less than 10% of what they learn Hirsh (2009b). Hirsh also states that professional development, which consists of teams of teachers engaging in a cycle of continuous improvement, leads to better instruction and higher levels of student performance. Teachers that use strategies which include examining data on student's performance, studying content and instructional strategies aligned to student standards, designing joint lessons, and creating formative assessments that enable them to measure the impact of the lessons will increase student achievement Hirsh**.** Research showed that teachers in Europe and Asia spend 15-25 hours per week in joint planning and collaboration, this is approximately 5 times the amount U.S. teachers spend (Darling-Hammond & Richardson, 2009). Higher expectations for student performance and increased accountability standards have shifted professional development from what teachers want to what students need (Hirsh, 2009b). In order to reach new accountability standards and to account for the new age of technology in society, teachers will need to work continuously and collaboratively. To do so professional development based on an analysis of student data and focused on a set of activities designed to coach and

provide feedback, will ensure classroom implementation of new age curriculum.

External experts instead of leading will facilitate professional development. The focus of

professional development moves from teacher training to continuous teacher learning

(Hirsh, 2009b).

Edward L. Davis in his book *Bringing America's Schools Back from the Brink*,

concluded that

"Education isn't broken, it's absolutely obsolete and needs to be redesigned,

schools don't need more money, more teachers, or more standardized tests, the

student is at the top of the classroom apex, computer and internet learning is key

and everyone else has a supporting role" (Pogrow, 2006).

Traditionally, there has been an assembly line approach to teaching where the

primary role of the teacher is a presenter of information. This concept is representative

of teachers trained using the comprehensive model of teaching. Edward L. Davis in his

book *Bringing America's Schools Back from the Brink*, suggests a new, radical concept

where the teacher is not a subject matter expert and which students work on projects of

their own selection with teachers as facilitators, where independent learning will be

encouraged and students take a lot of online courses (Pogrow, 2006). Davis goes on to

say, colleges keep on turning out teachers who do not know how to avoid boring their

students. Teachers are at the center of the professional development issue and

burdened with carrying out the demands of higher standards. Yet while teachers agree

with higher standards, they are not prepared to carry them out. Many teachers learned

to teach using the comprehensive educational instructional model of teaching, which

focuses on memorization and is without a deep understanding of the subject area

27

(Garet et al., 2001). In recent decades, school reform efforts have recognized teacher professional development as a key component of change and as an important link between the standards movement and student achievement. As students are expected to learn more complex and analytical skills in preparation for further education and work in the 21st century, teachers also learn to teach in ways that develop higher order thinking and performance. These new standards require a new kind of teaching, conducted by teachers who understand learning as well as teaching, who can address students' needs as well as the demands of their disciplines, and who can create bridges between students' experiences and curriculum goals (Nealy, 2009). Research recommended restructuring the educational policies of American schools in a way that allows for more planning, more time for observing other teachers and professional development time (Nealy, 2009). The capacity of teachers to meet higher standards, to teach more ambitious curriculum, and meet the needs of more diverse student population is embedded in continued improvement. Additional research is needed using comparison groups, on distinct professional models, and for teachers at different points in their careers (Darling-Hammond & Richardson, 2009).

Research on teacher learning indicates that professional development, which is ongoing, is related to the depth of teacher change (Garet et al., 2001). Professional development that includes collaboration of teachers has the goal of improving student achievement. When professional development is embedded in student learning and in the curriculum, it commonly appears in the literature for effective professional development and can positively influence teacher change and student achievement (Garet et al., 2001). The literature on teacher professional development suggests 3 core

features: (a) content focus, defined as the degree to which the activity is focused on improving content knowledge, (b) active learning defined by how many opportunities are available for active learning, which includes teacher discussion, common planning, observing other teachers and being observed (Garet et al., 2001). Active learning that focuses on specific instructional practices increased the teacher's use of those practices (Desimone et al., 2002), (c) Coherence, which is the alignment to state standards, curriculum, and district goals. The degree to which the professional development builds on teacher prior knowledge, the alignment to standards, and communication with fellow teachers is vital (Garet et al., 2001). The literature suggested these core features on teacher professional development had a greater impact of student achievement.

There are many types of professional development and the term itself, professional development, is used synonymously with in-service education, teacher training, staff development, and human resource development. Professional development can be received by one attending classes, workshops, conferences, book studies, or professional learning communities (Rollins, n.d.). Regardless of the term one uses the purpose of professional development is the same to increase the capacity of the teacher to better educate, connect, instruct students and to increase student achievement. Sparks and Loucks-Horsey (1989) identified 6 models of professional development: (a) individually guided, (b) observation / assessment, (c) involvement in curriculum development, (d) training, (e) inquiry, and (f) back mapping (Rollins, n.d.). The individually guided model relies on the individual to assess their strengths and weaknesses and to self-prescribe staff development. The observation model relies on an outside observer to evaluate a lesson and suggest professional development. The

curriculum development or school improvement model relies on the professional development to be aligned with the school improvement plan and to stay within the boundaries of the school's policies and procedures. The training model distinguishes itself as a one-time session with no follow up. The inquiry model begins with data being collected and an action plan being developed with follow up observations and evaluations of the action plan. The back mapping model begins with the end in mind and utilizes five steps in the professional development process, which include determining student achievement needs, determining educator needs, studying possible interventions, planning a program and implementation process, and providing ongoing support and monitoring progress (Rollins, n.d.). While the researcher could not find any specific studies to support the effectiveness of a model on student achievement, the different models do align with the research on the various methods teacher professional development can be offered.

There is no one-way or specific method to deliver professional development to improve instructional strategies. The researcher, in determining characteristics of professional development, used the research to divide out characteristics of effective professional development. From this review of the research, the professional development implemented in this comparative analysis study was categorized as either reform or traditional type by their characteristics.

Models of Professional Development

The reform type of professional development is a focused set of activities designed to coach and provide feedback that ensure classroom implementation of an innovation. Characteristics of the reform model include being sustainable, ongoing, and

embedded in classroom practice. Examples include study groups or networking, which occur during the school day in the teacher's classroom or during their planning time. Research suggested this type of professional development was more effective because it made connections with classroom teaching and usually occurred over a longer period of time (Garet et al., 2001). With these offerings occurring over a longer period of time, teachers were more likely to discuss concepts, issues, share materials, and discuss common student needs (Garet et al., 2001; Wei et al., 2009).

Traditional forms of professional development are characterized as episodic, often fragmented, and disconnected from real problems of teaching (Darling-Hammond et al., 2009). The traditional types of profession development, which include workshops, conferences, and institutes, occur outside the teacher's classroom, includes a leader with expertise and participants who attend sessions at schedule times often after or outside of school hours (Garet et al., 2001). Traditional forms of professional development are quite popular and are widely noted as ineffective because they only provide teachers with time, activities, and little content to effectively increase teacher's knowledge (Garet et al., 2001). Also national data indicate that most district supported professional development do not have the characteristics of highly effective professional development (Desimone et al., 2002). Recent studies suggested that student achievement can be increased if professional development focuses on increasing content knowledge and how students learn (Garet et al., 2001). Research suggested that reform types of professional development tend to produce better student outcomes because they tend to be longer in duration. If the traditional and reform offerings are the same length, there is no statistical difference in student achievement of either model

31

(Garet et al., 2001). A study of mathematics teaching in California based on teacher's

professional development experience and school data on student achievement, found

that scores were higher when professional development focused on content and how

students learned compared to control groups where professional development just

focused on content. Professional development is a vehicle to potentially transform

teachers from the traditional instructional delivery method, stand and deliver i.e.; lecture,

to practices needed to increase student achievement. From the limited pool of rigorous

quantitative studies, for example, one study described a meta-analysis of 1,300

research studies and evaluation reports, from which researchers identified just nine

experimental or quasi-experimental studies using control groups with pre- and post-test

designs that could evaluate impacts of professional development on student

achievement (Darling-Hammond et al., 2009). One current study suggested that student

achievement could be increased if professional development focused on increasing

teacher content knowledge and how students learn (Garet et al., 2001). For example a

study of mathematics teaching in California based on teacher's professional

development experience and school student achievement data found that student test

scores were higher when teacher professional development focused on subject content

and how students learned compared to control groups of students where professional

development just focused on subject content (Garet et al., 2001). An analysis of other

studies found that when professional development offered substantial contact hours

(ranging from 30 to 100 hours in total) spread over six to 12 months showed a positive

and significant effect on student achievement gains (Darling-Hammond et al., 2009).

According to the research, intensive professional development efforts that offered an

average of 49 hours in a year also increased student academic achievement by approximately 21 percentile points. The study also showed that professional development that involved a limited amount of time (ranging from 5 to 14 hours in total) showed no statistically significant effect on student achievement (Darling-Hammond et al., 2009).

In a study of classroom libraries and elementary-level literacy development, McGill-Franzen, Allington, Yokio, and Brooks (1999) found that reading comprehension among students whose teachers had received 30 hours of professional development in reading instruction and library use in addition to being donated-250 book classroom libraries, achieved at much higher levels than students whose teachers who simply received the classroom libraries. Taken together, these studies illustrate the importance of sustained, content-focused professional development for changing instructional practices in ways that ultimately improve student learning (Wei et al., 2009).

Connection Between Professional Development and Student Achievement

According to Bruce Joyner, director of the Booksend Institute,

"There is not a question that staff development can raise student achievement when it addresses the academic content that teachers teach, their teaching repertoire, and the amount of practice they provide students in particular areas" (Killion, 2002).

There is a connection between quality professional development and increased student achievement (Rollins, n.d.). While the connection between professional development and student achievement appears to be common sense, it is statistically challenging to prove because of the complex social and emotional environment of

schools. The research in this area tends to be more qualitative than quantitative

because of the factors in a school that cannot be accounted for (Killion, 2002).

Researchers seek to find the differences in changes in teacher behavior and attitudes

(Killion, 2002). Guskey and Sparks' model of the relationship between professional

development and student improvement acknowledge the complexity of linking

professional development to student achievement. Guskey and Sparks identify three

categories, which directly influence this relationship: (a) content characteristics, (b)

process variables, and (c) context characteristics (Guskey, 2000). Content

characteristics refer to new knowledge or skills that are to be learned from the

professional development. The process variables indicate how the professional

development will be offered. This refers to the type of activities, how they are planned,

executed, organized and sustained. The context characteristics refer to "who", "when",

"where", and "why" of the professional development. The context includes the climate

and culture of the organization and involved participants and pressures placed on them

to participate. Other factors that strengthen the influence of professional development to

student achievement involve the quality of the professional development participated in.

The new skills or knowledge must positively influence the teachers to have a positive

influence on students. Teacher knowledge and practices are also significant. The

professional development must alter or change the professional knowledge of the

teacher and / or their classroom practices. Administrator knowledge and practices also

influence student-learning (Guskey, 2000). The administrator's leadership, support,

coaching, and evaluation of teachers aid in the sustainability of the professional

development effort. Also parent knowledge, their support of teachers, and their support

of students strengthen the professional development focus of the school. The student must also be included in this linkage. Student's attitudes, work ethic, study habits, attendance, and behavior need to be considered in the linkage from professional development to student achievement (Guskey, 2000).

The 1997 report *Doing What Matters Most* found that states, which invested in quality professional development during the 1990s, were rewarded with increased student achievement (Rollins, n.d.). States such as Minnesota, North Dakota, and Iowa, which have had a long history of professional teacher policies, have consistency led the nation in student achievement (Rollins, n.d.). Andy Hargreaves, author of *Teaching in the Knowledge Society* says, "Teachers must pursue deep and continuous professional learning, work in network teams and this kind of professional development requires time to understand, learn about, and reflect on what the change involves and requires". Hargreaves goes on to state, "Even for the best teachers, changing successfully is hard intellectual work" (Houston, Blankstein, & Cole, 2007). Professional development should be designed to sustain adult learning. Hirsh suggested that professional development without follow up is malpractice. Also professional development should be aligned to the school improvement plan and carried out within the structure of the school's policies and procedures or staff may not see a connection (Rollins, n.d.). Hirsh (2009a) suggested that professional development forgo motivational speakers, or one size fits all professional development consultants. Also the elimination of one shot workshops, professional development catalogs, payment for unrelated graduate courses, one size fits all conferences and "cafeteria" staff development days. Professional development

should be aligned to those offerings that research and / or experience indicate will increase student learning (Hirsh, 2009b).

The major goal of professional development is to increase student achievement (Graves, 2008). Caroline Hoxby, professor of economics at Stanford, states "one thing we have learned definitively in recent years is that teachers differ in their ability to raise student's achievement" (Dubner, 2008). Teacher effectiveness is the most important factor in increasing student achievement. Effective teachers will increase student achievement for students (Dubner, 2008).

Former Governor Mike Easley of North Carolina appointed an Education First task force to look at professional development models as a means of increasing student achievement. The task force's goal was to develop recommendations to improve teacher quality (NGA, 2009). The task force findings found to increase student achievement for all students meant that professional development should include educators having high expectations for all students, should be culturally relevant, should provide sound teaching strategies, should increase teacher quality, and should provide enrichment programs (ERS, 2009).

Reform Models

The literature of professional development states that for every model there are success stories and stories of failure (Schwartzbeck, 2002). In some schools, the professional development models positively impact student achievement; however, in other schools, professional development initiatives do not result in student achievement gains.

The reform professional development model began in the last decade with comprehensive school reform (Doherty, 2000). The reform professional development models were research based and implementation looked different in each school because of processes used and the amount of time it took for staff buy in and full implementation. Traditional professional development such as workshops, conferences, institutes are more skill and content oriented and differ in that they focus on particular skills, higher order thinking skills or subject areas (Doherty, 2000). The reform type of professional development includes study groups, networking, mentoring, and coaching which differ from traditional forms in that they occur during the school day in the teacher's classroom or during their planning time (Garet et al., 2001).

Student achievement is more likely to improve when professional development addresses not only the learning of individual teachers, but also three dimensions of the school's organizational capacity: teacher knowledge, teachers' professional community, and program coherence (Wisconsin Center for Education Research [WCER], n.d.). Professional development often presents information that teachers see as irrelevant to student learning in their specific school settings. Professional development should work hand in hand with teacher evaluation and assessment (WCER, n.d.). One example of a reform model is the QuESt Model.

The QuESt Model

The QuESt model is a reform professional development model that was developed by Dr. Diane Rivers while she worked as an educational consultant for the IBM Corporation. QuESt stands for Quality Educational Systems – Tools for Transformation (QES, 2005). The model asked all stakeholders to create and

37

participate in a high quality-learning environment. The focus on improvement is at the process level. The program is a combination of quality principles, educational research, and best practices (QES, 2005). The goal of the program is to improve the achievement level of all students at each grade level in all subjects. The program focused on daily processes and procedures including instructional practices, therefore the administrator's role is to improve the processes of the school on a daily basis.

The program is a three phase, comprehensive, reform professional development model designed to aid schools in self-assessment, planning, and development (QES, 2005). Phase 1 includes a comprehensive Quality Educational audit to analyze current performance, to set baselines, and to begin using quality processes. This self-assessment is performed by teachers to analyze test scores against processes and standards to establish a baseline for strategic improvement.

Planning and design highlight phase 2. The entire staff participates to identify and outline the school's mission and vision for the future. Strategic planning centers on helping schools create a clear mission and vision and to align sound practices with research based findings. The focus is on processes that will impact performance, to align processes, to integrate quality principles, and to develop a detailed plan of action.

Phase 3 includes Quality Development and Deployment. Professional development is offered and administered through retreats, conferences, seminars, and workshops based on specific modules. The modules include Linking Philosophy and Mission with Practice, Redesigning the Organizational Structure, Curriculum Mapping and Alignment, Creating the Instructional and Assessment Linkages, Instructional Mapping, Leadership in the Classroom, Total Quality Leadership, Comprehensive

Assessment Strategies: A Standards Based Approach to Assessing Student

Performance, Creating Interdisciplinary Teams, Community Collaborations, Building

Effective Partnership with Parents and the Community, Continuous Improvement of

Processes, Data Driven Improvement, Using Data to Guide Decision Making, The

Integration of Technology, and Tools for Transformation (QES, 2005).

