

## ABSTRACT

Anna Theresa Perry. SYSTEMIC, STAKEHOLDER DRIVEN, SUSTAINED: A PROFESSIONAL DEVELOPMENT INITIATIVE'S IMPACT ON TEACHER & ADMINISTRATOR PERCEPTION AND STUDENT ACHIEVEMENT (Under the direction of Dr. Marjorie Ringler). Department of Educational Leadership, March, 2010.

The value of professional development continues to be emphasized on educational and governmental levels. Even as this study was being conducted, the U.S. Department of Education launched a \$4.35 billion dollar grant that includes improving teacher effectiveness as a core component of the grant's purpose (<http://www2.ed.gov/legislation/FedRegister/announcements/2009-4/111809c.html>). While the importance of the professional development of educators is clear, what is less clear is the type of professional development that transforms teaching practices and positively impacts student outcomes.

Evaluations of professional development programs are critical in identifying ways to impact teacher practice and ultimately student outcomes. Guskey (2000) provides a model for evaluating professional development that includes five stages of information collection. The purpose of this study was to evaluate a professional development initiative in one large school system in North Carolina by applying Guskey's model to examining specific elements of the initiative, surveying teacher and administrator perceptions of the initiative, and analyzing trends in student outcomes that occurred during the six year period the initiative was implemented.

A mixed methodology approach combining quantitative and qualitative methods was used. Electronic survey responses from 2,309 teachers and administrators were analyzed quantitatively using frequency distribution statistics, as well as the Fisher's exact test to analyze the relationship of responses between teachers and administrators. Additionally, trends in proficiency student outcome data as well as trends in AYP status were examined during the period the professional development initiative was implemented in the school district. For the qualitative data, open-ended survey responses from 77 principals were analyzed using frequency distribution statistics.

This study corroborated the finding from other research studies in the professional literature that indicate the difficulty of linking professional development to student outcomes. The results of this study also support the literature suggesting that specific elements must be present in order for the professional development to be translated into teaching practice. This study has many implications for school leaders as they plan professional development initiatives. Recommendations for planning, implementing, and evaluating, professional development initiatives are included.

SYSTEMIC, STAKEHOLDER DRIVEN, SUSTAINED: A PROFESSIONAL  
DEVELOPMENT INITIATIVE'S IMPACT ON TEACHER & ADMINISTRATOR  
PERCEPTION AND STUDENT ACHIEVEMENT

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Anna Theresa Perry

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by

Anna Theresa Perry

APPROVED BY:

DIRECTOR OF DISSERTATION: \_\_\_\_\_  
Marjorie Ringler

COMMITTEE MEMBER: \_\_\_\_\_  
Lynn Bradshaw

COMMITTEE MEMBER: \_\_\_\_\_  
Lane Mills

COMMITTEE MEMBER: \_\_\_\_\_  
David Rivera

INTERIM CHAIR OF THE DEPARTMENT OF EDUCATIONAL LEADERSHIP:

\_\_\_\_\_  
William Rouse, Jr.

ACTING DEAN OF THE GRADUATE SCHOOL:

\_\_\_\_\_  
Paul Gemperline

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## DEDICATION

I would like to dedicate this work to my husband, Phillip – thank you for our life together and for making this -as well as so many other things possible - and to my son Nicholas, your smile is my inspiration.

I love you both so very much!

## ACKNOWLEDGEMENTS

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## CHAPTER 1: INTRODUCTION

### Introduction

As school leaders across the nation respond to the demand to improve student outcomes, they are in search of the silver bullet that will make a positive difference in student achievement. Research points to professional development as one element that may make a difference. The research on professional development has specifically outlined the impact district leaders can make on improving student achievement by designing, implementing, and supporting professional development efforts for teachers. In 2002, Sparks noted that “district and school leaders play an essential and irreplaceable role in creating high-quality professional learning for all teachers” (p.11-14). More recently, Darling-Hammond and Richardson (2009b) claimed “when schools support teachers with well-designed and rich professional development, those teachers are able to create the same types of rigorous and engaging opportunities for students- a foundation for student success in school and beyond” (p. 52). Recent research by Douglas Reeves (2009) cited professional development as “one of the few leverage points that has the greatest influence on student achievement” (p. 57). Likewise, in examining school districts that have shown dramatic improvements in student performance, Odden and Archibald (2009) found that school districts that doubled their performance systematically employed an effective professional development plan.

The latest research on professional development comes at a time when a new presidential administration is calling for measures to ensure that all students graduate from high school “prepared for college and a career and have the opportunity to complete at least one year of postsecondary education” (Retrieved May 18, 2009, from <http://www.ed.gov/policy/gen/leg/recovery/guidance/uses.doc>). Additionally, the American Recovery and Reinvestment Act of 2009 explicitly encourages the use of funds for professional development, specifically for districts and school leaders to improve teacher effectiveness through activities that foster professional development. This legislation links teacher effectiveness to student achievement by including professional development as one of the options for which the funds can be used to increase student achievement. The hope pinned on professional development is that if conducted appropriately, it will positively impact teacher practice and subsequently student outcomes.

There has long been an intuitive link between teacher professional development and student achievement (Guskey & Yoon, 2009) but, as teaching has increasingly become more of a science than an art (Marzano, 2007), school leaders now can add research to the rhetoric and the research reveals implications for school principals and district leaders. One implication for school and district leaders is to examine the research-based elements of effective professional development and to discover how the elements impact teacher practice and student achievement. Another implication is for school and district



leaders to facilitate the elements of effective professional development in their administrative roles. School and district leaders may be able to impact teacher and administrator perception, teacher practice, and ultimately, student achievement, through professional development when they choose to employ elements that prove to be effective in doing so. While there are numerous lists of what those effective elements are (Darling-Hammond & McLaughlin, 1995; Lowden, 2005; Loucks-Horsley, Stiles, & Hewson, 1996), this study will examine three such elements that were recurring in the literature review. These elements include efforts that are systemic, stakeholder driven, and sustained over time.

The importance of professional development can be traced to the early 1980s following the release of *A Nation at Risk*, and later in *Goals 2000* and the No Child Left Behind (NCLB) Act of 2001. These seminal reports and laws spotlighted teacher quality and its relationship to student achievement. While *A Nation At Risk* focused on assessing the quality of teachers, *Goals 2000* and the NCLB Act of 2001 actually made the link between improved teacher quality through professional development (Retrieved March 2, 2009, from <http://www2.ed.gov/legislation/GOALS2000/TheAct/index.html>; NCLB, 2002). Goal 4 of *Goals 2000* stated “professional development serves as the bridge between where prospective and experienced educators are now and where they will need to be to meet the new challenges of guiding all students in achieving to higher standards of learning and development” (Retrieved March 2, 2009, from <http://www2.ed.gov/legislation/GOALS2000/TheAct/index.html>). The NCLB act

includes the following in its definition of professional development: “professional development gives teachers, principals, and administrators the knowledge and skills to provide students with the opportunity to meet challenging state academic content standards and student academic achievement standards” (NCLB, 2002). These important documents serve as a call to transform teaching for the goal of increasing student achievement. For almost thirty years, the importance of professional development has been lauded; however, the type of professional development that can make the leap to transforming teaching practice resulting in improved student achievement continues to be sought.

As early as 1995, the National Staff Development Council (NSDC) outlined elements necessary for effective professional development. At that time, there were separate professional development standards identified for elementary, middle and high schools with a total of 27 standards. According to Hirsh (2001), Executive Director for the National Staff Development Council much was learned by the council over a six year period about the need for professional development to be student focused, job embedded, and results based. As a result, the NSDC revised the standards in 2001. Hirsh (2001) noted that the revisions were focused on student outcomes, and although they remained infused in what she referred to as the “research-based division” (p. 9) of context, process, and content, they also became steeped in technology and in collaboration. The new standards outlined professional development as a necessary function of not only teachers, but of every individual or group

associated with student learning to include boards of education, classified personnel, and administrators.

### Statement of the Problem

If school and district leaders are able to impact student achievement as recent research indicates, (Darling-Hammond & Richardson, 2009b; Guskey & Yoon, 2009; Odden & Archibald, 2009) they must have the knowledge and tools to plan and implement effective professional development activities as outlined by the NSDC standards and research based practice. The issue, then, is to identify the elements of effective professional development that will best help school and district leaders in this effort. Guskey (2000) acknowledges that absolute proof that professional development is the sole contributor to any educational improvements is not possible in the complex business of education. Too many other intervening variables could potentially account for improving student outcomes making isolating the effects of any single professional development activity impossible. Yet Guskey (2000) does state “in the absence of proof, you can collect very good ‘evidence’ about whether or not professional development is contributing to specific gains in student learning” (p. 87).

This study attempted to link professional development to student outcomes and to add to the existing research base, the elements necessary for effective professional development that may ultimately improve student outcomes. More specifically, this study evaluated a professional development initiative in Cumberland County Schools in Fayetteville, North Carolina, and

outlined elements that contributed to the success of the initiative as determined by teacher perceptions, administrator perceptions, and student achievement outcomes.

### Background of Study

The seminal work of Joyce and Showers (1988) resulting from studies of numerous professional development programs, as well as interviews and case studies of hundreds of teachers found that the infrequency of implementation of powerful teaching practices learned through professional development was primarily due to weak professional development programs. They also noted that if not implemented, the impact of these practices on student outcomes could not be measured. Numerous researchers have outlined elements that constitute effective professional development such as systemic implementation, stakeholder input, and sustained commitment (Darling-Hammond & McLaughlin, 1995; Lowden, 2005; Loucks-Horsley et al., 1996). In 1978, the Rand Studies examined the results of initiatives funded with federal Title IV-C funds from the Elementary and Secondary Education Act (ESEA) to determine their effectiveness and impact. The results of these studies identified elements other than content that impacted the effectiveness of the professional development projects in their research. Some of these elements were:

1. Systemic Implementation - While district support was essential, neither top-down nor grassroots efforts were sufficient – collaboration was key;

2. Stakeholder Input -Teacher involvement was necessary for project success;
3. Sustained Process - The greater the scope of the change, the more time and effort are required (Roy, 2004).

As found in the research summarized above, three necessary elements of effective professional development are systemic implementation, stakeholder input, and sustained commitment. This study will focus on these three major elements of professional development found in this particular district's professional development initiative that match what the Rand studies outlined which include: a systemic model, a stakeholder driven model, and a sustained model.

