ABSTRACT

CASTLEBERRY, EMILY. Influences of Professional Development on Teachers and Teacher Retention: Perceptions of Teachers and Professional Development Administrators. (Under the direction of Dr. Brad Mehlenbacher.)

The purpose of this case study is to examine the influence of professional development on K-12 teachers to determine how teachers and administrators who are engaged in the professional development process describe their experience with effective professional development in relation to the 12 North Carolina professional development standards, and to ascertain whether the teachers and administrators recognized a relationship between effective professional development and teacher retention. To meet the needs of both the teacher and the administrator, professional development pedagogy must be congruent with the pedagogy desired in the classroom. The study describes both online and face-to-face interviews of teachers who take professional development workshops and administrators who develop them. Teacher Working Conditions (TWC) Survey data from 2002 through 2009 are explored and used as background for the data collected as part of this case study. The TWC data reveal differences in the perceptions of the teachers participating in professional development programs and the administrators who direct those programs (TWC, 2009.)

The researcher reviewed the professional development and teaching research, collected survey data from 366 teachers and 33 administrators, and conducted open-ended interviews of five self-selected teachers and five self-selected administrators. The goal of this work is to explore how teachers and administrators who engage in the professional development process perceive their experience with professional development in relationship to the 12 North Carolina professional development standards, and whether there is a

relationship between professional development and the perception of teachers and professional development administrators regarding the recruitment and retention of teachers.

The online survey was conducted between March 1, 2009 and March 31, 2009. The semi-structured open-ended interviews were conducted between April 1, 2009 and May 1, 2009. Over three-quarters of professional development administrators and over half of the teachers within the study affirmed teachers knew the 12 standards of professional development. However, in practice, a difference in perceptions regarding strengths and weaknesses of existing professional development practices were noted. Issues related to communication between professional development administrators and K-12 teachers are discussed. The demographic factor of age, and the contextual factors of years in service and number of job changes are explored. The breakdown of responses by teachers and administrators by these demographic and contextual factors suggest these factors have an impact on the perceptions of teachers and administrators.

Influences of Professional Development on Teachers and Teacher Retention: Perceptions of Teachers and Professional Development Administrators

by
Emily Abigail Castleberry

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APPROVED BY:

Dr. Conrad Glass	Dr. Karen DeBord
Dr. Pooneh Lari	Dr. Brad Mehlenbacher Chair of Advisory Committee

DEDICATION

This dissertation is dedicated to the memory of my mother, Mary Jane Pippin Mohn, who always believed I could accomplish anything as long as I tried diligently and did not give up. She was my role model and example of never giving up. For the last three and a half years of her life, she struggled with amyotrophic lateral sclerosis (ALS). Instead of feeling sorry for herself, she continued to do all that she could. When she could no longer leave our home, she made phone calls to encourage all the seniors and shut-ins in our church, senior family members and neighbors. She is still my inspiration and encouragement to keep trying.

BIOGRAPHY

Emily Abigail Mohn Castleberry received her undergraduate Bachelor of Arts degree from the North Carolina Central University in Elementary Education. She received an add-on certification in Specific Learning Disabilities at UNC Chapel Hill. Emily received a Corporation for Public Broadcasting (CPB) scholarship to Ohio University from August 2000 until June 2001. As a CPB Scholar, she received her Masters of Arts degree from Ohio University in Communication within the College of Communications and the School of Telecommunications.

Emily worked as the Literacy Coordinator and Director TeacherLine at UNC Center for Public Television from June 2001 to June 30, 2009. Previously, Emily worked for UNC Center for Public Television as the PreK-12 Manager from March 1, 1996 until February 28, 2000. Prior to this employment she worked for Durham Public Schools at Glen Elementary School as a K-5 teacher from August 1986 until August 1994, and as Sixth Grade Specific Disabilities teacher within the inclusion model at Chewning Middle School from August 1994 until February 1996.

Emily lives in Durham, North Carolina, with her husband, Sandy, and their two large black dogs. One is a black male Labrador mixed with Schnauzer Terrier, and one is a black female Labrador mixed with Shepherd.

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CHAPTER 1: INTRODUCTION

Introduction

Teachers are expected to keep abreast of new knowledge, to individualize instruction for a diverse population of students, to help all students achieve high standards, to introduce new technologies into the classroom, to become experts in student growth and development, to help manage the school, and to reach out to parents and the community. K-12 teachers are striving to do all this and more, but they find themselves pressed for time and opportunities to learn. Teachers know that they should work collaboratively yet, daily, they are isolated from other adults (Darling-Hammond, 1998; Guiney, 2001; Loucks-Horsley, Hewson, Love & Stiles, 1998; National Commission on Teaching and America's Future, 1996; National Foundation for the Improvement of Education, 1996; Sokolik, 2005; Wagner, 2001.) Teachers know that "communities of practice," which involve working closely with groups of people who share a concern or need can lead to more instances of excellent teaching (Wenger, 1998; Wenger, 2001; Wenger, McDermott & Snyder, 2002; Wenger & Snyder, 2000.) However, neither the time (interviewees' issue in this study) nor telephones (interviewees' feelings of isolation) are available to communicate with other professionals in or outside most K-12 schools (Inman, 2004; Osterholm, Horn & Johnson, 2006.) Ask teachers what they need to do a better job and the first response is always "more time."

Statement of the Problem

Attracting and maintaining highly qualified teachers in North Carolina is challenging. Developing an effective means of supporting and retaining teachers is crucial to creating a quality, learning environment for students and a supportive work environment for teachers

(Smith, Hofer, Gillespie, Solomon. & Rowe, 2003.) The recruitment and retention of new teachers presents a critical problem within the state of North Carolina as many teachers near retirement age (Gayton, 2008; Hussar, 1999.) The problem is exacerbated by national trends that indicate that one third of new teachers leave during the first year in the classroom and about 50 percent leave after five years (Gayton, 2008; National Commission on Teaching and America's Future, 2003; Yasin, 1999.) According to the Alliance for Excellent Education (2005), teacher attrition costs North Carolina's schools $188,565,281 each year (not including retirement.) This includes $ 84,497,347 for teachers leaving the profession and $104,067,934 for teachers transferring to other schools (Alliance for Excellent Education, 2005.) The requirement placed on school districts by No Child Left Behind to have teachers meet the "highly qualified" standards complicates the school districts' constant search for more qualified teachers (Office of the Deputy Secretary, 2004.)

To be successful, teachers need professional development that is a sustained, intensive effort to improve teaching and learning (Bos, 1995 & 2001; Broughman & Rollefson, 2000; Loucks-Horsley, Harding, Arbuckle, Dubea, Williams, & Murray, 1987; Loucks-Horsley, 1998; Richardson, 2003; Richardson & Placier, 2001.) To improve instruction, professional development must be collaborative, long term, and content driven (Barufaldi & Reinhartz, 2001; Belzer & Smith, 2001; Bullough, Crow, Hobbs, Kauchak & Stokes; 1997; Guskey, 2000; Guskey & Yoon, 2009.) Success requires teachers to be active learners, and a coherent part of other well-planned professional development activities (Buldu & Yilmaz. 2002.)

School systems are trying a variety of methods to retain highly qualified teachers. The elements of time, school climate, communication, workload, student discipline and a variety of initiatives are being used to retain teachers (Inman, 2004; Osterholm, Horn & Johnson, 2006.) These factors all fit under the sometimes little understood term of administrator support (Bobek, 2002.) Billingsley (2004) notes the importance of clearly defining expectations. Further, Billingsley indicated when school districts support additional professional development, the faculty members view this as an indication of administration's belief in their worth and professionalism. This statement appears an obvious conclusion, but according to Billingsley, this is not obvious in all schools and districts across the country. Billingsley concurs that professional development is an important part of teacher retention. She indicates that this especially true for faculty working with special needs children since this is her primary area of research (Billingsley, 2004.) Other school systems try to retain teachers through changes in salary (financial incentives), establishing support groups (learning communities), and through benefits and rewards such as recognition of the teacher's contributions to the school and community (Davis, 2009.)

Another important aspect of retaining new teachers is mentoring (Odell & Ferrraro 1992.) Two cohorts of 150 new teachers had mentors in a 1992 study. After four years 96% of these teachers were still employed as teachers. This points to mentoring as a possible route to teacher retention (Odell, 1992.) Studies on the impact of mentoring programs have provided empirical evidence that it has a positive impact on teacher retention (Ingersoll and Kralik 2004.) Mentoring needs to be a formal process that provides teacher growth and teacher retention (Bell & Thomas, 2007.)

Purpose of the Study

The purpose of this case study is to examine the influence of professional development on K-12 teachers to determine how teachers participating in professional development and administrators who are engaged in the professional development process describe their experience with professional development in relation to the 12 North Carolina professional development standards, and to ascertain whether the teachers and administrators recognized a relationship between effective professional development and teacher retention. The learning experiences of the participating teachers and their reflections on how these experiences were connected to their tenure in the classroom are an integral part of this study.

This study focuses on the collection and interpretation of data regarding the influences of professional development on K-12 teachers in North Carolina along with the perceptions of K-12 teachers and staff development administrators regarding these influences. Discovering how teachers and administrators viewed professional development required putting all the bits of data together much like completing a puzzle. A cooperative learning environment that provides an open communication between teachers and administrators through collaboration might be a key to solving the professional development puzzle across North Carolina. Collecting pieces of data required recognizing patterns through discovery and interpretation to provide a clearer picture of how professional development influences teachers through examining teacher and administrator perceptions (Piccoli, Ahmad & Ives, 2001; Smith, 1983.)

The National Staff Development Council's (2006) goal was for all teachers in all schools to experience high-quality professional development as part of their daily work

(NSDC, 2006.) Opportunities for professional growth and renewal often takes place within the workplace and are integrated into the daily life of practitioners. Opportunities to develop professionally, not only benefited individuals in shaping and performing their craft, but also help ensured that best practice was an everyday procedure and that the most effective approaches were used (Edwards, 1998; Keller, Ferguson & Wittenborg, 2003; Little, 1993.) Schools struggle to provide adequate professional development for teachers (Schlager & Fusco, 2004.) Problems attracting and maintaining teachers in rural areas were reflected in the growing income differential between rural and urban areas, with poorer counties subject to much higher property tax rates for local school support (Buchanan, 2002; Clewell & Villegas, 2001; Collins, 1999; Gade, Rex, Young & Perry, 2004; Lemke, 1994; Marquardt, 1994;US Department of Agriculture Economic Research Service, 2006.)

Teachers and Professional Development Administrators

A shift to a performance-based approach to supervision and evaluation demands the commitment and energy of both teachers and supervisors (Aseltine, Faryniarz & Rigazio; DiGilio, 2006.) There is no doubt that the current educational climate is driven by an overriding concern with student achievement and what promotes it (Smith & Gillespie, 2007.) If poor performance and lack of potential are the root causes of turnover among teachers—defined here as departure from a teaching position either through leaving the occupation or switching schools—then high rates of turnover might simply be the cost of ensuring teacher quality. This does not appear to be the case. Research has consistently shown that teachers with strong academic backgrounds, the characteristic most often associated with student achievement gains, are more likely than those with weak

backgrounds to leave teaching (Henke, Chen, & Geis, 2000; Murnane, Singer, Willett, Kemple & Olsen, 1991; Odden, Archibald, Fermanich & Gallagher, 2002; Schlechty & Vance, 1983.)

Professional development combined with mentorship may play a role in retaining teachers in the early years. Many first year teachers experience overwhelming isolation as they leave the support of student teaching cohorts, cooperating teachers, and university supervisors to work with children behind the closed door of a classroom. Leaving the support to which they were accustomed in their training may undermine the goals, diminish the spirits, and destroy the self-esteem of first year teachers. New teachers need assistance with both long- and short-range planning, transitioning children from one activity to another, including children with special needs or language differences, and working with parents. This assistance can best be provided by more experienced teachers who are working or have recently worked toward similar goals in similar settings (Certo & Fox, 2002.)

Defining Professional Development

Diaz-Maggioli (2004) defines professional development for teachers as a career-long process in which educators fine-tune their teaching to meet student needs. Professional development is essential to maintain the requisite knowledge, skills, and attitudes to be a successful teacher. This development can be defined as opportunities offered to educators to develop knowledge, skills, approaches, and dispositions to improve job effectiveness (Owen & Skinner, 2004.) Professional development supports growth through individual and group activity that includes independent study regarding professional development, action research, study groups, peer coaching, journaling, computer applications, and training. High-quality

training programs are designed to focus on trainee learning not only at a training site, but also on-the-job (North Carolina Professional Development Committee, 2003.)

Professional development is also the term that educators use to describe the continuing education of teachers, administrators, and other school employees. The National Staff Development Council (NSDC) provides standards for professional development for all those who work with students and clearly articulates the intended outcome of all professional development should be to improve student achievement. The 12 standards are research-based and organized around three broad areas to support the research: context standards, process standards and content standards (North Carolina Professional Development Committee, 2003.)

High-quality professional learning produces positive results that manifest in teachers' classroom practice and the performance of their students. Although staff development may have increased teachers' knowledge of their subject content, unless staff development was high-quality professional learning, teachers would not use that knowledge to improve classroom curricula and help students perform at standard. Staff development may increase teachers' knowledge of effective pedagogy, but it is high-quality professional learning that causes them to translate that knowledge into more focused and engaging classroom instruction. What is really important is whether the purpose and effect of these approaches will spark learning that produces demonstrably more effective teacher practices (Ball, Sleep, Boerst & Bass, 2009; Gallimore, Ermeling, Saunders, & Goldenberg, 2009; Hiebert & Morris, 2009; Jansen, Bartell, & Berk, 2009; Morris & Hiebert, 2009; National Staff Development Council, 2009.)

Context standards address the organization, system, and culture in which the new learning becomes instruction that is implemented and described through structures that must be in place for successful learning to occur. Process standards describe the learning processes used in the acquisition of new knowledge and skills and address the use of data, evaluation and research. Content examines what students must know and be able to do. Professional development content addresses the knowledge and skills that ensure all students are successful. The NSDC standards serve as the basis for the North Carolina 12 standards of professional development for teachers (North Carolina Professional Development Committee, 2003; North Carolina Public Schools, 2007.) These 12 standards include dimensions related to learning communities, leadership, resources, data driven, research based, design, learning, collaboration, equity, quality teaching, and family involvement.

Exploring Professional Development and Teacher Retention

The importance of teacher learning cannot be over-emphasized. Professional development assessment helps determine teacher learners (Putnam & Borko, 2000.) Growing emphasis on lifelong learning is supported by research and evidenced by several current factors such as the connection between high quality teachers and improved student performance (Hiebert, Gallimore, & Stigler, 2002; Kowalski, 1983; Mirel, 1994; Moore, 2000), Even highly developed knowledge and skills are no longer sufficient to meet new challenges, situations and problems facing individuals, organizations. The issue for educators and trainers is how to generate and assess abilities to deal with challenges and problems unknown at the time when the learning takes place (Illeris, 2009**.)** Research continues to expand the definition of what that means. Bernard-Powers et al. (2000) state,

“Fundamental…is the idea that adults are learners just as are children, and learn best when there are ongoing opportunities to develop questions, investigate, reflect, apply and share knowledge in real-life contexts" (p. 4.) Independent or self-directed learning can be defined as "a process in which individuals take the initiative, with or without the help of others” (Knowles, 1975, p. 11), to diagnose their learning needs, formulate learning goals, identify resources for learning, select and implement learning strategies, and evaluate learning outcomes (Knowles, 1975.) Herber and Nelson-Herber (1987) noted the challenge for teachers to become lifelong learners. For example, adult learners who have not been given the responsibility and the expectations for their own transformation and professional development may need modeled independent learning skills in order to incorporate such practice into their own learning as well as their teaching methods (Herber & Nelson-Herber, 1987; Lowry, 1989; Marsick and Watkins, 1989.)

Professional development for teachers needs to become a seamless part of the daily and yearlong job (Darling-Hammond, 2000; Fullan, 1999; Gregory, Rozzelle & Nikas, 2004; Johnson, Birkeland, Kardos, Kauffman, Liu & Peske, 2002.) Accommodations need to be made in teacher education by changes in how time was used throughout the school year and beyond it. Professionals in most fields routinely network with fellow practitioners, conduct and review research, and talk to experts and colleagues about new trends, emerging issues, and plans for improvement (Sparks & Hirsh, 2000; Sparks, 2002;Schlager & Fusco, 2004.) Finding ways to support and retain new teachers was an issue with implications for students, parents, veteran teachers, administrators, teacher educators, policymakers, and taxpayers, not to mention the new teachers themselves (Russo, 2001; O'Laughlin, 2001.) High teacher

turnover leads to less stable and less effective learning environments for students, places greater demands on other teachers and other school staff members, and increases the amount of money and time that must be spent recruiting, hiring, and training replacements (DePaul, 2000.) High turnover also limits the ability of schools to carry out long-term planning, curriculum revision, and reform, which may in turn have a significant impact on school funding (Halford, 1999.)

To understand the relationship between professional development and teacher retention, it was important to understand how professional development fits into the schema of the standards-based reform and/or accountability movement. Standards-based reform was more than just external standards and assessments, in that teachers were increasingly expected to emphasize higher order content and more demanding thinking skills (e.g., conjecture versus memorization) than they have in the past (Clotfelter, Ladd, Vigdor & Aliaga, 2004.)

This could be seen as either a challenge to teachers' professional autonomy, requiring teachers to obtain more content knowledge than the profession has typically required, or the chance to enhance their professionalization (the process whereby an occupation becomes a profession) by facilitating the development of subject-specific content and pedagogical skills (Cohen, 1990; Elmore, Peterson, & McCarthey, 1996; Grant, Peterson, & Shojgreen-Downer, 1996; Sizer, 1992.) Previous research on staff development and collaboration suggests that individual teachers do not profit equally even when the conditions supporting collaboration were positive (Elmore, et al, 1996; Klingner, 2004; Vaughn, Hughes, Schumm, & Klingner, 1998.) Certain teachers were likely to learn a lot and others were likely to not

learn much at all. Although NCLB (2001, sect. 9191) requires new teachers to have in-depth content knowledge in the fields that they will teach before they enter teaching, professional development was the primary means for deepening content knowledge among current teachers.

To improve classroom teaching in a steady, lasting way, the teaching profession needs a knowledge base that grows and improves (Hiebert, Gallimore & Stigler, 2002.) Furthermore, participation in professional development activities is one way in which states can ensure that teachers were highly qualified according to NCLB (Public Education Network & National Coalition for Parent Involvement In Education, 2004a, 2004b & 2004c.) Although increased student achievement is the ultimate goal of most current professional development activities, systemic reform initiatives were more likely to have a lasting impact if professional development offerings served to enhance teachers' commitment to the profession as well as their knowledge and skills to teach to higher standards (Wenglinsky, 2000 & 2002.)

While few studies have examined the relationship between teacher commitment and professional development activities, Rosenholtz (1989) and Louis (1998) found teachers' learning opportunities have a direct relationship with teacher self-reports of their commitment to the profession. Furthermore, Rutter and Jacobson (1986) found the relationship between professional development and teacher commitment to be mediated by the level of collaboration and input into decision-making (Farkas, Johnson, Foleno, Duffett, & Foley, 2000; Smith & Rowley, 2005.) Understanding the puzzle pieces of teacher

professional development can provide a complete picture of how North Carolina professional development can help K-12 teachers apply or adapt learning (see Figure 1 in Chapter 2.)

Developing an effective means of supporting and retaining teachers was also crucial to creating a quality-learning environment for students and a supportive work environment for teachers. Added to the already difficult task of retaining teachers in North Carolina and other parts of the nation were in continual preparation of those teachers in order to meet the ongoing needs of an increasingly culturally diverse and bilingual population (Bernal, 2002; Branch, 2001; DePaul, 2000; Kestner, 1994; Shure, 2001; Torres-Guzman, 1996; U. S. Department of Education, 2007.) To be successful, teacher professional development needs to be a sustained, intensive effort to improve teaching and learning. This involved both teachers and the professional development administrators across the state. However only 27 percent of teachers nationally who received professional development in 2000 reported that it improved their teaching (NCES, 2001.) The TWC study began in 2002 in response to the state's need to retain teachers in North Carolina classrooms. The North Carolina 2006 Teachers Working Conditions (TWC) annual survey of North Carolina teachers with 75,000 (66% of North Carolina public school educators) responses from 90% of North Carolina schools looked at time, empowerment, facilities and resources, and professional development. The 2006 TWC reported, "44 percent reported …little or no role at all in determining the content of their professional development" (p. # 35) (TWC, 2006; 2008.) In 2008, 104, 249 (87% of North Carolina public school educators) looked at leadership, time, professional development and resources. The 2008 TWC noted that 60% of teachers agreed that they were involved in decision making while 97% of principals stated that teachers were

involved. The 2008 TWC notes, “School leaders that can empower teachers, create safe school environments and develop supportive, trusting climates will be successful in promoting student learning.” The TWC also notes that a key issue in retaining teachers is the provision of a supportive learning environment (TWC, 2008.) The 2006 and 2008 TWC studies’ results lead to the belief that a possibility exists that there may have been a difference between the way administrators and teachers describe effective professional development and how they understand the relationship between professional development and retention. The idea of a difference in perceptions by teachers and administrators is identified in the 2008 TWC. The 2008 TWC stresses the different perceptions held by teachers and administrators. Gaps between “the perceptions of teachers and administrators regarding how school leadership addresses teacher concerns” and the degree of the discrepancies “is startling and must be taken into consideration for any working conditions reforms to be successful” (TWC, 2008.)