The QuESt model is guided by 7 quality principles: Mission Driven Schools which

is defined as having a shared vision among all stakeholders and having a

comprehensive plan to carry out that vision and mission. The second principle is Total

Quality Leadership. This principle states that clear values, high expectations, a focus on

the customer and a commitment to continuous improvement is necessary. Also, a

customer focus is a priority focusing on feedback and improving processes to address

customer feedback. The principle of Continuous Improvement of Processes is based on

the Plan-Do-Study-Act process. The principle of Data-Driven Decision Making declares

that schools will use data to make decisions and to improve processes. The Continuous

Learning Environment principle is the commitment that the school environment will work

to make the necessary changes to improve processes. Lastly, the principle of Team

Leadership / Membership forces staffs to work in Quality Improvement Teams to plan

and implement improvement efforts (QES, 2005).

The QuESt program begins with an audit of Quality Education. Again in phase I,

administrators and staff provide feedback on the 10 key process areas of philosophy.

The QuESt program uses the following factors to evaluate the objectivity and validity of

the audit: clarity of purpose, confidence in the process, collaborative problem solving

culture, cooperative decision making, courage to identify needs as well as strengths,

caring atmosphere, concern for faculty, staff, and student's developmental needs, the capacity to change, climate level of trust and cooperation among team members, and a commitment to comprehensive planning (QES, 2005).The purpose of this audit is to gather data from all stakeholders to identify strengths, weaknesses, needs, and obstacles to improvement (QES, 2005).

One major study conducted on the QuESt model reported significant improvement in student achievement over an 18 month period in 1994. An Alabama inner city middle school posted a 21% increase in reading scores for 6th graders, a 31% increase for 7th grade reading scores and 26% increase for 8th grade reading scores on the Stanford Achievement test using the QuESt model (QES, 2005). Comparable results occurred in a small, rural middle school in Tennessee in 1995. Students saw achievement gains of 6% in 6th grade reading, 7% in 7th grade Language Arts, 13% in 8th grade Social Studies and 26% in 8th grade Science. Southern Illinois University conducted a validation study of QuESt in 2004. A meta analysis conducted across 68 model sites indicated a 43% boost in achievement with an average effect size of .27 over a three year period (QES, 2005).

The Effective Schools Model

This professional development model is a whole school reform model that employs the characteristics of the traditional professional development model based on the premise that all children, regardless of race, socioeconomic status or gender can and will learn (More Effective Schools [MES], 2004). The model is based on seven guiding principles: clear and focused mission, instructional leadership, high

expectations, student time on task, frequent monitoring of student progress, providing a safe and orderly environment, and positive home school relations (MES, 2004).

The purpose of this model is to prepare school administrators to lead their schools and stakeholders to develop processes that prepare all students to have a 21st century education. Through implementing the Effective Schools professional development principles, students will be able to master the goals and objectives of the curriculum (McDonald, 2005).

The principle of a clear and focused mission is centered on all staff members, students, and parents knowing where they are going and why. This shared mission and vision is developed from common beliefs and values. The Effective Schools model calls for every staff member to be assigned to a correlate team, which represents one of the 7 correlate areas. These respective correlate teams set goals pertaining to their correlate, define processes to attain goals, monitor progress and report to the Effective Schools team which in most cases replaces the School's leadership team. The Effective Schools team consists of the principal and chairs from the correlate teams (MES, 2004). The Effective Schools team leads and approves all actions made by the correlate teams and keeps those respective teams aligned to the school's vision and mission. The team's purpose is to define, communicate and celebrate the mission of the school and help align all activities. This professional development model helps to communicate and develop processes to bring all stakeholders together to define this vision and mission.

The instructional leadership correlate is built upon using clear, agreed upon curriculum goals to establish teacher strategies, common assessments, and student learning (MES, 2004). This correlate also calls for schools to establish a collaborative

environment in which to define these processes. The principal sets the agenda for the instructional movement of the school as well as this correlate.

The high expectations correlate demands that schools recognize that some students have barriers to learning, but offer support to ensure the barriers are not insurmountable. Schools recognize this and offer all students a rigorous course of study.

Focusing on student time on task is another correlate the Effective Schools model is centered upon. Effective Schools defines time on task as the amount of time a student is actually engaged in learning (MES, 2004). Through the instructional leadership correlate, administrator's focus on the number of minutes students are engaged in a teacher directed lesson. Other focus areas are class transitions including from class activity to activity and the amount of time used transitioning from class to class. Student time on task includes the areas of lesson design which include: anticipatory set, purpose, input, modeling, guided practice, checking for understanding, independent practice, and closure (MES, 2004).

The principle of frequent monitoring is also a correlate. The practice of monitoring student performance is a huge part of teacher instruction. Effective Schools literature defines monitoring as any activity pursued by the teacher to keep track of student learning for purposes of making instructional decisions and providing feedback to students on their progress (MES, 2004). Monitoring can take many forms: questioning, circulating, homework, reviews, tests, and reviewing data to alter instruction. The concept of monitoring not only relates to student learning, but teachers as well. Again, under the correlate of instructional leadership, administrators are to monitor the delivery

of classroom instruction. This includes, but is not limited to, lesson plans, tests, common assessments, observations, record keeping, etc. This correlate team identifies the strengths and weaknesses of the delivery system.

Another correlate area is providing a safe and orderly environment (MES, 2004). This correlate deals with establishing a positive school climate, which relates to the vision and mission of the school. This correlate includes values, diversity, and communication. Not only is a strong discipline system important, but the team ensuring that all stakeholders are safe physically and psychologically play a part in this correlate. The Effective Schools model forces staff to develop a consistent discipline plan, which is communicated to all stakeholders. Also built into the safe and orderly schools principle is a reward system.

The final correlate is establishing positive home-school relations (MES, 2004). The premise is that parents, businesses, social agencies, and the community in general are needed to educate students. Teachers and school staff alone cannot educate students. This means using businesses to expand the curriculum, using parents and volunteers to expand activities, and to increase financial support.

There are several outstanding similarities and differences between the QuESt and the Effective Schools Models. The QuESt model asks all stakeholders to create and participate in a high quality-learning environment where the focus is improvement (QES, 2005). The Effective Schools model is based on the premise that all children, regardless of race, socioeconomic status or gender can and will learn (MES, 2004). The QuESt program focuses on quality principles, educational research, and best practices with the goal to improve the achievement level of all students at each grade in all subjects (QES,

2005). The Effective Schools program focuses on 7 guiding principles or correlates:

clear and focused mission, instructional leadership, high expectations, student time on

task, frequent monitoring of student progress, providing a safe and orderly environment,

and positive home school relations (MES, 2004). The focus of the QuESt program is on

improvement carried out by improving daily processes and procedures including

instructional practices (QES, 2005). The program is completed in 3 phases to help the

school grow in self -assessment, planning, and development. The bulk of the

professional development is administered in modules to the staff (QES, 2005). The

purpose of the Effective Schools program is to prepare school administrators to lead

their schools and stakeholders to develop processes that prepare all students to have a

21st century education. The administrators and correlate teams are to devise a plan of

action and are responsible for the subsequent professional development (MES, 2004).

In a study by (Birdsell, 2004) Reading and Math scores were studied in 6 school

districts and 31 schools in Kentucky from 1992 to 1994. The study compared the

performance of students in 22 elementary, 4 middle and 5 high schools using the

Effective Schools Model. The total gain score on state math assessments during this

period were higher in all 31 schools using the model. In reading, 25 of the 31 schools

had higher scores (MES, 2004).

High Stakes Testing

"Standardized tests first rose to prominence in the 1920s, the era in which the

"factory model" (Retrieved from http://www.fairtest.org/states.intro.htm) of education

established clear dominance. Standardized tests reinforced the mode of schooling in

which only a few children received a high-quality education, and the tests were used to

define student hierarchically within that model. In the "factory model" of education, various trade schools were established to teach skills to young people in order for them to be productive citizens of society. A few of the trade schools established were technical institutes and schools for training in industry. The schools provided training in such trades as bricklaying, carpentry, printing, and agriculture (Roberts, 1971, p. 85). The promise of school reform in the 1990s was to break with that inadequate, often harmful model of schooling to support high standards for all children (Retrieved from http://www.fairtest.org/states.intro.htm). Thus, over the years as societal needs progressed along with the need for a competent work force, it has become increasingly imperative that all children receive an education. With the 1983 release of *A Nation at Risk*, Elmore (1997) stated that the publication focused on a crisis of mediocre instruction, low expectations, and menacing foreign competition. Evidently, the American public education system seemingly was not producing students who were knowledgeable, competent citizens with the ability to meet the demands of the work force.

Furthermore, the publication of *A Nation at Risk* (1983) captured the American public's attention and interest in the educational system in the United States. The concern of the American public was the lack of quality instruction being delivered to students in the public schools accompanied with the perceived need of holding public school employees accountable for student academic performance. With this, there came a demand by the citizens to hold educators accountable for the academic achievement of students. The question then became, how was the task to be accomplished?

In the mid 1980s, while states were preparing to take on the issue of public school accountability and increased student academic performance, the National Governors Association, under the leadership of Arkansas Governor Bill Clinton, began promoting the idea of greater flexibility for schools in return for more tangible evidence of results on student achievement. Elmore (1997) stated this event spurred local reform efforts aimed at deregulation and tighter state monitoring of student achievement. The deregulation and tighter state monitoring of student achievement served as an avenue for allowing local school districts more control over the decision making process of the best procedure to be used to educate the students they served as well as the development of a system or process for monitoring what students learned. Thus, many states began to explore the idea of statewide testing programs to evaluate and monitor the academic achievement of students.

Doherty (2000) stated that the emphasis on accountability and how it relates to student academic achievement has manifested from the perception that states traditionally monitored the number of computers in the school, the number of students attending college from that school, or the number of books in the library to academic performance of the students. Prior to that time, little attention was paid to student academic performance. Doherty (2000) also stated that accountability is the idea of holding educators, schools, and students responsible for results in academic achievement. This level of accountability placed on those in the educational arena may serve as an avenue to increase student academic achievement. In addition, state policymakers have initiated policies that reward schools whose students show academic achievement and sanction those schools whose students do not demonstrate academic

achievement. Thus, the trend has evolved to ensure that all children are receiving a quality education.

This onslaught of the accountability movement has brought about the era of "high stakes" testing. Winters and Forster (2003) stated that "high stakes" testing and the use of standardized tests to sanction or reward schools for their academic student performance is among one of the contentious policy issues in education. The purpose of "high stakes" testing seemingly serves as an effort to hold students and educators accountable for student academic achievement. The "high stakes" testing initiative has taken on many forms throughout the school districts in the United States over the past several years. States and local school districts use standardized tests to measure the level of competence among students in a certain grade levels and subject matter content. This level of competence tested among students may then be used to determine student promotion and/or graduation from high school. Consequently, the student performance on "high stakes" test may also be used to measure the quality of instruction being delivered to the students in the respective schools and school districts to determine if the teachers are performing to the expectations of the state and local school districts in delivering sound educational instruction. Thus, "high stakes" testing places accountability for student achievement on educators by asking them to prepare students to master appropriate competencies demonstrated by test performance.

The American Educational Research Association (2001), in its position statement concerning "high stakes" testing, stated that certain uses of student achievement test data are termed "high stakes" if the results carry consequences for educators and students. The rewards may be praise or financial incentives for teachers whose

students' performance exceeds the minimal standard on "high stakes" test as well as sanctions for those teachers whose students' performance does not meet the minimum standard on the tests. As of the 2002-2003 school year, Education Week's *Quality Counts 2003* reported that all 50 states and the District of Columbia tested students to determine their knowledge in some subjects. Forty-seven states published report card information on the academic status of students relating to test scores in their schools and school systems. Furthermore, 22 states had the legal authority to replace staffs, close the schools, or place other sanctions on schools that had been identified as failing based on the accountability model used. The push for accountability associated with "high stakes" testing has focused almost exclusively on raising student test scores on state-mandated tests. Additionally, tests may be used to determine graduation and student promotion to the next grade. According to *Quality Counts 2003*, for the 2002-2003 school year, 19 states required students to satisfactorily complete a test to graduate from high school while five states used test scores to determine student promotion. Therefore, the results of high stakes tests have a variety of uses in today's education accountability processes.

States differ in their use of testing and accountability relating to students academic performance and holding the educational community responsible for student learning. However, all states are using some measure of a standardized test to determine the academic achievement (Retrieved from http://www.edweek.org/context/topics/issiespage/cfm?id=49) of their students. The results are used to attempt to raise the academic standards of the public educational system with the hope of producing a better-educated citizen as well as satisfy the public

48

outcry for better schools. Furthermore, "high stakes" testing has raised a concern from the public concerning the quality of teachers who instruct students in America's classrooms. This public concern continues to raise the awareness that American teachers must be better trained and equipped with the skills to deliver quality instruction to meet the demands of not only the "high stakes" testing issues, but the demands of our youth to compete in a global economy.

North Carolina Testing and Accountability

North Carolina continues to receive praise and criticism for its "high stakes" testing program (Brecheimer, 2002). The testing program in North Carolina was designed in an attempt to measure the progress of individual students as well as making critical decisions about their academic progress. In North Carolina, the accountability and testing program places a strong emphasis on testing, student academic performance, and teacher performance. Students are tested annually in grades 3-8 in Reading and Math and on various content areas in grades 9-12. School districts in North Carolina used the results of the testing program to determine proficiency or mastery in a specific content area. In order for the student to be successful at the next grade level or subject level, as well as be promoted to the next grade level, they must meet the minimum proficiency level. Therefore, the emphasis on increased student academic achievement is being monitored and evaluated through the process of "high stakes" testing.

In an effort to reorganize public education in North Carolina, The ABC's of Public Education, Accountability, Basics, and Control, (ABC's) was initiated in response to the mandates in legislation passed by the North Carolina General Assembly which was the

North Carolina Elementary and Secondary Reform Act of 1984 (North Carolina Department of Public Instruction [NCDPI], 2006). This act called for the implementation of the Basic Education Program through the establishment of a core curriculum for all students for each content area. In addition, it required the development of tests in each curriculum across the state. The ABC's was based on the belief that all children can learn and the mission of the public school community was to challenge each child to achieve and learn in order to produce an educated citizenry. Emphasizing strong, basic academics, the ABC's focused on a statewide testing program that targeted academic skills in reading, mathematics, writing and content specific areas in grades 9-12. Thus, the North Carolina Accountability model was designed to provide student achievement data to educators, parents, and the general public on the academic progress of students in North Carolina. The ABC's was initially implemented in grades K-8 in the 1996-1997 school year, and the high school accountability program was implemented during the 1997-1998 school year.

The following information provides a brief preview of the North Carolina High School Accountability model. In grades 9-12, students are tested annually at the end of each academic school year in the following five content areas: (a) Algebra I, (b) English 9, (c) Biology, (d) Civics, (e) U.S. History. Student scores are reported in terms of proficiency levels on each test in those identified courses that the students were enrolled during that academic school year (Public School of North, 1999). In many instances across the state of North Carolina, school districts have implemented local promotion policies that require students to score a minimum level of proficiency on the state mandated tests to receive credit for the course. For example, if a student has an

"80" grade average in Algebra I for the year, but does not obtain the minimum

proficiency level deemed by the state; the student does not receive the unit of credit

toward graduation requirements for the course. The student has the option of attending

summer school for additional instruction in that content area or retakes the course the

next school year. However, an exception to these types of policies exists relating to

exceptional children and for students who can show mastery of content through

examples of students work. Therefore, "high stakes" testing is utilized to determine units

of credits earned toward graduation from high school; however, measures are in place

to ensure that academic performance is examined accurately and fairly for all students.