Sustaining an effective professional development initiative is a goal for a school district to tackle. When new programs and techniques are introduced, typically teachers resist implementation and attempts to sustain the initiative by the district and often professional development initiatives are met with apathy. Murphy and Lick (2001) warn that in maintaining or sustaining an initiative, problems such as boredom and anxiety arise when teachers realize that their assumption of a short-lived professional development initiative is actually going to be a permanent requirement. To maintain commitment, Murphy and Lick contend that constant reminders of the purpose of the initiative is essential. Such is the case with Cumberland County Schools, a suburban district in Fayetteville, North Carolina.

In 2003, Cumberland County Schools embarked on a journey to identify teaching strategies that proved effective with its student demographics. The Cumberland County School system is the 4<sup>th</sup> largest school system in North Carolina with approximately 53,000 students and 3,300 teachers. It is located in Fayetteville, North Carolina, a suburb of the military installation, Fort Bragg. The student ethnic composition is 47.2% African American, 1.94% Asian, 7.23% Hispanic, 1.94% Native American, 36.78% White, and 4.92% designated as Other. Over twelve thousand students or 23.32% of the student population are military connected. Approximately three hundred new teachers are hired each year as a result of teacher attrition due in large part to military assignments. Cumberland County School representatives visit states across the nation as well as international countries to recruit teachers.

Due to the transient nature of the school system, Cumberland County School leaders determined a need for creating a common language in teaching practice. Professional development became the vehicle through which the shared language was identified and delivered. The professional development process began with a group of approximately three hundred educators including building principals, teachers, and central office administrators working in small groups to identify characteristics that existed in what they deemed as effective classrooms. An external consultant compiled these lists and identified six common areas that emerged. This list became Cumberland County School Systems' 6 Characteristics of Great Classrooms, and included positive emotional climate,

active engagement, meaningful learning, organized lessons, academic rigor, and continuous feedback (Yeager, 2004). The training initiative became known as the Creating Great Classrooms professional development initiative (CGCPDI).

The district continued the CGCPDI for six years. The purpose of this study is to evaluate teacher and administrator perceptions of three elements of the professional development initiative: systemic, stakeholder driven, and sustained commitment, and to determine the impact of this professional development on student outcomes. Thomas Guskey (2000) developed a model for evaluating professional development that consists of levels to ascertain implementation, organizational support, and student outcomes. These levels include, participant reaction, participant learning, organizational support and change, participant use of new knowledge and skills, and student learning outcomes. All levels were evaluated in this study with the exception of participant learning. Guskey suggests participants complete pre tests and post tests to determine the knowledge gained from the professional development. Since this study was a program evaluation after six years of implementation, an assumption of the study is that teachers understood the content of the CGPDI. Specifically, Guskey's levels, and the corresponding research questions that guided this study were:

*Participant Reaction:*

- What is the level of satisfaction among teachers in Cumberland County Schools with the fact that the CCGPDI has been sustained and systemic for the past six years?

- What is the level of satisfaction among administrators in Cumberland County Schools with the fact that the CGCPDI has been sustained and systemic for the past six years?
- Was there a difference in teacher and administrator satisfaction with the CGCPDI being sustained and systemic for the past six years?

*Organizational Support and Change:*

- How did teachers perceive the CGCPDI to be delivered at the school site?
- What are administrator's perceptions of challenges and successes among the three elements of the CGCPDI?

*Participant Use of New Knowledge and Skills:*

- How frequently did teachers perceive they implemented the CGCPDI in classrooms?
- What were the teacher perceptions of the impact of the CGCPDI on teaching practices?

*Student Learning Outcomes:*

- What are teacher perceptions of the impact of the CGCPDI on student achievement?
- What are administrator perceptions of the impact of the CGCPDI on student achievement?
- Was there a difference in teacher and administrator perception on the impact of the CGCPDI on student achievement?
- What trends in student outcome data occurred during the time of the professional development initiative?

### Significance of Study

While numerous studies have determined that effective professional development can indeed positively impact teacher practice (Darling-Hammond, 2000; Harwell, D'Amico, Stein, & Gatti, 2000; Killion, 2002; Schmoker, 2002),



there is less clarity about how this translates into impacting student outcomes. Findings from Guskey and Yoon (2009) pointed to a research synthesis that confirmed the difficulty of linking professional development to gains in student achievement. The findings from Guskey and Yoon's research continue to perpetuate the difficulties in linking professional development to student learning and underscore the need for continuous research on the impact of professional development on student outcomes. This study attempted to link professional development to teacher practice and student achievement by examining teacher perceptions of implementation, teacher and administrator perceptions of the impact of the professional development initiative on student achievement, and trends in student outcome data that occurred during the six years the professional development initiative was implemented in Cumberland County Schools.

Local, state, and federal resources continue to be invested in professional development with the hopes of improving student outcomes which adds to the significance of continued research. In 2008, the National Center for Education Statistics (NCES) indicated, "if public schools are spending approximately \$20 billion annually on professional development, then it merits serious study" (Retrieved March 3, 2009, from <http://www.ncrel.org>). Cumberland County Schools invested funding, time, and resources to implement and sustain this professional development initiative for six years. The findings of this study will inform district level leaders on the perceptions of teachers and administrators

regarding the effectiveness of professional development activities that include the elements of systemic action, stakeholder input, and sustained commitment and will report trends in student outcome data during the time of the professional development initiative. The size of the population in this study will provide district leaders in similar sized school districts opportunities to generalize the findings regarding planning and evaluating professional development activities on a district-wide level.

### Study Methodology

A mixture of quantitative and qualitative methodology was used in this study to evaluate professional development. The study utilized survey data and student achievement data obtained from the Cumberland County school district as a secondary data source.

The quantitative data consisted of responses to questions on the Cumberland County Schools District Needs Assessment survey in which a K12 *Insight* ([www.K12insight.com](http://www.K12insight.com)) survey was utilized. K12 Insight is a software survey package that allows the development, distribution and analysis of electronic surveys. In the fall of 2008, the Cumberland County School System's Federal Programs department sent an electronic survey to staff members in all Cumberland County schools identified as teachers, assistant principals, and principals. A total of 5,549 electronic survey invitations were e-mailed though the Cumberland County School system e-mail format. Prior to the survey, principals were sent an e-mail from the Cumberland County Schools' Federal Programs

office notifying them that their staffs would be receiving a survey and encouraging them to complete the survey to guide the district in planning. Of the 5,549 surveys distributed, 2,938 participants responded for a response rate of 52.9%. 629 respondents who began the survey identified themselves in categories other than Principals, Assistant Principals, or Teachers, and for the purpose of this study those surveys were not analyzed. A total of 2,309 responses were categorized as principals, assistant principals, or teachers and were analyzed in this study.

The study analyzed the survey responses to determine the teacher perceptions regarding frequency of implementation of the practices learned in the professional development initiative. The study also applied the statistical measure Fisher's exact test to compare teacher and administrator perceptions of the impact of the professional development initiative on student achievement as well as teacher and administrator perceptions of the satisfaction of the systemic, sustained implementation of the initiative over a six year period.

A second set of quantitative data that were analyzed included the student outcome data of 3<sup>rd</sup> through 8<sup>th</sup> graders in Cumberland County Schools on the North Carolina End of Grade reading and math tests and 9<sup>th</sup> through 12<sup>th</sup> graders in Cumberland County Schools on the North Carolina End of Course English I and Algebra I tests during the six year period the professional development initiative was implemented. Trends in proficiency data as well as Adequate Yearly Progress (AYP) data were examined.

A qualitative analysis was conducted on the results of a follow up survey that was administered in the fall of 2009 to determine additional principal perceptions on the three elements of the professional development initiative. The purpose of the additional survey was to help the district determine specific successes and challenges of the initiative perceived by the principals. The survey was distributed to all 87 principals in a monthly Cumberland County Schools' Leadership session. Of the 87 surveys distributed, 77 were completed for a response rate of 89%. These responses were analyzed from a qualitative approach using descriptive and frequency statistics to identify patterns of responses. The patterns will provide information to other district leaders on why administrators in this district perceived these elements as successful in implementing a professional development initiative and will also provide perceptions on potential challenges to anticipate when implementing such an initiative.

The mixed methodology approach allowed for multiple forms of data to be gathered and analyzed. This triangulation of the data provides for a more accurate depiction of the information.

#### Definition of Terms

1. Professional development and staff development will be used interchangeably throughout this study to encompass planned, coherent actions and support systems designed and implemented to develop

knowledge, skills, attitudes, aspirations and behaviors to improve student achievement (Killion, 2002).

2. Stakeholders are individual or groups with an interest in the staff development program. They might be school or district staff, school board members, community members, or public or private funders (Killion).
3. Content is the knowledge, skills, and understandings that are the foundations of any professional development effort (Guskey & Sparks, 2002, p. 73).
4. Context is the culture in which the professional development occurs that includes the “who, when, where, and why” (p. 74) involved in the professional development (Guskey & Sparks).
5. Process is the way in which the professional development is “planned, organized, carried out and followed up” (Guskey & Sparks, p. 74).
6. Systemic considers change over a period of time and involves all levels of the organization (Guskey, 2000).
7. Sustained includes “ongoing, intensive implementation which is supported by modeling, coaching, and the collective solving of specific problems of practice” (Darling-Hammond, 1998, p. 11).

#### Limitations of the Study

It is important to note that a limitation of this study was that data collected were from a secondary source. The secondary source was a

survey/questionnaire that was developed by the school district in the study and was not produced for research purposes. Also, surveys were completed electronically, which is a limitation in terms of verifying the individual actually completing the survey. Since this evaluation occurred after six years of implementation, information was not available to address one level of the evaluation model applied to this study, participant knowledge of the content of the training. One of the assumptions of the study was that all participants understood the professional development content enough to implement it, and the level of implementation was assessed in this study.

#### Organization of the Dissertation

This chapter presented an overview of the study being conducted. A brief history of professional development on a national scale, as well as the rationale for this particular study's professional development initiative was outlined. The problem to be researched was identified as was the purpose and methodology of the study. The significance of the study has been cited as well as the limitations encountered.

Chapter 2 is a review of related literature on the components necessary to ensure a professional development initiative is effective. Chapter 3 discusses the methodology used in this study. Chapter 4 presents an analysis of the data. Chapter 5 presents conclusions and recommendations for further study.