Research Questions

Question 1: How do teachers and administrators who engaged in the professional development process describe their experience with effective professional development in relationship to the 12 North Carolina Professional Development Standards?

Both quality and duration of professional development opportunities affect teachers’ ability to improve teaching practices and student achievement (National Staff Development Council, 2002; Sparks, 2002.) Standards developed by the National Staff Development Council (NSDC) provide guidance to policymakers and practitioners in understanding what constitutes high quality professional development. North Carolina standards are based on the

standards developed by the National Staff Development Council (NSDC.) These NSCD standards emphasize the importance of not only the content of professional development, but also the process in which it is communicated and the context in which it should occur. Professional development can be either good—adherent to a given set of principles and standards set forth — or bad—by not adhering to a given set of standards. This strong dichotomy serves as the standard and basis for the standards set forth by the state of North Carolina. Although in practice most professional development is a combination of these elements, it is not the role of this researcher to determine what is good or bad professional development, but to note whether a particular form of professional development adheres to standards set forth.

North Carolina became the first state to study teacher working conditions by surveying teachers and administrators and providing customized reports to individual schools about how their teachers feel about their school and what matters to them in making decisions about whether to continue teaching. From the first study in 2002 to the fourth study in 2008, the Teacher Working Conditions Survey (TWC), the number of participants continues to grow in the number. The 2002 and 2004 TWC studies found five conditions that concerned teachers—time, professional development, empowerment, and facilities and resources—needed to improve learning conditions of students and to assist in teacher retention. As a result, professional development requirements became a major focus of the North Carolina Department of Public Instruction to meet this need. The number of professional educator continues to grow. The 2006 TWC received a 66 percent response from school-based licensed educators (75,000.) The 2008 TWC response rate reached 85

percent of the state's schools (1,985) that reached the minimum response rate (40 percent) necessary to have valid data.

The data received were essential to help policymakers design flexible and effective policies that could be adapted to unique needs of individual school communities (U. S. Secretary of Education, 2003.) In chapters four and five of this research, teachers in North Carolina note lack of input into their professional development. The lack of communication between teachers and administrators was noted in this research (Dufour, 2001.) This lack of communication leads to the question as to whether districts were using the results of the annual survey.

In 2003, North Carolina adopted 12 research-based professional development standards for teachers organized around three broad areas. These standards serve to support teacher reflection research. They include content, context, and process (National Staff Development Council.) Five standards addressed within the professional development division context include learning communities, leadership, resources, data-driven systems and evaluation (DuFour & Eaker, 1998; Dufour & Eaker, 1999; Stein, 1998.) Within the division of process, professional development strands addressed include design, learning, collaboration, and equity and research driven. Within the division of content, two professional development strands of quality teaching and family involvement were addressed (Campbell & Kreinberg, 1998; National Staff Development Council, 2003.) The five pieces of the puzzle draw from these strands unite them in a cycle that can work together within a district's professional development.

Question 2: Do teachers and administrators believe there is relationship between effective professional development and attrition?

Teachers and administrators are vital to the success of any school and must work in partnership with schools and school districts in the training, retention, and development of teachers. The educational community is facing a tremendous shortage of trained professionals, teachers, principals, and other administrators, to serve in leadership roles in our nation's schools. It is crucial that we nurture and support the pool of candidates that now exists as we look for ways to recruit additional candidates for the future (Bolman & Deal, 2002; McCreight, 2000; Roberts & Pruitt, 2009.) There are four essential elements of organizational culture that foster high levels of employee retention. The culture must maintain choice, balance, development, and care (Bolman & Deal, 1997.) The greatest agent for organizational change is socialization within a culture. If an organization takes on the identity of a growing, adapting, and learning organization, it becomes part of the fabric of how they operate.

It is important for both teachers and administrators to understand how they can work together to meet the professional development needs of North Carolina teachers. The 2004 Teacher Working Conditions survey and the Southeast Center for Teaching Quality (SECTQ) report notes that teachers and local school administrators had different perceptions of teacher working conditions. How this factor will impact the current study was important to note in the findings.

We might anticipate that teachers and administrators perceive a connection between professional development and teacher attrition based on existing research. Further, a lack of

communication and understanding between administration and teachers might have been expected given the focus of the day-to-day work of administrators and teachers. The overall goal of positively impacting students was the same, but an understanding of how this was accomplished varied. The study data collected complimented existing research on the relationship of professional development to teacher working conditions and any relationship to teacher attrition. Based upon the literature, teachers and administrators in North Carolina recognize the need to restructure current professional development opportunities for all teachers in order to retain teachers and decrease attrition (Teacher Working Conditions, 2004, 2005, 2006, 2007, 2008.)

The variables of age, years of service and number of job changes impacted the responses and perceptions of teachers and administrators to questions during semi-structure open-ended interviews and questions in an online survey. The variables within this research included the personal characteristics or individual factors and the contextual factors regarding the self-selected teachers and administrators, and their influence on professional development outcomes for teacher. Personal characteristics include age, race, number of years teaching, number of career or job changes. Contextual factors were characteristics of the environment that were related to the effectiveness of collaboration. Contextual characteristics center on the 12 professional development standards that include learning communities, resources, learning communities, leadership, design, equity, data-driven, evaluation, research-based, learning, family involvement, quality teaching and collaboration.

This case study examined the individual and contextual influence of these characteristics impact upon K-12 professional development perceptions of teachers and administrators.

Significance of the Study

Research suggests that professional development activities could influence teacher satisfaction and subsequent plans to remain in teaching (Parkes & Stevens, 2000.) Professional development is essential to maintaining the requisite knowledge, skills, and attitudes to success on the job (Bempah, Kaylen, Osburn & Birkenholz, 1994; Darling-Hammond, 1997; Ginsberg & Berry, 1996; Murnane & Levy 1996; Rice, Gentile & McFarlin, 1991.) This development was defined as opportunities offered to educators to develop knowledge, skills, approaches, and dispositions to improve job effectiveness. Professional development supports growth through individual and group activity that includes independent study, action research, study groups, peer coaching, journaling, computer applications, and training. (Arnstine, 1975; Kohl, 1976; Lampert, 1985; McDonald, 1986; Schon, 1983; National Staff Development Council, 2001; Wilson, 1975.)

The 2004 North Carolina Teacher Working Conditions Survey (TWC) showed that North Carolina's 11,399 teachers or 12.37% of the 92,166 teachers employed in North Carolina's 117 school systems during the 2003-2004 school year left their systems (Office of the Governor in conjunction with the North Carolina Professional Teaching Standards Commission and the North Carolina Association of Educators, 2004.) The Center for Teaching Quality (CTQ) formerly Southeast Center for Teaching Quality (SECTQ) analyzed the Teacher Working Conditions Survey results and other critical variables against various

measures of student achievement, such as Adequate Yearly Progress status under the federal No Child Left Behind Act, student achievement growth and ABC school designation status.

The TWC Survey results indicate a high level of teacher satisfaction with the effectiveness, supportiveness, and professionalism of their school leaders, and with the opportunities they had to design and engage in professional development and school leadership activities (Birman, Desimone, Porter & Garet, 2000; Roberts & Pruitt, 2009.) However, the teachers' greatest concern in the 2004 survey regards the time available to engage in planning, teaching and professional development critical to reaching all students. This was shown clearly in the closeness of the average rating for professional development (3.77) to the highest rated working conditions domain of leadership (3.78) (NCDPI, 2004.) The summary of the 2004 TWC suggests a correlation between professional development and retention for elementary teachers within the conclusions (NCDPI, 2004.)

The findings for the 2004, 2005 and 2006 TWC surveys suggest a correlation between professional development and retention. All three studies recommended continued professional development as a remedy to current working conditions. Although these studies do not seek the exact information sought within this study, they do point to both a correlation between professional development and teacher retention and a difference in the views of teachers and administrators on what meets teacher needs. The Center for Teaching Quality published research comparing the results garnered by earlier TWC surveys. The report noted teachers who were unhappy with their professional development "often did not have access to the kind of professional development they needed." Further, differences between how teachers and administrators view teaching and learning conditions can vary greatly (Berry,

Smylie & Fuller, 2008.) Grissom analyzed Schools and Staffing Surveys (SASS) and related Teacher Follow-Up Surveys (TFS) from the National Center for Education Statistics and found evidence that principal leadership, an orderly schooling environment, greater classroom autonomy, and increased professional development predict lower teacher turnover after controlling for student and teacher demographics (Grissom, 2008.) Harris and Spillane looked at distributed leadership and how there were multiple leaders in a school system (Harris & Spillane, 2008.) Woods and Gronn reviewed the comparative merits of distributed leadership and democratic leadership as understandings of leadership in organizations (Woods & Gronn, 2009.)

Limitations of this Study

As with any study, there were some limitations that must be recognized. Simply collecting data about teacher professional development in North Carolina was not sufficient. Data must be valid, reliable, and clearly defined to meet the criteria regarding teacher and administrator views on professional development and teacher retention. However, collection of too much data can make the process unwieldy and cumbersome. The relationship between increased teacher development and increased time on-the-job is a complex one and relationships between variables may be accidental rather than causal. Using the qualitative method of interviewing greatly limits the sample size. Time and related costs were limiting factors due to the size and geography of the teacher-administrator population in North Carolina. Travel at the longest point from east to west is 543 miles and from north to south is 188 miles. A representative sample from the three geographic regions of North Carolina, mountains, piedmont, and coastal plain, must include teachers and staff development

administrators to provide a snapshot of the views of teachers and administrators in North Carolina. This is accomplished by the use of both an online survey made available to teachers and administrators across North Carolina that uses the same questions and information as the interview questionnaire. In a descriptive qualitative case study such as this, verification determines the trustworthiness or how well the results transfer or what were the generalizability of the findings. The elements come together as pieces of a puzzle to provide a clearer picture of the influences of professional development on North Carolina K-12 teachers. By using the case study model that includes open-ended interviews and an online survey, a clearer understanding of the issues becomes possible. Current research relating to the 12 North Carolina standards of professional development adds background to the puzzle of professional development. One limitation that must was considered was that the results of the study may not fully reflect the beliefs of all North Carolina teachers and administrators concerning professional development's role in teacher recruitment and retention and might not be completely transferable to other states.

Using a descriptive case study brings with it the limitations inherent in a case study. First and foremost this was a descriptive method, not an explanatory one. That is, without the controlled conditions of a laboratory, conclusions about cause-and-effect relationships that could be drawn. Behavior could only be described, not explained. Case studies involve only a single individual or just a few and, therefore, may not be representative of the general group or population. Case studies often rely on descriptive information provided by different people. This is retrospective data, and is therefore subject to the problems inherent to memory.

CHAPTER 2: LITERATURE REVIEW

Theoretical/Conceptual Framework

The theoretical or conceptual framework for this study was based upon professional development theory. There has been a growing consensus in the literature regarding the elements of effective professional development for teachers. It incorporated principles of adult learning: Adult learners need to be self-directed; displayed readiness to learn when they have a perceived need, and they desired immediate application of new skills and knowledge (Knowles, 1980.) Effective professional development was embedded in the reality of schools and teachers' work (Darling-Hammond & McLaughlin, 1995; Darling-Hammond, 1996, Darling-Hammond, 1997; Elmore, Peterson, & McCarthey, 1996; Garet, Porter, Desimone, Birman, & Yoon, 2001.) Professional development was designed with teacher input and fosters critical reflection and meaningful collaboration. It is internally coherent and rigorous, and it was sustained over the long term (Little, 1993; Renyi, 1996; Sparks & Hirsch, 1997.) Promising professional development was aligned with effective teaching and learning: "Principles that describe effective teaching for students in classrooms should not differ for adults in general and teachers in particular" (Rueda, 1998.) Professional development activities that have significant, positive effects on teachers' knowledge, skills and changes in classroom practice have three components. Quality professional development focuses on content knowledge; provide opportunities for active learning, and coherence with other learning activities (Garet el al, 2001; Hirsch, 2001.)

Teachers learn best through professional development that addresses their needs. One major component was the involvement of the adult learner in the learning process (Tennant

& Pogson, 1995.) Involving learners in planning and implementing learning activities were seen as the foundation for successful learning. Current research on teacher preparation, licensure, and recruitment begs the question — how effective was today's teacher education and professional development (Sullivan, 2002)? Current teacher professional development often provided mandatory and uniform opportunities for teachers that were ancillary to teacher practice, and that were periodic in nature (Sandholtz, 2002.) Ironically much of accepted pedagogy regarding the factors and conditions that promoted effective student learning was often ignored when it comes to the adults who teach and work in K-12 schools (Bredeson, 2003; Van Driel, Beijaard & Verloop, 2000.) Instead of teachers engaging in personally matched learning, and collaborating with peer learners on relevant tasks, predetermined programmed professional development was all too often the norm (Cameron, 1996; Cochran-Smith & Lytle, 1990; Elmore, 1995.) Breaking teachers into groups simply renaming those groups learning communities does not create “learning communities.” The theoretical framework of adult learning theory shares the many aspects of the teaching career and need for ongoing quality professional development that requires teachers to become lifelong adult learners (Dufour, 2004; Eleonora, 2003; Hiebert; Gallimore, & Stigler, 2002; Hord, 1998; Roberts & Pruitt, 2009.)

For example, Cindi Rigsbee, North Carolina's 2008 teacher of the year spent most of her career working at disadvantaged middle schools. When Rigsbee changed to a new school before the classrooms were even finished, she noted that the teachers began to work together in a newly formed professional learning community. According to Rigsbee, this was a transforming experience. In her former school, she had been accustomed to trading woeful

classroom tales. By starting out planning together and sharing ideas on a regular basis, the learning community developed as teachers bonded. As a result, there was a boost in teacher morale and student achievement (Rigsbee, 2008.)

Professional Development History

The professional development literature points to the inefficiencies of large group, one-time professional development sessions led by experts with little or no follow-up (Darling-Hammond, 1997; Loucks-Horsley et al, 1987.) In large group sessions teachers often received credit for occupying a seat during a professional development session, but neither had ongoing support nor were held accountable for perceived professional development learning (Shibley, 2001.) Female adult learners constitute a large portion of the K-12 teacher population. This portion of the adult learner population may have gender specific learner needs such as learning style and the type of learning support he or she may require (Hayes & Flannery, 2000.) As noted previously, much of what andragogy teaches about how adults learn is greatly ignored when professional development is offered to the adults who work within K-12 schools (Bredeson, 2003; Merriam, 2001; Sandholtz, 2002.) For example, an adult teacher with more than 20 years of experience teaching one way in a given area requires more than a one-shot afternoon workshop to shift thinking into a completely new way. Teachers at all levels of preparation enter with their own experiences and observations of what works with students, what should have been taught, and what instructional strategies worked best. Teachers need to participate in multiple, interactive, collaborative experiences. This conventional form of teacher professional development may

lead teachers to see themselves as acted upon by change as opposed to being agents of change (Lieberman, 1995, 1996.)

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Quality Professional Development

Quality professional development can lead to important qualitative outcomes such as the creation of a positive school culture, improvement in individual teacher skills, and development of opportunities for peer learning (Cohen, 2009; Haslam & Seremet, 2001.) School climate is based on these patterns and reflects norms, goals, values, interpersonal relationships, teaching, learning, leadership practices, and organizational structures. Quality professional development gives teachers at all experience levels the tools they need to approach classroom challenges with agreement, and access to a professional community that can support their endeavors provided resources, time, standards support and equity were in place (Cohen, 2009; Grossman, Wineburg & Woolworth, 2001; Haslam & Seremet, 2001.)

Numerous studies on effective professional development cite that ongoing professional development activities must address key areas (Campbell & Kreinberg, 1998; Cohen, 2009; Corcoran, 1995; Corcoran & Goertz, 1995**;** Kaufman, 1997; Kennedy, 1999; Loucks-Horsley, 1996; Sparks, 1983; Stigler & Hiebert, 1999; Sykes, 1999; Zemelman & Hyde, 1998.) North Central Regional Educational Laboratory (NCREL) cited the need for the educational community to move away from prior professional development models that occur only on teacher workdays, after school or on weekends. The reallocation of resources — especially time— was stressed. Further, the restructuring of the teacher's work to create "mental space" was highly recommended (Cook, 1997.) Professional development is problematic when there is no relationship between the school improvement plans and professional development activities or no feedback or follow-up related to professional

development activities (Buldu & Yilmaz, 2002; Caldwell, 1989; Ganser, 2000; McCarthy and Riley, 2000; National Staff Development Council, 2001, 2006.)

A quality teacher professional development program should include several essential elements. There needs to be a focus on the teacher as central to student learning. The teacher is also a part of the larger school community, and the relationships within that community must be respected. This leads to a focus that spirals outward from individual to collegial to organizational involvement. The context of professional development often extends beyond the school or districts. At each level, the recognition and respect for the leadership abilities of teachers and all members of the school community is essential (McConney, Ayres, Hansen, Cuthbertson, 2003.) Teaching practice and leadership skills advocated by quality professional development ought to reflect the best available research. Teachers need to be empowered to further develop expertise in subject matter content, technologies and other essential elements that lead to high standards or quality teaching. Quality professional development should be embedded in the day-to-day life of the school (Armour & Fernandez-Balboa, 2001.) Collaboration, time, and resources must be made available for professional development to be successful. Both those who facilitate the professional development and those who participate in that professional development must incorporate a long-term professional development plan (Gabriel Diaz-Maggioli, 2004; Office of Educational Research and Improvement [OERI], 1997; NSDC, 2006.)

Drawing from the essential elements discussed previously, professional development programs should possess particular characteristics and give importance to certain strategies in order to be successful. The puzzle pieces constitute quality professional development within

an open communication standard between teachers and administrators. First, teachers need a "collaborative environment" in which teachers feel safe and supported (Chubbuck, Clift, Allard & Quinlan, 2001; Darling-Hammond & McLaughlin, 1995; Tinzmann, Jones, Fennimore, Bakker, Fine, & Pierce, 1990**.)** Second, leadership opportunities for all teachers regardless of years of service were needed (Barone, 2003; Riordan, 2003.) Third, choice in professional development opportunities provided motivation for learning (Dewey, 1933; Hoban & Erickson, 2004; Loughran, 1996; Torres, Pionte & Preskill, 2005.) Fourth, feedback to teachers and administrators must be an integral part of school cultures (Bransford, Brown & Cocking, 1999.) Fifth, a set of shared goals, anticipated outcomes, and other teacher specified resources are essential for successful professional development (Bransford, Brown & Cooking, et al., 1999; McCombs, 1996; Pintrich and Schunk, 1996; National Staff Development Council, 2006.) Open communication provides the perimeter of the puzzle and allows teachers and administrators the opportunity to collaborate (Fox, 2008.)

The 2009 National Comprehensive Center for Teacher Quality included aspects of the five puzzle components listed above and fitted well within the parameters of North Carolina's 12 standards of professional development. Keys issues identified included four strategies for creating a quality learning environment and the retention of teachers. Tips and cautions were given that included provision for resources in funds and personnel, the need for commitment to improve and retain the entire faculty, communication between districts for collaboration, and the use of focus groups and interviews to involve teachers in determining their own professional needs. The importance of the involvement of teacher feedback in the planning of teacher retention was stressed. The first strategy was to provide high quality

induction and mentoring of teachers and included in this strategy an endorsement of a comprehensive system of mentoring and formative assessment. The second strategy addressed the improvement of working conditions. This included addressing working conditions and the measurement of school climate, the involvement of families within the community, and creating a school culture that encouraged collaboration. The third strategy involved differentiation of pay structures and sought to address the need for motivation. The fourth strategy was to provide for teacher advancement and leadership opportunities. This included not only the opportunity, but also the instruction in how to meet this strategy (Lasagna, 2009.)

Effective professional development is thus cyclical, ongoing, and includes the three phases: vision building, implementation, and sustainability (Steinkuehler, Derry, Woods and Hmelo-Silver, 2001.) Teachers learn their craft and improve their practice to meet the diverse needs of a changing K-12 school population (Hindley, 1996.) Professional identity is the teacher's representation of the self within the context of professional practice. It emerges from an iterative process of reflection on practice through continual evaluation of performance (Wheeler, Kelly & Gale, 2004.)