No Child Left Behind

In 2002-03 the ABC's were expanded to include the federal legislation No Child

Left Behind, NCLB. This federal legislation set proficiency goals in reading and math of

one hundred percent for all schools by 2013-14. For high schools, reading is defined as

the Grade 10 English end of course test and for math it is defined as the Algebra I end

of course test (NCDPI, 2008). The State Board of Education adopted adequate yearly

progress, AYP, as the "closing the achievement gap component" of the ABC's. AYP is

"all or nothing" and calls for schools to be evaluated in regards to the following

subgroups; School as a Whole, American Indian, Asian, Black, Hispanic, Multi-Racial,

White, Economically Disadvantaged, Limited English Proficient, and Students with

Disabilities (NCDPI, 2008). The Department of Public Instruction changed the ABC's 91-

day membership rule to a 140-day membership to align with NCLB and lowered its 98%

testing participation rate to 95% to align with NCLB. Also the State Board of Education

added high school assistance teams, Turnaround teams, for low performing high school

as a result of NCLB. Turnaround teams provide professional development for teachers and principals; provide structure and support, monitor student needs, the use of technology, teaching methods, and the allocation of personnel and finances (NCDPI, 2006). The No Child Left Behind Act mandates that highly qualified teachers are placed in classrooms, thus school districts must place more emphasis on professional development. The act itself requires school districts to allocate thousands of dollars to ensure and improve teacher quality (NCDPI, n.d.). The worst schools perform, the more they must allocate to professional development. For full disclosure on Adequate Yearly Progress, No Child Left Behind in North Carolina, and yearly target goals refer to the link: http://www.ncpublicschools.org/nclb/abcayp

Summary

Professional development is the continuing education of teachers, administrators, and school employees (Garet et al., 2001). While there has been little research conducted on the impact of professional development on student academic achievement, professional development is widely considered the vehicle to improve instructional methods of teachers; thus improving student academic performance. The literature on effective professional development states that professional development must be content focused, include active learning by the participants, and be aligned to the standard course of study and standards (Garet et al., 2001). Professional development can be accomplished in many delivery methods: workshops, institutes, networking, conferences, classes, book studies, learning communities; however, the two predominant methods of professional development are the reform and traditional models (Garet et al., 2001). The reform method focuses on changing teacher

52

instructional methods by making connections with teachers during the school day while the traditional model focuses on conferences, workshops, etc that occur outside the school day and classroom.

Education has for many years made the connection that better teachers produce better test scores thus the educational system has tried new management schemes, new curriculums, centralized and decentralized initiatives, implemented new regulations, discarded old regulations, added new programs and implemented testing programs (Killion, 2002). The emphasis on providing quality professional development has increased as the emphasis on "high stakes" testing has evolved and increased. The emphasis on "high stakes" testing and student achievement has made the delivery of professional development a more vital part of the educational process. As instructional processes have evolved, as technology has evolved, as diversity in the classroom has increased, school districts not only try to meet the demands of state standards, but federal student achievement standards as well.

CHAPTER 3: METHODOLOGY

As indicated in Chapter 1, the purpose of this study was to examine the impact of traditional and reform models of teacher professional development on student academic achievement of students in grades 9-12 based on student achievement on the five core North Carolina End-of Course tests, AYP student achievement in reading and mathematics, and perceptions of teachers over the three year period of 2005-2008. This chapter describes the statement of the problem, research questions, research design, the study, participants, quantitative component, qualitative component, student achievement measurement, NC testing program, proficiency levels, scoring NC end of course tests, growth, and AYP evaluation.

Statement of the Problem

Are students in grades 9-12 obtaining higher achievement scores on standardized tests and do teachers perceive students as benefiting by increased academic performance because of particular professional development offerings, which teachers are engaged in consistently over a period of time? Therefore, the problem of this study was to ascertain if professional development offerings with the characteristics of the reform or traditional type impacted student academic achievement greater?

Research Questions

Three research questions were considered for this study. They were:

Research Question #1: Is there a difference in student proficiency for the Academic years of 2005-2006, 2006-2007, 2007-2008, based on the five End of Course core courses, Algebra I, Civics, Biology, English 9, and U.S. History, for the three

schools whose teachers participated in traditional and reform types of professional development?

Research Question #2: Is there a difference in student proficiency for the academic years of 2005-2006, 2006-2007, 2007-2008, for the AYP Target Goals by subgroup based on Grade 10 Reading / English and Grade 10 Math / Algebra I for the three schools whose teachers participated in traditional and reform types of professional development?

Research Question #3: Is there a difference in the teacher perceptions of the impact of traditional and reform types of professional development offerings on student achievement?

Research Design

Trochim (2000) stated the research design is thought of as the structure of the research project. It is the substance that holds the research project together and allows one to show how all of the major parts of the research—participants, treatments, measures, and methods of assignment—work together to address the research question or questions. There are many types of research designs available to investigators, which assist the researcher in answering research questions. Huch et al. (1974) stated that the purpose of the research design is to establish the basis for tests of statistical significance. Thus, the research design serves two purposes—first, to assist the researcher in answering the research question; and secondly, to control variables that might affect the cause-effect relationship.

Furthermore according to Johnson and Onwuegbuzie, researchers should collect multiple data using different strategies, approaches, and methods in such a way the

resulting mixture or combination is likely to result in complementary strengths and non-overlapping weaknesses (Johnson, & Onwuegbuzie, 2004). Maxwell argued that using a mixed method approach provides a greater range of insights and perspective and permits triangulation or the confirmation of findings by different methods, which improves the overall validity of results, and makes the study of greater use to the constituencies to which it was intended to be addressed (International Food Policy Research Institute, 1998). Therefore, due to the method of the collection of data and analyses of the data, it was determined that a comparative analysis design utilizing qualitative and quantitative methods was the most appropriate design for completing the study.

This Study

This study is a comparative analysis of two types of professional development offerings implemented over a three-year academic period. There are three high schools referred to in this comparative analysis study. For the purposes of this study the schools will be referred to as School "A", School "B", School "C". School "A" is also referred to as reform model and School "B" and "C" data are combined and referred to as traditional model (see Table 1). Also these three schools employed two different types of professional development offerings with different characteristics during this three-year academic period. The two professional development types employed characteristics of reform and traditional offerings of professional development. The student achievement data will be analyzed from each respective school for the three-year academic period 2005-2006, 2006-2007, and 2007-2008. The trend in student achievement will be compared among models as defined by the characteristics of

Table 1

Teacher/Staff Demographics – Reform & Traditional Model

	2005-2006		2006-2007		2007-2008	
	RM	TM	RM	TM	RM	TM
Classroom Teachers	83	87	85	90	78	87
Licensed Teachers	71%	84%	82%	89%	92%	90%
Highly Qualified Teachers	86%	85%	94%	92%	99%	99%
Teachers with Advanced Degrees	13%	18%	14%	20%	14%	21%
# of National Board Certified Teachers	7%	8%	5%	8%	6%	9%
Years of Teaching Experience	0-10/11+ 50% 50%	0-10/11+ 33% 67%	0-10/11+ 54% 46%	0-10/11+ 35% 65%	0-10/11+ 47% 53%	0-10/11+ 35% 65%

Note. RM-Reform Model, TM-Traditional Model. Retrieved from
www.ncreportcards.org/src/schDetails.jsp?Page=4&pSchCode=361&pLEACode=640&pYear=2005=2006;
www.ncreportcards.org/src/schDetails.jsp?Page=4&pSchCode=361&pLEACode=640&pYear=2006=2007;
www.ncreportcards.org/src/schDetails.jsp?Page=4&pSchCode=361&pLEACode=640&pYear=2007=2008.

effective professional development, the professional development model used, and the two types of models the researcher has defined: reform and traditional.

Participants

The goal of the three sample schools was to change and strengthen the instructional methods teachers used to improve student achievement. During this three-year period, school "A" implemented professional development using the reform model. School "B" and school "C" implemented a professional development using the traditional model. The schools studied are in a rural county in eastern North Carolina. The county covers 591 square miles. The school system is the largest employer in the county with over 2200 employees. Overall, the ethic distribution of the county is 53% African-American, 36% White, and 7% Hispanic. In each of the high schools, student population mirrors these ethnic percentages. The school system has 4 comprehensive high schools, however only 3 of the schools participated in a formal professional development model. The student enrollment ranges from 1228 students at School "A" to 1311 students at school "B" with school "C" housing 1240 respectively (NRMS, 2009). Each site contains grades 9-12. Test scores and data from all students in each of the sample schools were used in this study. Also, the staffs of each school were surveyed to gauge their perceptions of the effectiveness of the professional development model employed during this 3-year time frame. The staff members with advanced degrees, staff members with National Board Certification, the percentage of licensed teachers, highly qualified teachers, along with the average number years of teaching experience at these 3 schools fluctuated very little over this time frame (see Table 1).

Quantitative Component

The quantitative research component of the study consisted of student proficiency scores on the five core courses (Algebra I, Civics, U.S. History, Biology, and English 9) for the North Carolina End-of-Course Tests for students in grades 9-12. Also included were the student academic proficiency scores on reading and mathematics tests indicating AYP for the same three-year academic period 2005 - 2008. The data received from the participating local educational agency were students' scale scores disaggregated by the participating high schools. The data were used to evaluate the proficiency levels of test scores for the subjects of Algebra I, Civics, U.S. History, Biology, and English 9 over the three academic years consisting of 2005-2006, 2006-2007, and 2007-2008 as well as AYP for each subgroup from the participating high schools to determine if a trend exists in the student academic performance. Therefore, this quantitative data was examined to determine if the trends in student academic achievement among the three participating high schools that utilized the reform professional development model and traditional professional development model impacted student academic performance.

Qualitative Component

The qualitative component of this study consisted of a survey to faculty members who were currently teaching in the three participating high schools. The survey was comprised after interviewing each of the three school's principals to gain information as to why each model was chosen, how implementation began, and what the goal of each model was. Based on the themes of the interviews and the research of each model, the survey was constructed. The survey will seek to obtain data on the level of support each

model received upon selection. Other indicators measured by the survey will be (1) the level of benefit the teachers felt the model brought to the staff, students, and parents as a seamless organization, (2) the direct impact the model had upon the teacher's content knowledge, (3) the direct impact the model had upon broadening the teacher's teaching strategies, and (4) was the model focused on delivering a theme of professional development or was there too much diversity in the offerings of the model? The survey will be administered to the participants by Zoomerang. Respondents will be given 5 working days to respond with a follow up email delivered to them again asking for their assistance and informing them they have 3 additional days to participate. Participation will be asked for only those staff members who taught in the school during the years form 2005-2008 and clicking on the link to participate will serve as acceptance to participate. The survey is attached in Appendix B.

As the researcher reviews the student achievement data for each of the five core End-of Course tests, the trend of student achievement for each course will be compared at the same time. This method will also be utilized when analyzing the AYP data for Grade 10 reading and mathematics. The researcher will look for possible connections from the EOC scores from each model while looking for patterns, outliers, and participant perceptions. Conclusions will be drawn when each respective subject's data is compared and the staff survey data is analyzed to examine patterns of increase in student achievement to connect the effectiveness of the professional development model implemented.

Student Achievement Measurement

The plan to reorganize public education in North Carolina, the ABC's of Public

Education, was initiated in response to legislation passed by the North Carolina General

Assembly-the North Carolina Elementary and Secondary Reform Act of 1984 (NCDPI,

2006). This act called for the implementation of the Basic Education Program through

the establishment of a core curriculum for all students for each content area and the

development of tests to assess the implementation of each curriculum across the state.

This initiative was based on the belief that: (a) all children can learn, and (b) the mission

of the public school community was to challenge each child to achieve and learn. In

order to emphasize strong, basic academics, the ABC's focused on a statewide testing

program that targeted academic skills in reading, mathematics, and writing, and content

specific areas for grades 9-12. The North Carolina ABC's Accountability Program was

initially implemented in grades K-8 in the 1996-1997 academic school year, and the

high school accountability program was implemented during the 1997-1998 school year.

North Carolina Testing Program, Grades 9-12

The North Carolina Testing Program in grades 9-12 is comparable to the North

Carolina Testing Program in grades 3-8. The Assessment Brief released by the North

Carolina Department of Public Instruction stated:

" The North Carolina Standard Course of Study outlines the content standards by

describing the knowledge and skills those students should acquire in the various

content areas. Those ten content areas were a follows: (a) Algebra I, (b) Algebra

II, (c) Biology, (d) Chemistry, (e) Economics, Legal, Political Systems, (ELP), (f)

English I, (g) Geometry, (h) Physical Science, (i) Physics, (j) United States

History" (NCDPI, 2006).

Proficiency Levels

Furthermore, the performance standards, called achievement levels, were

developed as a means of reporting and assessing student academic achievement in the

aforementioned content areas. The achievement levels developed were levels I, II, III,

and IV respectively. A student who scores at level I or II is considered as neither having

met the required knowledge or skills necessary to be successful in the next content area

nor obtained the knowledge needed for mastery of the specific content in the course

they were enrolled. Students who score a level III or IV are considered to have obtained

mastery in that content area and potentially have the knowledge and skills to be

successful in the next sequential course. Thus, North Carolina has developed a process

to identify the academic performance of students in an attempt to ensure all students

have acquired the necessary skills and knowledge to be successful in the next content

area.

Scoring North Carolina End-of-Course Tests

On the North Carolina End-of-Course Tests, the student test scores (number

correct on the test, raw scores) are converted to a common scale using the means and

standard deviation of each of the test score distributions from the year the test was

normed. For interpretation, the scale scores have a mean of 50 and a standard

deviation of 10. The range of the scale scores is generally from 20 to 90. From these

common scale scores, each student is assigned an achievement level- Level 1, 2, 3, or

4. According to Assessment Brief; Understanding End-of-Course Testing: Scores and

Standards NCDPI (1999), achievement levels allows for the comparison of student and group performance to predetermined standards based on what is expected in each tested area. As mentioned earlier, developmental scale scores allow for the comparison of a student's academic growth from one academic year to another academic year. Consequently, these developmental scale scores are not equivalent across teachers and discipline. Therefore, they are not appropriate for the statistical analysis in this study, as comparisons cannot be made of students and/or group performance. In this study, achievement levels are to be used in analyzing the student achievement and academic performance data.

Growth

A school's ABC's growth status is determined by its growth calculation and its change ratio (a measure of the percent of students meeting their individual growth targets). The courses a school offers determines the composition of these measures, as described by EOC tests and a two-year baseline score. The school or student whose total growth is equal to or exceeds the growth expectation (shown by a difference of 0.00 or better) are said to have met expected growth. Expected growth is based on the expectation that a student will perform similarly from year to year. The standard is equivalent to a year's worth of material for a year of instruction. High growth represents 10% higher level of performance compared to the expected growth composite for EOC tests (NCDPI, 2006). On the North Carolina End-of-Course Tests, the student scale scores are converted to a common metric using the means and standard deviation of each of the test score distributions from the year the test was normed to create a *z*-score or what the state defines as an academic change score. The state computes the

Academic Change (AC) for each student to examine growth in the subject tested. The

NCDPI's (2006) academic change measure is referred to as a c-score. A student should

be expected to do at least as well this year as she/he has done in previous years, when

his/her test results are compared to all other students in NC who took the test in the

standard-setting year. If a student's c-scores remain about the same over time, the

student is demonstrating skills at about the same overall position on each test when

compared to students statewide (NCDPI, 2006). These c-scores can range from -4 to 4.

The state considers growth expectations for students in 3 categories: below

expectations: c-scores below -.50, within expectations: c-scores within -.50 and +.50,

and above expectations: c-scores above +.50 (NCDPI, 2006). As mentioned earlier, the

academic change scores allow for the comparison of a student's academic growth from

one academic year to another academic year.

Prediction formulas are used in the high school model to predict how much

students should grow in each tested subject. Table 2 shows which, tests are used to

predict growth for each of the core courses.

AYP Evaluation

With the passing of No Child Left Behind at the federal level, several changes to

the ABC's testing program were made for the 2002-2003 school year. Most notably,

Adequate Yearly Progress, or AYP, was added to measure "whether the students in a

school as a whole and in each identified subgroup met the performance standards set

by [the] state" (NCDPI, 2008). AYP is an effort to bring attention to the need to reduce

achievement gaps that exists between subgroups of students based on their respective

gender, race, or disability (NCDPI, 2008). AYP measures the yearly progress of

64

Table 2

Prediction Courses

End of Course Test	End of Course Predictor Courses
Algebra I	EOG Mathematics Grade 8*
Biology	EOG Reading Grade 8 and English I, if available or EOG Reading Grade 8 (if English I is not available)
Civics and Economics	Biology (previous edition) and English I if available, or English I (if previous edition Biology is not available)
English I	EOG Reading Grade 8
U.S. History	Civics and Economics and English I (if English I is not available, then Civics and Economics alone) (*Biology may return as the primary predictor*)

Note. *In cases where middle school students are taking Algebra I, the previous year's EOG is used (NCDPI, 2006).

different groups of students, All Students as a Whole, American Indian, Asian, Black, Hispanic, Multi-Racial, White, Economically Disadvantaged, Limited English Proficient, and Students with Disabilities at the school, district, and state levels against yearly target goals in reading and math. For any of the ten subgroups to be measured for a school, there must be at least 40 students in the category who have been in membership at that school for at least 140 days (NCDPI, 2008). For high school, reading equates to Grade 10 English and for math, it equates to Algebra I. These target goals set proficiency and participation targets and are set in three-year increments to increase. Each school must have a participation rate of 95% per subgroup (NCDPI, 2008).