## CHAPTER 2: REVIEW OF THE LITERATURE

### Introduction

Research has indicated that for a professional development initiative to be effective, the context, process, and content must be considered (Guskey, 2000). Numerous researchers have elaborated on specific characteristics that must be part of the context, process, and content in order to constitute effective professional development (Darling-Hammond & McLaughlin, 1995; Lowden, 2005; Loucks-Horsley et al., 1996). Determining what constitutes effective professional development is critical in this age of accountability and as a result, Guskey developed a model for evaluating professional development that consists of levels to gauge implementation, organizational support, and student outcomes. The research on professional development program evaluation was reviewed in this chapter because this study focused on evaluating a 6 year professional development initiative in a large school district in North Carolina.

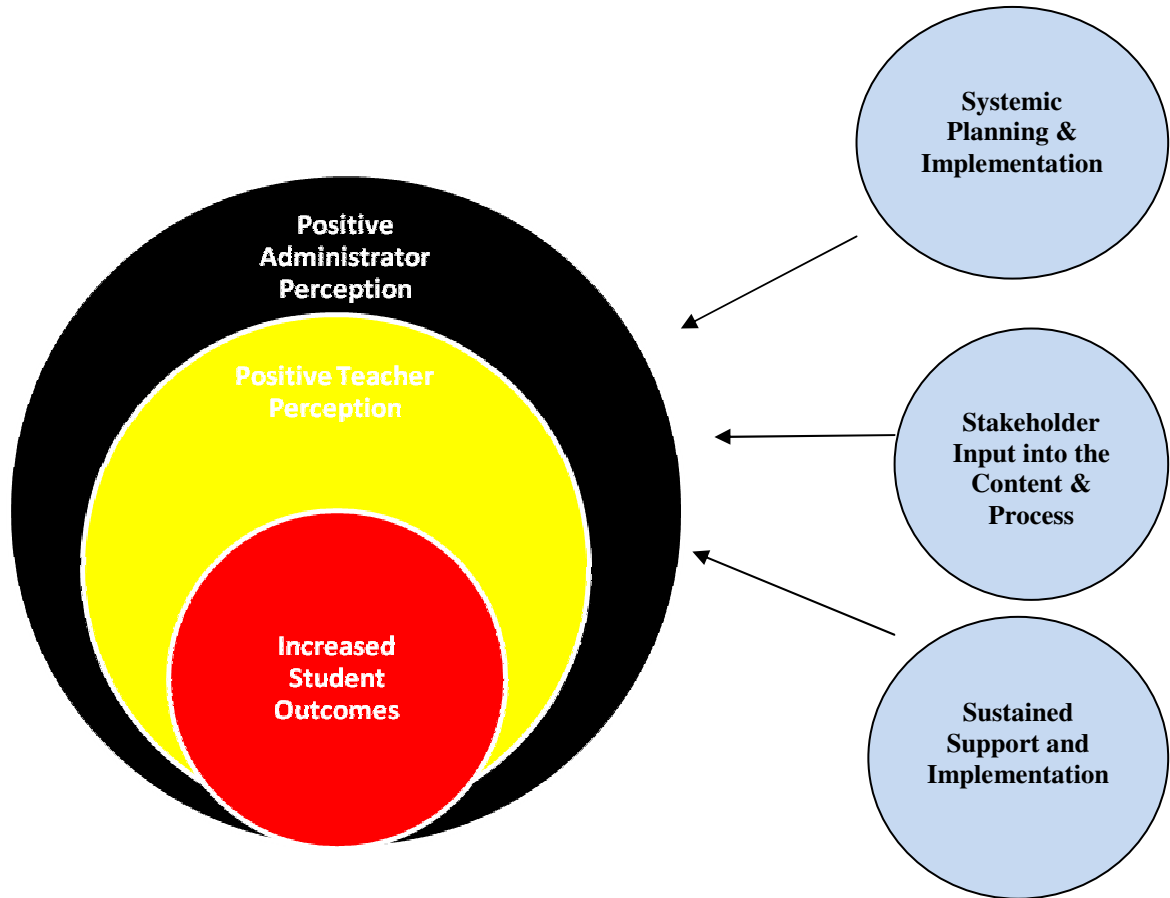
This review of literature focused on the three major elements of professional development that represented recurring themes in the research. The elements discussed are systemic, stakeholder driven, and sustained. A review of the literature that was specific to these three elements described the extent to which the value of these elements was supported by existing research and whether they have been found to positively impact teacher practice and student outcomes. This review of literature also focused on the role of change in the educational improvement process, the impact of administrator perception on a

professional development initiative, the link of professional development to student achievement, and the context, process, and content specific to the professional development initiative in this study.

### Elements of Effective Professional Development

School and district leaders may be able to impact teacher and administrator perception, teacher practice, and ultimately, student achievement, through professional development when they choose to employ elements that prove to be effective in doing so. While there are numerous lists of what those effective elements are (Darling-Hammond & McLaughlin, 1995; Lowden, 2005; Loucks-Horsley et al., 1996), this study examined three such elements that were recurring in the literature review. In 1978, the Rand Studies examined the results of initiatives funded with federal Title IV-C funds from the Elementary and Secondary Education Act (ESEA) to determine their effectiveness and impact. The results of these studies identified elements other than content that impacted the effectiveness of the professional development projects in their research. This study focused on three of the elements the Rand studies found to impact the effectiveness of professional development, which were efforts that are systemic, stakeholder driven, and sustained over time. The conceptual framework for the three elements included in this study is captured in Figure 1. This study focused on how these three elements are necessary to positively impact teacher and administrator perceptions of professional development, and ultimately student achievement.





*Figure 1.* Conceptual framework for the study.

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## Systemic Professional Development

According to Sparks (2002), one of three elements that will transform schools is Systems-Thinking. As defined by Senge (1990), Systems Thinking is a "...discipline for seeing wholes" (p. 77). It refers to a framework for seeing interrelationships and interconnectedness of ideas. Based on Schmoker's (2004) use of these terms, in this section, the term systemic will be used interchangeably with systems thinking, comprehensive, and coherent.

In educational organizations, the term leverage is key in the notion of systems-thinking. Senge (1990) states that "small, well-focused actions can sometimes produce significant, enduring improvements, if they're in the right place. Systems-thinkers refer to this as 'leverage'" (p. 64). Systems-thinking is critical in using professional development as leverage to impact student achievement. As indicated in research by Opfer, Henry, and Marshburn (2008), when this leverage is applied in the form of focusing district support on targeted professional development strategies, student achievement is impacted.

In an age of accountability, a district's vision for professional development goals should involve a clear definition that is reached through stakeholder input, is aligned to the needs of the district, and is clearly communicated to all stakeholders in order to produce systematic change (Sparks & Hirsh, 1997). Fullan and Stiegelbauer (1991) contend that "the greatest problems faced by school districts and schools are not resistance to innovation, but the fragmentation, overload, and incoherence resulting from the uncritical

acceptance of too many innovations” (p. 197). Many researchers have referred to the ineffectiveness of “flavor of the month” professional development activities, and have emphasized the need for more coherent models (Firestone, Mangin, Martinez, & Polovsky, 2005; Hirsh, 2004; Lowden, 2005; Schmoker, 2004). Schmoker states, “rather than promote coherence and alignment between staff development and academic goals, training and workshops tended to focus on the hot topics of the day” (p. 430). Further, Kedro and Short (2004) conducted a study of a St. Louis district that allocated an additional \$55,000.00 to 40 low performing schools to select a professional development model for improvement. A result of this research suggested that a district-wide coherent professional development model was far better than for each school to implement its own program. Additionally, Laine and Otto (2000) conducted a study for the North Central Regional Educational Laboratory that examined an exemplary private organization and a school district with proven results. Their findings indicate that it is critical that district leadership is committed to funding and transmitting messages related to the professional development throughout the organization. Further, Lowden (2005) applied Guskey’s (2000) model to evaluate a professional development initiative. Her study involved a survey of two-hundred five teachers in two suburban school districts in New York, and the findings indicate that for long-term transformation to occur in professional development planning and implementation there must be support from the whole organization. Based on the research noted here, any professional development initiative that a

district embarks on should be a systemic effort that is communicated, modeled, and supported by district leaders.

Firestone et al. (2005) found that while past arguments suggested that districts can have little impact on what transpires in the classroom, more current research argues that if districts harness their resources and commit leadership and support to the professional development endeavor, then indeed the district can impact the classroom. Research conducted by Corcoran, Fuhrman, and Belcher (2001) added that when a district provides “vision, focus, support, and policy coordination” it can improve instruction (p. 78). Additionally, in their recent book titled *Doubling Student Performance... and Finding the Resources to Do It*, Odden and Archibald (2009) make the claim that “a comprehensive ongoing professional development program is key to producing large improvements in student learning” (p. 124). Their research on numerous high performing school districts ascertained that “a shared practice among schools and districts increasing student achievement was the widespread systemic and ongoing professional development” (Odden & Archibald, p. 70).

More recently, in a report highlighting the current state of professional learning, results of a study focusing on high performing school districts in several countries including the United States indicate that sustained professional development is indeed related to student achievement gains, ([www.nsd.org/stateproflearning.cfm](http://www.nsd.org/stateproflearning.cfm)). This research supports that professional development, when applied in a systemic manner, may impact student

achievement. Lowden (2005) and Sparks and Hirsh (1997) suggest that a focused effort that includes stakeholder input at all levels ensures that professional development is tailored to meet the needs and goals of the district. The next section will examine the research on stakeholder input.

### Stakeholder-Driven Professional Development

Historically, professional development has been designed by school leaders without involving stakeholders in its development and implementation. Even as the groundbreaking Rand studies, which examined the results of initiatives funded with federal Title IV-C funds from the Elementary and Secondary Education Act (ESEA) to determine their effectiveness and impact, suggested as early as 1978, teacher involvement was a critical element to the success of the projects studied. Despite the years of research that have outlined the importance of seeking input from those who will be implementing the professional development, this is rarely practiced (Guskey, 1995). Recent dissertations completed by Racek (2008), Spicer (2008) and Molina-Walters (2004) have continued to support the finding that Guskey (1995) noted over a decade ago. Each of these studies indicated that teachers want to have a voice in the professional development in which they will participate and that the professional development will only translate into classroom practice, if the teacher (s) believe it makes a difference in student outcomes.

As Molina-Walters (2004) states, an impediment in educational improvement is that the teacher often plays no role in the decision making about the very training expected to affect classroom practice. According to Spicer (2008), “the one group who should benefit the most from professional development seldom has a voice in determining the nature and substance of professional development; and that is our teachers” (p. 11). As Racek (2008) found, “professional development focused on student achievement needs to be planned, taught, implemented, evaluated for efficacy and impact on the audience, both student and teacher” (p. 2). According to the findings of these studies, a void in empowering teachers to identify their professional development needs still exists.