Professional development research stresses that professional development is most effective when integrated into a teacher's daily classroom practice, and incorporates immediate and ongoing follow-up designed to close identified gaps in a teacher's capabilities (Johnson, Potter, Pughsley, Wallace, Kellor & Odden, 1999; Fishman, Best, Marx & Tal, 2001.) Alexander and Murphey (1998) contend that effective professional development must (1) acknowledge a teacher's knowledge base, (2) help teachers reflect and manage their

thoughts and behaviors through strategic processing, (3) remain sensitive to teacher motivation and issues of affect, (4) realize and provide for the fact that teacher learning is developmental, and (5) be contextually grounded. From this foundation, Hawley and Valli (1999) connect each of their eight principles to one or more of these five dimensions of learner centeredness discussed by Alexander and Murphey (1998.) Whether professional development activities are positive or negative on the professional development of the teachers involved depends greatly on the culture of the school setting (Peterson, 2002.)

A recent survey question addressed the use of data to drive educational decisions. Respondents indicated that this was happening in a variety of ways—and nearly two-thirds said they now offer professional development to ensure that data were interpreted accurately. Respondents indicated that 65% of respondents use data to help allocate district resources; 49% use data to aid in staffing decisions; and 45% said their teachers use data to customize lessons based on students' abilities. Finally, the survey noted that 56% said they have student information systems that provide for easy analysis of data (Teaching and Learning, 2008.)

A recent paper from the Center for American Progress focused on six state strategies for attracting and retaining effective teachers in high poverty and high-minority schools. Chait (2009) elaborated on six strategies that include:

- Analyze teacher and student distribution
- Design an evaluation system to measure teacher effectiveness and improvement of teacher performance
- Support incentive programs in high need districts

- Provide funding for teacher preparations programs that target high need schools
- Provide an induction program for new teachers in high need areas and require schools to report their budgets by actual expenditures

Professional development takes place in the real world with many factors impacting its outcomes. Sandra Kerka (2003) divided these factors into four basic categories. The first category is practitioner characteristics such as motivation, experience or whether the teacher is full-time or part-time in status. The second addressed learner characteristics such as stability or transience, educational attainment of the adult learner, how the learner defines "outcomes" and "achievement" along with other individual characteristics. The third category refers to program factors. These factors can include teacher working conditions such as those studied in the North Carolina Teacher Working Conditions Survey (TWC)—autonomy, access to resources and colleagues, standardized curriculum and administrative support. The fourth factor approached by Belzer (2001) was the professional development system characteristics. The characteristics may include a lack of alignment between standards for learners and for practitioners; to what degree state authorities agree; accountability mandates; coherence, accessibility, and quality of offerings (Berry, Turchi, Hare, Owens, Dilworth & Clements, 2003; Dillworth & Imig, 1995; Kerka, 2003.) Scholars have used organization theory to link studies to a broader context, or to additional theories. Bolman and Deal (1997) used a variety of social metaphors to refer to types of organizations. How the schools systems under study work determine what type of organizational system were prevalent.

A particular school's culture enhances or hinders professional learning. Culture enhances professional learning when teachers believe professional development is important, of value, and "the way we do things around here." Professional development is nurtured when the school's history and stories include examples of meaningful professional learning and a group commitment to improvement. Professional learning is reinforced when sharing ideas, working collaboratively to learn (Marx, Blumenfeld, Krajcik, & Soloway, 1997), and using newly learned skills are recognized symbolically and orally in faculty meetings and other school ceremonies. The most positive cultures value staff members who help lead their own development, create well-defined improvement plans, organize study groups, and learn in a variety of ways. Cultures that celebrate, recognize, and support professional learning bolster professional community (Knapp, Copland, Talbert, 2003; Inverso, 2003; Lasagna, 2009; Peterson, 2002.) There is a growing body of empirical research that indicates, "positive school climate is associated with and predictive of academic achievement, school success, effective violence prevention, students' healthy development, and teacher retention" *(*Cohen, McCabe, Michelli & Pickeral, 2009.)

The concern has been raised regarding the current financial circumstances and their impact on teachers and the school climate or culture. Stephanie Hirsh, executive director of the National Staff Development Council, argued that the current financial climate could provide "an opportunity to step back and review current programs, and examine what's getting results and what's not" (Hirsh, 2009.) Rebora (2009) suggested that the financial crisis "could bring focus and innovative thinking to practices that are too often fragmented and hide-bound by convention."

NC 12 Standards of Professional Development

North Carolina's Twelve Professional Development Standards are divided with three strands of standards: context, process and content. Each of these major components forms s section of what constitutes quality professional development. The standards found within each strand further illuminate a visual picture of what constitutes quality professional development for teachers. Context standards include learning communities, leadership and resources. Process standards include the strands data-driven, evaluation, research-based, design, learning and collaboration. Content standards refer to equity, quality teaching and family involvement (North Carolina Public Schools, 2007.)

In order that North Carolina teachers and all those involved in professional development have a common understanding of this terminology, the North Carolina Public Schools system has defined the terms as follows:

1. Learning Communities — Professional development that improves the learning of all students and organizes adults into learning communities whose goals are aligned with those of the school and district.
2. Leadership — Professional development that improves the learning of all students and requires skillful school and district leaders who guide continuous instructional improvement.
3. Resources — Professional development that improves the learning of all students and requires resources to support adult learning and collaboration.

4. Data-Driven — Professional development that improves the learning of all students and uses disaggregated student data to determine adult learning priorities, monitors progress and help sustain continuous improvement.
5. Evaluation — Professional development that improves the learning of all students and uses multiple sources of information to guide improvement and demonstrate its impact.
6. Research-Based — Professional development that improves the learning of all students and prepares educators to apply research to decision making.
7. Design — Professional development that improves the learning of all students and uses learning strategies appropriate to the intended goal.
8. Learning — Professional development that improves the learning of all students and applies knowledge about human learning and change.
9. Collaboration — Professional development that improves the learning of all students and provides educators with the knowledge and skills to collaborate.
10. Equity — Professional development that improves the learning of all students, prepares educators to understand and appreciate all students; creates safe, orderly, caring and supportive learning environments and hold high expectations for their academic achievement.
11. Quality Teaching — Professional development that improves the learning of all students, deepens educators' knowledge, provides them with research-based instructional strategies to assist students in meeting rigorous academic standards and prepares them to use various types of classroom assessments appropriately.

12. Family Involvement — Professional development that improves the learning of all students and provides teachers and school leaders with knowledge and skills to involve families and other stakeholders appropriately (NCDPI, 2008.)

State Level Impact on K-12 Teacher Professional Development

Professional development for North Carolina's K-12 teachers is influenced by a variety of state level entities. The North Carolina Professional Teaching Standards Commission (NCPTSC) establishes standards for North Carolina teachers and teaching profession. The Commission's standards are aligned with state, regional and national "ideals" for teaching (NCPTSC, 2004.) The School Improvement Division of North Carolina Public Schools provides statewide leadership for school improvement and recruits, trains, and supervises state assistance teams. Three of the duties assigned to this division impact professional development—staff development coordination, school technical coordination and closing the achievement gap (Harkreader & Weathersby, 1998; North Carolina Public Schools, 2004.) The state level governing programs were just part of the picture.

The Blue Ribbon Commission (2008) reinforces the need for quality professional development of teachers to meet the needs of 21st Century learners. North Carolina was the first to administer a teacher working conditions survey to every K-12 educator and the first to partner with the Federal Twenty-first Century skills focusing on revising standards, assessment and professional development (May 2008 State Board of Education Meeting.)

Currently, a coalition of educators at various levels of academia in North Carolina, professional development producers and providers, professional organizations and community leaders are meeting to develop a plan of action for improvement in North

Carolina public instruction. The Race to the Top group efforts are focused on securing funding and creating strategies to positively impact administrators, schools, teachers, and students success across North Carolina. Highly qualified teachers and administrators are essential to the plans of this collaboration. Professional development, adequate resources, a strong infrastructure, coaching and teacher leadership development are areas of concern. Ways to meet the needs of rural school districts in North Carolina include recruitment and training of administrators and teachers, providing a statewide system of evaluation, involving the community, and creating a dynamic, cost-effective technological infrastructure for all North Carolina schools are included in this effort (Race to the Top, 2009.)

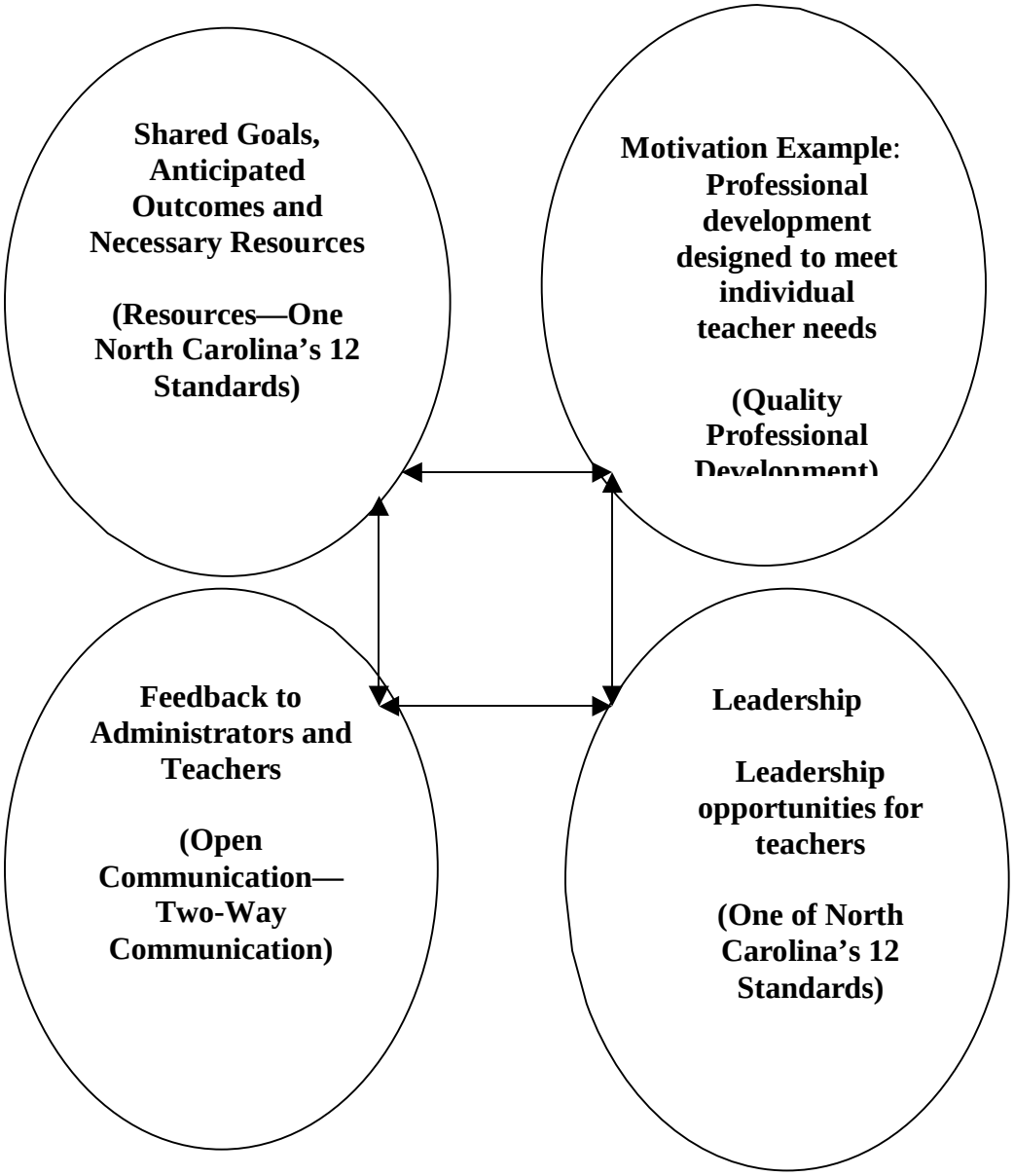
Putting the NC Professional Development Puzzle Together

Drawing from the essential elements discussed previously, professional development programs should possess particular characteristics and give importance to certain strategies in order to be successful. This case study explores those characteristics in North Carolina K-12 teacher professional development as a puzzle that addresses how teacher professional development is viewed by teachers and professional development administrators and possible implications of these perceptions.

As mentioned previously, five major puzzle pieces impact both teachers and professional development administrators in the need to create a cooperative learning environment built on open communication: (1) collaboration, (2) motivation, (3) leadership, (4) feedback, and (5) shared goals. Open communication helps to build the parameters of the puzzle. One puzzle piece rests on the premise that teachers need a collaborative environment in which teachers feel safe and supported (Chubbuck, Clift, Allard & Quinlan, 2001; Darling-

Hammond & McLaughlin, 1995; Tinzmann, Jones, Fennimore, Bakker, Fine, & Pierce, 1990**.)** Collaboration is also one of North Carolina's 12 professional development standards. Another puzzle piece stresses the importance of leadership opportunities for all teachers regardless of years of service (Barone, 2003; Riordan, 2003.) Teacher leadership opportunities fall under North Carolina's leadership standard. A third major piece of the puzzle notes that choice in professional development opportunities provides motivation for learning (Dewey, 1933; Hoban & Erickson, 2004; Loughran, 1996; Torres, Pionte & Preskill, 2005.) Meeting individual teacher needs in professional development provides motivation for teachers and is part of the aforementioned job embedded professional development. A fourth puzzle piece requires that feedback to teachers must be an integral part of school cultures (Bransford, Brown & Cocking, 1999.) Feedback to teachers and administrators creates open communication. The fifth major puzzle piece is the need for a set of shared goals, anticipated outcomes, and other teacher specified resources essential for successful professional development (Bransford, Brown & Cooking, et al., 1999; McCombs, 1996; Pintrich and Schunk, 1996; National Staff Development Council, 2006.) This fifth piece of shared goals, anticipated outcomes and essential resources provides teachers and administrators with a common culture and understanding of professional development that benefits both teachers and students. Resources are one of North Carolina's 12 standards of professional development.

Figure 1 shows a diagram of this cycle of professional development cooperative learning noted in the five puzzle pieces. See Figure 1.



Note: The elements of the diagram are part of a cycle that creates open communication between North Carolina teachers and administrators that can impact teacher professional development.

Figure 1. Professional Development Cooperative Learning Environment

Summary

Introduction

This study explores how professional development is an essential piece of the education conundrum in North Carolina for both teachers and the students they impact. The current pertinent research is included as part of this case study.

Professional development research reiterates that professional development is most effective when integrated into a teacher's daily classroom practice, and incorporates immediate and ongoing follow-up designed to close identified gaps in a teacher's capabilities (Johnson, Potter, Pughsley, Wallace, Kellor & Odden, 1999; Fishman, Best, Marx & Tal, 2001.) As addressed previously under the section addressing quality professional development, the principles noted by Alexander and Murphey (1998) and Hawley and Valli (1999), give clear indicators or what quality professional development should include. Both sets of quality professional development indicators stress the importance of teacher input in the professional development process and both fit well within North Carolina's 12 standards of professional development.

Principals and other school leaders shape school culture, impact the quality of professional development teachers receive. They do this through three key processes. First, they read the culture, understanding the culture's historical source as well as analyzing current norms and values. Second, they assess the culture, determining which elements of the culture support the school's core purposes and the mission, and which hinder achieving valued ends. Finally, they actively shape the culture by reinforcing positive aspects and working to transform negative aspects of the culture (Peterson & Deal, 2002.) Whether the

culture is negative or positive depends greatly on principals and other school leaders as they read, interpret and shape the school's "persona" (Fullan, 1999, 2001, 2002; Peterson, 2002; Peterson & Brietzke, 1994; Peterson & Deal, 2002)

Online surveys for teachers and administrators developed through the use of North Carolina's 12 standards of professional development aids in the understanding of the influences of professional development on K-12 teachers. Scaled and open-ended questions are included and responses are analyzed in conjunction with retention data made available through the North Carolina Department of Public Instruction in Chapter 5. Comparisons of perceptions of teachers and administrators are made on common survey or interview items.

Major Influencing Factors

The traditional form of teacher professional development may lead teachers to see themselves as being acted upon by change as opposed to being agents of change (Lieberman, 1995, 1996.) This challenge of professional development is to inspire and prepare classroom teachers to launch curriculum rich activities with the tools that make sense regardless of the delivery format. The definitive goal of technology use in any teaching and learning situation must be the advancement of student learning (Cooper & Bull, 1997; Gibbons & Young, 1997, Roach, Snyder & Seamon, 1996; Rossiter & Bagdon, 1999) in order to meet the Twenty-first Century learning goals.

Quality professional development can lead to important qualitative outcomes such as the creation of a positive school culture, improvement in individual teacher skills, and development of opportunities for peer learning. Quality professional development gives teachers at all experience levels the tools they need to approach classroom challenges with

agreement, and access to a professional community that can support their endeavors. One major component of professional development for teachers and other adult learners is the involvement of the adult learner in the learning process. Involving learners in planning and implementing learning activities is seen as the foundation for successful learning (Guarino, Sandtibanez, Daley, & Brewer, 2004.)

Theories, Training and Climate

Professional development can start a personal journey of growth and discovery that allows the learner to connect with the learning process on a daily and hourly basis. Effective professional development allows the adult learner to bond concept with context and encourage change in teaching practices to achieve desired academic results for students. Effective professional development strategies may require a change in the ways teachers spend their time, the ways they work together and may develop as teachers involved in professional development build informal support systems, partnerships, teams and collaborative structures (Astuto, Clark, Read & McGee, 1993; Borthwick, Pierson, Anderson, Morris, Lathem, & Parker, 2004; Roberts & Pruitt, 2009.)

Research indicates the importance of creating a climate that encourages and supports learning. The literature describes a good learning environment as one that embodies trust and mutual respect among teachers and learners. When working with adult learners, the roles of teacher and learner may become interchangeable. Leadership of a learning activity is seen as belonging to the teacher. However, it is important for successful learning experience that all involved understand that each person has something to teach as well as something to learn. (Draper, 1992) Due to the importance of encouraging teamwork, cooperation and

collaboration among adult learners, small group usage appears embedded in adult education (Bruner, 1986, 1990 & 1996; Draper, 1992; Murphy & Lick, 1998.)

Professional development technology training needs to be a part of professional development plan of K-12 teachers to meet the requirements of twenty-first century goals and objectives (North Carolina Department of Public Instruction, 2008.) Creating the plan is just the initial step. A one-time workshop that is not followed by ongoing support is of little value if implementation is the goal (Roberts and Myers, 1999.) If technology is to be implemented into the K-12 curriculum, teachers must have a positive perception of their own abilities to integrate technology into their teaching and to use technology with their students (Cradler, Freeman, Cradler & McNabb, 2002; Roberts, & Myers, 1999.) In fact, the ability of practitioners to engage in ongoing, high-quality professional development is a hallmark of enterprises known for high performance and sustained public agreement (Guskey, 2000; Guskey & Yoon, 2009; Loucks-Horsley, Love, Stiles, Mundry & Hewson, 2003 and Schlager & Fusco, 2003.)

CHAPTER 3: METHODOLOGY

Introduction to Research Approach

In order to place the puzzle pieces of collaboration, leadership, feedback to teachers and administrators, shared goals and objectives with anticipated outcomes and motivation in their correct locations, this study included the explorations of self-selected teacher and administrator personal characteristics (age, race, number of years teaching, number of career or job changes) and contextual characteristics (12 professional development standards, administrative support, teacher attrition.) This research examined the individual and contextual characteristics influence on professional development.

When selecting the methodology for this research study, the method along with its common usage, advantages and disadvantages were examined. A case study format was selected because it is an intensive study of a single group, incident, or community. In this study the possible influences of professional development on North Carolina teachers was sought from both teachers and administrators who have participated in professional development during the last 12 months. Purposive sampling was used in this study. By definition elements are chosen based on purpose of the study, and targets a particular group of people. Subjects were selected because of some characteristic such as being a teacher or staff development administrator. Patton (1990) proposed purposive sampling is appropriate when particular sites or participants are chosen because, as Schwandt (1997) summarizes, “there may be good reason to believe that ‘what goes on there’ is critical to understanding some process or concept” (p. 128.) The methods selected include purposive sampling, online survey and open-ended interview within the descriptive case study model.

Research Design and Rationale

Case study research can include quantitative evidence and qualitative data, rely on multiple sources of evidence, and benefits from the prior development of theoretical propositions. Merriam Webster's Online Dictionary (2008) defines "case study" as "an intensive analysis of an individual unit (as a person or community) stressing developmental factors in relation to environment." The ideographic case study is descriptive, explanatory, or interpretive (Levy, 2008.) This model fits the research study of determining the influences of professional development on North Carolina teachers.