Perhaps one of the most controversial and debated components of NCLB is the requirement that states bring 100% of its students to proficient level on state tests by the year 2013-2014 (NCDPI, 2008). For their part, individual schools, school districts, and states are required to demonstrate progress on their efforts to steadily increase student performance goals, both for students as a whole and for certain student subgroups, in order to eventually meet the 100% mark (Linn, 2003). Performance levels, which represent the percentage of student's proficient, increase every three years and in equal increments until the final year of 2013-2014 when all levels must reach 100%. These annual targets set by the state are labeled as Adequate Yearly Progress (AYP) goals. Refer to Table 3 for AYP target goals for the years of 2005-2006, 2006-2007, 2007-2008.

Table 3

NC AYP Proficiency Target Goals – Grade 10

Year	Reading	Math
2005-2006	35.4	70.8
2006-2007	35.4	70.8
2007-2008	35.4	70.8

Note. (NCDE, 2008).

If a school fails to meet AYP for two consecutive years, a series of sanctions begins to be enacted, which can include intra-district school choice, supplemental tutoring for students, and eventually, restructuring by state government. In order to meet AYP, a school must demonstrate proficiency at set levels by students as a whole and by students in subgroups such as economically disadvantaged, students with disabilities, and students from specific racial or ethnic groups. In addition, if a school fails to test at least 95% of its students, the school fails to make AYP. For full disclosure on AYP evaluation, refer to http://www.ncpublicschools.org/nclb/abcayp

Summary

This comparative analysis study used a mixed-method research design to examine the impact that the professional development models, reform and traditional, had on student academic achievement in three high schools in eastern North Carolina. School "A" used the reform model while school "B" and school "C" used the traditional model. For the purposes of this study, student proficiency data was used to compare the five core North Carolina End-of-Course tests Algebra I, Civics, Biology, U.S. History, and English 9; AYP student achievement in reading and mathematics by subgroup; and teacher perceptions were used to triangulate the data in order to draw conclusions on the effectiveness of the model implemented.

CHAPTER 4: RESULTS

Introduction

This chapter reports the data related to the impact that different models of professional development had upon student achievement in three eastern North Carolina high schools over a three-year academic period from 2005-2006, 2006-2007, 2007-2008. Participants in this study included students in grades 9-12 in three high schools who were enrolled in Algebra I, English 9, Civics, U.S. History, and Biology during the three-year academic period of 2006-2008 as well as the respective staffs of each school. For the purposes of this study, each school was identified as either using the reform model or traditional model of professional development. The data collected was organized and analyzed according to the following research questions:

Findings

Research Question One: Is there a difference in student proficiency for the Academic years of 2005-2006, 2006-2007, 2007-2008, based on the five End of Course core courses, Algebra I, Civics, Biology, English 9, and U.S. History, for the three schools whose teachers participated in the Traditional vs Reform Models of Professional Development?

The student growth results for the various models over the three-year period are presented in Table 4. The data revealed no conclusive patterns or evidence that the reform model of professional development had a greater impact on student achievement during this three-year academic period than did the traditional model. Only for the period of 2007-2008, in the area of English 9, did the reform model experience success separate from the traditional model (see Table 4).

Table 4

Expected Growth

	Reform Model			Traditional Model		
Course	2005 2006	2006 2007	2007 2008	2005 2006	2006 2007	2007 2008
Algebra I	Met	Met	Met	Met	Met	Met
Biology	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met
Civics	N/A	Not Met	Not Met	N/A	Not Met	Not Met
English 9	Not Met	Met	Met	Not Met	Not Met	Not Met
U.S. History	N/A	Met	Met	N/A	Met	Met

Note. N/A – Please note test data was not available to the researcher for this academic year due to the End of Course test being renormed.

Research Question Two: Is there a difference in student proficiency for the academic years of 2005-2006, 2006-2007, and 2007-2008 for the AYP Target Goals by subgroup based on Reading and Math for the three schools whose teachers participated in the Traditional and Reform Models of Professional Development?

Table 5 reports the AYP results for Grade 10 reading for the reform and traditional model implemented over a three-year period. The target rate of proficiency for AYP reading in these academic years was 35.4. Table 5 provides the growth rate for each subgroup. Beside the score is a number in parenthesis that exemplifies how far above the target rate of proficiency the school was if it is a positive number. A negative score in parenthesis exemplifies how far the school was from reaching the target rate of proficiency.

With the exception of the Students with Disabilities, SWD, subgroup, each school displayed the same pattern of subgroups throughout the three-year academic period. Each school met the threshold for evaluation in regards to qualifying for AYP (i.e. at least 40 students in a specific category). The data does not indicate a difference in student achievement; however, it does show a pattern between the reform and traditional models of professional development. In Figure 1, the pattern of growth is demonstrated for the reform model. Each subgroup shows a decrease in performance in year two followed by an increase in year three. In Figure 2, the pattern of growth is demonstrated for the traditional model. Again, each subgroup shows a decrease in performance in year two followed by an increase in year three. Both models demonstrate the same pattern of proficiency over the three-year period.

71

Table 5

AYP Student Proficiency – Grade 10 Reading

Subgroup	Target (35.4) 2005-2006		Target (35.4) 2006-2007		Target (35.4) 2007-2008	
	RM	TM	RM	TM	RM	TM
All Students	46.6 (11.2)	52.8 (17.4)	32 (-3.4)	40.1 (4.7)	45.2 (9.8)	45.2 (9.8)
Black	34.1 (-1.3)	40.1 (4.7)	19.7 (-15.7)	28.3 (-7.1)	30.2 (-5.2)	32.5 (-2.9)
White	63 (27.6)	81.3 (45.9)	46 (10.6)	65.1 (29.7)	65.8 (30.4)	84.5 (49.1)
Economically Disadvantaged	35.3 (-.1)	41.6 (6.2)	17.6 (-17.8)	24.4 (-11)	31.2 (-4.2)	30.5 (-4.9)
Students with Disabilities	5 (-30.4)	N/A	N/A	N/A	15 (-20.4)	N/A

Note. RM-Reform Model, TM-Traditional Model, N/A-signifies the school did not qualify to have a subgroup for that year.

*. Beside the score is a number in parenthesis that exemplifies how far above the target rate of proficiency the school was if it is a positive number. A negative score in parenthesis exemplifies how far the school was from reaching the target rate of proficiency.
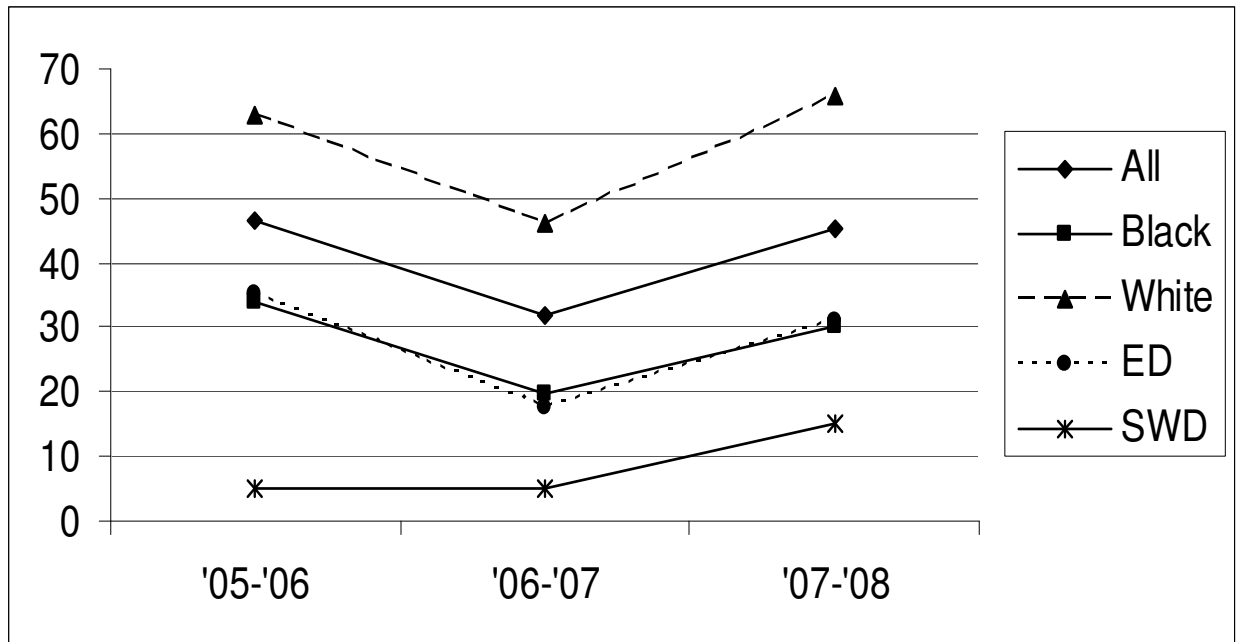
Figure 1. End of course – AYP reading target goal progress - "reform school".
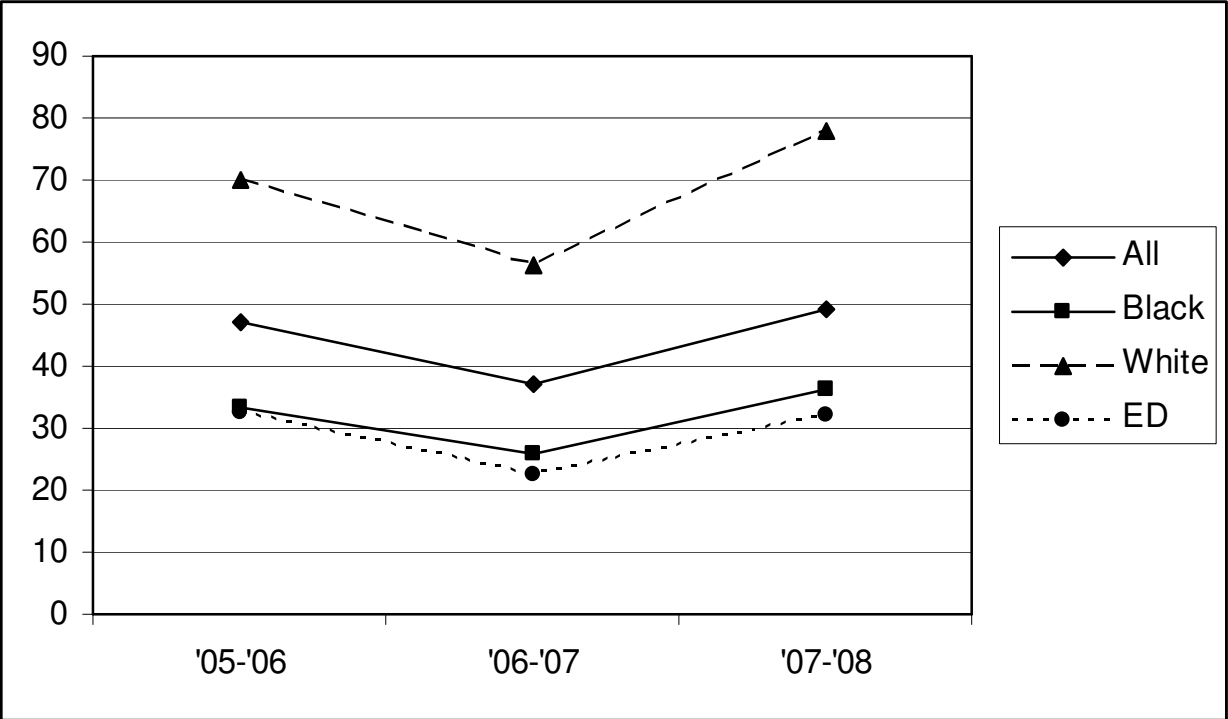
Figure 2. End of course – AYP reading target goal progress - "traditional schools".

Table 6 reports the AYP results for Grade 10 math for the reform and traditional model implemented over a three-year period. The target rate of proficiency for AYP reading in these academic years was 70.8. Table 6 provides the growth rate for each subgroup. Beside the score is a number in parenthesis that exemplifies how far above the target rate of proficiency the school was if it is a positive number. A negative score in parenthesis exemplifies how far the school was from reaching the target rate of proficiency.

With the exception of the SWD subgroup, each school displayed the same pattern of subgroups throughout the three-year academic period. Each school met the threshold for evaluation in regards to qualifying for AYP (i.e. at least 40 students in a specific category). The data does not indicate a difference in student achievement nor a distinctive pattern between the reform or traditional models of professional development. In Figure 3, the pattern of growth is demonstrated for the reform model. Each subgroup shows an increase in performance in year two followed by a decrease in year three. In Figure 4, the pattern of growth is demonstrated for the traditional model. The subgroups of All Students, Black, Economically Disadvantaged, and Students with Disabilities show flat growth or a slight increase in performance in year two followed by a decrease in year three. Only the White subgroup was different. The white subgroup demonstrated flat growth in year two, but showed an increase in year three. Excluding the White subgroup, both models demonstrate the same pattern of proficiency over the three year period.

Table 6

AYP Student Proficiency – Grade 10 Math

Subgroup	Target (70.8) 2005-2006		Target (70.8) 2006-2007		Target (70.8) 2007-2008	
	RM	TM	RM	TM	RM	TM
All Students	78.8 (8)	74.7 (4.6)	80.1 (9.3)	64.5 (-6.3)	50.3 (-20.5)	67.3 (-3.5)
Black	72.9 (2.1)	66.6 (-4.2)	69.7 (-1.1)	66.6 (-4.2)	45.6 (-25.2)	55.3 (-15.5)
White	87.2 (16.4)	90.5 (19.7)	91.3 (20.5)	88.6 (17.8)	79.1 (8.3)	91.2 (20.4)
Economically Disadvantaged	72.3 (1.5)	63.8 (-7)	72 (1.2)	61.6 (-9.2)	49.2 (-21.6)	56.1 (-14.7)
Students with Disabilities	38.3 (-32.5)	N/A	N/A	N/A	30 (-40.8)	N/A