Absent collaborative decision making that is based on available research related to teacher, school and district needs, and the practicality of implementing the recommended strategies, a professional development initiative will likely not be implemented, and thus not be able to impact student outcomes. Collective action is necessary to induce school improvement and systemic change (Joyce & Showers, 1988; O’Day, 2002).

To further emphasize the necessity of involving teachers in designing the professional development initiative, research recently completed by Darling-Hammond, Wei, Andree, Richardson, and Orphanos (2008) found that when compared to nations that outperform the United States on international

assessments, the United States does not allow teachers as much input into the design of their own professional development as international countries do.

While the research suggests the need for stakeholder input into professional development, it also outlines a need for the professional development to be sustained in order to have an impact on student outcomes. A recent qualitative study conducted by Ferguson (2008) in one western North Carolina school system focused on six elementary schools in which interviews were conducted with 12 elementary school teachers, 4 elementary school administrators, and 3 central office administrators. The purpose of the study was to investigate how perceptions of elementary teachers, elementary administrators, and central office administrators compared on the subject of professional development.

While Ferguson found the perceptions of the three groups to differ slightly depending on the aspect discussed, the perceptions of elementary teachers and elementary administrators were similar in most cases, and those of the central office administrators were much broader. Like Dyson, she found that certain contextual factors needed to be present for professional development to be viewed as effective.

As Ferguson (2008) noted in a recent dissertation “Findings show that longer presentations conducted at the school site produced a longer lasting impact. Follow up to professional development sessions is very important for any new concepts to have a long lasting effect” (p. 173). The next section will

address the research related to the importance of sustaining professional development initiatives.

### Sustained Professional Development

Many researchers stress the importance of sustaining professional development in order to see results (Darling-Hammond & McLaughlin, 1995; Levine, Cooper, & Hilliard, 2000; Lewis, 2000). One of the cornerstones of the definition of high quality professional development as outlined in the 2001 NCLB act is that it is sustained over time.

As Lewis (2000) noted, “good professional development depends on informed and consistent policies that reduce the ‘noise’ of change around teachers” (p. 12). A recent national survey of one thousand teachers sponsored by the United States Department of Education’s Eisenhower Professional Development Program was conducted to identify effective approaches to professional development. One of the findings revealed that teachers viewed professional development activities as most useful when sustained over a period of time (Garet, Porter, Desimone, Birman, & Yoon, 2000).

A striking statement about the importance of sustained professional development was made by Levine et al., in 2000. They declared the following:

Ultimately the challenge facing those interested in eliminating the achievement gap between children of color and other children requires sustained and cohesive professional development for educators. The



framework must be sustained and be cohesive with sufficient time for interventions to take hold – total commitment (p. 17).

Darling-Hammond et al. (2008) noted that even teachers' self report a higher degree of effectiveness when professional development is sustained over time. Even more recently, a National Staff Development Council study released in 2009, examined professional development efforts in the United States and high-achieving nations around the world, which have been making substantial and sustained investments in professional learning for teachers over the last two decades. This study found that professional development that is not long term has little impact on practice and that nations outperforming the United States on international assessments invest substantially in sustained teacher development (Darling-Hammond & Richardson, 2009a). Additionally, a review of studies conducted by the Regional Educational Laboratory Southwest (2007) indicated that when professional development was extended over a period of six to twelve months, student achievement increased by 21 percentile points (Yoon, Duncan, Lee, Scarloss, & Shapely, 2007). This research suggests that well-designed professional development that is sustained may in fact relate to improved student outcomes.

#### A Synthesis of Recent Studies on Systemic, Stakeholder Driven, and Sustained Professional Development

There have been numerous studies conducted in the past few years on the effects of professional development models. In 2008, Dyson, Ferguson,

Racek, and Spicer all published dissertations which examined professional development models. While both Dyson's and Ferguson's studies were conducted in North Carolina, Racek's study included participants in Wyoming, and Spicer's study focused on teachers in Virginia. It is important to note that each of these studies focused on perceptual value and did not examine student achievement.

Dyson's study was conducted in one public elementary school in a small rural town in central North Carolina and included interviews of 10 teachers from the same school who had participated in a professional development as well as interviews of 7 teachers in the same school who had not participated in the training. The study utilized a qualitative analysis to explore teachers' change in practice as a result of a professional development initiative. Dyson found that professional development could impact instructional practices when teachers' beliefs and attitudes matched the instructional technique to be learned, and when certain contextual and situational factors allowed for teachers to practice the new techniques. Once the teachers observed student success as a result of the changes in instruction, the new techniques were integrated into the teachers' beliefs. The study also noted that professional development could directly impact teachers' beliefs; however, it took longer and required more information about why the techniques worked for students. In this instance, teacher practice changed as a result of discovering more about the rationale behind the technique.

Racek's study focused on thirty teachers in one school district in Wyoming and utilized survey methodology to examine teacher perceptions of staff development. He specifically investigated how perceptions varied based on teacher knowledge of the NSDC standards, experience level as teachers, grade level taught, and time spent in the district. Racek's study found no significant association in the variables and the perception of effective professional development practices.

Spicer's study was conducted in a school district in central Virginia and included survey data from 218 teachers. Her study, like Racek's, investigated teacher perceptions of professional development and examined comparisons based on teaching experience and based on teaching assignment. Spicer found that teachers in their first three years perceived professional development experiences more positively than those with more experience. Her findings showed inconsistencies among teachers who taught different subjects. Similar to the other studies mentioned, Spicer's findings also revealed specific components necessary to deem professional development effective.

Each of these studies included recommendations to increase the potential for knowledge gained in professional development programs to be implemented. The recommendations from these studies align with the three components supported in this study. Those elements are systemic efforts, stakeholder driven efforts and sustained efforts.

With regard to the element of systemic professional development efforts, Dyson found that for it to be effective, it is necessary for the professional development initiative to be linked to systemic goals. Participants indicated they would be much less likely to implement their new learning without reminders from their peers and without the alignment to the overall school improvement efforts. In their dissertation studies, Racek and Spicer both listed systemic efforts as necessary by suggesting there is great importance in linking the professional development to a needs assessment process. Both of these studies examined teacher perception of professional development and found that teachers want the opportunity to identify professional development needs aligned with school improvement efforts.

As far as the element of stakeholder driven professional development, Racek and Spicer both refer to the need to empower teachers in the process and to ensure there is collaboration and reflection throughout the process. Ferguson's dissertation study specifically focused on perspectives of elementary school teachers, elementary school administrators, and central office administrators and found that all three groups noted the importance of soliciting input from teachers on the professional development to be presented. Ferguson's research noted that ideas for the professional development must be solicited from classroom teachers in order for the initiative to be successful. Dyson found that in order for a professional development initiative to be effective, it must be directly linked to

input from the teachers. These studies all support the need for stakeholders to be involved throughout the professional development initiative.

In terms of sustainability, Racek and Spicer each specifically included sustainability in their list of recommendations for effective professional development models. Ferguson pointed to the importance of sustainability by referring to “longevity and follow up” as important elements, while Dyson used the term “fidelity” and discussed the importance of allowing participants time for implementation. Each of these studies points to the significance of sustaining a professional development initiative.

Conclusions on Professional Development that is Systemic,  
Includes Stakeholder Input and is Sustained

As Guskey (2003) states, “The objectives of professional development are clear: to make a difference in teaching, to help educators achieve high standards, and ultimately to have a positive impact on students” (p. 12). While research exists to suggest what characteristics make effective staff development programs, such as including systemic structures, stakeholder input, and sustained efforts, these features are not commonly seen in practice (Clarke & Hollingsworth, 2002; Richardson, 2003). Perhaps that is why professional development does not always translate into teacher implementation (Elmore, 2002). As Kent (2004) found, attitude is a critical element of inducing change, and “ultimately, the individual teacher determines the extent to which any innovation occurs.” (p. 427). Joyce and Showers (1988) were pivotal in laying the

groundwork for this research by noting that in order for professional development to be the catalyst in improving student achievement, the change process and the implementation process must be considered. The next section will examine the elements necessary in the role of change in the educational improvement process.

### The Role of Change in the Educational Improvement Process

Professional development provides a process to attain educational change for the purpose of improvement. Fullan and Stiegelbauer (1991) explained that staff development is a necessary component in the educational change process. Specifically, they stated that educational change consists of “learning new ways of thinking and doing, new skills, knowledge, attitudes, etc...It follows that staff development is a central theme related to change in practice” (p. 84). Many programs have been based on the idea that professional development leads to changes in teachers’ beliefs and attitudes, which causes them to change classroom practices for the goal of improved student outcomes (Clarke & Hollingsworth, 2002; Guskey, 2005).

While this is a logical chain of thinking, Guskey (2005) calls it a naïve perspective. Many researchers (Fullan & Stiegelbauer, 2001; Guskey, 2005; Kent, 2004), have lamented that teachers who participate in staff development do not always translate their new learning into practice. It is ultimately the teacher who decides how much change in practice occurs (Kent). For those who invest in staff development programs with a goal of improving teacher practice for

increased student achievement, it is critical to find what it takes for staff development to make the transition from concept to application.

Guskey (2002) has argued that in order to make this transition, staff developers need to pay attention to the process of teacher change. He notes that professional development programs alone do not bring about teacher change, and that actually, it is only when the teacher sees that the change in classroom practices leads to positive student outcomes that the professional development actually produces a lasting impact on teachers' beliefs. Guskey's model, suggests a linear chain of events that reflect changes in teacher attitudes and beliefs after having an opportunity to employ new methods and experiencing success in student achievement.

While the model depicts the process as linear, Guskey (2002) acknowledges that the process may actually be more cyclical than linear. For example, in order for a teacher to actually initiate a change in practice, there must be some level of conceptual acceptance in existence. Similarly, Kent (2004) noted "it is a teacher's inner desire to learn new strategies and practices that is the beginning of successful innovation..." (p. 430). As Fullan and Stiegelbauer (1991) note, "the relationship between behavioral and belief change is reciprocal and ongoing..." (p. 91). In a recent dissertation, Racek (2008) suggested that despite the recent emphasis on professional development's link to student achievement, changes in practice do not seem to materialize. The question then

becomes, what is necessary for teachers to view professional development as worthwhile enough to make a change in practice initially?

In response to this question, Wagner (2001) synthesized twelve years of work in school districts across the country and abroad facilitating the change process. He identifies four conditions necessary to prompt adults to try new strategies:

1. A shared vision of the goals of teaching and learning;
2. A recognition of the urgent need for change;
3. A relationship inclusive of mutual respect and trust; and
4. A strategy for creating commitment rather than compliance.