This research includes surveys and open-ended interviews, with the retrospective interviews following the online surveys. Data from these interviews was meant to augment the survey data and to allow respondents to elaborate more reflectively perhaps on professional development issues in general. Cross-sectional, predictive survey designs are particularly suited for collecting data on many variables simultaneously and for a large group of subjects, and are "the design of choice" to gather information on individual's attitudes (Creswell, 2003.) Open-ended interviews are particularly useful for getting the story behind a participant's experiences. The interviewer can pursue in-depth information around a topic. The same open-ended questions were asked to all interviewees. This approach was selected because it facilitates faster interviews that can be more easily analyzed and compared (Huschka, Schwartz, St. John, Picone-Decaro, Jenkins & Carey, 2004; McNamara, 2008.) Desimone (2009) suggests that researchers apply recent research knowledge to improve conceptualization, measures, and methodology for studying the effects of teachers' professional development on teachers and students. Further, Desimone made the case that

there is a research consensus to support the use of a set of core features and a common conceptual framework in professional development impact studies, and urged researchers to move away from automatic biases either for or against observation, interviews, or surveys in such studies. Desimone argues that the use of a common conceptual framework would elevate the quality of professional development studies and subsequently the general understanding of how best to shape and implement teacher learning opportunities for the maximum benefit of both teachers and students (Desimone, 2009.)

Population and Sample

The population for this study includes North Carolina K-12 teachers who have participated in professional development within the past 12-month period and district level K-12 professional development administrators employed in their positions within the last 12-month period. The teacher and administrative samples were self-selected. The online survey of 399 teachers and professional development administrator and open-ended interviews of four currently employed teachers, one retired teacher, two who self-identified as teacher/administrators and three district level staff development administrators help answer the research questions of how teachers and administrators who are engaged in the professional development process describe their experience with effective professional development in relation to the 12 North Carolina professional development standards and whether the teachers and administrators recognize a relationship between effective professional development and attrition.

The researcher used both the online survey and open-ended interview methods. The administrators' sample was solicited from a staff development administrator list of the 115

North Carolina school districts. A total of 33 self-identified staff development administrators completed the online survey and four completed open-ended interviews. The K-12 teachers sample was solicited through both the North Carolina Department of Public Instruction Section Chief's lists and professional teachers' organizations that the researcher retains including the North Carolina Reading Association, the North Carolina Science Teachers Association, the North Carolina Middle School Association, and the North Carolina Teachers of Mathematics Association to solicit teachers who may have retired or left the teaching profession and the subject division chiefs at the North Carolina Department of Public Instruction to reach teachers currently practicing in North Carolina schools. A total of 367 self-identified teachers completed the online survey and five completed open-ended interviews. A total of 33 self-identified staff development administrators completed the online survey and five completed the open-ended interviews (three district level professional development administrators plus two professional development teacher administrators.)

Data Management and Procedures

Introduction

Various data sources added to the richness and depth of this study. The data sources aided in understanding how, why, and under what circumstances conventional and technology-based professional development is meeting the needs of teacher participants and influencing the teacher participants. The use of several independent data sources such as self-selected teacher interviews, district-level administrator interviews; public documents, an online questionnaire of teachers and administrators across North Carolina, and school or district provided documents from the three regions reflected the qualitative research practice

of triangulation. The final result constituted a case study. The participants in this study are a self-selected sample of North Carolina teachers or administrators out of the possible population who either completed open-ended interviews or an online survey questionnaire. The data received are subjective. The subjective measurement technique provides the only direct means for the assessment of user opinion and preferences (Cushman & Rosenberg 1991.)

Sample Selection

The open-ended interviews consist of five teachers (n = 5) at various stages of years of employment and five professional development administrators (n = 5) also in various stages of years of employment in their positions that are located in different districts across North Carolina. An online survey of teachers (n=366) and professional development administrators (n=33} garners data about current attitudes and opinions of a diverse group of present and past North Carolina teachers. The researcher made the online survey available to rural and urban areas as well as the three regional areas of North Carolina: mountains, piedmont, and coastal plain as noted in chapter one through existing databases of teachers and administrators. Respondents include all three geographic regions with an n=399 for the online survey. Although an online survey generally garners a lower percentage of the total population, using an online survey allows for comparison and contrast with the open-ended interviews throughout the 115 school districts within North Carolina.

As cited previously, research on professional development revealed connecting pieces of the puzzle cited in chapter two regarding such as relationships with teaching experience and geographical (i.e., rural or urban) locations (Annetta & Dickerson, 2006; Beeson &

Strange, 2000; Buchanan, 2002; Hardy, 2002; Crews, 2002; Claycomb & Hawley, 2000; Harmon, 2001; Kerka, 2003; Marquardt, 1994; Perie, Baker & Whitener, 1997; Richardson, 2003; Richardson & Valli, 2001;Yasin, 1999.)

Online Survey

Introduction

After pilot testing, the researcher solicited participants in an online survey to both teachers and administrators, collecting their demographic information and asking them to complete questions relevant to North Carolina's 12 standards of professional development for teachers. The researcher collected the survey data through the use of SurveyMonkey. SurveyMonkey is an online tool that enables the creation of professional online surveys by the user. The questions were pre-programmed by the researcher and the data analyzed and available for export. Patton (1990) notes six kinds of questions a researcher can ask. These include behaviors, opinions or values, feelings, knowledge, sensory and background demographics. The online survey questions included behaviors, knowledge and background demographics questions.

The online survey for beginning teachers, tenured teachers, and professional development administrators sought to determine the effects, if any, on teacher retention, and perhaps inform future professional development. Scaled and open-ended questions were included and responses analyzed in conjunction with retention data made available through the North Carolina Department of Public Instruction. Comparisons of perceptions through the online survey were made regarding age, years of services and number of job changes within the education profession on common survey items. Evaluation data serves as a resource to

suggest possible future research to determine the effects on teacher retention and the relationship of professional development.

Advantages of Web-based Surveys

There are many advantages of using Web-based surveys compared to traditional mail or face-to-face methods. Web-based surveys have the same strength as paper versions in that they allow respondents to take their own time to complete the survey. If it is administered anonymously then online surveys may be better at addressing sensitive questions, because an interviewer is not present asking the questions directly (Brace, 2004, pp. 38-39.) It is also a faster transmission of the survey itself to the participants, and the results come back faster to the researcher. In addition, Web-based surveys are sometimes seen as "environmentally friendly" due to the online format's non-use of paper (Yun & Trumbo, 2006.) Numerous studies have used non-probability sampling to recruit survey respondents through list serves, discussion forums, and newsgroups (Anderson & Ganseneder, 1995; Schmidt, 1997; Kaye & Johnson, 1999) similar to this research study.

Disadvantages of Web-based Surveys

Generally, a 30 percent response rate for Web-based surveys is expected (Saunders, Lewis & Thornhill, 1997.) The response time of Web-based surveys is somewhat controlled by the researcher conducting the survey, depending on the length of time that the survey is posted on the Web. Virtual survey experts suggest that virtual surveys should run for at least one week (and usually up to a limit of two), thus allowing visitors to the respective Web site enough time to participate in the survey (Virtual Surveys Ltd, 2001.) Another disadvantage noted by the researcher is the inability to track how many people actually receive the

invitation within a group (e.g., the number of respondents within the North Carolina Reading Association or the North Carolina Council of Teachers of Mathematics associations surveyed) such as those utilized in this study. This makes it impossible for the researcher to determine the exact number of individuals who received the survey and the percentage of them who answered the online survey during the four weeks allowed for the online survey during the month of March 2009.

Procedures

The matrix and rating type questions are used when surveying the frequency of something like behavior or attitude. Open-ended questions require more time to complete and lower the chances of completion of online surveys. The Likert scale uses order of ranking or rating choices from low to high (e.g. Strongly Disagree to Strongly Agree going from left to right.)

The Web Link Collector used in this survey tracks respondents by adding 01, 02, and so on to responses. The email invitation included the purpose of the study, how to log onto to the Website to answer the survey questions and reassurance of anonymity. The researcher's use of the Web Link Collector in SurveyMonkey did not allow anyone to submit additional responses due to a default setting of one response per respondent. This link no longer works through the use of cookies. The default setting prevented an individual access to the survey from a different computer (SurveyMonkey, 2008.)

Pilot Test

A pilot test of the questions is important. The three basic goals of the pre-test are to evaluate the competency of the questionnaire, to estimate the length of the survey or time to

take the survey, and to determine the quality of the surveyor (Iraossi, 2006, p. 89.) The pilot of this survey included the researcher's committee chair and a group of twenty-four North Carolina State University graduate students and professional development colleagues for peer feedback to pilot the survey. After making changes based on pilot responses, the online survey was posted to the Web and responses solicited.

Sample Selection

An online survey may be used to collect data about current attitudes and opinions. The online survey for this study was made available to rural and urban area populations as well as the three regional areas of North Carolina (mountain, piedmont and coastal) through existing databases of teachers and administrators. Groups included the North Carolina Department of Public Instruction division chairs, the 115 school districts through the professional development administrator for the district, the North Carolina Reading Association (1500 members), the North Carolina Council for Teachers of Mathematics (2244 members), the North Carolina Middle School Association (27,000 members) and the North Carolina Council for the Social Studies. There is no way to track how many members of each group actually received the emails from their organization's listserv. The online survey allows for comparison and contrast with the open-ended interviews. Interviews help to clarify and obtain additional details regarding implementation practices within North Carolina's K-12 districts. The online survey questions for this study are found in Table 1. The online survey results were available to survey respondents online after data collection was completed (see Table 1.)

Table 1. Online Survey Questions of NC Teachers and Administrators

District___ Age___ Race/Ethnicity__Years of Service__Number of Job Changes___ Please check one: Teacher_____ Administrator _____
Please note in the statements below whether you or teachers in your district have participated in any of the activities below and rate the activity from 1 to 5 with 5 being Strongly Agree and 1 being Strongly Disagree
1 a. FOR TEACHERS ONLY: Teachers in your district know all 12 of North Carolina's Professional Development Criteria. 1.b. FOR ADMINISTRATORS ONLY: Teachers in your district know all 12 of North Carolina's Professional Development Criteria.
1.c. FOR ADMINISTRATORS ONLY: Administrators in your district know all 12 of North Carolina's Professional Development Criteria
2. Teachers in your district have participated in professional development based on individualized personal plans for professional development (DESIGN.)
3. Teachers in your district have worked in small group learning activities that take place over time and result in change (COLLABORATION.)
4. Teachers in your district have had the opportunity to become a Teacher Leader who guides other teachers to become leaders (LEADERSHIP.)5. Teachers have been provided with opportunities for collaboration among colleagues with time and space allotted for development of learning communities (LEARNING COMMUNITIES.)

Table 1 Continued

6. Teachers have experienced professional development focused on helping teachers and school leaders access, understand and use a variety of data to improve learning for all students (FAMILY INVOLVEMENT.)
7. Teachers have participated in follow-up from professional development to track evidence that what you learned is used in your teaching and has achieved intended outcomes (EVALUATION.)
8. Teachers in your district have applied research learned in professional development to classroom practice (RESEARCH BASED.)
9. Teachers in your district have participated in professional development that is current and appropriately uses a variety of strategies to motivate and interest teachers (LEARNING.)
10. Teachers in your district gather evidence of improvements in student learning in their classrooms to determine the effects of their professional development on their students (DATA-DRIVEN.)
11. Teachers in your district have participated in professional development that helped to establish learning environments that communicate high expectations for the academic achievement of all their students (EQUITY.)
12. Teachers in your district have been offered numerous professional development opportunities to give you a greater understanding of content that teachers are required to teach (QUALITY TEACHING.)

Table 1 Continued

13. There is a relationship between professional development and teacher attrition in your district or in other districts in which you may have worked (PROFESSIONAL DEV.)
14. Many professional development opportunities are available to teachers that give teachers a greater understanding of the content that teachers are required to teach (RESOURCES)

Open-ended Interviews

Introduction

The open-ended interview method works well for individuals when personal contact is desired. The advantages of face-to-face contact, clarification of questions, probing for further information and observing the person being interviewed helped the researcher to gain a fuller understanding of the responses of interviewees.

Patton (1990) identifies three basic types of qualitative interviewing for research or evaluation: the informal conversational interview, the interview guide approach**,** and the standardized open-ended interview**.** As noted, this research used the open-ended interview because the focus is on listening and learning from the participants. The learning experiences of the participating teachers and their reflections on how these experiences were connected to their tenure in the classroom were an integral part of this study. The views and understandings of the professional development administrators and how their views agree and disagree with the views of teachers are of prime importance to understanding the impact of teacher professional development in North Carolina.

Sample Selection

The open-ended interviews consist of five teachers (n=5) in various stages of years of employment and five administrators (n=5) also in various stages of years of employment in their positions that are located in different districts across North Carolina. The total sample open-ended interviews is n=10. As noted previously, the open-ended interviews allowed for comparison and contrast with the online survey. The online survey consists of 399 responses from administrators and teachers. The interviews were a subset of the online survey

participants that aided the researcher in gathering more in-depth responses to survey questions.

Through interviews with teachers and professional development administrators, the researcher seek to provide valuable insight into the administrative view regarding the effectiveness of the professional development efforts within and across districts in order to provide teachers with the necessary skills to meet the “highly qualified” status focus of the North Carolina 12 professional development standards. Further, the researcher sought through the questionnaire to find support or lack of support through teacher and administrator perceptions for the correlation between professional development and teacher retention.

Analysis

This community of practice in North Carolina is built on the 12 professional development standards adopted by North Carolina and based on the National Staff Development Council adopted standards. The researcher examined the patterns of meaning that emerged from the data. The researcher’s sought to find patterns within words (and actions) and to present those patterns for others to inspect while at the same time staying as close to the construction of the world as the participants originally experienced it. The people within the study were seen as integral with their environment and this placed the focus on people's experience and perceptions in regard to North Carolina teacher professional development and how they interpreted their experiences.

Limitations

The disadvantages of the interview method were its time consuming nature and the need to schedule based on the interviewee’s time schedule. Since this study only interviewed

ten individuals-five teachers and five professional development administrators, this did not prove insurmountable.

Procedures

Interviews with key participants provided in-depth information on perceptions, attitudes, skills, and abilities gained through professional development and the influence of the professional development on teacher satisfaction and, possibly, on teacher issues related to retention and attrition as noted previously by researchers Rice, Gentile and McFarlin (1991.) In research, open-ended items are frequently used as complements rather than alternatives to structured items. As a follow-up to a structured item on a survey, an open-ended item in an interview can bring to light unanticipated interpretations and variations in the meaning of responses. To confirm the findings of this study, the researcher was mindful of Mason's (2002) advice about ethics, and sought a second opinion of the analysis of the data from a colleague through the member checking process. Having an outside evaluator was beneficial in verification of the data. The researcher made available transcripts for each face-to-face interview respondent. The respondent was asked to confirm the accuracy of the transcript and to revise or supplement their responses if they chose to do so. This member checking (Miles & Huberman, 1994) or audit-trail (Lincoln & Guba, 1985) supported the validity and trustworthiness of the claims made about the data gathered. An “n” of ten does not allow the researcher to generalize on these aspects of the participants’ backgrounds. However, differences worth noting are reported in Chapter 4 from the data gained from the participants depending on these variables.

The North Carolina 12 standards of professional development are integrated within the online survey and the open-ended interviews. A copy of North Carolina State University Informed Consent Form was given to each interviewee and in is available in Appendix A. All individuals remain anonymous for the purpose of this study with more generic designations given by the researcher of this study. This study provides an opportunity to gain an understanding of professional development issues facing teachers and administrators. Questions are the most powerful tools we have for making decisions and solving problems, for inventing, changing and improving our lives as well as the lives of others (McKenzie, 2000.) Open-ended interview items are not necessarily more accurate than rated survey questions, however, they do provide more detailed explanations. The more detailed explanation may provide insight as to why survey respondents gave specific answers. For example, open-ended interview follow-up may point to the reasons a specific question received mixed responses. The open-ended interview might suggest where misunderstandings about the meaning of specific survey questions arose and why. The open-ended questions for teachers and staff development administrators are found in Table 2. (See Table 2)

Table 2. Sample Open-ended Questions of NC Teachers and Administrators

Demographics: Teacher___ Administrator ___Male_____Female_____ District_____
Ethnicity: Caucasian___ African-American/Black___ Asian____ Pacific Islander ____
Native American/American Indian____ Hispanic/Latino____ Other_____
Your contact information will not be shared with anyone. Any comments will not include your name or the name or school, but will refer to the region of North Carolina.
Please explain your answers to the questions that are asked.
1. How long have you worked in your current job? What caused you to leave prior positions in education?
2. In what ways is professional development for teachers in your district correlated to the North Carolina Twelve Standards of Professional Development? Please explain. [ALL 12 STANDARDS]
3. What connection, if any, do you see between professional development and teacher attrition in your district? In other districts in which you may have worked? Please explain. [PROFESSIONAL DEVELOPMENT AND ATTRITION]
4. How have teachers in your current or prior district worked together in small group learning activities? What were the results of this opportunity? [COLLABORATION]
5. In what ways have teachers in your district had occasion to become leaders in their school or district? [LEADERSHIP]

Table 2 Continued

6. Have opportunities for collaboration among fellow teacher colleagues been provided in district? [COLLABORATION] [DESIGN
7. Has time and space been allotted in your district for the development of learning communities? [LEARNING COMMUNITIES]
8. Have teachers in your district experienced professional development focused on helping teachers and school leaders access, understand and use a variety of data to improve learning for all students? [DATA-DRIVEN]
9. Is follow-up from professional development provided to teachers to track evidence of what is used in classroom teaching and achieve intended outcomes? [EVALUATION]
10. In what ways do teachers apply research learned in professional development to classroom practice? [RESEARCH-BASED]
11. Is the professional development provided in your district current? Is there appropriate use 1f a variety of strategies to motivate and interest teachers? [LEARNING]
12. Is gathering evidence of improvements in student learning encouraged? If so, does this allow teachers to determine what effect, if any, teacher professional development has on their students? [DATA-DRIVEN] 13. Have teachers participated in professional development that helped to establish learning environments that communicate high expectations for the academic achievement of all students? [EQUITY]

Table 2 Continued

14. Are many professional development opportunities available to teachers, and do these opportunities give teachers a greater understanding of the content that teachers are required to teach. [RESOURCES]

Case Study Model

In the case study model, the purpose is to develop a case from the data gathered in answer to the research questions. Case studies are used to organize diverse information types related to a particular case such as the perceptions of teachers administrators and then to analyze the data for patterns and themes, In this case study, the data were gathered and organized to focus on the problem being studied of teacher attrition and the influences of professional development on North Carolina teachers, and a case study narrative developed and validated by study participants (Miles & Huberman, 1994; Patton, 2001.) This descriptive qualitative case study is non-experimental, and involves an in-depth descriptive record (Yin, 1993.) As per usual, this descriptive case study was selective, focused on one or two issues fundamental to understanding the system being examined (Feagin, Orum, & Sjoberg, 1991) such as data gathered on the influences of professional development on North Carolina teachers.

In this case study, the influences of quality professional development on North Carolina teachers were examined through the correlation of the North Carolina 12 standards of professional development. Case studies are particularly useful when researchers want a detailed contextual view of an individual's life or of a particular phenomenon. Yin (1994) presents at least four applications for a case study model: (1) To explain complex causal links in real-life interventions, (2) To describe the real-life context in which the intervention has occurred, (3) To describe the intervention itself, and (4) To explore those situations in which the intervention being evaluated has no clear set of outcomes. This study fits well into the descriptive qualitative case study model, drawing data from both the online survey and open-

ended question interviews with the primary intent to be to correlate common themes derived from the data (Creswell, 1998, p. 18.)

The study of the relationship between professional development and the recruitment and retention of teachers fits within the goal of qualitative research to provide a deep understanding of people's experiences and perspectives in the context of their personal circumstances. Other pertinent data examined within a descriptive case study could be letters, memorandums, agendas, administrative documents, newspaper articles, or any document that is germane to the investigation. In the interest of triangulation of evidence, the documents serve to corroborate evidence from other sources. Interviews are one of the most important sources of case study information. This descriptive case study used an online survey and open-ended interviews in which key respondents were asked to comment about certain events (Feagin, Orum, & Sjoberg, 1991; Stake, 1995; Yin, 1994.) The descriptive case study is an ideal methodology for this investigation. Personal experiences are compared and analyzed to identify the underlying or overarching structures of the professional development studied. A descriptive qualitative study allows for the capture of rich data to analyze through a mainly inductive analytic process.