Note. RM-Reform Model, TM-Traditional Model, N/A-signifies the school did not qualify to have a subgroup for that year.
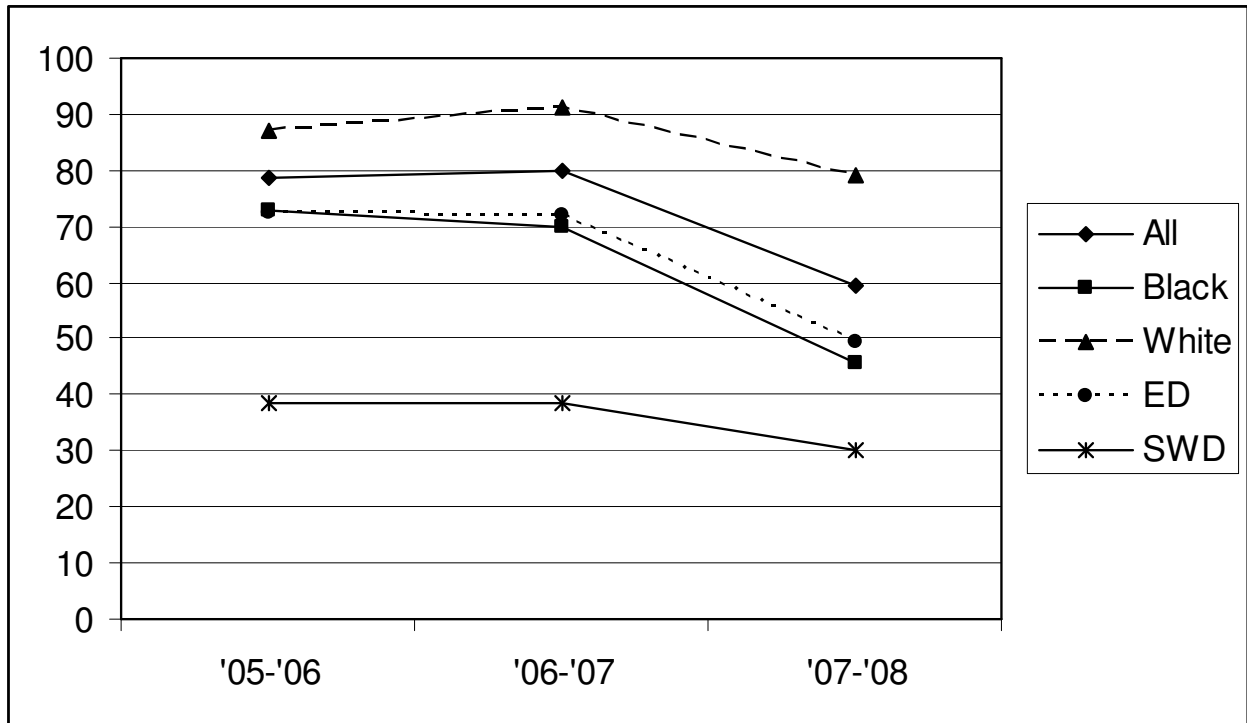
Figure 3. End of course – AYP math target goal progress - "reform school".
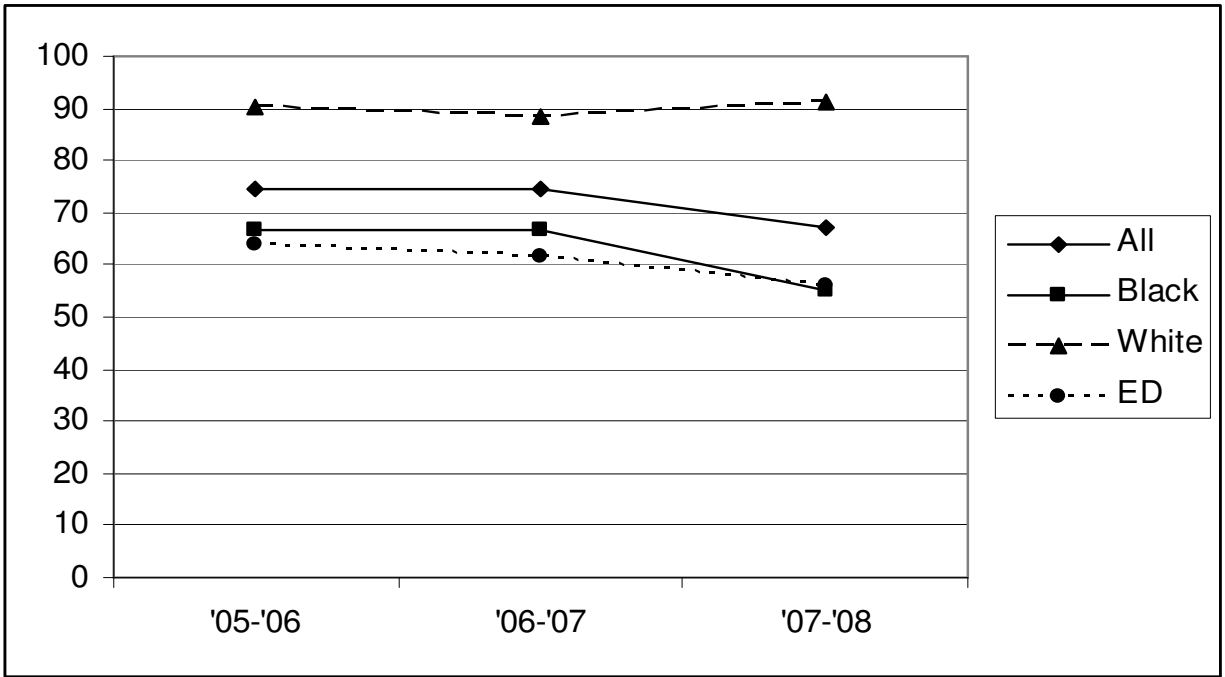
Figure 4. End of course – AYP math target goal progress - "traditional schools".

Beside the score is a number in parenthesis that exemplifies how far above the target rate of proficiency the school was if it is a positive number. A negative score in parenthesis exemplifies how far the school was from reaching the target rate of proficiency.

Research Question Three: Is There a Difference in the Teacher Perceptions of the Impact of the Traditional vs Reform Professional Development Models on Student Achievement?

The researcher took the total number of positive responses for all questions and divided by the total number of participants to determine the average percentage of positive responses for each reform and traditional participant. The average for the reform model responses was 69% while the traditional model averages for each response was 58%. Following this process the researcher identified all responses having a 10-percentage point difference (positively or negatively) as indicative of a significant difference in perception. The highlighted responses for each question represent a 10-percentage point difference in the question response as compared to the overall percentage. The reform model participants demonstrated a significant difference from the response perception on 24 of the 28 questions as compared to the traditional model, which responded with a significant difference on 14 questions (see Table 7).

Both the reform and traditional model schools agreed with the selection of their respective model, however, only the reform model felt they were given a thorough working knowledge of the model. All participants, reform and traditional, felt the professional development was beneficial to them, however, only the reform participants felt the professional development aided in their ability to provide quality instruction.

Table 7

Staff Survey

Item	Reform Model 52 / 67%	Traditional Model 91 / 54%
Which School do you teach?	# of positive responses / % of positive responses	# of positive responses / % of positive responses
Did you agree with the selection of the Professional Development Model chosen at your respective school?	*49 / 94%*	*74 / 81%*
Do you feel you were given a thorough working knowledge of the selected Professional Development Model?	*44 / 85%*	61 / 67%
Do you feel the selected Professional Development Model has had a significant impact upon student achievement in your school?	32 / 62%	51 / 56%
Do you feel the Professional Development provided over the academic years of 2005-2006, 2006-2007, and 2007-2008 was: Beneficial to you as an educator?	*44 / 85%*	*64 / 70%*
Has improved your ability to provide quality instruction in the classroom?	*42 / 82%*	54 / 59%
Been helpful to unify your staff towards a common mission?	*44 / 87%*	59 / 65%
Been helpful to clearly define your schools vision and mission for all stakeholders?	*46 / 88%*	*69 / 76%*
Helped your staff has become more collaborative?	*41 / 79%*	58 / 64%
The climate of your school is more inviting for students?	*45 / 87%*	*65 / 71%*
The climate of your school is more inviting for parents?	*45 / 87%*	*65 / 71%*

Table (continued)

You use textbooks, workbooks, and worksheets less?	*25 / 48%*	*37 / 41%*
That you are better equipped to differentiate instruction in the classroom?	*43 / 83%*	59/ 65%
That you are valued more as an employee?	32 / 62%	*42 / 46%*
That you have more input into the decision making process in your school?	*28 / 54%*	50 / 55%
You have changed your daily classroom activities?	*41 / 79%*	56 / 62%
Your school has been able to provide a more caring environment for all students?	*43 / 83%*	60 / 66%
Your school has been able to provide a safer learning environment?	37 / 77%	58 / 64%
That your staff is better equipped to meet the needs of at-risk students?	37 / 71%	58 / 64%
Communication with parents and the community the school serves has improved?	*42 / 81%*	*64 / 70%*
Student attendance has increased?	*19 / 37%*	*49 / 54%*
That Professional Development should have been more subject oriented?	*41 / 79%*	60 / 55%
As a result of the Professional Development provided? You are more knowledgeable in your content area?	*29 / 56%*	*34 / 37%*
You integrate technology in your daily lesson more?	*41 / 79%*	53/ 58%
Your students spend more time online in your class?	*18 / 35%*	*31 / 34%*
In terms of Misc. Professional Development offerings not directly related to the chosen Development Model do you feel? There were too many offerings during this 3 year period?	*21 / 40%*	*29 / 32%*

Table (continued)

It hindered the implementation of and the effectiveness of the Professional Development Model?	*19 / 37%*	*26 / 29%*
You were able to fully dedicate yourself to implementing the model?	*22 / 42%*	*37 / 41%*
Do you feel that your participation in the 3 year Professional Development model has helped prepare you for teaching in the 21st century?	*41 / 79%*	56 / 62%

Note. Reform Average response – 69% favorable; Traditional Average response – 58% favorable.

According to the results, only the reform model assisted the staff in unifying towards a common mission and become more collaborative. Both staffs felt the professional development helped to clearly define the school's vision and improve the climate of the school for students and parents. Interestingly, both staffs reported under their respective averages they used textbooks, workbooks, and worksheets less, that students spent more time online as a result of the professional development, and they were more knowledgeable in their subject area. However, only the reform model participants felt they had changed their daily classroom activities, integrated technology more in their classes, and felt they were better equipped to meet the needs of 21st century learners. In reviewing the staff perceptions, the professional development offered with the characteristics of the reform model produced more favorable perceptions about improving student achievement.

The data in Table 7 represented the number of positive responses and the percentage of positive responses by question for the reform and traditional models of professional development. To look for specific discrepancies in staff perceptions, the researcher has noted the highest 3 responses for the reform and traditional model in Table 8.

The perceptions of the staffs using the reform and traditional models of professional development were the highest on the same three questions. Both staffs overwhelmingly agreed with the selection of the professional development. Also, both staffs responded most favorable in responding how the professional development aided them in altering the climate of their respective schools for students and parents.

Table 8

Highest Three Favorable Responses

Item	Reform Model	Traditional Model
Did you agree with the selection of the Professional Development Model chosen at your respective school?	49 / 94%	74 / 81%
The climate of your school is more inviting for students?	45 / 87%	65 / 71%
The climate of your school is more inviting for parents?	45 / 87%	65 / 71%

Although each model responded more favorable to the same questions, the reform model did respond at a higher rate.

The researcher noted in Table 9 the 3 responses that each staff responded to least favorability. Thirty-seven percent of the staff using the reform model felt their professional development assisted them in improving student attendance while the traditional model responded more favorability. Thirty-two percent of the staff utilizing the traditional model of professional development felt there were too many professional development offerings during this three-year span, while the reform staff did not rank this question as low. Both models received low response rates agreeing that as a result of their professional development, their students spent more time online. Also, both staff agreed with low response rates the amount of professional development hindered the implementation of the model of professional development offered.

Process Variables

In Guskey (2000) and Sparks' work the term process variables are used. The content characteristics of professional development are the new knowledge or skills that are to be learned. The process variables indicate how the professional development will be offered. This refers to the type of activities, how they are planned, executed, organized and sustained. The context characteristics refer to "who", "when", "where", and "why" of the professional development. The context includes the climate and culture of the organization and involved participants and pressures placed on them to participate. Other factors that strengthen the influence of professional development to student achievement involve the quality of the professional development participated in. The new skills or knowledge must positively influence the teachers to have a positive

Table 9

Lowest Three Favorable Responses

Item	Reform Model	Traditional Model
Student attendance has increased?	19 / 37%	N/A
Your students spend more time online in your class?	18 / 35%	31 / 34%
In terms of Misc. Professional Development offerings not directly related to the chosen Development Model do you feel?		
There were too may offerings during this 3-year period?	N/A	29 / 32%
It hindered the implementation of and the effectiveness of the Professional Development Model?	19 / 37%	26 / 29%

influence on students. Teacher knowledge and practices are also significant. The professional development must alter or change the professional knowledge of the teacher and / or their classroom practices. Administrator knowledge and practices also influence student learning (Guskey, 2000).

The reform model called for a predetermined number of modules to be completed by the staff each year while allowing the staff flexibility to participate in additional offerings. Appendix C lists the professional development offerings in which the reform staff participated. During this three year period, reform staff members participated in 6 professional development modules in year one, 14 modules in year two, and 8 modules in year three. During this three-year period, the staff also began and implemented 6 other whole school initiatives.

The traditional model called for the staff to participate yearly in an effective schools offering, but allowed them more flexibility to participate in offerings of their choice. Appendix D provides the list of professional development offerings in which the traditional staff participated. During this three year period traditional staff members participated in a total of 28 professional development offerings in year one, 45 offerings in year two, and 16 offerings in year three. During this three-year period, the staff also began and implemented 28 other whole school initiatives. This data reinforces the research with the reform staff responding with higher percentages on the survey data in speaking to the effectiveness of the model implementation, changes in teacher instructional strategies, and in the preparation of teachers for 21st century teaching.

Effective Characteristics of Professional Development and the Qualitative Data

The literature reveals six effective characteristics of professional development regardless of the delivery model used to present the information Guskey (2000). These six characteristics are: (a) coherence, (b) alignment to school and district goals, (c) active learning takes place, (d) activities focused on teacher content knowledge, (e) influences the teacher, (f) teacher discussion, common planning, observing other teachers. In Tables 10 - 15, the researcher connects the survey questions and the perceptions of each respective staff in terms of Guskey (2000) and Sparks' process variables.

Coherence is the connection of professional development to state standards and curriculum. The degree to which the professional development builds on teacher prior knowledge, the alignment to curriculum, and communication with fellow teachers is vital (Garet et al., 2001). Forty percent of the reform staff felt there were too many offerings during this three-year period which were not aligned with the state standards and curriculum. Thirty seven percent of the reform staff felt these offerings hindered the overall implementation of the reform model. Only 32% of the traditional staffs felt there were too many offerings with 29% feeling the offerings hindered the overall implementation of the model.

Professional development should be aligned to school and district goals and aid in the process of defining and communicating a common vision and mission for all staff and stakeholders. A higher percentage of the reform staff reported they felt the professional development they participated in helped unify the staff towards a common

Table 10

Teacher Survey and Coherence

	RM	TM
In terms of Misc. Professional Development offerings not directly related to the chosen Development Model do you feel? There were too may offerings during this 3-year period?	21 / 40%	29 / 32%
It hindered the implementation of and the effectiveness of the Professional Development Model?	19 / 37%	26 / 29%

Table 11

Teacher Survey and Alignment to School and District Goals

	RM	TM
Been helpful to unify your staff towards a common mission?	*44 / 87%*	59 / 65%
Been helpful to clearly define your schools vision and mission for all stakeholders?	46 / 88%	69 / 76%

Table 12

Teacher Survey and Active Learning

	RM	TM
You integrate technology in your daily lesson more?	*41 / 79%*	53 / 58%
You use textbooks, workbooks, and worksheets less?	*25 / 48%*	37 / 41%
Do you feel the Professional Development provided over the academic years of 2005-2006, 2006-2007, and 2007-2008 was: Beneficial to you as an educator?	*44 / 85%*	64 / 70%
Your students spend more time online in your class?	*18 / 35%*	31 / 34%

Table 13

Teacher Survey and Focused on Teacher Content Knowledge

	RM	TM
That Professional Development should have been more subject oriented?	*41 / 79%*	60 / 55%
As a result of the Professional Development provided? you are more knowledgeable in your content area?	*29 / 56%*	34 / 37%

Table 14

Teacher Survey and the Influence of Professional Development on the Teacher

	RM	TM
That your staff is better equipped to meet the needs of at-risk students?	37 / 71%	58 / 64%
Do you feel that your participation in the 3 year Professional Development model has helped prepare you for teaching in the 21st century?	41 / 79%	56 / 62%
Has improved your ability to provide quality instruction in the classroom?	42 / 82%	54 / 59%
That you are better equipped to differentiate instruction in the classroom?	*43 / 83%*	59/ 65%

Table 15

Teacher Survey and Teacher Discussion, Common Planning, Observing other Teachers

	RM	TM
You were able to fully dedicate yourself to implementing the model?	*22 / 42%*	*37 / 41%*
Helped your staff has become more collaborative?	*41 / 79%*	58 / 64%

mission and helped define the school's vision and mission than did the staffs of the schools participating in the traditional model.

Active learning focuses on specific instructional practices that increase the teacher's use of those practices and aids in the improvement of student achievement (Desimone et al., 2002). Just as students are no longer passive recipients of teacher led classes where drill, practice, and worksheets are the norm, teachers cannot be passive recipients of professional development. Learning is an active process, which calls for acquiring, creating, and using knowledge for students in classrooms and teachers participating in professional development. The teachers participating in the reform model reported they integrated technology more, used textbooks, workbooks, and worksheets less and the professional development had been more beneficial to them as an educator. The reform staff also said their students spent more time online as a result of professional development than their traditional model counterparts even though both percentages were much lower than the other responses. These percentages indicate the reform teachers felt the offerings did aid them in altering their instructional practices at a higher rate than those participating in the traditional offerings.