Wagner (2001) also points out that most teachers care about their students, and they want to make a difference which is one reason many chose the profession initially. He offers that “the challenge in motivating teachers is to help them understand what today's students need to know and be able to do for work and for effective citizenship and to help them learn better strategies for teaching all students” (Wagner, p. 383).

While Wagner's strategies do not completely outline an avenue for ensuring that a teacher's participation in professional development will lead to a change in practice and a subsequent improvement in student learning, the research does indicate that teachers must see a positive impact on student outcomes in order for the change to be sustained. The next section will elaborate



more on the role of administrator perception and its impact on teacher practice and student achievement.

#### The Impact of Administrator Perception on a Professional Development Initiative

An additional factor necessary to ensure that professional development sparks a change in instructional practice is that it must occur in an environment supported by administrators. Studies conducted by Dyson (2007) and Lowden (2003) indicate that for change in practice to occur, the professional development initiative must be seen as a priority for administrators. Similar to the results from Darling-Hammond's 2009 research indicating a need for teachers to perceive a professional development as effective, so too, do administrators need to share that perception. Dufour (1991) refers to the principal as the change agent that is necessary for the success of any professional development model in the school. Racek and Spicer's 2008 studies outline the importance of school leaders as instructional leaders in the implementation of any professional development initiative. Teachers in both of these studies referenced the importance of their principals taking on the roles of professional development leaders. Based on the results of this combined research, if teachers see that their principals value changes in practice as a result of a professional development initiative, and if teachers view the professional development initiative as effective and implement the changes, then student outcomes can improve. The next section will focus on the research supporting the link between effective professional development and increased student achievement.

### Linking Professional Development to Student Achievement

Togneri and Anderson (2003) captured what should be clear in a simplistic statement. “Students learn what they are taught; students will learn more if they are taught well” (p.15). Although it would seem logical that when teachers learn better ways to teach, students make gains in learning, researchers have continued to point to potential flaws in that logic (Guskey, 2000; Yoon et al., 2007). Even teachers themselves have a hard time believing that professional development improves their practice. In a 2000 survey, only 25% of the teachers reported that professional development improved their practice a lot (NCES, 2001). More recently, Guskey and Yoon (2009) referred to 1,300 studies conducted by the Regional Educational Laboratory Southwest and noted the complexity in the relationship of professional development and student achievement. Specifically, they claim that their “research synthesis confirms the difficulty of linking professional development to student achievement gains despite the intuitive and logical connection” (p. 498).

While Guskey and Yoon’s (2009) findings continue to point to the difficulty of linking professional development to student achievement, they maintain that indeed there is a link. In fact, they go as far as to say “in the history of education, no improvement effort has ever succeeded in the absence of thoughtfully planned and well-implemented professional development” (p. 498).

Advocates of professional development’s impact on student achievement have long made the claim that professional development can be linked to

improved student outcomes (Borko, 2004; Darling-Hammond, 1998; Killion, 2002). Groundbreaking research from Wright, Horn, and Sanders (1997) which analyzed subsets of standardized test data on five tests taken by Tennessee students in grades 3<sup>rd</sup> through 5<sup>th</sup> pointed to the impact that improving teacher practice can have on student achievement. Most notable was their claim that “the immediate and clear implication of this finding is that seemingly more can be done to improve education by improving the effectiveness of teachers than by any other single factor” (Wright et al., 1997, p. 63).

Darling-Hammond (1998) studied schools both in the United States and abroad where a focus was placed on professional development and found that students reaped the benefits of teacher professional development. In 2000, Darling-Hammond continued the notion by citing North Carolina’s investment in professional development and its subsequent status in posting the greatest increase in achievement gains in math and science than any other state.

In 2002, Schmoker contended that “achievement is primarily a function of two things: what we teach and how we teach” (p. 1). Schmoker further claimed that there is nothing “esoteric about what is needed for schools to make dramatic progress-fix our gaze on effective, targeted teaching and mechanisms for promoting, replicating, refining, and routinely honoring it” (p. 4). Adding to this notion was Elmore’s (2002) research which identified a model that suggested one of three paths to improve instruction and student achievement was through increasing the knowledge and skills of the teacher.

Odden and Archibald (2009) continued the notion that effective professional development is critical in producing student gains in learning. They noted a common element among schools succeeding in increasing student achievement was the implementation of systemic and ongoing professional development. According to Lowden's (2006) research, even the perception of increased student achievement is influenced by a teacher's participation in effective research based professional development. In order for professional development to have a chance of impacting student achievement, the teacher must perceive professional development as beneficial.

The research included in this section explains both the answer to why professional development is important in improving student achievement, and to which elements should be included for the professional development to translate into improved student outcomes. The question that remains is how to determine the effectiveness of a professional development program.

#### A Model for Evaluating Professional Development

The seminal work of Joyce and Showers (1988) resulting from studies of numerous professional development programs, as well as interviews and case studies of hundreds of teachers found that the infrequency of implementation of powerful teaching practices learned through professional development was primarily due to weak professional development programs. They made the point that in order for professional development to improve student outcomes, it must first be translated into instructional practices the classroom. They contend that in

order to discover what makes professional development translate into changes instructional practices, evaluation of those programs is critical. Thomas Guskey (2000) outlined an evaluation process that includes five critical levels of evaluation. These five critical levels include: participants' reaction, participants' learning, organization support and change, participants' use of new knowledge and skills, and student learning outcomes. According to Guskey (2000), the first level of professional development evaluation involves assessing the participants' reactions to the opportunity. The basic question at this level is whether or not the participants enjoyed the experience. This is the most simplistic of Guskey's levels and the reactions at this level of the evaluation are often indicative of the reactions at future evaluation levels.

The second level of Guskey's evaluation model assesses the knowledge gained as a result of participating in the professional development. In order to assess this level, an analysis is completed to ascertain if the participants reached the criteria set out prior to the activity. Often a pre-assessment and post-assessment are completed to determine if learning occurred as a result of the professional development experience.

At the third level of Guskey's evaluation model, the organization's efforts are assessed to determine if they hinder or support the implementation of the initiative. The organization's policies, levels of support, allocation of resources, and efforts to resolve conflicts are all taken into consideration.

In Guskey's evaluation model, the fourth level addresses the participant's use of the knowledge and skills gained as a result of the professional development experience. This information can only be assessed after enough time has passed to allow the participants an opportunity to implement the new learnings. The questions at this level address the degree and quality of implementation.

At the final stage of Guskey's evaluation model is the assessment of student learning outcomes. While student and teacher interviews or observations can be used to provide information for this level, evaluation of this level is primarily dependent on student outcomes reflected on standardized tests, grades, and portfolio evaluations.

Guskey's model is an adaptation of one designed to assess the value of supervisory training programs in the area of business and has been applied in numerous other settings. While success at early levels of the evaluation process may be indicative of success at other levels, it does not mean that each level is dependent on the previous one so they are each important in the evaluation of a total program.

A study conducted by Lowden in 2003 applied Guskey's model to evaluate the impact of a professional development initiative on teacher change in instructional practice and ultimately on improved student achievement. Lowden's study surveyed two hundred five K-12 teachers in two public suburban school districts in New York. The study used a five point Likert scale and surveyed

teachers' perceptions of staff development at the five levels of evaluation. The findings of the study showed a strong relationship between teacher implementation of new knowledge and skills gained from professional development and the impact on student outcomes.

While there are still intervening factors which make it difficult to conclusively link the relationship of effective professional development for teachers to improved outcomes for students, there is certainly no shortage of research that seems to provide what Guskey (2000) referred to as 'good evidence' (p. 87) pointing to the link. The following outlines the elements included in the professional development initiative of this study in Cumberland County Schools as well as the research used by the school system to support each element.

#### Cumberland County Schools' Creating Great Classrooms Professional Development Initiative (CGCPDI)

In June, 2003, approximately three hundred Cumberland County teachers, principals, and central office administrators convened in small groups in an auditorium to brainstorm characteristics that comprised an effective classroom. The discussion was led by an external consultant who formerly taught in the Cumberland County school system. The session was prefaced by the superintendent stating that there was enough experience and expertise in education present in the room to identify what was effective for students in Cumberland County schools. Each group generated a list that was submitted to

the consultant who examined them for consistent themes, aligned them with national brain research, and narrowed them to the final six characteristics. The consultant also aligned the groups' generated themes with best practices identified by local teachers and administrators as well as national research from Jim Collins (2001), Eric Jensen (2005), Ruby Payne (1996) Robert Marzano (2007), Debra Pickering, and Jane Pollock, and David Sousa (2006).

### Context

The Cumberland County School system is the 4<sup>th</sup> largest school system in North Carolina with approximately 53,000 students and 3,300 teachers. It is located in Fayetteville, North Carolina, a suburb of the military installation, Fort Bragg. There are a total of 87 schools, 51 of which are elementary schools, 15 of which are middle schools, 14 of which are high schools, and 7 of which are designated in categories such as year round, alternative, and evening academies. There is one principal for each school for a total of 87 principals. While many of the schools in the system are located in rural areas, the system does have schools located in urban areas as well. It is comprised of a 56% free and reduced population. During the time of this study, the superintendent who began the initiative, remained with the system, and the external consultant who led the professional development was a former teacher in the district.

### Process

The process began with a group of approximately three hundred educators including building principals, teachers, and central office administrators



working in small groups to identify characteristics that existed in what they deemed as effective classrooms. An external consultant compiled these lists and identified six common areas that emerged. This list became the Cumberland County School Systems' 6 Characteristics of Great Classrooms, and included positive emotional climate, active engagement, meaningful learning, organized lessons, academic rigor, and continuous feedback.

In 2003-2004, the group spent the year defining each of the characteristics and identifying acceptable evidence of each. In 2004-2005, leadership teams comprised of principals, assistant principals, teachers, and central service personnel received training on the teams' definition and evidence related to each of the characteristics. The external consultant also shared national brain research that supported each characteristic. The principal, assistant principal, and teacher representative returned to school each month to conduct the same presentation. Each month, the site teams asked teachers to submit strategies from each of the six characteristics that they found effective in their classrooms. The external consultant compiled these strategies into a book titled *Applying Great Classroom Strategies* (Yeager, 2005). Teaching and modeling these strategies became the basis for the trainings in 2005-2006, when again triads of each buildings' principal, literacy coach, and central service representative returned to the sites to deliver the presentations. The 2006-2007 year was spent with leadership teams convening monthly to define procedures and protocols for examining student work samples that represented each of the six characteristics.