One way to better understand this issue is to interview the teachers who are working in this profession and those who are providing professional development to those teachers. Another technique is to also interview or survey those who have left the profession to better understand why those individuals left and if professional development had any correlation to their reasons for leaving. Those who have left the profession were asked to participate in the online survey in addition to those currently employed. All written evidence that can be

documented was used as supportive evidence of written and verbal data gained through the online survey and open-ended interviews.

The data and analysis reported within the study include all the sources drawn upon, the rationale for the use of each source and the data gathered. It is important to connect the data to the literature review and outline of how these data relate to the outlined issues in professional development. These connections reinforce the continuity between the problem, methodological approach, data, analysis and conclusion.

Open-ended (Yin, 1994) or semi-structured (Merriam, 1998) interviews of K-12 North Carolina teachers and administrators in the sample were used to gather informants' opinions and insights into teacher professional development in North Carolina.

Other Pertinent Data

The researcher looked at a various public documents such as the North Carolina Public Schools Statistical Profile 2004, North Carolina Public Schools report System Level Teacher Turnover Report 2003-2004, and State Report: NC Teacher Working Conditions Survey 2004. Local documents from the school districts may be included if the documents clarify a point or question that may arise within the study. The researcher examined these local and public documents to secure data regarding professional development and teacher attrition — recruitment and retention. Any documents used are identified and documented in the results section.

Other data included any pertinent public documents such as the North Carolina Public Schools Statistical Profile 2004, North Carolina Public Schools report System Level Teacher Turnover Report 2003-2004, and State Report: NC Teacher Working Conditions Survey

2004 and reports on analysis of data by Ingersoll regarding North Carolina teacher attrition. Analyzing documents is a non-intrusive method of attempting to understand communications or how one individual is conveying meaning to another (Borg and Gall, 1996; Gall, 2006.)

Data Analysis

Data analysis is the process of making sense out of the data (Merriam, 1998.) To analyze the interview data, the researcher borrowed methods from Miles and Huberman (1994) to generate meaning and to confirm findings. The researcher noted, counted, and categorized themes when the number per respondent exceeds three for each respondent. The researcher placed themes within the 12 professional development categories into subcategories so that both general references and specific instances were displayed. The research incorporates Creswell's (2002) analysis cycle. In this case, the categories or themes were predetermined based on the 12 standards of professional development for North Carolina teachers. Statements reflecting teacher or administrator attitudes toward professional development are extracted, categorized, and coded under the 12 professional development standards adopted by North Carolina for both open-ended questionnaires and online surveys. In the case of the online interview, Survey Monkey is the tool used to gather and analyze the data for correlations and discrepancies.

Verification

In qualitative research, the process by which readers, researchers, and even participants can be confident in the interpretation and analysis of the qualitative endeavor is referred to as verification. Cresswell (1997) defines verification as "a process that occurs through the data collection, analysis, and … writing" (p. 194.) He outlines eight methods of

verification (acknowledging bias, prolonged engagement, rich/thick descriptions, negative case analysis, triangulation, peer review, member checking, and external audits) and recommends that researchers employ at least two of the methods. For the purposes of this study, triangulation was used to "double check" data or claims about the data.

In addition to the data provided by the qualitative interviews, the documents were analyzed through peer review (inter-rater reliability), and provide another portion of the data triangulation. A group of North Carolina State University doctoral candidates currently working on qualitative doctoral studies served as peer reviewers or inter-raters for reliability and Dr. Betty Wells Brown, Professor, UNC Pembroke, Department of Professional Leadership, School of Education and former Associate Dean of Academics served as outside reviewer for this study. The online survey provided data that was compared to the interview results. This provided the potential to confirm or call into question similarities and differences noted within the interviews.

Role of the Researcher

This research involves the study of the influence of professional development on K-12 teachers to determine whether there are differences in perception between the teachers participating in professional development and the administrators who direct the professional development programs. As an observer, the researcher noted, recorded, and interpreted the efforts, attitudes, and both the oral and written comments of participants as they defined and redefined the influence of professional development programs and strategies on their practice and perceptions of themselves as professionals. Further noted were perceived attitudes, concerns, and self-efficacy (beliefs about one's abilities to produce designated levels of

performance) of the teacher participants and administrators who direct professional development programs.

Researcher Background and Bias

As with any research, the researcher in this study was likely to bring bias to the study. The researcher's background (a former K-12 teacher and a statewide manager of a K-12 online professional development program and provider of statewide face-to-face K-20 professional development) created its own bias. The researcher is aware of current trends and attitudes within the K-12 community. The research associated with this study expanded the researcher's knowledge of the professional development literature and research studies involving applications of technology to teaching and conventional face-to-face professional development. The final analysis showed added knowledge concerning how contextual factors play a part in acquisition of the K-12 professional development knowledge. It is important to recognize and acknowledge that both the teacher participants and administrative participants in this study graciously allowed the researcher into their professional lives.

The triangulation of data-collection processes employed in this study helped to offset any expectations that the researcher may hold as to the impact of conventional and technology-based professional development. Peer review (inter-rater reliability), analysis of other pertinent data, open-ended interviewing and online survey provide triangulation for this study. Analysis of both public documents and any school or district documents revealed another view of the phenomenon under study. Potentially important information as to how teacher-learners build relationships between concrete knowledge and the new perspective received through professional development was studied.

CHAPTER 4: RESEARCH FINDINGS

Introduction

To determine the influence that professional development might have on teacher attrition, this case study examines both formal professional development and opportunities for professional learning such as common planning time, shared opportunities to examine student work, or tools for self-reflection that may occur outside the bounds of formal professional development events. These areas all fit within the 12 standards for professional development for teachers acknowledged by the North Carolina Department of Public Instruction (NCDPI) and recognized as standard by the National Staff Development Council (NSDC.) Both externally provided and job-embedded learning activities that increase teachers' knowledge can change their instructional practice in ways that support student learning. Formal professional development represents a subset of the range of experiences that may result in professional learning.

As noted in the literature review, professional development must be embedded into the daily lives of teachers (Darling-Hammond, 1991; McDiarmid, 1995.) Professional development is essential to maintain the requisite knowledge, skills, and attitudes to be a successful teacher. Quality professional development must offer educators the opportunity to develop the necessary knowledge, skills, approaches, and dispositions to improve job effectiveness. High-quality professional learning produces positive results that manifest in teachers' classroom practice and the performance of their students (Garet, Porter, Desimone, Birman & Yoon, 2001.)

Four hundred surveys were completed at www.surveymonkey.com via a portal at http://www.unctv.org/education/teacherline/index.html. A simple random sample was selected so that all samples of the same size had an equal chance of being selected from the population. This random sample was taken from the total population of North Carolina teachers and professional development administrators who participated in professional development during the past 12 months and those who have left the profession.

The request to complete the survey was sent to the 115 school district professional development administrators within North Carolina. The request to complete the survey was sent to North Carolina teachers through North Carolina Department of Public Instruction division chairs, the North Carolina Reading Association, the North Carolina Mathematics Council, the North Carolina Middle School Association and the North Carolina Council for the Studies. The invitation was further sent to retired teachers and those who were members of the organizations mentioned above who had left the profession. The invitation to participate email message gave the parameters of the study, when participants could view the results of the survey, and guaranteed the participant anonymity. The survey notification was sent one week prior to survey's beginning to allow for distribution to all the parties solicited. The actual time frame for completion of the survey was the month of March, 2009. The survey was designed around the North Carolina 12 standards of professional development and teacher retention in regards to the perceptions of North Carolina teachers and administrators. A group of North Carolina State University doctoral candidates acting as peer reviewers or inter-raters for reliability, pilot tested and critiqued the survey instrument. The peer reviews were used to rephrase the open-ended interview questions prior to use with

the sample population. In addition to the data provided by the qualitative interviews, Dr. Betty Wells Brown, Professor, UNC Pembroke, Department of Professional Leadership, reviewed the set up and reasoning behind the online survey. The online survey provided data that was compared to the interview results. This provided the potential to confirm or call into question similarities and differences noted within the interviews.

The open-ended interviewees were selected from the same random sample population as the online survey participants. A request for district professional development administrators was sent to the 115 school districts. A separate request for teachers was sent through existing databases. Three district professional development administrators and three teachers who responded were selected. One teacher and one district administrator from each region geographic (mountains, piedmont and coast) were selected. In a separate request from the online interview, individuals from the same subgroups were requested to participate in a face-to-face interview if they were interested in providing more detail than was allowed through the online interview. Further, some teacher and administrative personnel emailed the researcher because they did not get to complete the survey during March 2009. The researcher suggested that these teachers and administrators become part of the open-ended interview. The individuals were asked to notify the researcher via email two weeks following the invitation asking that face-to-face interviews occur during the months of April and May 2009. The remainder of the interview participants were chosen from individuals who self-selected and met criteria. The researcher sought individuals who were distributed between teachers and administrators, were over the three geographic regions, and were not from the same school district. Since North Carolina professional development administrators

and teachers meeting the criteria self-selected to participate, the researcher accepted interview participants from this group. Participants included:

- Mountain Region: a professional development administrator, a teacher, and an individual who held the dual role of a classroom teacher and that of an administrator (coach for new teachers)
- Piedmont Region: a professional development administrator, a classroom teacher, and a retired classroom teacher
- Coastal Region: a professional development administrator, a teacher, a former teacher and a teacher/administrator who held the dual role of a classroom teacher and that of an administrator (mentor for new teachers.)

Ten open-ended interviews were completed. Notification was sent via email to all possible participants once the ten interviewees were obtained. Demographic information was obtained through both methods. Both open-ended interview participants and online survey respondents included North Carolina teachers and professional development administrators. All three geographic regions of North Carolina were represented through both methods.

The online survey instrument has two parts. Part one contains questions regarding the demographic information of the respondents. Part two contains questions directly related to North Carolina's 12 standards of professional development and a question relating to research question two and the researcher's anticipation. The online survey for teachers and administrators developed through the use of North Carolina's 12 standards of professional development aids in the understanding of the influences of professional development on K-12 teachers. Scaled questions were included and responses analyzed in conjunction with data

made available through the North Carolina Department of Public Instruction. Comparisons of perceptions of teachers and administrators were made on common survey items with open-ended interviews.

Descriptive Statistics for the Online Survey

Introduction

The following paragraphs describe the results from the random sample of n=399. Thirty-three self identified as staff development administrators (8.3%), 360 self identified as North Carolina teachers who have participated in professional development within the past year (91.6%), and six did not self identify as either administrator or teacher and remain unknown (1.5%.) One individual completed the survey after the survey closing date and was discarded. The survey questions included demographics that are pertinent to prior research on the state of an aging teaching profession and the mobility of teachers in North Carolina (Ingersoll, 2009.) No online participants self-identified as to gender.

Non-demographic questions related directly to the 12 professional development standards: learning communities, leadership, resources, data-driven, evaluation, design, learning, collaboration, equity, quality teaching and family involvement (NCDPI, 2009.) Demographic questions included age, years of service, number of job changes, district/region, and race/ethnic origin. For all demographic categories 395 respondents answered this question and four left it blank.

Age

Total Participants

For the category of age, 66 (16.7%) out of 395 respondents are 22 through 30 years of age, 102 (25.8%) respondents are 31 through 40 years of age, 108 (27.3%) respondents are 41 to 50 years of age, 101 (25.5%) respondents are 51 to 60 years of age and 17 (4.3%) respondents are above 60 years of age. The median age for individuals completing this

survey was 47 years of age with the youngest being 22 years of age and the oldest being 65 years of age.

Teachers

For the category of age, 61 (16.7%) out of 363 respondents are 22 through 30 years of age, 97 (27%) respondents are 31 through 40 years of age, 98 (27%) respondents are 41 to 50 years of age, 86 (24%) respondents are 51 to 60 years of age and 16 (4%) respondents are above 60 years of age.

The National Commission on Teaching and America's Future (NCTAF) report on age distribution among K-12 teachers notes the lower quartile as 32 years of age, the upper quartile as 50 years of age, and the median age for teachers in 2004 as 42 years of age for North Carolina K-12 teachers (Ingersoll, 2009.) This concurs with the research noted in the literature review that the teacher workforce is aging.

Administrators

For the category of age, 5 (16%) out of 32 respondents are 31 through 40 years of age, 10 (31%) respondents are 41 to 50 years of age, 15 (47%) respondents are 51 to 60 years of age and 2 (6%) respondents are above 60 years of age.

Years of Service as an Educator

Total Participants

For the category of years of service, 77 (19%) out of 396 responded with zero to five years of experience, 80 (20%) responded with six to 10 years of experience, 65 (16%) with 11 to 15 years experience, 52 (13%) with 16 to 20 years experience, and 122 (31%) with over

20 years experience. Some individuals made extra notations stating they had changed positions within districts, grade levels, and school systems.

Teachers

For the category of years of service, 74 (20%) out of 366 responded with zero to five years of experience, 77 (21%) responded with six to 10 years of experience, 62 (17%) with 11 to 15 years experience, 44 (12%) with 16 to 20 years experience, and 106 (29%) with over 20 years experience.

Administrators

For the category of years of service, 3 (9%) out of 33 responded with zero to five years of experience, 3 (9%) responded with six to 10 years of experience, 3 (9%) with 11 to 15 years experience, 8 (24%) with 16 to 20 years experience, and 16 (48%) with over 20 years experience.

Number of Job Changes as an Educator

Total Participants

For the category of number of job changes, 110 out of 390 (28%) responded with no job change, 136 (34%) with one or two job changes, 108 (27%) with three to four job changes, 37 (9%) with five to six job changes and 4 (1%) with other six job changes. The highest number of job changes recorded on the survey is 16 and the lowest number is zero. The number of job changes supports current research indicating a mobile teaching workforce cited during the literature review.

Teachers

For the category of number of job changes, 110 out of 358 (31%) responded with no job change, 127 (35%) with one or two job changes, 104 (29%) with three to four job changes, 20 (6%) with five to six job changes and 2 (.5%) with other six job changes.

Administrators

For the category of number of job changes, zero out of 32 responded with no job change, 9 (28%) with one or two job changes, 4 (12%) with three to four job changes, 17 (53%) with five to six job changes and 2 (6%) with other six job changes.

District/Region

Total Participants

For the category of district/region, the three North Carolina geographic regions representatives show a breakdown by region of 396 respondents. The survey request incorporates all three regions. The response rates by district/region response include 72 (18%) mountain respondents, 160 (40%) piedmont respondents and 164 (41%) coastal respondents.

The three regions addressed in this research include the 32 counties that constitute the mostly agriculturally based coastal region [tidewater and coastal plain], the 33 counties of the industrial and technologically based counties that constitute the piedmont region and the 26 counties that constitute the mountain region (NC Employment Security Commission, 2009.) As noted previously, all sample participants were secured by a one week invitation prior to the start of the online surveys solicited through the North Carolina Department of Public Instruction section chiefs, a listserv of the 115 districts, professional organizations such as

the North Carolina Reading Association, the North Carolina Middle School Association, the North Carolina Science Teachers Association, and the North Carolina Council for Teachers of Mathematics.

Overall, more respondents come from the piedmont district than the other two regions. The coastal plain is second and the mountain region third in number of participants. The same is true for both teachers and administrators. Administrators had more than five years experience with most clustering around the 15 to 20 years of experience mark compared to teachers who had a range of zero years to more than 20 years experience. Teachers with 20 years or more experience responded similarly to administrators in the majority of questions. Teachers with less experience vary more in their responses. Teachers with more than six job changes respond similarly to administrators with 20 years or more years. Teachers in this group agreed 100% on all questions except the two that addressed research-based and design. Administrators with more than 20 years experience agreed that all the individual standards are met in their districts.

Teachers

A total of 362 out of the total 360 teacher participants responded to this question. The response rate by region for teachers include 68 (19%) mountain region respondents, 150 (41%) piedmont region respondents, and 164 (45%) coastal region respondents.

Administrators

A total of 33 administrators answered this question. The response rate by region for administrators include 12 (36%) mountain region respondents, 14 (42%) piedmont region respondents and 7 (21%) coastal region respondents.

Race/Ethnicity

Total Participants

Racial/ethnic origin self identified by 393 respondents include 356 (90%) White/Caucasian, 33 (8.4%) Black/African American, 2 (.5%) multi-racial, 2 (.5%) other and 2 (.5%) Asian. As noted previously, the population is a random sample taken from the total population all North Carolina teachers and professional administrators who self-selected to participate and who had participated professional during the past 12 months.

Teachers

Racial/ethnic origin self identified by 361 respondents include 324 (90%) White/Caucasian, 28 (8.6%) Black/African American, 2 (.5%) multi-racial, 2 (.5%) other and 2 (.5%) Asian.

Administrators

Racial/ethnic origin self identified by 32 respondents include 27 (84%) White/Caucasian and 5 (16%) Black/African-American.

Research Question 1

The online survey questions one through 12 and question 14, address the professional development experience of North Carolina teachers. The coded responses for these question are the 12 North Carolina standards of professional development: learning communities, leadership, resources, data-driven, evaluation, research-based, design, learning, collaboration, equity, quality teaching and family involvement.

Research Question 2

Survey question number 13 refers to a possible relationship between professional development and teacher attrition.

Relationship to the 12 NC Standards of Professional Development

The first survey question after demographics is two pronged with a choice designated for administrators only or for teachers only. All other questions are the same for both groups. The rating scale for all non-demographics questions have a one (1) to five (5) range. Within this range, 1 equals Disagree Strongly, 2 equals Disagree, 3 equals Agree Somewhat, 4 equals Agree, and 5 equals Agree Strongly. For purposes of clarity, the tables reporting the results were divided into the two categories of Agree or Disagree.

The demographic questions note 33 self-identified as administrators (8.3%), 360 self identified as North Carolina teachers who have participated in professional development within the past year (91.6%), six did not self identify as either administrator or teacher and remain unknown (1.5%.)

The results are given under the appropriate criteria from the 12 professional development standards applied by the North Carolina Department of Public Instruction. Of the questions asked on the online survey, responses indicate the majority of educators agree that teachers know the 12 standards in their districts. The remaining questions address whether specific standards are met in the respondent's district. Individual online participants skipped some questions while answering other questions. Since the researcher guaranteed complete anonymity to participants of the online survey, questions regarding why various questions are skipped cannot be ascertained from the data gathered from this research. See

table three for a compilation of the professional development covered by questions on the online survey and the responses given. The results of the online survey for teachers are given in Table 3. The results of the online survey for administrators are given in Table 4.

Table 3. Results of Online Survey for North Carolina Teachers

NC 12 Standards of Professional Development	Agree	Disagree
Teachers Know Standards	52.2%	47.8%
Design	75.4%	24.6%
Collaboration	72.8%	27.2%
Leadership	75.9%	24.1%
Learning Communities	83.3%	16.7%
Family Involvement	75.1%	24.9%
Evaluation	78.2%	21.8%
Research-Based	78.7%	21.4%
Learning	86.7%	13.3%
Data-Driven	86.3%	13.7%
Equity	78.4%	21.6%
Quality Teaching	76.8%	23.2%
Professional Development Relationship to Attrition	81%	19%
Resources	84.7%	15.3%

Table 4. Results of Online Survey for North Carolina Administrators

NC 12 Standards of Professional Development	Agree	Disagree
Administrators Know Standards	100%	0%
Teachers Know Standards	86.1%	13.9%
Design	78.7%	21.3%
Collaboration	72.8%	27.2%
Leadership	78.8%	21.2%
Learning Communities	81.8%	18.2%
Family Involvement	81.3%	18.7%
Evaluation	84.8%	15.2%
Research-Based	75.7%	24.3%
Learning	87.5%	12.5%
Data-Driven	81.8%	18.2%
Equity	78.7%	21.3%
Quality Teaching	78.8%	21.2%
Professional Development to Attrition	87%	13%
Resources	90.9%	9.1%

Results of Online Survey

Introduction

The knowledge of the 12 standards by teachers within regional or district professional development garnered a 52.2% agreement rating. As noted previously, respondents skipped some questions, and that means that the total for specific questions are less than the 366 teacher total respondents. For example, approximately three-quarters of teachers agreed that six standards were met: equity, evaluation, quality teaching, leadership and family involvement. The highest rating was given to equity.

Research Question 2

Research question two regarding a relationship between teacher attrition and professional development received a positive response from online survey respondents.

Administrators

The administrators (87%) agreed there is a relationship between quality professional development and teacher attrition.

Teachers

Teachers (81%) agree a relationship exists between effective professional development and teacher attrition.

Total Participants

The knowledge of the 12 standards by teachers within regional or district professional development garnered an 86.1% agreement rating. The knowledge of the 12 standards by administrators garnered a 100% rating. This breakdown by administrators knowing the 12 standards is only given in Table 3 since it is the same for all further breakdowns of data. For

subsequent tables for administrators only, the administrators' response to the question of whether teachers know the standards is given, but not whether administrators know the standards. Both administrators and the teachers skipped some questions.