Effective professional development focuses on improving teacher content knowledge. All three staffs expressed a high rate of need for more subject oriented offerings. Twenty-four percent more of the reform model participants reported there should have been more subject area offerings as compared to the traditional model participants. The reform model participants reported as a result of the professional development offerings, they were more knowledgeable in their content area even though they felt there should have been more offerings.

Effective professional development and teacher participation in the offerings had a positive influence on the teachers. The offerings participated in are the catalyst to induce and sustain teacher change. The reform model participants felt at a higher response rate the professional development they participated in better equipped them to meet the needs of at-risk students, helped them prepare for teaching in the 21st century, aided in their ability to provide quality instruction, and they were better equipped to differentiate instruction in the classroom.

Effective professional development creates a professional climate where teacher discussions, common planning, and observing other teachers are acceptable, encouraged, and practiced. The reform model participants reported a 1% point difference in their ability to fully implement the model. Seventy-nine percent of the reform staff reported as a result of the professional development offerings, their staff had become more collaborative.

In analyzing the survey data that relates to the effective characteristics of professional development, the reform model participants reported a higher level of agreement in every instance than the staffs of the traditional model. Therefore, the researcher draws the conclusion that the reform model of professional development displays at a greater rate the effective characteristics of professional development as perceived by the staffs of the respective schools.

This chapter provided detailed sets of data related to the impact of teacher professional development on student achievement in three eastern North Carolina high schools in one school district. The quantitative data was more difficult to draw any definite conclusions on the impact that the reform or traditional models of professional

development had upon student achievement. The expected growth data for the schools utilizing the reform model professional development is comparable to the data for the schools utilizing the traditional model professional development with the exception of English 9 for year 2006-2007 and 2007-2008. Also, there is no detectable difference in Grade 10 AYP Reading and Math results, with the exception of the White subgroup in grade ten math during this three-year period nor does it appear either model of professional development aided a school in closing the proficiency gap towards the NCLB target scores. The data for each school and subject are random and appear to have no relation to the type of professional development delivered.

However, the qualitative data revealed positive results for the reform professional development model used. In all of the responses, the staff that participated in the reform model of professional development responded more favorably to the qualitative survey of than those who participated in the traditional approach to professional development. Based on the pattern of responses, the reform model participants felt the offerings were more beneficial to them and had a greater and more lasting impact on student achievement while the reform participants felt that as a result of the professional development their teaching strategies had changed and they were better equipped to meet the needs of 21st century students. Also, the pattern of responses from staff members from either model of professional development as similar for the three survey items with the highest level of agreement and for 2 of the 3 items with the lowest levels of agreement between the two model's staffs.

CHAPTER 5: CONCLUSIONS, RECOMMENDATIONS, IMPLICATIONS

Introduction

The purpose of this comparative analysis study was to examine the impact of two professional development models used in three high schools in eastern North Carolina to determine if the types of professional development activities impacted student academic achievement based on the five core North Carolina End of Course tests; the AYP student academic achievement on the standardized tests in reading and mathematics; and the overall perceptions of teachers during the three year academic period of 2005-2006, 2006-2007, and 2007-2008. This chapter provides a brief overview of the literature, statement of the problem, methodology, research questions and conclusions, implications, and recommendations.

The Literature

Professional development activities may be classified into two categories, the reform model and the traditional model. The reform model type of professional development is characterized by collaborative approaches to professional learning and promoting school change that extends beyond individual classrooms while being sustained and intensive (Wei et al., 2009). Traditional forms of professional development are characterized as episodic, often fragmented, and disconnected from real problems of teaching (Darling-Hammond et al., 2009). Reform offerings such as study groups or networking differ from traditional forms in they occur during the school day, in the teacher's classroom, or during teacher planning time. Research suggested this type of professional development is more effective because it makes connections with classroom teaching and usually occurs over a longer period of time (Garet et al.,

2001). With these offerings occurring over a longer period of time, teachers are more

likely to discuss concepts, issues, share materials, and discuss common student needs

(Garet et al., 2001). The most important attributes of effective professional development

are time, activities that occur in a sustained, prolonged manner, and teachers focusing

on content knowledge and instructional strategies (North Central Regional Educational

Laboratory [NCREL], 1993). A study of mathematics teaching in California found that

math scores were higher when professional development focused on content and how

students learned compared to control groups where professional development just

focused on content (Darling-Hammond et al., 2009). Darling-Hammond et al. (2009)

also analyzed studies and discovered when professional development offered

substantial contact hours (ranging from 30 to 100 hours in total) spread over six to 12

months; it showed a positive and significant effect on student achievement gains. Their

research also showed that intensive professional development efforts that offered an

average of 49 hours in a year increased student academic achievement by

approximately 21 percentile points. Furthermore, their study showed that professional

development that involved a limited amount of time (ranging from 5 to 14 hours in total)

showed no statistically significant effect on student achievement. Also, Wei et al. (2009)

found strong effects of professional development on student achievement when

professional development focused on the teacher. McGill-Franzen et al. (1999) in their

study of classroom libraries and elementary-level literacy, found that reading

comprehension among students whose teachers had received 30 hours of professional

development in reading instruction and library use in addition to being donated 250

book classroom libraries, achieved at much higher levels than students whose teachers

simply received the classroom libraries. Recognizing the need to ensure high-quality

professional learning for every teacher is a new paradigm of professional development

based on the theory of continuous improvement (Hirsh, 2009a). Hirsh (2009a) further

states continuous improvement addresses a continual, sustained focus at improving

processes to improve the overall quality of an organization, person, or business. The

findings of this study, along with Hirsh's findings, align themselves with the attributes of

the professional development offerings shown in Appendix C where the reform model of

professional development was implemented.

The second type of professional development are the traditional forms, which

include, but are not limited to workshops, institutes, courses, and conferences and

usually consist of a less structured approach to professional development that occurs

outside the teacher's classroom, which includes a leader with expertise and participants

who attend sessions at scheduled times often after or outside of school hours Garet et

al. (2001). Darling-Hammond et al. (2009) stated that traditional forms of professional

development are characterized as episodic, often fragmented, and disconnected from

real problems of teaching. The list of professional development offerings the schools

that utilized the traditional model of professional development are shown in Appendix D.

The number of workshops attended over this period of time and the lack of consistency

in the offerings attended align themselves with the episodic, fragmented, disconnection

of improving teacher instructional strategies. Therefore, the problem of this study was to

examine two professional development models, in which teachers received professional

development over a 3-year academic period. The researcher explored the 2 models and

their impact on student achievement based on the professional development offerings

participated in by each respective staff. The researcher used the five core North Carolina End-of-Course tests, the reading and mathematics AYP student academic achievement, and the perceptions of faculty to answer the proposed research questions for this study.

Statement of the Problem

Wei et al. (2009) stated that since the release of *A Nation at Risk* in the 1980s, stakeholders such as politicians, business leaders, educators, students, and parents began calling for the reform of high schools in America resulting in increased student academic achievement. Wei et al. (2009) continued by stating this trend of school reform has remained constant over the years as educators have inundated schools with initiatives focused on improving student achievement. In all types of school reform, the teacher remains the catalyst for improving student achievement. Garet et al. (2001) noted that professional development has become the vehicle to improve teaching methods thus influencing student achievement. Therefore, if improving the quality of the teaching workforce via professional development is crucial to increased student academic achievement, then a focus on the best teacher professional development practices need to be examined to ensure student achievement is attained.

Methodology

This comparative analysis study used mixed-method data collection to examine the impact that the professional development models of reform and traditional on student academic achievement in three high schools in eastern North Carolina. One school used the reform model while two other schools used the traditional model. The data analyses consisted of comparing the student achievement levels, student AYP

academic achievement, and survey results of teachers to determine if a particular professional development impacted student academic achievement. In developing the research methodology, the five core End of Course classes, Algebra I, English 9, Civics, Biology, and U.S. History, were selected. Also the 10 AYP subgroups were selected upon which the respective schools only qualified for four of the subgroups during this three year academic period. The researcher analyzed the data to determine if trends existed in student achievement when compared to the professional development models utilized during this 3 year academic years of 2005-2006, 2006-2007, and 2007-2008. In addition, data from a staff survey were analyzed to triangulate the impact of student academic achievement. The triangulation of these multiple sources of data provided the researcher with the assurance that all aspects of the study were being analyzed, and all data collected were organized according to the research questions.

Research Questions and Conclusions

There were three research questions addressed in this study. Conclusions derived from this study were based on the data analyzed from the student achievement scores on the North Carolina End-of-Course tests, the North Carolina 10th Grade tests in Reading and Mathematics, and the staff surveys. The conclusions will be presented with their respective research question:

Research Question One

Is there a difference in student proficiency for the Academic years of 2005-2006, 2006-2007, 2007-2008, based on the five End of Course core courses, Algebra I, Civics, Biology, English 9, and U.S. History, for the three schools whose teachers participated in the Traditional vs Reform Models of Professional Development?

There were overall limited increases in student achievement in tested areas from the high schools using the reform model and traditional model of teacher professional development. In accordance with the North Carolina accountability model, ABC's, the high school using the reform model of professional development saw a steady increase in student achievement scores in one test area, English 9, compared to the two schools using the traditional model of professional development. The English 9 test scores met growth standards in year two and three whereas the traditional schools did not. The schools reported identical growth patterns for the subjects of Algebra I, Biology, Civics and U.S. History throughout the three-year period.

Research Question Two

Is there a difference in student proficiency for the academic years of 2005-2006, 2006-2007, 2007-2008, for the AYP Target Goals by subgroup based on the Reading and Math for the three schools whose teachers participated in the Traditional vs Reform Models of Professional Development?

The researcher also compared student proficiency in terms of AYP target goals for Grade 10 Reading. For the subgroups of All Students and Economically Disadvantaged, the test scores show a consistent trend of negative student achievement over this three-year academic period thus widening the gap of proficiency from the NCLB target. For the subgroup of White, the reform model and one school using the traditional model produced a minor increase in student achievement over a three-year academic period whereas the other school using the traditional model showed a negative trend over the three-year period. For the subgroup of Black, the reform model school and one traditional model school demonstrated a negative trend

103

widening the proficiency gap in student achievement over the three year period as opposed to one school using the traditional model who demonstrated a steady increase in student achievement, hence closing the proficiency gap.

In comparing the pattern of AYP Target Goals by subgroup based on Grade 10 Math, student growth was the same for the AYP subgroups of All Students and White, for the school using the reform model of professional development as it was for the two schools using the traditional model of professional development. Each school showed an upward trend in year two followed by a decline in test scores in year three. More specifically, the three year pattern of student proficiency for the AYP subgroup of Black showed the school using the reform model and one school using the traditional model had a steady decline in test scores over a three year period compared to one school using the traditional model who saw an increase in proficiency in year two followed by a decrease in year three. The subgroup of Economically Disadvantaged showed the school using the reform model and one school using the traditional model had a steady decline in proficiency over the three year academic period compared to one school using the traditional model that experienced a decline in year two and an increase in proficiency in year three. The subgroup of Black for the school using the reform model was the same as it was for the two schools using the traditional model of professional development. Therefore, this data does not support the research that reform professional development tends to produce better student outcomes because it tends to be longer in duration because there is no statistical difference in student achievement (Garet et al., 2001). The study also confirms the research by Guskey that the linkage of student achievement to professional development is not a single cause–effect

relationship. Even though each staff underwent a significant amount of professional

development over a three-year period, the evidence of this is not reflected in student

achievement. Darling-Hammond et al.'s (2009) research suggested that students of

teachers who participate in professional development for a limited amount of time

(ranging from 5 to 14 hours in total) showed no statistical gains in student achievement.

Whereas the research from Wei et al. suggested that professional development must be

sustained at least 50 hours to have an effect on student achievement.

Research Question Three

Is there a difference in the teacher perceptions of the impact of the Traditional vs

Reform Professional Development Models on student achievement?

The survey administered to the staffs showed the teacher perceptions of the

impact of the Traditional vs Reform Professional Development Models on Student

Achievement. Overall, the reform school staff participated in 28 offerings and 6 other

school wide initiatives compared to the traditional model staff who participated in 89

offerings and 28 school wide initiatives. Research shows that 9 out of 10 teachers

participate in professional development that consists primarily of short-term conferences

or workshops, 1-2 days, focusing on content knowledge rather than sustained

professional development, focusing on learning strategies (Darling-Hammond et al.,

2009). Hirsh (2009a) said that too few teachers experience the quality of professional

development and teamwork that enable them to be more effective educators. Effective

teaching occurs when educators on teams are involved in a cycle in which they analyze

data, determine student learning goals based on that analysis, design joint lessons that

use evidence-based strategies, have access to coaches for support in improving their

classroom instruction, and then assess how their learning and teamwork affects student achievement.

The survey data from the traditional model staffs who participated in 89 offerings and 28 other school wide initiatives confirm the participation in episodic offerings and confirms the importance of sustained, content-focused professional development to change instructional practices in ways that ultimately improve student learning (Wei, Darling-Hammond, Andree, Richardson, & Orphanos, 2009).

Teachers involved in professional development delivered via the reform model perceived this effort as a better means of impacting student achievement.

The staff that experienced the reform model of professional development had a more favorable opinion of the model chosen and felt they were given a better introduction and synopsis of the model than the staffs that experienced the traditional model of professional development. Also, the staff who experienced the reform model of professional development felt their reform model had a more significant impact on student achievement and was more beneficial to them as an educator than the staffs that experienced the traditional model of professional development. The staff who used the reform model responded at 48% compared to the staff that used the traditional model who responded at 41% when asked if they used worksheets, textbooks, or workbooks less than they did before the professional development was implemented. The reform model staff felt their professional development better equipped them to differentiate instruction and helped them change their daily classroom activities at a higher percentage than those staffs that experienced the traditional model of professional development. Also the staff that experienced the reform model of

106

professional development felt their professional development prepared them to integrate

technology more in their daily lessons than those staffs that experienced the traditional

model of professional development. However only 34 % and 35% of the three staffs

reported they allowed their students to spend more instructional time online than they

did before the professional development was implemented. The staff that experienced

the reform model of professional development felt there should have been more subject

oriented professional development offerings during this three-year period as compared

to those staffs that experienced the traditional model of professional development. The

staff that experienced the reform model of professional development responded at a

higher rate, 40%, that there was too much professional development during this three

year period and responded at a higher rate, 32%; they felt the various offerings

hindered the implementation of the reform model as compared to those staffs that

experienced the traditional model of professional development. The staff that

experienced the reform model of professional development felt the professional

development model implemented helped prepare them for teaching in the 21st century

at a higher rate, 79%, as compared to those staffs who experienced the traditional

model of professional development. Overall, the analysis of the survey responses from

the staff that experienced the reform model of professional development had a more

favorable reaction to the model implemented than the staffs that participated in the

traditional model of professional development. The staff at the reform school model felt

they were given a better working knowledge of the model as compared to those at

schools who participated in the traditional model. This is attributed to the characteristics

of the model itself with a steady consistent pattern of collaboration and communication

highlighting the reform model as compared to an inconsistent pattern of staff members participating in various workshops and conferences with the traditional model. These feelings support the research that reform professional development is intensive, ongoing, and connected to practice; focuses on the teaching and learning of specific academic content; is connected to other school initiatives; and builds strong working relationships among teachers (Wei et al., 2009). Interestingly, each staff felt the professional development was beneficial to them overall, however, all three staffs responded at 48% or less when asked if they used workbooks, textbooks, and worksheets less. Also while the majority of each respective staff reported they were better equipped to differentiate instruction, had changed their daily classroom activities, and integrated technology in their lessons more, none of the staffs responded with the majority admitting their students spent more instructional time online. Also when comparing the highest three responses it is interesting to note their responses do not include instruction. The top three survey responses for each model implemented were consistent in the agreement of the model selected, and the improvement of the climate of the school instead of the instructional impact on student achievement.

The reform model school which implemented the outlined, consistent model of professional development reported at the 40% rate that there were too many offerings during this three year period compared to the schools which participated in the traditional model of conferences and workshops, etc., who responded at 32%. Also the staff at the reform model school responded at a higher rate, 37% that the various offerings they participated in hindered their ability to raise student achievement scores as compared to the traditional model staffs who responded to the questions at 32%.