The triads identified objectives that were vertically aligned, deconstructed these objectives, developed guiding questions to ask as student work related to the objectives was reviewed, and collected student work congruent to the identified objectives. This year was spent in a planning phase, and no sessions were conducted at the schools. In 2007-2008, *Examining Student Work* (Yeager, 2007) became the district-wide focus with teachers working in professional learning communities at their schools to deconstruct objectives, plan organized lessons, write guiding questions, and collect and examine student work samples congruent to the objective. The triads selected samples from this process to bring to the monthly leadership meetings for analysis by peer groups.

This process was based on the support of multiple researchers (Engstrom & Danielson, 2006; Darling-Hammond et al., 2008; Schmoker, 2004). As noted by Schmoker (2004) “the most promising strategy for sustained substantive school improvement is building the capacity of school personnel to function as a professional learning community” (p. 424). Further, Engstrom and Danielson (2006) indicated that effective professional development models include shared leadership and are collaborative in nature.

In the spring of 2008, surveys were sent to teachers and administrators to identify what the next focus area for *Creating Great Classrooms* needed to be. The majority of the responses indicated that there was a need to focus on the characteristic of academic rigor.

Principals and Central Services representatives were also administered a survey requesting that they rate the percentage of teachers in their building fully implementing each characteristic. Again, at each school level, principals identified the characteristic of Academic Rigor as the one most in need of training. As a result of the feedback from both administrators and teachers, Academic Rigor became the content focus the following year.

Based on these results, the 2008-2009 training focused on the characteristic of Academic Rigor, and the book *Creating Rigorous Classrooms* (Yeager, 2008) accompanied the training. The external consultant used this book to share national brain research related to academic rigor, and the triads again conducted these sessions at their sites. Each month, the professional learning communities focused on examining lesson plans and student work for academic rigor. The triads observed classrooms for evidence of academic rigor and brought that evidence to the leadership meetings for peer group analysis.

Research to support this focus can be found in a report by Wenglinsky (2002). His study included teachers who had been trained in activities to increase students' higher order thinking skills. His findings reflected improved student achievement in those schools where teachers had received such training.

#### Content

The six characteristics identified by teachers and administrators in Cumberland County are listed in Appendix B. Appendix B also includes the

indicators the group identified that evidence the characteristic. Following Appendix B, the national research base that aligns with each characteristic is outlined.

### Positive Emotional Climate

The research base for the characteristic of Positive Emotional Climate was Ruby Payne's (1996) book, *A Framework for Understanding Poverty* and David Sousa's (2006) book *How the Brain Learns*. While the essence of this research spans a decade, each of these researchers highlights the importance of the role of a positive climate on student learning.

Ruby Payne's research focuses on the importance of positive relationships. Specifically, Payne (1996) states "the most important part of learning seems to be related to relationship" (p. 110). She claims that acknowledging that students are valuable and treating them with respect and care develops a relationship that will enhance learning. She goes as far as to say "the key to achievement for students from poverty is in creating relationships with them" (Payne, p. 109).

In his research, Sousa (2006) focuses on the role of emotion and safety in learning. He declares that "students must feel physically safe and emotionally secure before they can focus on the curriculum" (p. 44). Essentially, his research indicates that students cannot learn unless they are in an environment they feel is safe from threats or danger.

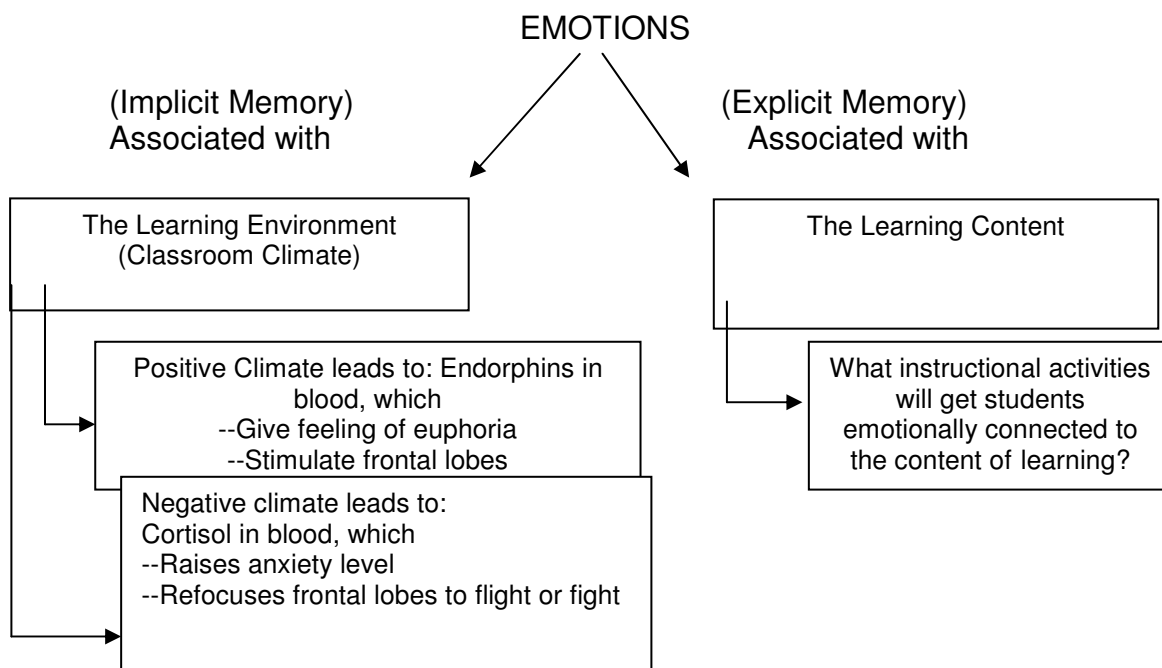
As Sousa (2006) depicts in Figure 2, emotions affect the learning process. If the information is appealing to the brain, the brain is more likely to focus attention on it and transfer it to higher level cognition. On the other hand, when the brain feels threatened, it cannot focus on learning because it is focused on survival.

#### Organized Lesson Built Around Clear Measurable Goals

Research used for this characteristic was based primarily on the books *Classroom Instruction That Works* by Robert Marzano (2001), Debra Pickering, and Jane Pollock and Eric Jensen's (2005) book *Teaching with the Brain in Mind*.

The research from Marzano et al. (2001) focused on the importance of setting goals and specifically stated: (1) Instructional goals should narrow the focus for students. While the researchers identified the importance of goal setting, they warned that this can narrow what students concentrate on, thereby actually negatively affecting learning in other areas; (2) Instructional goals should not be too specific. The authors caution that when goals are too specific, students are so focused that they miss information not directly related to the goal; and (3) Students should be encouraged to personalize the teacher's goals. Another reason the researchers found that goals should not be too specific is because this limits students ability to translate them into personal goals.

(Sousa, 2006, p. 84)



*Figure 2. The impact of emotion on learning.*

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## Active Engagement

The research base for this characteristic included Jensen (2005) and Sousa (2006). Jensen defines engagement as the acts of focusing sight, hearing, and physically paying attention. He further claims that “more attention to the learning also usually means better results” (Jensen, p. 35).

As David Sousa (2006) states, the brain wants to be involved in the learning process. Active engagement allows choices and activities that are both enjoyable and successful in meeting the objective. Recent technological advances allow examination of images of the brain involved in different activities. From these images, it is revealed that various parts of the brain are engaged during different activities. Sousa and Jensen (2005) both advocate that students need to be engaged in learning activities that require a variety of skills in order to ensure learning is stored in long term memory.

Sousa (2006) adds that the brain can only take in a limited amount of information before it must turn inward for processing. His research suggests that if the brain does not have an opportunity to actively process the information, the information is lost. Students must be engaged during a teacher’s presentation of a lesson in order to make meaning of the information presented. Only a student can move information from working memory to long-term memory. Teachers can design activities for this to occur, but students must work with the information to strengthen the connections and move it to long term memory.

### Meaningful Learning

Again, the research for this characteristic primarily came from Payne (1996), Marzano et al. (2001), Jensen (2005), and Sousa (2006). According to Sousa, learning is more likely to be moved into long term memory if it makes sense and has meaning. He states that the brain will not even attend to information unless it has meaning or makes sense. Jensen further highlights the importance of relevance by indicating that neurons connect with other neurons if information is relevant. If the information is not relevant, neurons do not connect, and the information is filtered out of the brain. His research substantiated the role of relevance in ensuring information is translated into long term memory. “The greater the number of links and associations the brain creates, the more neural territories involved and the more firmly the information is woven in neurologically” (Sousa, p. 92).

Sousa (2006) refers to this as transfer and suggests that new learning is dependent on how much previous knowledge exists for the brain to make an association and to make sense of the new information. Teachers must plan activities for students to work with information in a variety of ways in order for the information to have lasting connections.

### Academic Rigor

Research consulted for this characteristic included Payne (1996) and Marzano et al. (2001). As mentioned, Payne’s work was specifically chosen due to her work with students in poverty and because over half of this district’s



student population qualifies for free and reduced lunch services which is the federal guideline identifying students of poverty.

According to Payne (1996), “the true discrimination that comes out of poverty is the lack of cognitive strategies. The lack of these unseen attributes handicaps in every aspect of life the individual who does not have them” (p. 107). This quote underscores the rationale for including this characteristic. Marzano et al. (2001) found when students are involved in higher-level questioning strategies; they achieved higher scores on standardized tests than those who were not exposed to such challenging questions.

The research of Dr. Marian Diamond, a neuroanatomy researcher and professor at the University of California at Berkeley (Retrieved April 23, 2009, from <http://ib.berkeley.edu/people/faculty/profiles/more/mdiamond/php>) was also consulted for this characteristic. Dr. Diamond’s research focused on the impact of impoverished or enriched environmental input on the structure of the cerebral cortex and behavior of rats. She studied a rat in an impoverished environment which consisted of only food and water and lacked any other stimulation as compared to rats in more enriched environments. The first sample of the more enriched environment consisted of several rats and stimulating toys for exercise. The second sample of the more enriched environment included not only the exercise toys, but also toys which required the rats to maneuver through a maze to receive treats, and problem solving toys that also resulted in rewards. She found increased neural activity in the rats who were allowed to interact with other

rats and who had experiences with more challenging toys. Her findings substantiate the importance of challenging students in order to grow neurons and increase the brain's capacity.