For the specific standards, administrators gave the highest agreement rating for resources. Collaboration received the lowest rating by administrators. Approximately 80% of administrators agreed that learning communities, data-driven, and family involvement standards were met.

Personal and environmental factors combine and interact with one another to form contextual factors. Three demographic contextual factors noted in Chapter 1 were studied to verify any impact on the survey results. The factors included age, years of experience and number of job changes in the profession. As noted previously, 395 of the 399 respondents provided answers to questions providing demographic information. Both administrators and teachers skipped specific questions, and those participants not answering demographic questions were excluded. Any responses skipped were also excluded from the contextual analysis.

Table 5 gives the contextual influence of age for teachers. Table 6 gives the contextual influence for administrators.

Table 5. Demographic factor: Age of Teacher Participants

NC 12 Standards	22-30 Years	31-40 Years	41-50 Years	51-60 Years	60+ Years
Teachers Know Standards	41% Agree 59% Disagree	52.9% Agree 47.1% Disagree	64.9% Agree 35.1% Disagree	53% Agree 47% Disagree	81.3% Agree 18.7% Disagree
Design	66.7% Agree 33.3% Disagree	84.7% Agree 15.3% Disagree	85% Agree 15% Disagree	81.9% Agree 18.1% Disagree	81.3% Agree 18.7% Disagree
Collaboration	75.8% Agree 24.2% Disagree	83.5% Agree 16.5% Disagree	81.9% Agree 18.1% Disagree	73.4% Agree 26.6% Disagree	87.5% Agree 12.5% Disagree
Leadership	66.7% Agree 33.3% Disagree	80% Agree 20% Disagree	78.7 Agree 21.3 Disagree	78.3% Agree 26.2% Disagree	75% Agree 25% Disagree
Learning Communities	69.7% Agree 30.3% Disagree	78.8% Agree 21.2% Disagree	87.2 Agree 12.8% Disagree	79.5% Agree 20.5% Disagree	75% Agree 25% Disagree
Family Involvement	77.3% Agree 22.7% Disagree	87% Agree 13% Disagree	77.7% Agree 22.3% Disagree	67.4% Agree 32.6% Disagree	93.8% Agree 6.2% Disagree
Evaluation	86.4% Agree 13.6% Disagree	77.6% Agree 22.4% Disagree	88.3% Agree 11.7% Disagree	83.1% Agree 16.9% Disagree	87.5% Agree 12.5% Disagree
Research-Based	77.3% Agree 22.7% Disagree	89.4% Agree 10.6% Disagree	89.4% Agree 10.6% Disagree	83.1% Agree 16.9% Disagree	81.3% Agree 18.7% Disagree
Learning	87.9% Agree 12.1% Disagree	85.9% Agree 14.1% Disagree	81.5% Agree 18.5% Disagree	79.5% Agree 20.5% Disagree	68.8% Agree 31.2% Disagree

Table 5 Continued

Data-Driven	71.2% Agree 28.8% Disagree	87% Agree 13% Disagree	86.2 % Agree 13.8 % Disagree	73.4% Agree 26.6% Disagree	68.8% Agree 31.2% Disagree
Equity	83.3% Agree 16.7% Disagree	88.2% Agree 11.8% Disagree	77.7% Agree 22.3% Disagree	84.3% Agree 15.7% Disagree	81.3% Agree 18.7% Disagree
Quality Teaching	63.3% Agree 36.7 Disagree	80% Agree 20% Disagree	78.7 Agree 21.3 Disagree	77.1% Agree 22.9 % Disagree	87.5% Agree 12.5% Disagree
PD Relationship To Attrition	83.3% Agree 16.7% Disagree	90.6% Agree 9.4% Disagree	74.5% Agree 25.5% Disagree	83.3% Agree 16.7% Disagree	81.3% Agree 18.7% Disagree
Resources	65.2 % Agree 34.8 % Disagree	83.5% Agree 16.5% Disagree	87.2% Agree 12.8% Disagree	76.2% Agree 23.8% Disagree	87.5% Agree 12.5% Disagree

Note: PD=Professional Development

Table 6. Demographic factor: Age of Administrators

NC 12 Standards	31-40 Years	41-50 Years	51-60 Years	60+ Years
Teachers Know Standards	67% Agree 33% Disagree	80% Agree 20% Disagree	73.4% Agree 26.6% Disagree	100% Agree
Design	67% Agree 33% Disagree	70% Agree 30% Disagree	86.7% Agree 13.3% Disagree	100% Agree
Collaboration	50% Agree 50% Disagree	70% Agree 30% Disagree	73.4% Agree 26.6% Disagree	100% Agree
Leadership	50% Agree 50% Disagree	90% Agree 10% Disagree	100% Agree	100% Agree
Learning Communities	50% Agree 50% Disagree	80% Agree 20% Disagree	100% Agree	100% Agree
Family Involvement	67% Agree 33% Disagree	80% Agree 20% Disagree	93.4% Agree 6.6 % Disagree	100% Agree
Evaluation	83.4% Agree 16.6%Disagree	60% Agree 40% Disagree	93.4% Agree 6.6 % Disagree	100% Agree
Research-Based	83.4% Agree 16.6% Disagree	50% Agree 50% Disagree	93.4% Agree 6.6 % Disagree	100% Agree
Learning	83.4% Agree 16.6% Disagree	80% Agree 20% Disagree	86.7% Agree 13.3% Disagree	100% Agree
Data-Driven	67% Agree 33% Disagree	70% Agree 30% Disagree	100% Agree	100% Agree
Equity	100% Agree	80% Agree 20% Disagree	100% Agree	100% Agree
Quality Teaching	67% Agree 33% Disagree	60% Agree 40% Disagree	86.7% Agree 13.3%Disagree	100% Agree
PD Relationship To Attrition	67% Agree 33% Disagree	60% Agree 40% Disagree	100% Agree	100% Agree
Resources	83.4% Agree 16.6% Disagree	50% Agree 50% Disagree	93.4% Agree 6. 6% Disagree	100% Agree

Note: PD=Professional Development

Demographic Factor Age

Table 5 and Table 6 indicate the demographic factor of age plays a role in the perceptions of teachers and administrators regarding North Carolina's 12 standards of professional and their discernment of a correlation between quality professional development and teacher attrition. By looking at the factor of age, differences in perceptions of North Carolina's 12 standards vary for teachers and administrators. Administrators expressed increased confidence in the 12 standards being met by teachers as they increased in age. The administrator 31 to 40 age group notes the lowest agreement that teachers know the standards. Further, administrators in the youngest group had less than a 70% agreement for seven standards: design, collaboration, learning communities, learning, equity, and resources. As this represents over half of the 12 required professional development standards, addressing these areas is important. Further, assistance in gaining a better understanding of the 12 standards and successful implementation methods might prove beneficial. Both teachers and administrators appear to believe more standards are met as their age progresses. Overall, administrators demonstrate a greater belief that standards are met across age groups than teachers. For example, three quarters of teachers over age 60 believe that all the standards are met except data-driven and learning standards. These differences may mean that older teachers feel more comfortable or know more about the other 10 standards.

By looking at older (40 years and above) teacher responses, it might be helpful to have professional development for this group include more professional development activities relating to the data-driven and learning standards. The youngest age group 22 to 30 years of age applied only to teachers. Teachers in the 31 to 40 years of age gave the lowest

rating overall to the standards being known in their districts. This group's response supports the need for more teacher oriented professional development and support especially in the first five years of teaching. The agreement rating for the question regarding a relationship between professional development and attrition received an increasing rate of agreement with the increase in age. This might be because teachers and administrators have had more time to see relationships develop between professional development and teacher attrition over the years.

Table 7 shows the contextual influence of years of service for teachers. Table 8 shows the contextual influence of years of service for administrators.

Table 7. Contextual factor: Years of Service Teacher Participants

NC 12 Standards	0-5 Years	6-10 Years	11-15 Years	16-20 Years	20+ Years
Teachers Know Standards	69% Agree 31% Disagree	62% Agree 38% Disagree	54.1% Agree 45.9% Disagree	50% Agree 50% Disagree	74.1% Agree 25.9% Disagree
Design	85% Agree 15% Disagree	80% Agree 20% Disagree	91.9% Agree 8.1% Disagree	75% Agree 25% Disagree	86.2% Agree 13.8% Disagree
Collaboration	84% Agree 16% Disagree	81% Agree 19% Disagree	94.6% Agree 5.4% Disagree	87.5% Agree 12.5% Disagree	89.7% Agree 10,3% Disagree
Leadership	86% Agree 14% Disagree	87% Agree 13% Disagree	83.8% Agree 16.2% Disagree	87.5% Agree 12.5% Disagree	75.9% Agree 24.1% Disagree
Learning Communities	92% Agree 8% Disagree	87% Agree 13% Disagree	86.5% Agree 13.5% Disagree	87.5% Agree 12.5% Disagree	75.9% Agree 24.1% Disagree
Family Involvement	91% Agree 9% Disagree	91% Agree 9% Disagree	94.6% Agree 5.4% Disagree	87.5% Agree 12.5% Disagree	94.2% Agree 5.8% Disagree
Evaluation	82% Agree 18% Disagree	90% Agree 10% Disagree	75.7% Agree 24.3% Disagree	100% Agree	77.6% Agree 22.4% Disagree
Research-Based	92% Agree 8% Disagree	90% Agree 10% Disagree	91.9% Agree 8.1% Disagree	100% Agree	89.7% Agree 10,3% Disagree
Learning	92% Agree 8% Disagree	91% Agree 9% Disagree	91.9% Agree 8.1% Disagree	100% Agree	86.2% Agree 13.8% Disagree

Table 7 Continued

Data-Driven	91% Agree 9% Disagree	81% Agree 19% Disagree	91.9% Agree 8.1% Disagree	100% Agree	81% Agree 19% Disagree
Equity	91% Agree 9% Disagree	91% Agree 9% Disagree	94.6% Agree 5.4% Disagree	87.5% Agree 12.5% Disagree	82.8% Agree 17.2% Disagree
Quality Teaching	78% Agree 22% Disagree	81% Agree 19% Disagree	86.5% Agree 13.5% Disagree	87.5% Agree 12.5% Disagree	84.5% Agree 15.5% Disagree
Professional Development Relationship To Attrition	93% Agree 7% Disagree	92% Agree 8% Disagree	83.8% Agree 16.2% Disagree	87.5% Agree 12.5% Disagree	84.5% Agree 15.5% Disagree
Resources	80% Agree 20% Disagree	83% Agree 17% Disagree	97.3% Agree 2.7% Disagree	100% Agree	81% Agree 19% Disagree

Note: PD=Professional Development

Table 8. Contextual factor: Years of Service of Administrators

NC 12 Standards	6-10 Years	11-15 Years	16-20 Years	20+ Years
Teachers Know Standards	100% Agree	80% Agree 20% Disagree	57.1% Agree 42.8% Disagree	64.7% Agree 35.3% Disagree
Design	67% Agree 33% Disagree	80% Agree 20% Disagree	85.7% Agree 14.3% Disagree	88.2% Agree 11.8% Disagree
Collaboration	67% Agree 33% Disagree	80% Agree 20% Disagree	85.7% Agree 14.3% Disagree	94.1% Agree 5.9% Disagree
Leadership	67% Agree 33% Disagree	80% Agree 20% Disagree	85.7% Agree 14.3% Disagree	82.4% Agree 17.6% Disagree
Learning Communities	67% Agree 33% Disagree	100% Agree	71.4 % Agree 28.6% Disagree	88.2% Agree 11.8% Disagree
Family Involvement	100% Agree	80% Agree 20% Disagree	71.4 % Agree 28.6% Disagree	82.4% Agree 17.6% Disagree
Evaluation	100% Agree	80% Agree 20% Disagree	28..6% Agree 71.4% Disagree	76.5% Agree 23.5% Disagree
Research-Based	100% Agree	80% Agree 20% Disagree	100% Agree	88.2% Agree 11.8% Disagree
Learning	67% Agree 33% Disagree	80% Agree 20% Disagree	85.7% Agree 14.3% Disagree	94.1% Agree 5.9% Disagree

Table 8 Continued

Data-Driven	100% Agree	80% Agree 20% Disagree	85.7% Agree 14.3% Disagree	76.5% Agree 23.5% Disagree
Equity	67% Agree 33% Disagree	100% Agree	100% Agree	88.2% Agree 11.8% Disagree
Quality Teaching	100% Agree	80% Agree 20% Disagree	85.7% Agree 14.3% Disagree	82.4% Agree 17.6% Disagree
Professional Development Relationship To Attrition	67% Agree 33% Disagree	80% Agree 20% Disagree	100% Agree	82.4% Agree 17.6% Disagree
Resources	67% Agree 33% Disagree	80% Agree 20% Disagree	85.7% Agree 14.3% Disagree	82.4% Agree 17.6% Disagree

Note: PD=Professional Development

Contextual Factors

Years of Service

The contextual factor of years of service appears to have an influence on participants' survey responses. There are only teacher participants in the group with zero to five years of service. The responses by teachers and administrators to questions Administrators with six to ten years of experience believe the standards for family involvement, evaluation, research-based, data-driven and quality teaching standards are met. Teachers with six to ten years experience rated all other standards (design, leadership, learning communities, learning, equity, and resources) higher than administrators in this group. The belief by administrators that professional development has a relationship to teacher attrition increases with years of service through 20 years of service. There is a slight drop in agreement after 20 years.

A reverse trend is seen in teacher responses. Teachers with 10 or less years of service indicate a greater belief there is a relationship. There is a drop in level of agreement for teachers in the 11 to 15 years of service group and then the level of agreement rises. It appears that both new teachers and teachers with the most years of service perceive a relationship between professional development and teacher attrition within their districts. This may occur because individuals in the 11 to 15 years age group have reached a more stable time in their educational careers. Teachers with 11 to 15 years of service rated the resources standard highest. This may point to the question, "What do teachers need to effectively plan for and meet student needs during instruction?" Having an adequate amount of equipment and supplies is vital to teacher implementation of standards. Administrators in this group rate the learning communities standard highest. The recent emphasis by North

Carolina Public Schools to build communities of practice may be why this standard is rated at this level.

Table 9 shows the contextual influence of number of job changes for teachers. Table 10 shows the contextual influence of number of job changes for administrators.

Table 9. Contextual factor: Number of Job Changes of Teachers

NC 12 Standards	No Job Change	1-2	3-4	5-6	6+
Teachers Know Standards	58.3% Agree 41.7 Disagree	72.1% Agree 27.9% Disagree	52% Agree 48% Disagree	33% Agree 67% Disagree	67% Agree 33% Disagree
Design	76% Agree 24% Disagree	90.2% Agree 9.8% Disagree	78% Agree 22% Disagree	36.4% Agree 63.6% Disagree	100% Agree
Collaboration	79.2% Agree 20.8% Disagree	88.5% Agree 11.5% Disagree	84.9% Agree 15.1% Disagree	72.7% Agree 27.3% Disagree	100% Agree
Leadership	75% Agree 25% Disagree	85.2% Agree 14.8% Disagree	74% Agree 26% Disagree	77.3% Agree 22.4% Disagree	100% Agree
Learning Communities	83.3% Agree 16.7% Disagree	83.6% Agree 16.4% Disagree	71.2% Agree 28.8% Disagree	59% Agree 41% Disagree	100% Agree
Family Involvement	79.2% Agree 20.8% Disagree	95.1% Agree 4.9% Disagree	89% Agree 11% Disagree	77.3% Agree 22.7% Disagree	100% Agree
Evaluation	70.8% Agree 29.2% Disagree	82% Agree 18% Disagree	72.6% Agree 27.4% Disagree	77.3% Agree 22.7% Disagree	100% Agree
Research-Based	86.5% Agree 13.5% Disagree	93.4% Agree 6.6% Disagree	82.2% Agree 17.8% Disagree	77.3% Agree 22.7% Disagree	67% Agree 33% Disagree
Learning	87.5% Agree 12.5% Disagree	90.2% Agree 9.8% Disagree	87.7% Agree 12.3% Disagree	72.7% Agree 27.3% Disagree	100% Agree

Table 9 Continued

Data-Driven	70.8% Agree 29.2% Disagree	90.2% Agree 9.8% Disagree	79.5% Agree 20.5% Disagree	72.7% Agree 27.3% Disagree	100% Agree
Equity	85.4% Agree 14.6% Disagree	91.8% Agree 8.2% Disagree	84.9% Agree 15.1% Disagree	63.6% Agree 36.4% Disagree	100% Agree
Quality Teaching	68.8% Agree 31.2% Disagree	85.2% Agree 14.8% Disagree	80.8% Agree 19.2% Disagree	77.3% Agree 22.7% Disagree	100% Agree
Professional Development Relationship To Attrition	79.2% Agree 20.8% Disagree	86.9% Agree 13.1% Disagree	82.2% Agree 17.8% Disagree	77.3% Agree 22.4% Disagree	67% Agree 33% Disagree
Resources	88.5% Agree 11.5% Disagree	91.8% Agree 8.2% Disagree	86.3% Agree 13.7% Disagree	63.6% Agree 36.4% Disagree	100% Agree
Equity	67.7% Agree 32.3% Disagree	86.9% Agree 13.1% Disagree	79.5% Agree 20.5% Disagree	77.3% Agree 22.4% Disagree	100% Agree

Note: PD=Professional Development

Table 10. Contextual factor: Number of Job Changes of Administrators

NC 12 Standards	No Job change	1-2	3-4	5-6	6+
Teachers Know Standards	100% Disagree	50% Agree 50% Disagree	86.7% Agree 13.3% Disagree	67% Agree 33% Disagree	100% Disagree
Design	100% Agree	62.5 Agree 37.5% Disagree	86.7% Agree 13.3% Disagree	100% Agree	100% Disagree
Collaboration	100% Agree	75% Agree 25% Disagree	86.7% Agree 13.3% Disagree	100% Agree	100% Agree
Leadership	100% Agree	62.5% Agree 37.5% Disagree	80% Agree 20% Disagree	67% Agree 33% Disagree	100% Agree
Learning Communities	100% Agree	75% Agree 25% Disagree	86.7% Agree 13.3% Disagree	67% Agree 33% Disagree	100% Agree
Family Involvement	100% Agree	75% Agree 25% Disagree	93.3% Agree 6.7% Disagree	67% Agree 33% Disagree	100% Disagree
Evaluation	100% Agree	50% Agree 50% Disagree	86.7% Agree 13.3% Disagree	100% Agree	100% Disagree
Research-Based	100% Agree	75% Agree 25% Disagree	93.3% Agree 6.7% Disagree	100% Agree	100% Agree
Learning	100% Agree	87.5% Agree 12.5% Disagree	86.7% Agree 13.3% Disagree	100% Agree	No Answer

Table 10 Continued

Data-Driven	100% Agree	75% Agree 25% Disagree	86.7% Agree 13.3% Disagree	100% Agree	100% Disagree
Equity	100% Agree	100% Agree	86.7% Agree 13.3% Disagree	100% Agree	100% Disagree
Quality Teaching	100% Agree	87.5% Agree 12.5% Disagree	86.7% Agree 13.3% Disagree	100% Agree	100% Disagree
Professional Development Relationship To Attrition	100% Agree	75% Agree 25% Disagree	86.7% Agree 13.3% Disagree	100% Agree	100% Disagree
Resources	100% Agree	75% Agree 25% Disagree	86.7% Agree 13.3% Disagree	100% Agree	100% Disagree

Note: PD=Professional Development

Number of Job Changes

The contextual factor of number of job changes influences survey responses for both teachers and administrators. Unlike the areas of age and years of service discussed previously, the factor of job changes is not appear tied to the other two factors (age and years of service.) The administrator agreement ratings increase with each level. It appears the logical progression of understanding is augmented by the multiplicity of experiences gained in diverse settings. This suggests that the more job changes administrator's experience, the greater their level of perception that they know a particular standard. Administrators with no job changes (100%) and administrators with more than six job changes (100%) believe that teachers in their districts do not know the 12 standards of professional development. Slightly more than one-third of administrators indicate that the design standard is evident in their districts. Administrators with one to two job changes perceive the equity standard (100%) to be evident. As defined in Chapter 2, the equity standard refers to professional development that improves the learning of all students and prepares educators to understand and appreciate all students. Further, providing supportive learning environments and maintaining high expectations for the academic achievement of all students are key elements in student learning.

On the whole, teachers and administrators demonstrate a variation in perceptions. However, an interesting result of the contextual factor of job changes is that administrators with one to two job changes and five to six job changes indicate lower ratings for leadership than teachers in any job change category. This is especially noteworthy since the 2008 TWC indicates a difference in perception between teachers and administrators regarding leadership

as problematic. According North Carolina's 12 standards of professional development, professional development that improves the learning of all students requires "skillful school and district leaders who guide continuous instructional improvement."