Implications

The findings from this comparative analysis study indicated that professional development is indeed the vehicle to improved student achievement (Darling-Hammond et al., 2009). The role of the leader in charting the course and setting the goals of professional development for their staff is an important aspect this study has not addressed. As stated earlier, there is limited research on the impact of professional development on student achievement in a quantitative format. The researcher suggests more studies over a longer period of time to draw conclusions on the impact professional development has on student achievement. The quantitative data in this study do not show an increase in EOC scores for either model after three years with the exception of English 9 which met growth standards in year two and three for the reform model. The AYP data indicates the margin closing towards the target goals for Grade 10 reading and an increase in the gap from the target scores for Grade 10 math. It is difficult for the researcher to draw any definite conclusions in this short time frame. Quantitative studies of this type need to be longitudinal lasting for more than 3 years. Longitudinal studies will expose teachers to more professional development offerings and allow the teachers more time to engage in the active learning process. Studies have found the intensity and duration of professional development to be related to the amount of teacher change thus affecting student achievement. As a result of this study, student achievement data are comparable resulting in that professional development made no substantial impact on student achievement. It is much easier to draw conclusions from the qualitative data; however, it is the opinion of the researcher that this data should be used mainly to guide the direction of professional development more

so than to draw conclusions on its effectiveness. Qualitative data needs to be used to set a more strategic course of action and plan for implementation. Until the Department of Public Instruction revamps the outdated requirement that all teachers must attained 15 CEU's or professional credits to maintain a valid license within a five year cycle, teachers have no choice but to attend the traditional style of professional development offerings thus hindering the more sustained and more effective types of professional development. The Department of Public Instruction goes as far as defining 10 clock hours of professional development as being 1 CEU. Darling-Hammond et al. (2009) stated that professional development must be sustained on average 50 hours to have a positive impact on student achievement. Furthermore, Darling-Hammond et al. (2009) said that in the United States, the average teacher receives only 16 hours of professional development each year. This equates to only 1.6 CEU's per year. In analyzing national professional development survey results, Birman et al. (2007) found that mathematics teachers averaged 13 hours of professional development on mathematics content and pedagogical skills during the 2003-04 school year. This equates to 1.3 CEU's. Fewer than 10% of participants experienced more than 24 hours or 2.4 CEU's of professional development on mathematics content or pedagogy during the year (Wei et al., 2009). This body of research indicated that students of teachers who participated in professional development for a limited amount of time (ranging from 5 to 14 hours in total) showed no statistical gains in student achievement. The literature reveals professional development must be sustained from 30-40 hours before teacher change can occur. However, to maintain a teaching license in NC, one must only attain 15 credit hours or 150 seat hours of professional development every five years in any

110

combination. The review of literature in this study follows the progression of professional development from the 1950s to present day. Just as the 1950s saw classroom instruction mostly led by the teacher who was deemed the subject expert, professional development was delivered in the same manner. As instructional practices have grown and progressed, so did the evolution of professional development to more of a team, collaborative approach (Joyce & Showers, 1996).

The needs of teachers to retool themselves from outdated educational strategies to meet the demands of 21st century learners is not the primary focus of professional development leaders at the state, district, and building levels. NCDPI's criteria of obtaining 15 CEU's of professional development every five years are directly related to the origins of professional development in the 1950s. As the delivery methods, types, and methods of professional development have progressed, this same progression has not evolved on the state re-licensure level. The study of professional development must continue to evolve and progress to meet the needs of a new generation of students.

Recommendations

Based upon the findings and conclusions of this study, the following recommendations are indicated. The recommendations are presented in relation to the respective state, district, building level needs and in respect to research.

State Level

1. There is a need for administrators to receive more effective training in professional development.

Administrator knowledge and practices influence student-learning (Guskey, 2000). The study revealed through the quantitative and qualitative data that school

leaders need additional or more effective training in professional development. If school

systems and school administrators are going to spend thousands of dollars and utilize

teacher time, better planning for professional development, selection of appropriate

professional development and alignment for the types of professional development

implemented with student achievement deficiencies is needed. The research suggests

that professional development offered by the central office and / or school district

leaders, is the least effective professional development teachers participate in (Darling-

Hammond et al., 2009). State leaders need to focus on the professional development of

administrators in selecting, delivering, and evaluating professional development.

2. There is a need for NCDPI to overhaul the antiquated system of teacher

renewal.

Hirsh (2009a) noted the elimination of one shot workshops, professional

development catalogs, payment for unrelated graduate courses, one size fits all

conferences and "cafeteria" staff development days are not productive. Professional

development should be aligned to those offerings that research and or experience

indicate will increase student learning. For years, the North Carolina Department of

Public Instruction has required teachers to obtain 15 CEU's every 5 years to maintain a

valid teaching license. Of these 15 required professional development credits, teachers

are automatically given 5 credits for active service therefore only needing 10 credit

hours. This system is in direct conflict with what the literature says about characteristics

of effective professional development. The literature on professional development

suggests that re-licensure needs to be based on the demonstration of teaching

competence and effectiveness instead of teachers earning an arbitrary number of hours

in a renewal cycle (Hirsh, 2009a). These 10 required hours must include only 3 hours in the teacher's subject area and the rest can include a wide range of professional development that can be participated in. These hours may or may not be relevant to the teacher's subject area or instructional strategies relevant to teaching. There is no connection between required professional development, sustainability, improving teacher performance, or increasing instructional strategies and the current system of maintaining a valid North Carolina teaching license.

District Level

1. There is an increased need to improve the professional development evaluation process.

The research of Darling-Hammond et al. (2009) suggested that professional development offered by the central office and / or school district leaders, is the least effective professional development teachers participate in. Central office personnel need to monitor and evaluate professional development offerings in much more detail. The research suggested that most professional development is evaluated only using Level I and II of Guskey's model. Educators must go deeper than just the participant's reactions and participant's learning. Levels III, IV, and V of Guskey's model, which refer to organizational support, the change in teacher behavior, and teacher use of new skills in applying the professional development over time must be evaluated. Evaluating these levels of Guskey's model is more difficult, but will provide valuable feedback on the quality of professional development, the impact on student achievement, and the sustainability of the professional development. Guskey's five levels of evaluation along with better awareness of the characteristics of effective professional development are

113

great tools and criteria for determining if professional development is relevant and effective.

    2. An increased emphasis on systemic planning will focus efforts on high quality professional development.

Central office personnel must effectively plan for professional development to allow teachers to reap the full benefits of the relationship between professional development offerings, teacher change, and student achievement. The intensity, quality, and duration of professional development are related to the amount of teacher change thus affecting student achievement. Central office personnel should consider the district weaknesses, school weaknesses, teacher weaknesses, and the characteristics of effective professional development, when designing, implementing a structure and delivery method for professional development. Central office personnel must ensure that building level administrators are keeping their professional development aligned with system goals.

    3. Superintendents must ensure that building level administrators are well versed in the area of professional development.

Professional development is an expensive venture, therefore it should be well planned, executed, sustained, and make a difference in the bottom line, which is improving instruction and increasing student achievement. The costs of professional development include: workshop expenses, registration expenses, presenter fees, travel costs, housing costs, substitute teacher costs, and may include other intangible costs. Superintendents and central office personnel must ensure that building level administrators are using funds wisely. This study indicates with the number of offerings

participated in by the traditional schools (see Appendix D) how easy it can be for teachers and administrators to participate in professional development outside of the focus of the system or individual school.

Building Level

1. Administrators need to become more strategic in deciding what types of and which delivery systems of professional development can bring about the biggest change in teacher behavior and in student achievement.

The principals of these three schools met with his or her leadership team, reviewed the models, and the staffs voted on several recommendations without considering the connection to test scores and staff weaknesses. Staff members in the traditional model schools participated in 89 professional development offerings in three years and also participated in 28 other school wide initiatives. With staff members participating in this number of initiatives and offerings, the researcher feels this is indicative of the traditional model participants. The concept of sustainability is difficult to maintain with staff members participating in this many offerings. Building level administrators must be knowledgeable enough in professional development to choose a model of professional development that aligns itself with the effective characteristics of professional development. Teacher change and increase in student achievement will be easier to accomplish if the professional development participated in has these characteristics.

2. Building level administrators must have a vision, be risk takers, and problem solvers.

Today's schools have a level of cultural, socio-economic, and educational diversity this nation has not witnessed before. Accompanying the diversity in our classrooms are accountability standards. The goal of NCLB is 100% of all students on grade level by 2014. This is an enormous goal. For schools to reach this goal, building level administrators must have a vision of how to change teacher behavior to reach that goal. As in any endeavor there are issues to reaching goals, therefore building level must be problem solvers in leading staffs to a new standard of teaching. Stand and deliver teachers of the 1950s must be re-tooled into 21st century teachers. Finally building level administrators need to be risk takers. With this era of accountability and classroom diversity, building level administrators must be willing to step outside of the box and take risks to change teacher behavior and to increase student achievement.

Recommendations for Further Research

Five research recommendations are made:

1. There is a need to clearly define the link between student achievement data and professional development.

Teacher effectiveness data and student achievement data should be used as criteria to determine and develop quality professional development. Over the three-year academic period in this study, there was no consistent improvement in student achievement in the measures of ABC's or NCLB. There is a connection between quality professional development and increased student achievement (Rollins, n.d.). While the connection between professional development and student achievement appears to be common sense, it is statistically challenging to prove because of the complex social and emotional environment of schools. The research in this area tends to be more

qualitative than quantitative because of the factors in a school that cannot be accounted for (Killion, 2002). In this study, the researcher agrees with Killion and could not draw any conclusive findings on the impact that either professional development model had upon student achievement. The student achievement results were very mixed and one could conclude in some subjects or subgroups the staff's focus on professional development rather than instruction may have hindered the progress of student achievement. Outside of survey data collected by the researcher there is little evidence of professional development evaluation. Guskey (2000) has set forth the standard for professional development evaluation, yet it was ignored. Wei et al. (2009) outlined the characteristics of effective professional development, yet there is no evidence these characteristics were noted before entering into the 3- year journey of professional development. This work is a great beginning; however more in depth quantitative research is required to begin clearly defining the link between professional development and student achievement

2. There is a need to conduct subject specific studies at the K-5, 6-8, and 9-12 levels.

Each grade span has its own characteristics and each level also has its own accountability measures. There is a need to conduct research on professional development in specific subjects as it relates to the accountability measure for that grade span, end of grade or end of course test. For example, conducting research on the results of language arts professional development at the K-5 level may produce similar or different results for language arts professional development at the 6-8 and 9-12 level. The results of this type of research could present break through information as

how to best reach students of a certain age in a particular subject given the different

variables of a specific grade span. This type of research may also begin defining the

links between professional development and student achievement.

3. There is a need to conduct additional studies at the K-5, 6-8, and 9-12 levels.

One aspect of this study examined the link between professional development

and student achievement on five end of course tests in grades 9-12. Additional research

is needed using comparison groups and which; professional development models are

more effective given the different purposes in different contexts and for teachers at

different points in their career (Darling-Hammond & Richardson, 2009). Just as

elementary, middle, and high schools have different characteristics, so do their

teachers. Raywid (1993) cited examples for creating professional development time: (a)

use part or all of faculty, department, or team meetings for professional development,

(b) lengthen the school day for 20 minutes four days per week; use an early release on

the fifth day to provide an extended period of time for professional development, (c) one

morning per week, engage students in alternative activities such as community service

that are supervised by parents, community members, or non-instructional staff; use this

time for professional development (d) provide a common scheduled lunch and planning

periods for teachers working on joint projects. The use of these strategies will be

different in each grade span because of the structure of the school day. Additional

insight would be beneficial to connect which type and delivery method of professional

development meet the needs of each grade span, and also linking professional

development for specific instructional strategies to each grade span could help

determine which types of professional development is most effective and has the largest impact on student achievement.

4. Additional quantitative studies need to be performed with larger sample sizes.

There is a need to replicate this study with an increased sample size. Each of the staff members were given the survey who had participated in the entire three year implementation of the professional development model. This qualitative sample size was larger and did produce a stronger look at the perceptions of the staffs. However in analyzing the quantitative data, only the teachers who taught the five end of course classes, Algebra I, Biology, Civics, English 9, and U.S. History were used. This sample size is roughly one third of the entire teaching staff of each school. The quantitative results would have been stronger if a larger sample size was available.

5. More longitudinal studies need to be performed to connect effective types and characteristics of professional development in regards to student achievement.

The research stated it is difficult to connect professional development and student achievement because of the time from the professional development is offered until testing occurs, and there are many student, family, and socieo-economic factors that cannot be accounted for. However, if the US is going to continue to measure school success and teacher effectiveness in terms of student achievement, then more research on the effectiveness of professional development in relation to student achievement must be performed over a longer period of time to identify sustained patterns of growth and improvement. Longer studies will allow for teachers to take advantage of the active learning process, create learning teams, and sustain changes in instructional practices.

Even though each staff felt the professional development delivered to them was beneficial and helped them prepare for teaching in the 21st century, it is disturbing to the researcher the majority of the responding teachers did not allow students internet access during instruction and still used worksheets and workbooks the same amount of time. As the global economy has evolved centered on knowledge with access to technology, teachers must prepare students to work, live, and learn using 21st century tools and digital resources (Rivero, 2006). Schools must stop preparing students for jobs that do not exist or do not have a sufficient wage to support a family. Six out of ten of the fastest growing occupations require post secondary training, indicating that high schools are preparing students for a work world that does not include fax machines, email, teleconferencing, or the internet (Daggett, 2005). Therefore, leaders must have more of a vision of what teaching 21st century skills include and convey that in any type of professional development implemented.

REFERENCES

American Educational Research Association. (2001). AERA position statement

    on high-stakes testing in Pre-K–12 education. Retrieved

    from

    http://www.aera.net/policyandprograms/?id=378&terms=high+stakes+testing

A Nation at Risk. (1983). Retrieved from http://www2.ed.gov/pubs/NatAtRisk/risk.html

Birdsell, B. (2004). More effective schools – Program evaluation. Retrieved from

    http://www.mes.org/NWRL,WholeSchoolModels-MES.pdf

Birman, B., LeFloch, K. C., Klekotka, A., Ludwig, M., Taylor, J., Walters, K.,

    Wayne, A., & Yoon, K. S. (2007). *State and local implementation of the No*

    Child Left Behind Act, volume II—Teacher quality under NCLB: Interim

    report. Washington, DC: U.S. Department of Education, Office of

    Planning, Evaluation and Policy Development, Policy and Program

    Studies Service.

Brecheimer, S. (2002). *School psychologists, coalition building, and high stakes*

    testing. Retrieved from

    http://www.nasponline.org/advocacy/SPAN/span/spp02.nchtml

Corcoran, T. B. (1995). *Helping teachers teach well: Transforming professional*

    development. Consortium for Policy Research in Education, Policy Briefs

    New Brunswick, NJ.

Daggett, W. R. (2005). The education challenge: Preparing students for

    a changing world. International Center for Leadership in Education, 1-18.

Darling-Hammond, L., & Ball, D. (1997). Teaching for high standards: What

   policymakers need to know and be able to do. Paper prepared for the National

   Education Goals Panel. Washington, DC: U.S. Department of Education.

Darling-Hammond, L., & Richardson, N. (2009). *Professional learning in the*

   learning profession. Retrieved from http:www.nsdc.org/presentation

Darling-Hammond, L., Wei, R. C., Andree, A., Richardson, N., & Orphanos, S.

   (2009). Professional learning in the learning profession: A status report on

   teacher development in the United States and abroad. National Staff

   Development Council. Retrieved from

   http://www.nsdc.org/news/NSCDstudy2009.pdf

Desimone, L. M., Porter, A. C., Garet, M. S., Yoon, K. S., & Birman, B. F. (2002).

   Effects of professional development on teacher's instruction: Results from a

   three-year longitudinal study. *Educational Evaluation and Policy Analysis, 24*,

   81-112.

Doherty, K. M. (2000). Planning and evaluation service. Early implementation of

   the Comprehensive School Reform Demonstration Program. U.S.

   Department of Education Summary Report.

Dorio, W. D. (2006). High schools good…and bad. *District Administration, 42*(10),

   44-47.

Dubner, S. J. (2008). How can the achievement gap be closed? A Freakonomics

   Quorum. Retrieved from

   http://www.freakonomics.blogs.nytimes.com/2008/03/18/how_can_the

   achievement_gap-be-closed

ERS. (2009). *What can schools do to reduce the achievement gap? ERS on the*

    Same Page Series. Retrieved from http://www.ers.orgotsp/otsp3.html

Elmore, R. F. (1997, Fall). Issues in science and technology. The politics of

    education reform. Retrieved from http://www.nap.edu/issues.14.1/elmore.htm

Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., & Yoon, K. S. (2001).