### Continuous Feedback

Marzano et al.'s (2001) research was the primary source for this characteristic. Their research suggests that providing feedback is a powerful strategy that is often underused in classrooms. Their analysis found that in order for feedback to positively impact student achievement, it needs to be specific to a skill or a kind of knowledge. They state "the more specific the feedback, the better" (Marzano et al., p. 99). In their findings, they add that when students are just told which answers are correct or incorrect, student achievement is actually negatively impacted. Their findings also suggest that feedback from both teachers and students can positively impact student achievement. Finally, their research points to the importance of providing feedback in a timely manner. According to their findings, "in general, the more delay that occurs in giving feedback, the less improvement there is in achievement" (Marzano et al., p. 97).

While this section focused on the content of this particular district's professional development initiative, a review of related research indicates that while content is important, the initiative will stick only when the initiative's context, process, and content has been systemic in concept and implementation, has involved stakeholder input, and has been sustained over time. All three elements

are necessary to positively affect teacher and administrator perceptions and ultimately to increase student achievement.

### Summary

Research continues to emphasize the potential influence of professional development on increasing student outcomes (Marzano & Waters, 2009; Odden & Archibald, 2009; Reeves, 2009). Despite this research, most school districts have not endeavored toward realizing these results because they cannot overcome the obstacles of resistance, overload, and incoherence typically associated with innovation (Fullan & Stiegelbauer, 1991).

Kent (2004) noted, many school districts are not investing their professional development funds in coherent models that solicit input from teachers or that are sustained over time. This study focused on a district that has concentrated its resources on a systemic professional development model that included internal teacher and administrator input as well as national brain research on its content and strategies. Additionally, the initiative was sustained over a period of six years. The results will contribute to the research on whether the elements of ensuring there is systemic focus, stakeholder input, and efforts to sustain the professional development initiative can be linked to impacting teacher practice and will inform school district leaders in the design of professional development for the purpose of improving student outcomes. Chapter 3 describes the research questions and the research design of the study. Chapter

4 explains the results of the study and Chapter 5 presents conclusions and recommendations for further study.

## CHAPTER 3: RESEARCH METHODOLOGY

### Introduction

The study of a professional development initiative in Cumberland County Schools entitled Creating Great Classrooms provided the opportunity to evaluate six years of professional development and to determine the effectiveness of the initiative by examining perceptions of teachers and administrators as well as trends in student outcome data. The evaluation of the professional development initiative concentrated on three elements: systemic action (Senge, 1990; Sparks, 2002; Schmoker, 2004; Opfer et al., 2008), stakeholder input (Guskey, 1995; Molina-Waters, 2004; Racek, 2008; Spicer, 2008), and sustained commitment (Firestone et al., 2005; Hirsh, 2004; Lowden, 2005; Schmoker, 2004) and their perceived impact on teacher practice and ultimately student achievement. This study attempted to link professional development to student outcomes. More specifically, this study evaluated the Creating Great Classrooms professional development initiative (CGCPDI) in Cumberland County Schools in Fayetteville, North Carolina, and determined elements that contributed to the success of the initiative as determined by teacher perceptions, administrator perceptions, and student achievement outcomes.

This chapter describes the procedures utilized in this study. The chapter is divided into four sections. The first section introduces the design of the study. Section two describes the population and the sample. The third section

discusses the instrumentation and data collection procedures. In the final section, the data analysis, reliability, validity, and investigator bias will be outlined.

### Design of the Study

This study employed a mixed methodology approach utilizing both quantitative and qualitative methods to analyze secondary data provided to the researcher by the Cumberland County School system. Thomas Guskey's (2000) program evaluation model was used to analyze the results of both the quantitative and qualitative measures to examine teacher and administrator perceptions regarding the impact of the professional development on practice as well as on student achievement. Two separate surveys administered at different points by the school district were analyzed. One survey was a quantitative survey and the other one required open ended responses which were analyzed qualitatively. Additionally, trends in student outcome data were analyzed. The following section outlines the research questions that guided this study.

### Research Questions

The research questions in this study were designed to address Thomas Guskey's (2000) professional development evaluation model. According to Guskey, effective professional development program evaluations require the collection and analysis of five critical levels of information. These levels include: participant reaction, participant learning, organizational support and change, participant use of new knowledge and skills, and student learning outcomes. All levels were evaluated in this study with the exception of participant learning.

Guskey suggests participants complete pre-tests and post-tests to determine the knowledge gained from the professional development. Since this study was a program evaluation after six years of implementation, an assumption of the study was that teachers understood the content of the CGPDI.

To measure participant reaction to the professional development experience information was gathered through a survey question. The survey question asked participants to rank their level of satisfaction with the CGCPDI using a likert scale.

In order to address organizational support and change the evaluation determined if the professional development opportunity promoted changes compatible with the mission of the school district. Information to evaluate this level was gathered through two separate surveys. One survey included a question for teachers to indicate if and how the professional development training was delivered at their sites. Another piece of information used to evaluate this level, came from questions on a survey administered to all principals in the sixth year of the initiative that asked them to identify specific successes and challenges of the initiative.

To evaluate participant use of the new knowledge and skills gained from the professional development opportunity, data were collected on a survey question asking teachers to rate their frequency of implementation of the professional development. Responses to a second question asking teachers to

rate their perception of the impact of the CGCPDI on their instructional practices were also analyzed to evaluate this level.

In order to evaluate the initiative's impact on student outcomes data were collected in a variety of ways. Teachers and administrators were both asked to rate their perception of the impact of the professional development model on student achievement in their respective classrooms and schools. A statistical comparison of these responses was also computed to address this level. Additionally, this level included an examination of trends in student outcome data during the years the professional development initiative was implemented.

Specifically, Guskey's levels, and the corresponding research questions that guided this study are found below and are explained further in Table 1:

*Participant Reaction:*

- What was the level of satisfaction among teachers in Cumberland County Schools with the fact that the CCGPDI had been sustained and systemic for six years?
- What was the level of satisfaction among administrators in Cumberland County Schools with the fact that the CGCPDI had been sustained and systemic for six years?
- What was the relationship between teacher and administrator satisfaction with the CGCPDI being sustained and systemic for six years?

*Organizational Support and Change:*

- How did teachers perceive the CGCPDI to be delivered at the school site?
- What were administrator's perceptions of challenges and successes among the three elements of the CGCPDI?



Table 1

*Evaluation Framework for the Study*

Evaluation Level	What Questions Are Addressed?	How Will Information Be Gathered?	What is Measured or Assessed?	How Will Information Be Used?
Participants' Reactions	<p>R1.(a) What was the level of satisfaction among teachers in Cumberland County Schools with the fact that the CGCPDI had been sustained and systemic for six years?</p> <p>R1. (b) What was the level of satisfaction among administrators in Cumberland County Schools with the fact that the CGCPDI had been sustained and systemic for six years?</p> <p>R.1(c) What was the relationship between teacher and administrator satisfaction with the CGCPDI being sustained and systemic for the past six years?</p>	2009 Cumberland County Schools Needs Assessment Survey Data	<ul style="list-style-type: none"> <li>• Perceptions of satisfaction with the fact that the professional development initiative was systemic and sustained for 6 years</li> </ul>	<ul style="list-style-type: none"> <li>• Frequency distribution of teacher responses</li> <li>• Frequency distribution of administrator responses</li> <li>• Fisher's exact test to analyze relationship of teacher and administrator responses</li> </ul>

Table 1

*Evaluation Framework for the Study (continued)*

Evaluation Level	What Questions Are Addressed?	How Will Information Be Gathered?	What is Measured or Assessed?	How Will Information Be Used?
Organizational Support and Change	<p>R2. (a) How did teachers perceive the CGCPDI to be delivered at the school site?</p> <p>R2. (b) What were administrator’s perceptions of challenges and successes among the three elements of the CGCPD initiative?</p>	<p>2009 Cumberland County Schools Needs Assessment Survey</p> <p>2009 Cumberland County Schools Follow Up Survey for Principals</p>	<ul style="list-style-type: none"> <li>• The organizational facilitation</li> <li>• The capacity of the initiative</li> </ul>	<ul style="list-style-type: none"> <li>• Frequency distribution of choices to designate delivery style of the professional development initiative</li> <li>• Qualitative analyses of principal responses</li> </ul>
Participants’ Use of New Knowledge and Skills	<p>R3. (a) How frequently did teachers perceive they implemented the CGCPDI in classrooms?</p> <p>R3. (b) What were the teacher perceptions of the impact of the CGCPDI on teaching practices?</p>	<ul style="list-style-type: none"> <li>• 2009 Cumberland County Schools Needs Assessment Survey</li> </ul>	<ul style="list-style-type: none"> <li>• Degree of implementation</li> </ul>	<ul style="list-style-type: none"> <li>• Frequency distribution of teacher responses</li> </ul>

Table 1

*Evaluation Framework (continued)*

Evaluation Level	What Questions Are Addressed?	How Will Information Be Gathered?	What is Measured or Assessed?	How Will Information Be Used?
Student Learning Outcomes	<p>R4.(a) What were teacher perceptions of the impact of the CGCPDI on student achievement?</p> <p>R4. (b) What were administrator perceptions of the impact of the CGCPDI on student achievement?</p> <p>R4.(c) What was the relationship between teacher and administrator perception on the impact of the CGCPDI on student achievement?</p> <p>R4. (d) What trends in student outcome data occurred during the time of the professional development initiative?</p>	<ul style="list-style-type: none"> <li>• 2009 Cumberland County Schools Needs Assessment Survey</li> <li>• 2003-2009 NC and CCS EOG/EOC Proficiency and AYP Data</li> </ul>	<ul style="list-style-type: none"> <li>• Student learning outcomes</li> <li>• Student behavioral outcomes</li> </ul>	<ul style="list-style-type: none"> <li>• Frequency distribution of teacher responses</li> <li>• Frequency distribution of administrator responses</li> <li>• Fisher's exact test to analyze relationship of teacher and administrator responses</li> <li>• Analysis of student outcome data in Reading and Math for 3<sup>rd</sup> - 12 graders during from 2003-2009</li> </ul>

*Participant Use of New Knowledge and Skills:*

- How frequently did teachers perceive they implemented the CGCPDI in classrooms?
- What were the teacher perceptions of the impact of the CGCPDI on teaching practices?

*Student Learning Outcomes:*

- What are teacher perceptions of the impact of the CGCPDI on student achievement?
- What are administrator perceptions of the impact of the CGCPDI on student achievement?
- Was there a difference in teacher and administrator perception on the impact of the CGCPDI on student achievement?
- What trends in student outcome data occurred during the time of the professional development initiative?