The relationship between professional development and teacher attrition has a positive response rate for over three quarters of teacher participants. Administrators in the job changes categories received a positive response from three quarters to 100 percent of administrators for all categories except those with more than six job changes. The administrators with more than six job changes note a 100 percent disagreement that there a relationship between professional development and teacher attrition.

Open-ended Interview Findings

Introduction

The open-ended interview responses include both administrator and teacher findings regarding the perceptions of teachers and administrators across the state regarding North Carolina's 12 standards of professional development. A picture of how professional development impacts teachers and how administrators view this impact emerges. The open-ended interviews provide information about differences and similarities regarding teachers and administrators. The interviews provide detail a survey is not designed to offer. However, it is important to remember that the interviews, although rich in descriptive data, represent a very small segment of the sample population.

The codes for the open-ended interviews are the same ones as used in the online survey and come directly from North Carolina's 12 standards of professional development. All interviewees designate whether they believe that teachers and administrators know North

Carolina's 12 standards of professional development and whether the standards are used in their region. The following sections address demographics, whether the 12 standards of professional development are met, and whether interviewees answer the two research questions. The specific code responses used to analyze the data were taken from the 12 professional development standards, and the two research questions.

Perceptions of Interviewees

Perceptions of the two groups vary. Administrators endeavor to provide professional development that they believe meets North Carolina's 12 standards of professional development. However, teachers note differences in how this professional development is perceived by teachers. Teachers in the mountain region of North Carolina tend to agree more with administrators regarding the implementation of standards than those from either the piedmont or coastal region. In most cases, the professional development administrators, "teacher administrators" and teachers state very strongly that professional development in their respective districts is based on the 12 standards. The response of the interviewees supports the results of the online survey. The interviewees note areas of need or concern previously mentioned in the literature such as time management, resources, leadership, personal empowerment and opportunities for professional development that meet the needs of individual teachers (TWC, 2009.)

Both teachers and administrators indicate that the 12 standards of professional development are the foundation for professional development in their districts. However, both groups indicate that not all of the standards are known. This is evident in efforts by teachers and administrators to give specifics about all the standards. The administrator

interviewees stress that every effort is made to meet the 12 professional development standards. The teacher interviewees note differences in administrator and teacher understanding of specific standards.

Interview responses highlight the difficulty both groups experience in verbalizing a clear difference in the standards of collaboration and learning communities. Responses stress the importance of the standards data-driven, design and research-based professional development. However, the lack of agreement between administrators and teachers regarding implementing standards supports the most recent TWC study regarding the differences in teacher and administrator perception (TWC, 2009.)

After interviewing the professional development administrators, the teacher/administrators and classroom teachers, it became apparent that both administrators and teachers recognize that the 12 standards of professional development are the basis for professional development in each district or region. Interviewees were unable to cite all the standards or give a definition of all the standards. However, administrators note that every effort is made to insure that professional development meets the 12 standards of professional development. Teachers agree that districts tried to meet the standards, but disagree with administrators on the meaning of individual standards and whether they are met in their districts. This difference in perception is highlighted by the difference between teachers and administrators within the study show in the interpretation and use of the standards.

The difficulty in separating the collaboration and learning communities' standards lead to the possibility that professional development for both teachers and administrators addressing these two standards may be needed. To meet the collaboration standard,

professional development must prepare educators to be skillful members of various stakeholders' groups and provide educators with opportunities and skills necessary to manage conflict and challenges productively. A broad-based learning community that enhanced educators' skills to use online tools and resources to advance knowledge was stressed. The learning communities standard (see Chapter 2) supports professional development that improves the learning of all students and organizes adults into learning communities whose goals are aligned with those of the school and district. As noted in Chapter 2, the learning community involves individuals with common goals and beliefs that come together to learn from each other. To be successful, teachers are a part of ongoing, school-based learning teams that met as needed to plan instruction, examine student work, and/or solve problems. Further, it is important that administrators and teachers develop knowledge and skills necessary to be leaders in professional development (Dufour, 2004; Roberts & Pruitt, 2009.)

Demographics

Demographics include age, years of service, number of job changes, district or region, and race or ethnic origin. The demographic age range from the mid-twenties to above 60 years of age. Years of service ranged from less than five years to greater than 30 years of service. The number of job changes range from two to five.

Racial or ethnic backgrounds for those interviewed include seven who self-identified as White or Caucasian, two who self-identified as African-American or Black and one who self-identified as American Indian instead of Native American.

Results of Open-ended Interviews

Open-ended interview participants represent each of the three geographic regions. One administrator (MA1), one teacher (MT1) and one who holds the dual role of a classroom teacher and that of an administrator as district coach for new teachers (MTA1) represented the mountain district. One administrator (PA1), two teachers (PT1 and PT2), and one retired teacher (PT3) represent the piedmont region. One administrator (CA1), one teacher (CT1), one former teacher (CT2) and a teacher/administrator who holds the dual role of a classroom teacher and that of an administrator as mentor for new teachers (CTA1) represent the coastal region. Table 11 shows where interviewees are in relationship to the three regions and interviewee labels. See Table 11.

Table 11. Open-ended Interview Designations

Region	Administrators	Teacher-Administrators	Active Teachers	Retired Teacher	Former Teacher
Mountain	1 (MA1)	1 (MTA)	1 (MT1)		
Coastal	1 (CA1)	1 (CTA1)			1 (CT1)
Piedmont	1 (PA1)		2 (PT1 & PT2)	1 (PT3)	

Research Question 1

The following sections address how Research Question 1 is answered by the open-ended interviews.

Administrators from the three regions indicate that the 12 standards are met in their respective districts and note specifics of how standards are met. For example, CA1 notes the coastal region's use of technology enables professional development that meets the 12 standards. In response to how technology enables teachers to meet the 12 standards, CA1 notes, "Teachers are taught to use these technology-based tools and integrate them into their teaching techniques through targeted professional development classes. These classes are delivered via video conferencing and originate mainly at schools within the UNC System or the North Carolina Independent Colleges and Universities. At the core of these and many other 21st century classrooms practices are reliable, high-speed access to the Internet." PA1 agrees that all professional development is based upon the 12 standards of professional development. MA1 notes that staff development administrators "do everything possible to ensure that the NSDC standards apply to their staff development." However, MA1 indicated a concern regarding the workloads of teachers and the required professional development needed for teachers to meet district goals. Teachers and Teacher/Administrators consistently stated that the 12 standards were the basis for professional development, but often added a qualifier as to how well a standard was met.

The teachers in all three regions echoed the concern of MA1 regarding time. Teachers MT1, PT1, PT2 and CT1 consistently brought up the problem of time to complete professional development criteria. Each administrator was asked about the issue of time for

professional development. MA1 and MTA1 noted a concern regarding the time to take advantage of all the professional development offered. PA1, CA1, and CTA1 agree time is problematic, but either see no way of changing professional development implementation to address this issue or do not feel comfortable with further discussion. CT2 notes two concerns—availability of resources to meet the 12 professional development standards and whether individual teacher professional development needs are met. All of the administrator interviewees emphasize what each one is doing to meet the 12 professional development standards, but stress the need for continual improvement. PA1 notes that the resources standard is not met in the area of technology. Further, PA1 states, "Teachers are being asked to utilize technology for learning communities with insufficient equipment to meet this standard." MA1 agrees, "Resources are always scarce." Both MT1 and MTA1 state professional development in the mountain region is encouraged and provided through both online and face-to-face environments.

Collaboration and Learning Communities

The 12 standards suggest ways the collaboration and learning communities' standards may look in districts. Collaboration includes professional development to prepare educators to be proficient members of various stakeholders' groups. Educators are provided with the skills necessary to use technology and to collaborate. Further are educators are provided with opportunities and skills necessary to manage conflict and challenges productively. Learning communities can be small teams of teachers, administrators, non-teaching staff, parents, representatives of community colleges and colleges and universities, regional education service alliances, and or policy makers and community members. For this to be

successful, all teachers need to be part of ongoing, school-based learning teams. These teams should meet as needed to plan instruction, examine student work, and/or solve problems. Interviewees discussed how they believe these standards are met in their districts.

MA1 notes middle school results have been tremendous thanks to an IMPACT model of integrating technology into teaching and learning in North Carolina K-12 schools to make a significant difference in student outcomes, such as achievement and behaviors such as absenteeism, and teacher outcomes, such as level of technology integration in classroom teaching and technology skills. Teachers also met in other small groups for reasons such as professional book discussions or professional development council reworking of professional development forms and procedures. A greater number of small group opportunities were provided in the 2008-2009 school year, but the district needed to provide more opportunities for small group work. CA1 cited the use of online learning communities promoted in their district. The definition of collaboration and the time needed to adequately implement this standard suggested a greater need for communication by administrators and teachers.

Piedmont and coastal region teachers agree that collaboration is important, but did not agree that adequate time was allotted. For example, PT1 states, “Collaboration isn’t by definition, ‘collaboration.’ It is now coming down to this is what all teachers will do.” CT1 observed, “the district did provide half days for collaboration, but the practice had ceased.” MT1 and MTA1 note more time provided for collaboration than their peers in the piedmont and coastal regions. Piedmont region retired teacher PT3 notes the concern that testing for students is a paradox that intensifies the need for collaboration while reducing teacher time allotted for collaboration.

Administrators cite ways they believe communication and collaboration standards are met. MA1 notes that communication and collaboration days are provided routinely at the elementary and middle grades levels, grade level teams meet together along with exceptional children teachers, media coordinators, technical facilitators, and that substitute teachers are hired to provide this release time routinely in the mountain region. PA1 concurs that collaboration is important between the schools and district, teachers and school communities that included families in the piedmont region. CA1 stated that collaboration is encouraged through online learning communities and through district release time days built into the school district calendar in the coastal region. Administrators MA1, PA1 and CAI agree that adequate time is given for collaboration.

Data-driven, Design and Research-Based

Interviewees tend to discuss design, data-driven and research-based standards together. For districts to meet the data-driven standard, professional development must improve the learning of all students, use disaggregated student data to determine adult learning priorities, monitor progress and help sustain continuous improvement. The design standard requires that professional development improve the learning of all students by the use of learning strategies appropriate to the intended goal. In order to meet the research-based standard, professional development must improve the learning of all students and prepare educators to apply research to decision making. Interviewees note the importance of the standards of data-driven, design and research-based professional development. Administrators and teachers agree that data-driven professional development has been shown to improve the learning of all students using disaggregated student data to determine adult

learning priorities, monitor progress and help sustain continuous improvement. Administrators stress all of professional development in their districts is data-driven. Administrators note concerns for teacher understanding of the process is considered important, but expected. MA1 remarked that reflection on the application of professional learning was critical, but noted a concern that asking "good educators" to do follow-up might be misinterpreted. MATI pointed out that there was "a fine balance between gaining data-driven evidence on student learning without creating a feeling of lack of trust." The personal understandings of each standard's implementation by interviewees varied suggesting that believing one "knows" the standards should be interpreted with caution.

Teachers indicated that the importance of data-driven classrooms was stressed in their regions, but little or no professional development was given to enable teachers to prepare data-driven classrooms. CT1 saw very little being done "to help teachers and school leaders access, understand and use a variety of data." CTA1 indicated that the district wanted data on students maintained and reported, but that professional development was minimal in the areas where data was sought. PT2 agreed that professional development to help teachers acquire and understand data was offered, but that it was not really helpful because the professional development was repetitive from year to year and mostly old information just reformatted. MT1 stated that professional development in MT1's district was data-driven. However, PT1 expressed concern about the time spent disaggregating End of Grade (EOG), End of Course (EOC) and assessment data. PT1 questioned the usefulness of data gathered through these standardized tests.

The standards of design and research-based professional development garnered both agreement and disagreement between administrators and teachers. To meet the design standard, teachers and school leaders participated in a variety of strategies to achieve professional development goals that focus on student learning, include technology that supports educators' adult learning styles, and differentiated for teachers and school leaders based on individualized plans for personal and professional growth. There is a need to provide professional development to improve the learning of all students and prepare educators to apply research to decision making. This research-based standard required that educators

- Be prepared to be skillful users of educational research and technology
- Be encouraged to conduct action research in the classroom
- Be allowed to collaborate with researchers and practitioners to ensure that strategic priorities are aligned with the LEA and North Carolina State Board of Education.

Administrators across three regions observed that professional development selected by each district was designed to provide teachers with professional development that was current and research-based. CA1 and PA1 indicated that professional development was current, and delivered by both face-to-face and online learning. PA1 commented that online learning communities were in place to help teachers develop lesson plans and unit plans with their colleagues. MA1 asserted that the district provided many professional development activities in a variety of forms. Further, MA1 noted that the local institution of higher education and Western Region Education Service Alliance (WRESA) provided a variety of professional development opportunities designed to meet the needs of the teachers. CA1

cited working with a different institution of higher education to meet the needs of the teachers. Administrators across the three regions noted that the design standard was implemented through the careful selection by each district of current and research based professional development. Administrator agreement on the research-based standard recognized the importance of having and implementing research-based professional development in the classroom. The difficulty of assessing the criteria arose in making the direct connections to the classroom. Teachers had a different view on the design of professional development in their districts.

When asked if there was appropriate use of a variety of strategies to motivate and interest teachers' interviewee answers varied. Mountain region representatives MA1, MTA1 and MT1 noted a variety of professional development opportunities through the local institute of higher education in addition to district face-to-face and online professional development. Piedmont administrator PA1 stressed that a great deal of professional development was available to teachers via the district's Website. Piedmont teacher PT1 noted that professional development planning was done at the district level without teacher input. PTI noted prior district assignment sought a partnership between teachers and administrators to meet the professional needs of teachers. Coastal administrator CA1 and CTA1 stressed the technology based learning opportunities were provided.

Equity

To meet the equity standard, professional development must result in the improved learning of all students, prepare educators to understand and appreciate all students; created safe, orderly, caring and supportive learning environments and hold high expectations for

their academic achievement. Interviewees noted the importance of professional development that met the equity standard. Equity relates strong to motivation. The data gathered from interviewees regarding the equity standard showed a general consensus on district, school and teacher efforts to meet this criterion. Both administrators and teachers generally agreed that districts pursued professional development sessions, workshops and activities linked to the standards. Administrators MA1, PA1, CA1 noted positive implementation of professional development for all teachers in their districts. PT1 offered the caveat that there was "a disconnection of understanding between what the teachers feel they need and what the district mandates for teacher professional development." This was in conflict with notations by MT1, PT2, and CT1 who noted a variety of professional development available to meet individual teacher needs.

Evaluation

The evaluation standard requires that professional development improve the learning of all students through the use of multiple sources of information to guide improvement and demonstrate its impact. A lack of consensus pointed to be a lack of understanding between the administrators and the teachers regarding evaluation. The evaluation of professional development consistently included qualitative and quantitative data that indicated a knowledge gained by participants, and a level of implementation and improvement met in student learning. Both formative and summative evaluation was required by this standard. Administrators across the three regions agreed that their districts promoted evaluation within current professional development.

Respondents note methods for gathering information on professional development within their districts, such as required written feedback in the form of logs or diaries of professional development, but suggest there is a need for improvement. PA1 explained that "effective professional development" was evaluated through observation, dialogue or written evaluation. CA1 noted that evaluation was an important part of all professional development, and evaluation was built into all professional development. Teachers note the existence of evaluation, but not that evaluation was effective for teachers. Teachers from the three regions are unclear about follow-up to evaluation such as if forms are completed. Confusion about the usefulness of evaluation filtered into concerns of the teacher/administrators regarding the mentoring of newer teachers. The survey question regarding evaluation does not show this ambiguity. This is true in the tables of breakdown by teachers and administrators as well as contextual and demographic factors. At least three-quarters of survey respondents indicate that the evaluation standard is met.

Learning and Quality Teaching

For the learning standard to be met, professional development must demonstrate learning methods that mirror, as closely as possible, the methods participants are expected to use with their students. Interviewees stressed the importance of providing opportunities to practice new skills and receive feedback on the performance of those skills were noted as important. The quality teaching standard required professional development that offered many opportunities for teachers to develop deep knowledge of their content, expand teachers' instructional methods appropriate to specific content areas and/or address a variety of classroom assessment tools that are integrated into the instructional process and allowed

teachers to regularly monitor gains in all student learning. These standards related to the puzzle piece regarding feedback to teachers and administrators.

Interviewees tie together the two standards of learning and quality teaching. Administrators from the three regions indicated that both standards were being met. Again, teachers state their districts or regions are trying to meet these standards, but qualify this by noting their own personal experiences does not support this.

CT1, PT1 and PT2 noted a lack of input into their own learning that led to teacher resentment. The top-down method was a recurring theme among all the teachers interviewed. However, MT1 disagreed and noted that MT1's district "makes every effort to bring specialists in the field to our county for professional development. The system also encourages and provides means for me to attend professional development opportunities in other areas if they are not able to offer the same opportunities."

Family Involvement

The family involvement standard required professional development that improved the learning of all students, and provided teachers and school leaders with knowledge and skills to involve families and other stakeholders appropriately. This included preparing educators to establish positive relationships with families, to support student learning, to prepare leaders to build consensus among educators and community members concerning the overall mission and goals. It was noted that educators had to communicate with families and the community through various means, including technology. Both administrators and teachers agreed that family involvement needed more emphasis, but indicated there were efforts made in their districts to meet this standard. PA1 and PT2 related that involving

parents directly in their child's or children's education was key to successful to student learning. For example, two schools in PA1's district held monthly parent meetings that related specifically to what was happening in the classroom and how parents could assist their children. Teachers in those two schools gave mini lessons to parents at the monthly meetings and sent home weekly family activities related to the week's instruction. PT1 noted more parent involvement in other districts worked and stressed the importance to address the issue in PT1's current district. MT1 noted that family information was gathered, but did not see any specific efforts to involve families. CT1 mentioned monthly parent and teacher meetings, parents on school committees and weekly progress reports to parents. CTA1 commented that new teachers especially needed mentoring to successfully work with families in the ways that met the family involvement standard.

Leadership

To meet the leadership standard, professional development needed to improve the learning of all students while school and district leaders guided continuous instructional improvement. This standard included administrators that modeled LEA and North Carolina state professional development plans and leaders that recognized and advocated for professional development as a key strategy for supporting significant improvements in student achievement. Administrators and teachers noted the importance of leadership development, but disagreed on how to develop this standard. Administrators noted Teacher Council representatives, subject area leaders, and mentors as ways to development leadership. Teachers within the three districts disagreed. The mountain region teachers offer examples similar to the administrators from that region, but coastal and piedmont teachers

suggest leadership opportunities should be available within the school and district. Both coastal and piedmont teachers state that administrators within their districts often ignored their personal efforts to develop leadership and did not offer resources to develop leadership. The development of teacher leaders was included in this standard and related to the puzzle piece of leadership (teacher leadership.)

Resources

The resources standard requires professional development that improves the learning of all students and required resources to support adult learning and collaboration. Resources must under gird all professional development to be successful. A guideline stressed that time was made available during the school workday for collaboration and that significant fiscal resources were dedicated for professional development. Both teachers and administrators noted time and funding for teacher release time as problematic.

Administrators PA1 and CA1 identified district days or half days built into the school calendar year along with alternative forms professional development that were available online for teachers. PA1 indicated district goals were "to be sure that professional learning communities support the community, are data driven, on grade level and meet teacher needs." This time gave teachers a chance to collaborate and design learning activities that developed flexible grouping, allowed teachers to develop flexible teaching strategies and a variety of strategies to help students meet rigorous academic standards. MA1 and MTA1 indicated time as a deterrent to meeting this standard. MTA1 noted that numerous opportunities for professional development were available through WRESA in addition to professional development provided by the district. MA1 noted the district supported teachers

through “tuition reimbursement for up to nine semester hours per year for advanced degrees,” and worked through collaboration with local institutes of higher education to encourage “teachers who show they are willing to learn and lead.”

Online Survey and Open-ended Interviews

Introduction

The teachers within the online survey and the open-ended interviews responded similarly regarding some of the standards. Teachers rated highest the family involvement standard. Teachers gave their next highest rate of agreement to the research-based standard, the design standard, the learning standard, and the data-driven standard.

Relationship of PD to Teacher Attrition

The following section addresses how teachers and administrators within the open-ended interviews answer Research Question 2.