    What makes professional development effective? Results from a National

    Sample of Teachers. *American Educational Research Journal, 38*, 915-945.

Goudy, L., Fountain, C., & Monroe-Ossi, H. (2008, Sept.). *Professional learning of*

    middle school and preschool teachers using concept mapping. Paper

    presented at the 3rd International Conference on Concept Mapping:

    Helsinki, Finland and published in the Proceedings of the 3rd International

    Conference on Concept Mapping, v2, 564-570.

Graves, L. (2008). Closing the achievement gap. Retrieved from

    http://www.usnews.com/blogs/on-education/2008/7/23/closing-the-

    achievement-gap.html

Guskey, T. (2000). *Evaluating professional development.* Corwin Press. Thousand

    Oaks, California.

Guskey. T., & Yoon, K. S. (2009). What works in professional development?

    Retrieved from

    http://www.pdal.net.inc.Guskey%20&%Yoon%202009%20PDK%20effective%

    20pd.pdf

Harvard Family Research Project. (2006). A conversation with Thomas R.

    Guskey. The evaluation exchange: A periodical on emerging strategies on

    evaluation, XI(4), Winter 2005-2006. Retrieved from

    http://www.nsdc.org/professional.org

Hirsh, S. (2006). NSDC Standards Provide A Richer Definition of Professional

    Development than does NCLB. Retrieved from

    http://www.nsdc.org/news/jsd/hirsh273.pdf

Hirsh, S. (2009a). NSDC opens the door to professional learning that

    ensures great teaching for every student everyday: A new definition.

    Retrieved from http://www.nsdc.org/themes

Hirsh, S. (2009b). Creating Effective Teacher Professional Development in Tough

    Economic Times. Retrieved from

    http://www.nsdc.org/news/authors/hirsh_webinars3-26-09.pdf

Hord, S. (1994). Staff Development and Change Process: Cut from the Same Cloth.

    Retrieved from http://www.sedl.org/change/issues42.html

Houston, P. D., Blankstein, A. M., & Cole, R. W. (2007). *Out of the box leadership*.

    Corwin Press, Thousand Oaks, California.

Huch, S. W., Cormier, W. H., & Bounds Jr., W. G. (1974). Reading statistics and

    research. New York, Harper & Row.

International Food Policy Research Institute. (1998). Can qualitative and

    quantitative methods serve complementary purposes for policy research?

    Evidence from ACCRA. (FCND Discussion Paper No. 40). Washington,

    DC: Food Consumption and Nutrition Division.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed-methods research: A

    research paradigm whose time has come. *Educational Researcher, 33*(7)

    14-26.

Joyce, B. and Showers, B. (N.D.) Continuous Professional Development. Retrieved

    from http:// www.cornerstoneliteracy.org/PDF/2_7%20CPD.pdf

Joyce, B. and Showers, B. (2002). Student Achievement Through Staff Development.

    ASCD: Alexandria, VA.

Killion, J. (2002). What works in the middle: Results based staff development.

    Retrieved from www.nsdc.org/midbook/index/fm

Linn, R. (2003). Accountability: Responsibility and reasonable expectations.

    Educational Researcher*, 32*(7), 3-13*.* Retrieved from http://er.aera.net

Sparks, D., & Loucks-Horsey, S (1989). 5 Models of staff development. Journal

    of Staff Development, *10*(4), 40-57.

McClure, A. (2006) New Report Aims to Bring High Schools Into 21st Century.

    District Administration, *42,* 23.

McDonald, D. (2005). Global perspectives: From here to there. Southeast Center

    for Effective Schools. Power Point International Society for Equity and

    Effectiveness in Education.

McGill-Franzen, A., Allington, R. L., Yokio, L., & Brooks, G. (1999). Putting books

    in the classroom seems necessary but not sufficient. The Journal of

    Educational Research*, 93*(2), 67-74.

More Effective Schools. (2004). Raw Data. Retrieved from

    http://www.mes.org/nwrl/wholeschoolmodels_MES.pdf

Nealy, M. (2009). Teachers need more schooling too. Retrieved from

    http://diverseeducation.com/artman/publish/article_12258.shtml

North Carolina Department of Public Instruction. (2006). *Evolution of the ABC's*.

    Retrieved from

    http://www.ncpublicschools.org/doc/accountability/Reporting/abc/2006-

    07/abcevolution.pdf

North Carolina Public Schools. (n.d.). Frequently asked questions. Retrieved

    from http://www.ncdpi.org/profdev/faq

North Carolina Department of Public Education. (1999). Understanding end-of-

    course testing: Achievement levels. Retrieved from

    http://www.ncpublicschools.org/docs/accountability/testing/eoc/asb_achlev

    eoc.pdf

North Carolina Department of Public Education. (2008). Adequate Yearly Progress

    (AYP). Retrieved from http://www.ncpublicschools.org/nclb/abcayp

North Central Regional Educational Laboratory. (1993*).* Collaborations in

    education: Creating a professional development school. Retrieved from

    http://www.ncrel.org/sdrs/areas/issues/educatrs/profdevl/pd300.htm

NGA. (2009). Closing the achievement gap. Retrieved from

    http://www.subnet.gga.org/educlear/achievement/

NRMS. (2009). Raw Data. Retrieved from http://www.nrms.k12.nc.us/inside/

Pickvance, C. (2001). Four varieties of comparative analysis. School of Social

    Policy, Sociology and Social Research, University of Kentucky.

Pogrow, S. (2006). The Bermuda Triangle of American education: Pure

    traditionalism, pure progressivism, and good intentions. Phi Delta

    Kappan, *88*, 142-150.

Przeworski, A., & Teune, H. (1970). The logic of comparative social inquiry. New

    York: Wiley.

Public Schools of North Carolina. (1999). Assessment brief-understanding

    end of course testing: Scores and standards. In 1999-2000 Growth &

    Performance Report Pitt County Schools Report Card for ABCs (161-166).

    Greenville, NC.

Quality Educational Systems. (2005). 20/20 Insight Report for NCHS – AQE – Year

    1. Performance Support Systems, Inc.

Raywid, M. A. (1993). Community: An alternative school accomplishment. In

    G. A. Smith (Ed.), Public schools that work: Creating community (pp. 23-

    44). New York: Routledge.

Rivero, V. (2006). The future is flat: For student to have the necessary

    skills to succeed in a global world, districts must embrace technology –

    now. American School Board Journal*, 193*, 49-50.

Roberts, R. W. (1971. Vocational and practical arts education. (3rd ed.) New

    York, NY: Harper and Row.

Rollins, D. H. (n.d.). Designing powerful professional development for teachers,

    administrators, and school leaders. Department of Public Instruction.

    Retrieved from

    www.ncdpi.nc.us/docs/profdev/guidelines/ncguidelines/guidetodesigning.

    pdf

Schwartzbeck, T. D. (2002). Choosing a model and types of models: How to find

     what works for your school. The National Clearinghouse for

     Comprehensive School Reform. Research Brief.

Trochim, W. M. (2000). The research methods knowledge base (2nd ed.).

     Retrieved from http://trochim.human.cornell.edu/kb/design.htm

Wei, R. C., Darling-Hammond, L., Andree, A., Richardson, N., & Orphanos, S.

     (2009). Professional learning in the learning profession: A status report on

     teacher development in the United States and abroad. Technical Report.

     National Staff Development Council. Retrieved from

     http://www.nsdc.org.studytechnicalreport2009.pdf

Winters, M. A., & Forster, G. (2003). Testing high-stakes tests: Can we believe

     the results of accountability tests? *Teachers College Record, 106*(6).

Wisconsin Center for Education Research. (n.d.). Raw data. Retrieved from

     http://www.wcer.wisc.edu/articleindex/index.php?req=show_subcat&

     cat_id=8&parent_id=0

Yoon, K.S., Duncan, T., Lee, S., and Shapley, K. (2008). The Effects of Teachers'

     Professional Development on Student Achievement: Findings from a Systemic

     Review of Evidence. Paper presented at the annual meeting of the American

     Educational Research Association. March 24-28, 2008. New York.

APPENDIX A: INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board Office
1L-09 Brody Medical Sciences Building• 600 Moye Boulevard • Greenville, NC 27834
Office **252-744-2914** • Fax **252-744-2284** • **www.ecu.edu/irb**

TO: Mark Cockrell, 4512 Saddle Run Rd., Wilson, NC 27896

FROM: UMCIRB 𝒦𝒦

DATE: November 24, 2010

RE: Expedited Category Research Study

TITLE: "A Comparative Analysis Study of Professional Development Models Impacting Student Academic
Achievement"

UMCIRB #10-0586

This research study has undergone review and approval using expedited review on 11.22.10. This research study is
eligible for review under an expedited category number 5 & 7. The Chairperson (or designee) deemed this **unfunded**
study **no more than minimal risk** requiring a continuing review in **12 months**. Changes to this approved research may
not be initiated without UMCIRB review except when necessary to eliminate an apparent immediate hazard to the
participant. All unanticipated problems involving risks to participants and others must be promptly reported to the
UMCIRB. The investigator must submit a continuing review/closure application to the UMCIRB prior to the date of
study expiration. The investigator must adhere to all reporting requirements for this study.

The above referenced research study has been given approval for the period of **11.22.10** to **11.21.11**. The approval
includes the following items:
- Internal Processing Form
- Letter of Support (dated 10.13.10)
- Survey including consent—Principals & School Staff
- COI Disclosure Form (dated 10.12.10)

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

**The UMCIRB applies 45 CFR 46, Subparts A-D, to all research reviewed by the UMCIRB regardless of the
funding source. 21 CFR 50 and 21 CFR 56 are applied to all research studies under the Food and Drug
Administration regulation. The UMCIRB follows applicable International Conference on Harmonisation Good
Clinical Practice guidelines.**

IRB00000705 East Carolina U IRB #1 (Biomedical) IORG0000418
IRB00003781 East Carolina U IRB #2 (Behavioral/SS) IORG0000418
IRB00004973 East Carolina U IRB #4 (Behavioral/SS Summer) IORG0000418
Version 3-5-07

UMCIRB #10-0586
Page 1 of 1

APPENDIX B: STAFF SURVEY

Item	School A	School B	School C
Which School do you teach?			
Did you agree with the selection of the Professional Development Model chosen at your respective school?			
Do you feel you were given a thorough working knowledge of the selected Professional Development Model?			
Do you feel the selected Professional Development Model has had a significant impact upon student achievement in your school?			
Do you feel the Professional Development provided over the academic years of 2005-2006, 2006-2007, and 2007-2008 was: Beneficial to you as an educator?			
Has improved your ability to provide quality instruction in the classroom?			
Been helpful to unify your staff towards a common mission?			
Been helpful to clearly define your schools vision and mission for all stakeholders?			
Helped your staff has become more collaborative?			
The climate of your school is more inviting for students?			
The climate of your school is more inviting for parents?			
You use textbooks, workbooks, and worksheets less?			
That you are better equipped to differentiate instruction in the classroom?			
That you are valued more as an employee?			
That you have more input into the decision making process in your school?			
You have changed your daily classroom activities?			
Your school has been able to provide a more caring environment for all students?			
Your school has been able to provide a safer learning environment?			

That your staff is better equipped to meet the needs of at-risk students?			
Communication with parents and the community the school serves has improved?			
Student attendance has increased?			
That Professional Development should have been more subject oriented?			
As a result of the Professional Development provided? You are more knowledgeable in your content area?			
You integrate technology in your daily lesson more?			
Your students spend more time online in your class?			
In terms of Misc. Professional Development offerings not directly related to the chosen Development Model do you feel? There were too many offerings during this 3-year period?			
It hindered the implementation of and the effectiveness of the Professional Development Model?			
You were able to fully dedicate yourself to implementing the model?			
Do you feel that your participation in the 3-year Professional Development model has helped prepare you for teaching in the 21st century?			

APPENDIX C: PROFESSIONAL DEVELOPMENT OFFERINGS –

REFORM MODEL SCHOOL

School Year

2005-2006   Audit of Quality Education
              Strategic Quality Planning / Design
              Linking Philosophy & Mission w/ Practice
              Curriculum Mapping / Alignment
              Facilitator Training / Certification
              Technology Training

2006-2007   Audit of Quality Education
              Leadership Retreat
              Strategic Quality Planning / Design
              Classroom Instruction That Works
              Leadership System of Baldridge
              Tools for Active Indepth Learning
              Continuous Improvement of Processes
              Data Driven Decision Making
              Instructional Mapping
              Community Collaborations
              Tools for Transformation: Technology
              Facilitator Training / Certification
              Technology Training
              Student Learning Styles

2007-2008   Tools for Active In-depth Learning
              Reading for Writing & Learning
              Strategic Quality Planning / Design
              Quality Development/Deployment
              Comprehensive Assessment Strategies
              Creating Interdisciplinary Teams
              Facilitator Training / Certification
              Technology Training

* Please note the following are other school wide initiatives during this 3 year academic span: Weekly subject level collaboration meetings, Monthly meetings to discuss various topics, Staff Big Brother / Sister Program, Community Collaboration Team, Open House Report Card night, Community forums

Reform Model School.   (2007 – 2008).   Impact Report Cohort 5.   Raw Data.

APPENDIX D: PROFESSIONAL DEVELOPMENT OFFERINGS –

TRADITIONAL MODEL SCHOOLS

School Year

2005 –2006	Effective Schools Conference
	Writing across the Curriculum
	Learning Styles
	Correlate Teams
	Classrooms that Work
	Poverty Training
	Inspiration
	Learn NC
	Project Heart
	Teacher Academy
	PEP Training
	PDA Classroom Walk Through
	NEETA Fall Conference
	Writing Assessment Scoring
	In the Right Direction
	Lets Start a High School Writing Center
	John C. Campbell Folk School / Teaching
	SAS Technology Training
	Algebra Teacher's Kit
	Outlearning the Wolves: Book Study
	Using Multiple Intelligences
	NCSLMA Conference
	Rubrics
	Pre/Post Assessments
	Writing Across the Curriculum
	NC Counselor's Conference
2006 – 2007	Effective Schools Conference
	Rubrics
	Pre/Post Assessments
	Benchmark Testing
	Protocols
	What Works in Classrooms
	TESA
	PESA
	Square Wheels Training
	Editing Software for Student Made Videos

NC Social Studies Conference
Summer Science Leadership Institute
E - Instruction Workshop
Thinking Maps
History Alive Curriculum Development
Learning Centered School
PASI
PBS
Leadership of the Carolinas
NASSP Conference
NC Network Conference
NC PAPA Conference
NC Social Studies Conference
Math Leadership Conference
AP Summer Institute
Counselor Workshop
NCSLMA Conference
NC Reading Conference
NCTEC Conference
TESA

Square Wheels
History Alive
Learning Centered School Institute
Thinking Maps
What Works in Classrooms
Differention of Instruction
Closing the Achievement Gap
NCIRA
Social Studies Staff Development

Academy of Reading
Health Staff Development
Chemical Hygiene Training
Science Staff Development-TASC
Writing across the Curriculum
FLANC

2007 – 2008

Effective Schools Conference
NASSP Convention
NC Safe Schools Conference
NC Network Conference
NASSP Conference
NC Network Conference
NC PAPA Conference
NC Social Studies Conference
AP Summer Institute
NC Reading Conference

NCTEC Conference
PESA
E-Instruction Workshop
Leadership of the Carolinas
Social Studies Staff Development
Teacher Academy

* Please note the following are other school wide initiatives during this 3 year academic span: Progress Reports, Parent Phone Calls, Maintaining Phone Logs, Common Lesson Plans, Grade Level Meetings, Novel Stars, Monitoring of At-Risk students, Sending out Post Cards, Open Houses, Math Night Out, Creation of School Alumni Organization, Creation of Cultural Awareness Night, Freshman Transition Classes, After School Tutoring, Test Wizard for Social Studies, Math, and English, Eduware Software, Leadership Class Books, LCD Projector Training, Leadership Retreat, School Curriculum Fair, Financial Aid Workshops for Parents, After School Tutoring, Freshman Transition Program, Parent Call Logs, Peer Mediation / Counseling, Progress Reports, Novel Stars Traditional Model Schools.