Administrators, Teacher/Administrators and teachers responded as to whether they believe there is a relationship between professional development and teacher attrition. The piedmont administrator (PA1) stated that new teachers asked about professional development during interviews for teaching positions. PA1 indicated a growing need for quality professional development that meets teacher needs if the districts want to keep highly qualified teachers. Piedmont teacher (PT1) noted, “The current system does not allow time for teachers to take further professional development. Many teachers leave the profession or get burned out.” Piedmont retired teacher PT2 stated, “Professional development needs to be tied to the classroom teacher’s work. New teachers need as much mentoring and appropriate professional as possible to keep them in the classroom.” Mountain teacher MT1 stated, “I

think professional development helps teacher attrition when it was specifically tailored to teachers' needs." MTI further stated, "The system also encourages and provides means for me to attend professional development opportunities in other areas if they are not able to offer the same opportunities. Professional development [opportunities] that are time fillers and only for credits—aka time wasters—only encourage burn out with staff." Coastal teacher CT1 noted, "Some teachers really resent being told they have to attend professional development workshops that are not of interest to them. I do believe some teachers seek employment in other places because of this."

Mountain administrator (MA1) voiced concerns regarding professional development for teachers. MA1 stated, "I see mediocre and poor quality teachers avoid professional development opportunities, attempt to avoid application of professional learning, and I see the excellent educators not being given enough time to practice nor provided adequate follow-up support for the professional development and professional learning." Mountain teacher/administrator MTA1 noted, "Professional development is important for teachers and administrators. Further, beginning teachers want and need a variety of supports such as face-to-face meetings complemented by an electronic network developed for beginning teachers; ongoing professional development for mentors; and opportunities for principals to focus on their role in new teacher development. However, Title I districts often lack resources for technology integration or sustained professional development for teachers or administrators."

Coastal plain administrator CA1 observed that professional development was "extremely important." CA1 indicated that technology had impacted professional development in CA1's district. CA1's district "offers an annual 'technology camp' for

teachers. Teachers are taught to use these technology-based tools and integrate them into their teaching techniques through targeted professional development classes. Grants have provided funds to make professional development more accessible to meet the needs of teachers." Coastal plains teacher administrator CTA1 stressed the use of mentoring. However, CTA1 and coastal region teacher CT2 did not see a direct relationship between professional development and attrition.

Of the ten interviewees, eight (80%) specifically noted a relationship between professional development and attrition, and two (20%) did not see a relationship. The 80% percentage correlates to the online survey findings with 81% of teachers and 87% of administrators that agreed there was a relationship between professional development and teacher attrition.

Summary

Results from this study seem to indicate that administrators and teachers differ in perceptions regarding implementation, degree of support, opportunities for teacher leadership, and strategic allocation of resources. In some districts there is a rapport between teachers and administrators that teachers describe as feeling that their learning needs are being addressed or satisfied. Teachers and administrators agree on concepts, but not necessarily on implementation.

CHAPTER 5: SUMMARY, CONCLUSIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Summary

The purpose of this chapter is two-fold. First, it is important to put all the puzzle pieces of professional development in North Carolina's K-12 community provided by both teachers and administrators together. Second, this chapter concludes my investigation of the influences of professional development upon North Carolina K-12 teachers as seen by both North Carolina teachers and administrators. The remaining sections of this research study highlight the findings and observations and propose several recommendations to address the issues identified.

Administrators and teachers acknowledge a general knowledge of North Carolina's 12 standards of professional development. Both the online survey and interview responses suggest that teachers and administrators perceive a relationship exists between professional development influences on teacher attrition. Differences in perceptions of professional development between administrators and teachers are described in Chapter 4. Additionally, both face-to-face interviews and online survey data reveal divergences regarding the interpretation of requirements for teacher professional development.

The face-to-face interviewees offer more positive responses if located in the mountain region or coastal region than in the piedmont region. Those interviewed in the piedmont region give mixed responses. Interviewees in all three regions (mountain, piedmont, and coast) note areas of agreement and areas of concern. Teacher interviewees discuss how or if professional development is used to meet individual teacher professional needs.

Within the online surveys, the factors of age, years of service, and number of job changes influenced how teachers and administrators responded to the survey questions. Differences in perceptions varied according to whether respondents were teachers or administrators, but also according to demographic and contextual factors. Within this study, similarities in perception by teachers and administrators increase with age and years of experience. The teachers between 22 to 30 years of age and/or zero to five years of service are the least positive that standards are met and that teachers understand the 12 standards. Further, the question regarding a relationship between professional development and attrition received a majority agreement rating within this age group. This suggests that professional development processes need to connect explicitly to the standards, why standards are important, and how standards can be implemented in the classroom. Teachers in the next age group (30 to 40 years of age) gave a slightly higher level of agreement that standards are understood. Teachers 41 and above agreed more overall with administrators than their younger counterparts. Administrators with 11 to 15 years of service note the highest level of agreement that the standards are met. However, administrators overall rated higher levels of agreement to survey questions than teachers. These differences in perception point to the need for increased communication and collaboration between professional development efforts and between teachers and professional development administrators. e

NC 12 Standards of Professional Development

Within the face-to-face open-ended interviews, the professional development administrators, “teacher administrators” and teachers state very strongly that professional development in their respective districts is based on the 12 standards. This response

generally supports the results of the online survey. However, administrators and teachers note differences in the interpretation of specific standards. Within interviews, some of the interviewees note that although they do not know the standards by heart, the standards are the basis for all professional development. This may also relate to variations in responses to the survey questions between teachers and administrators. Perceptions by open-ended interviewees vary most in the areas of evaluation, leadership, personal empowerment, and opportunities for professional development that meet the needs of individual teachers (TWC, 2009.)

Interviewees (teachers and administrators) note the importance of the standards of data-driven, design and research-based professional development. There is further agreement between teachers and administrators interviewed regarding the need for adequate resources. Perceptions diverge again in interpretation and implementation. There is consensus among the administrators interviewed that all of their professional development is data-driven. Teachers indicate the importance of data-driven classrooms is stressed in their regions, but little or no professional development is given to enable teachers to prepare data-driven classrooms. This dichotomy offers support for the variation in teacher and administrator perceptions.

Professional Development and Teacher Attrition

Through both interviews and online survey over two thirds of teachers and administrators recognize a relationship between professional development and teacher attrition. This response answers Research Question 2. Administrators show a slightly lower agreement level regarding the relationship of professional development and teacher attrition

than teachers. The difference in understanding by administrators and teachers further suggests the need for communication and collaboration that includes both teachers and administrators aiming to meet district goals and objectives.

Conclusions

Based on information collected during the follow-up interviews and using the input from the Web-based survey, the researcher is better able to understand the reasons for the variations in the responses regarding K-12 professional development. It is important to note that both the online survey and open-ended interviews support the research literature that indicates there is a difference in perception between teachers and administrators. Perceptions of administrators and teachers regarding the influences of professional development on teachers and the recognition of standards in practice suggest the need for improved communication between teachers and administrators within districts, regions, and statewide.

Based on this research case study, the four pieces of the professional development puzzle (collaboration, motivation, feedback, and shared goals) exist in some form within current teacher professional development but are not equally distributed across the districts.

Suggestions for Future Research

Introduction

The research study data collected compliments existing research on teacher professional development and identifies the previously noted disconnect between teacher and administrator understanding of professional development. The 2004 TWC study report notes the need for quality professional development. Following this report, the state of North Carolina began intensive professional development for teachers especially in high need

schools statewide. This policy continues to this day. This attention to professional development creates a belief that the professional development need in North Carolina has been met. However, when the specific standards are addressed in this study, a potential problem emerges that may suggest that this assumption is unfounded. The difference in perceptions of between teachers and administrators indicated by the 2009 TWC report appears to have carried over into the area of professional development. The idea that differences between how teachers and administrators view teaching and learning conditions can vary greatly is outlined in Chapter 1 (Berry, Smylie & Fuller, 2008.) This exploratory, descriptive case study may have generated a future hypothesis for further study regarding the importance of tracking variations in perceptions between teachers and administrators regarding the 12 standards of professional development. Since the majority of administrators and teachers in this study observe a relationship between professional development and teacher attrition, perhaps another area for further study might be that teacher professional development plays an important role in teacher attrition.

Teacher attrition has attracted a considerable attention as federal, state, and local entities seek answers to what causes teachers to leave the profession and what can be done to prevent this loss. Based upon the results of this research, further research might be needed in the areas of creating teacher leaders and in the area of resources for teachers that include the time for networking and collaboration. Developing instructional leadership for teachers should include ways school leaders engage the school community in school-wide improvement**.** Other research might look at what is known about what makes teacher professional development effective, how teachers change as a result of professional

development, and the implications for policy and practice in professional development. Teacher attrition is a problem, not only in North Carolina, but also nationally. Solutions to the problem of retaining high-quality teachers must be found even in the current economic environment. As noted previously, teacher professional development becomes a milestone in every teacher's continuum of life-long learning and career progression (Eleonora, 2003.)

Administrators

Research indicates that administrative leadership is the most important factor in determining the climate of a school and there are specific leader activities that allow all teachers to feel supported in their work (Bateman & Bateman, 2001; Council for Exceptional Children, 2004; DiPaola & Walther-Thomas, 2003; Evans, 1999; Gerlach, 2001; Goor, Schwenn, & Boyer, 1997.) Administrators seeking to retain well-qualified teachers may want to investigate further the disconnect noted in this research between perceptions of administrators and teachers regarding professional development.

Communication between administrators and teachers regarding professional development standards can diminish the disconnect between teacher and administrator interpretations. Administrators might investigate whether the design and organizational discontinuity or lack of cohesive community exists. This tactic aids in determining if differences in perceptions occur because the whole school community is unfamiliar with the district vision, goals, programs and strategies. Determining the level of administrative support is essential (Johnson, Birkeland, Kardos, Kauffman, Liu & Peske, 2001.) Administrative support can be a complex issue with multiple perceptions. Administrative support may include administrator visibility, communication, climate, school community

function, time and workload. Administrators may wish to research the part played in teacher retention by administrative support.

Today's beginning teachers are much more likely to benefit from practices that make them feel connected to their peers. This connectedness is enhanced by school leaders who work to ingrain a collaborative culture in their schools through practices such as shared decision-making, common planning periods and long-range professional development targeted at experienced teachers, mentors and new teachers as well. Schools that operate as professional learning communities enable their members to discuss problems and to develop strategies for dealing with problems. Administrators may wish to investigate whether their districts function as learning communities.

Teachers and Teacher Leaders

Classroom teachers and teacher leaders might research solutions to teacher attrition that meet the needs of the teachers and whole school community. Educators have been investigating why teachers leave the classroom for over forty years. Most have looked at individual characteristics of teachers instead of institutional characteristics. Teachers may want to seek answers to the need for classroom teachers to meet the needs of individual students and make classroom implementations in regard to teacher time, reaching not only the high-risk students, but also the high achieving students and their mixture within individual classrooms. Additionally, teachers may want to address the impact of a lack of resources or the importance of district support of teacher leaders to complete research. In the current economy, investigating how to work within the existing system to make changes beneficial to all may help districts struggling to maintain high quality teachers.

Research-based professional development is a mandate from the federal and state governments. The research-based professional development standard includes classroom teachers conducting their own action research. Consider for example the following:

- Are teachers encouraged to become teacher leaders in the district?
- Is the professional development available in the district meeting the goals of teachers while meeting the goals and objectives of the district vision?
- How can teachers improve practice in the average classroom?
- Given the workload of classroom teachers, how can teachers collaborate and build learning communities?
- What role, if any, do standardized testing requirements have on teacher attrition?
- What role do teacher administrators such as mentors and coaches play in retaining highly qualified teachers?

Professional Development Specialists

Professional development is a broad term that can refer to various education, training, and development opportunities. Professional development programs target many specific outcomes and target a full range of activities that have the common goal of increasing the knowledge and skills of educators. From college courses to staff training seminars, professional development activities vary according to program characteristics and providers' needs. Based upon the variations in perceptions of professional development by regions of North Carolina and professional development literature, professional development opportunities need to be tailored to the region and include experiences intended to result in

highly qualified teachers who implement classroom activities that promote high student performance.

Professional development specialists interested in working with K-12 teachers may want to research:

- How does your district professional development impact or is perceived to impact the K-12 classroom.
- By using the lens focused through the 12 standards of professional, how can quality professional development be refined to meet teacher and district goals?

The literature related to professional development and change includes social capital as a means of understanding the role of community development, the challenges that the community can face and the role of adult education for community development. Additional research questions might be:

- Do professional learning communities in your district establish and nurture a commitment to professionalism among teachers?
- Do professional learning communities in your district create an ongoing learning community among teachers that supports them in executing innovative ideas and best practices?

Reform requires that teachers learn new roles and ways of teaching that begin a developmental process requiring teachers to focus on changing their own practice. For example:

- Does professional development in your district complement both the needs of the educator and the goals and objectives of the school district in which the teacher practices?

K-12 Teacher Assessment Specialists

K-12 assessment specialists interested in teacher training, professional development, and attrition may want to investigate institutional barriers, situational barriers, psychosocial barriers and pedagogical barriers that contribute to the loss of high quality teachers. Assessment specialists may wish to investigate their own role in teacher retention through professional development. For example:

- How do professional assessment skills, including instrument design and consultation, apply?
- How do assessment specialists influence the professional development standard of evaluation with formative and summative assessment?
- How does state policy impact the role of assessment specialists in professional standards and professional development?

The findings of this research suggest that assessment issues are continuing to be challenges for both teachers and administrators. Assessment specialists may wish to investigate the bearing or impact on teacher retention with assessment issues noted in Chapter 4. Teacher and administrator participants in this study may wish to investigate difficulties related to

- The time to process standardized testing
- Applying assessment to improve school outcomes

- Insufficient training in assessment for classroom teachers and using the results of testing to maximize student motivation and learning.

Researchers

Researchers interested in the complex area of study of organizational culture and change may want to determine the role played by organizational culture based on the differences between teachers and administrators perceptions of reality regarding professional development for teachers. For example

- How does organizational communication and communication patterns between teachers and administrators impact socio-cultural change?
- What role does positional power play in professional development for teachers?
- What role does positional power play in teacher attrition?

Within the current economy, researchers may address

- How might scarce resources and differences in perception regarding resources between teachers and administrators influence teacher attrition?

Closure

A viable communications plan that includes both administrators and teachers in each of the 115 districts and that addresses differences in perceptions and the management of quality professional development for North Carolina's K-12 teachers would aid in meeting North Carolina's 12 standards of professional development. A system wide K-12 culture of open communication through a collaborative system for both administrators and teachers could prove beneficial in meeting professional development goals. Perceptions of professional development standards vary not only between administrators and teachers, but

also by the demographic and contextual characteristics of age, years of service and number of job changes. Addressing those differences in perceptions may assist in the positive results of professional development for teachers. North Carolina K-12 administrators and teachers in the research study note a relationship between professional development and teacher attrition. K-12 educators and professionals in North Carolina might study further this correlation between teacher professional development and teacher attrition more intently.

Maintaining the metaphor of piecing together a complex puzzle that has guided some of the findings presented by this multi-source study. It is important to note that the puzzle of the relationship between teachers, administrators, professional development, and teacher attrition is hardly complete. It is hoped, however, that some of the discussion has shed light on the myriad of pieces involved in the puzzle and that, with continued study and elaboration, the relationship between these complex variables can be better illuminated.

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APPENDICES

Appendix A

Revised 6/2003

IRB Consent Form

North Carolina State University

Institutional Review Board For The Use of Human Subjects in Research

GUIDELINES FOR PREPARATION OF INFORMED CONSENT FORM

An **Informed Consent Statement** has two purposes: (1) to provide adequate information to potential research subjects to make an informed choice as to their participation in a study, and (2) to document their decision to participate. In order to make an informed choice, potential subjects must understand the study, how they are involved in the study, what sort of risks it poses to them and who they can contact if a problem arises (see informed consent checklist for a full listing of required elements of consent.) Please note that **the language used to describe these factors must be understandable to all potential subjects, which typically means an eighth grade reading level.** The informed consent form is to be read and signed by each subject who participates in the study **before** they begin participation in the study. A duplicate copy is to be provided to each subject.

If subjects are **minors (i.e. any subject under the age of 18)** use the following guidelines for obtaining consent:

0-5 years old – requires signature of parent(s)/guardian/legal representative

6 – 10 years old - requires signature of parent(s)/guardian/legal representative and verbal assent from the minor. In this case a minor assent script should be prepared and submitted along with a parental consent form.

11 - 17 years old - requires signature of both minor and parent/guardian/legal representative

If the subject or legal representative is *unable to read and/or understand the written consent form*, it must be verbally presented in an understandable manner and witnessed (with signature of witness.) If there is a good chance that your intended subjects will not be able to read and/or understand a written consent form, please contact the IRB office (919-515-4514) for further instructions.

For your convenience, attached find a sample consent form template that contains necessary information. In generating a form for a specific project, the principal investigator should complete the underlined areas of the form and replicate the bold areas.

North Carolina State University

INFORMED CONSENT FORM for RESEARCH

Title of Study **Influences of Professional Development on Teachers and Teacher Retention: Perceptions of Teachers and Professional Development Administrators**
Principal Investigator Emily M. Castleberry Faculty Sponsor: Dr. Brad Mehlenbacher

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We are asking you to participate in a research study. The purpose of this study is to examine the impact of professional development on the retention of North Carolina K-12 teachers.

INFORMATION

If you agree to participate in this study, you will be asked to answer questions regarding "What role does professional development play in the recruitment and retention of North Carolina K-12 teachers?" **"**In what ways can professional development help to recruit, retain, and nurture excellent teachers?"

RISKS

Using lay language describe the foreseeable risks or discomforts, if any, of each of the procedures to be used in the study, and any measures which will be used to minimize the risks.

BENEFITS

List the benefits you anticipate will be achieved from this research, either to the subjects, others, or the body of knowledge. If there is no direct benefit expected to the subject, but knowledge may be gained that could help others, state this.

EMERGENCY MEDICAL TREATMENT (if applicable)

N/A.

CONFIDENTIALITY

The information in the study records will be kept strictly confidential. Data will be stored securely in participants will be noted by sex, race geographic region of state, grouping of school districts by regions—not by name, specific schools or school district. **No reference will be made in oral or written reports which could link you to the study.**

COMPENSATION (if applicable)

For participating in this study you will receive results of online study and open-ended interviews. **If you withdraw from the study prior to its completion, you will receive** N/A. If students will receive class credit for participating, include: **Other ways to earn the same amount of credit are** N/A.

Appendix B

Glossary of Terms

Action Research—a systematic enquiry designed to yield practical results capable of improving a specific aspect of practice and made public to enable scrutiny and testing.

Case Study—the presentation of data about a single setting or event. It is not a method of research as such because the data being offered can have been gathered using a variety of different methods (questionnaire, observation, and so forth.) It is predominantly a description, and is usually based on a qualitative data set, though statistics such as survey findings may be incorporated.

Coded Data—refers to a way of recording material at data collection, either manually or on computer, for analysis. The data are put into groups or categories, such as age groups, and each category is given a code number. Data are usually coded for convenience, speed, and computer storage space and to permit statistical analysis.

Cross Tabulating—the process of analyzing data according to one or more key variables. A common example is to analyze data by the gender of the research subject or respondent, so that you can compare findings for men with findings for women. Also known as cross-referencing.

Demographics—information about the sample that includes areas such as age, sex, social class, presence of children, etc.

Descriptive Research—describes certain characteristics of populations, and identifies and explores relationships between variables

Hypothesis—a statement which research sets out to prove or disprove.

Interview-Semi-structured—contains a mix of structured questions, often to get factual data, and more general open-ended questions which allow the respondent to elaborate on particular issues.

Likert-scale question—type of closed-ended question that allows respondents to indicate how closely their feelings match the question or statement on a rating scale. Good for measuring the degree of respondents' feelings or attitudes about something.

Literature Review—brings together individual reviews of papers, etc. It should weave together the individual reviews into an overview of the area. The aim is to convey an awareness of the current state of knowledge in the subject. It is commonly used to set the scene for introducing new research or a new perspective on the research.

Mean—the "average" where the researchers add up all the numbers and then divide by the number of numbers.

Median—the "middle" value in the list of numbers

Mode—the value that occurs most often

Numerical question—a type of closed-ended question that allows respondents to pick a number. Example: What is your current age?

Open-ended question—type of survey question to which there is not one definite answer. Allows a respondent to answer in his or her own words. Used in exploratory research.

Random Sampling—combines chances (that everyone in the frame has the same chance of being chosen) with balance (that the chosen sample will be an accurate microcosm of the research population as a whole.)

Respondent—person who is providing responses to your survey

Sample—a sub-group of selected respondents derived from your target population.

Survey methodology—type of delivery method associated with your survey, e.g., Web survey, telephone survey, mail survey, and personal interview survey.

Target population—entire group of possible respondents to a survey question. Since it is improbable to survey every individual in a target population, a smaller sub-group of the population is selected, known as a sample.

Qualitative research—type of research relying primarily on the collection of qualitative data (i.e., non-numerical data such as words and pictures)

Quantitative research—type of research relying primarily on the collection of quantitative data (i.e., numerical data)