Population and Sample of the Study

The population for this study included all certified teachers, principals, and assistant principals in the Cumberland County School district in Fayetteville, North Carolina. The Cumberland County School system is the 4<sup>th</sup> largest school system in North Carolina with approximately 53,000 students and 3,300 teachers. There are a total of 87 schools, 51 of which are elementary schools, 15 of which are middle schools, 14 of which are high schools, and 7 of which are designated in categories such as year round, alternative, and evening academies. There is one principal for each school for a total of 87 principals. While many of the schools in the system are located in rural areas, the system

does have schools located in urban areas as well. It is comprised of a 56% free and reduced population.

As part of the school district evaluation plan, the entire population of teachers, assistant principals, and principals was sampled. The school district granted permission to utilize the results of this survey for the purpose of this study. A total of 5,549 electronic surveys were distributed. Surveys were returned by 2,938 participants for a response rate of 52.9%. A total of 629 respondents who began the survey identified themselves in categories other than Principals, Assistant Principals, or Teachers, and for the purpose of this study those surveys were not analyzed. A total of 2,309 responses were categorized as principals, assistant principals, or teachers. Table 2 indicates the number of responses by position and grade level as given to the researcher by the school district.

#### Instrumentation and Data Collection for the Study

A report by the National Partnership for Excellence and Accountability in Teaching (Lewis, 2000) provided guiding principles for improving professional development which included a need for the evaluation of a variety of sources of data on (a) outcomes for students, and (b) the instruction and other processes involved in implementing lessons learned through professional development (Lewis).

There are multiple means of gathering data significant to an educational study, which is why the researcher must discern what tools will most appropriately gauge the information necessary for the study. As Coleman and

Table 2

*Number of Respondents by Position and Grade Level*

Position	Pre-K – 5	6-8	9-12	K-12	Total
Principal	45	12	11	0	68
Assistant Principal	36	26	25	0	87
Classroom Teacher	924	433	537	52	1,946
Itinerant Teacher	9	4	2	7	22
Resource Teacher	145	22	16	3	186

Briggs (2002) note, surveys are the most frequently utilized research method. As defined by Cohen, Raudenbush, and Ball (2003) “surveys gather data at a particular point in time with the intention of describing the nature of existing conditions, or identifying standards against which existing conditions can be compared, or determining the relationships that exist between specific events” (p. 169).

This study, consistent with recommendations of Coleman and Briggs (2002), used two separate surveys that gathered data at a particular point in time. One was developed by the school district and was administered in the spring of 2009 to provide direction for the coming school year and the other was a follow up by the district administered in the fall of 2009 to more deeply analyze the rationale for the specific responses in the initial survey. A survey was appropriate to this study because it was a method of obtaining data from a relatively large number of individuals (Coleman & Briggs).

For this study, a *K12 Insight* ([www.K12insight.com](http://www.K12insight.com)) survey was utilized. *K-12 Insight* is a software package designed for distributing surveys and collecting responses. The initial electronic survey was sent to staff members in all Cumberland County schools identified as employees in one of the positions noted above. A total of 5,549 electronic survey invitations were e-mailed through the Cumberland County School system e-mail format. Prior to the survey, principals were sent an e-mail from the Cumberland County Schools’ Federal

Programs office notifying them that their staffs would be receiving a survey and encouraging them to complete the survey to guide the district in planning.

The initial survey that was used was for the purpose of a general needs assessment to inform the district for planning purposes and included questions that were used to inform this study. As Sparks (2002) noted, “local evaluation studies of staff development are more important than large scale “definitive” research to demonstrate the value of staff development” (pp. 11-16). The survey included a statement to notify participants that results would be anonymous and may be shared for external research purposes.

As Kedro and Short (2004) note, a single survey does not tell the whole story. They specifically state “Multiple sources of data are preferable in gauging levels of staff development and implementation. When assessing staff development, a single standardized survey may not get all the details. “Using several data sources is superior to just using one” (p. 48). For that reason, an analysis of a follow up survey was administered to principals to better understand what may have specifically contributed to the positive feedback on the initial survey as related to this professional development initiative. This information will help to inform district leaders on designing and implementing future professional development initiatives.

### Data Analysis

This study utilized a mixture of qualitative and quantitative methodology. Using both methodologies provided the researcher an opportunity to address



research questions from a variety of perspectives. From a quantitative standpoint, statistical results indicate frequencies and can examine relationships among answers from different categories of respondents. Additionally, student outcomes reported during the professional development initiative were examined.

With the addition of a qualitative approach, open ended responses can be coded to reveal patterns in responses and can provide a foundation for meaning to the study (Creswell, 2003). Research questions for this study fell into the three primary categories of perceptions on frequency of implementation of the professional development initiative, perceptions of impact on student achievement, and satisfaction with the initiative being systemic and sustained over a period of six years. Each category and the corresponding research questions are discussed below with the type of data analysis used with each research question.

One category examined perceptions regarding the frequency of implementation of the initiative. For this category, there was only one question, and only teachers were surveyed. The responses were in a likert scale format that included four choices. This question was analyzed quantitatively to determine teacher perception on the frequency of implementation. Another question in this category examined teacher perception of the impact of the CGCPDI on their instructional practices. This question was also analyzed quantitatively.

Another category of the research questions examined perceptions of the professional development initiative's impact on student achievement. Both administrators and teachers were surveyed on this question that again used a likert scale to rank responses. The responses included four choices. For this question a quantitative analysis was used to examine the frequency of perceptions on level of impact on student achievement. Additionally, a Fisher's exact test was used to examine the relationship of responses between administrators and teachers.

A third category of the research questions examined perceptions among administrators and teachers regarding the satisfaction level with the initiative being systemic and sustained over a six year period. Again, a likert scale was used for response choices. A quantitative analysis was applied to examine the frequency of perceptions regarding level of satisfaction with the initiative being sustained. Additionally, a Fisher's exact test was done to examine relationships of responses between administrators and teachers. Finally, a qualitative analysis of the responses of principals as to what specific successes and challenges were faced with each of the three elements was applied. The researcher utilized a coding system to determine patterns and relationships of responses.

### Validity of Study

#### *Internal Validity*

One of the limitations of this study is that the surveys utilized were created by the school district and were not validated. Instead they were developed and

administered by the school district. Additionally, the survey instruments were not developed for the purpose of this research study, and instead were developed and administered by the school district for planning purposes. In order to overcome these limitations, the researcher utilized data triangulation methods to increase the validity of the instruments.

As Coleman and Briggs (2002) indicate, there are several potential factors which may impact internal validity. One is that respondents may not complete questionnaires accurately. A second cause is that those who did not complete the surveys may have responded differently than those who did. Additionally, the characteristics of the researcher may influence the respondents. Coleman and Briggs suggest one way to overcome these potential factors is to triangulate among various sources of data. For this reason, the researcher utilized results from the initial study and also examined responses on a follow up questionnaire which attempted to explain the results of the initial survey. While the questions on the second survey were also developed by the district, they were closely aligned with those on level III of Guskey's (2000) Evaluation Model which examine the initiative on an organizational level. As Coleman and Briggs note, there may not be absolute proof for educational researchers; however, triangulation should contribute to an "...acceptable level of authenticity to satisfy both researcher and reader that the study is meaningful and worthwhile" (p. 71).

### *External Validity*

Generalizing the findings from any study is difficult, but some ways the assurance that the findings of this study can be applied to other settings includes the the fact that multiple sources of data were used. Additionally, the size of the sample in this study increases the likelihood that similar results could be expected in similar circumstances.

### Reliability

According to Coleman and Briggs (2002), reliability is the extent to which similar results would be produced under similar circumstances. One attempt to increase the reliability of this study was to apply Guskey's (2000) model of evaluation. As mentioned, the instruments used in this study were not validated and therefore cannot conclusively indicate a high degree of reliability. To overcome this, triangulation was used to examine responses to similar questions in different formats.

### Investigator Bias

This evaluation occurred six years after the professional development initiative began; therefore the researcher, nor the participants were aware that their participation in the training would be used for a research study. This resulted in the elimination of respondent bias as well as research data collection bias. The triangulation of multiple sources of data ensure consistent and dependable analyses of the study.

### Methodology Summary

As indicated previously, this study employed a mixture of quantitative and qualitative analysis. The data sources were secondary and results were provided to the researcher by the school district. The researcher attempted to ensure validity and reliability of the study by triangulating a variety of data sources. As noted by Killion (2002), in order to increase support of conclusions, researchers utilize multiple data sources to answer questions. A process of triangulating data results in more valid conclusions which is what this researcher attempted to do.

## CHAPTER 4: FINDINGS

### Data Analysis

The study of a professional development initiative in Cumberland County Schools entitled “Creating Great Classrooms” provided the opportunity to evaluate a six year professional development initiative and determine the effectiveness of the initiative by examining perceptions of teachers and administrators as well as trends in student outcome data. The evaluation of the initiative concentrated on the three elements of systemic action (Firestone et al., 2005; Hirsch, 2004; Kedro & Short, 2004; Laine & Otto, 2000; Lowden, 2005; Schmoker, 2004), stakeholder input (Ferguson, 2008; Joyce & Showers, 1998; O’Day, 2002; Racek, 2008; Spicer, 2008), and sustained commitment (Darling-Hammond & McLaughlin, 1995; Levine et al., 2000; Lewis, 2000) and their perceived impact on teacher practice, and ultimately student achievement. This study attempted to link the professional development initiative to student outcomes. More specifically, this study evaluated the Creating Great Classrooms professional development initiative (CGCPDI) in Cumberland County Schools in Fayetteville, North Carolina, and determined professional development elements that contributed to the success of the initiative as determined by teacher perceptions, administrator perceptions, and student achievement outcomes.

In this chapter, the procedures for data collection and analysis of the data for the research questions that guided the study are presented. Specifically, this study addressed the following research questions:

### *Participant Reaction*

- What was the level of satisfaction among teachers in Cumberland County Schools with the fact that the Creating Great Classrooms professional development initiative has been sustained and systemic for six years?
- What was the level of satisfaction among administrators in Cumberland County Schools with the fact that the Creating Great Classrooms professional development initiative has been sustained and systemic for six years?
- What was the relationship between teacher and administrator satisfaction with the Creating Great Classrooms professional development initiative being sustained and systemic for six years?

### *Organizational Support and Change*

- How did teachers perceive the Creating Great Classrooms professional development initiative to be delivered at the school site?
- What were administrator's perceptions of challenges and successes among the three elements of the CGCPD initiative?

### *Participant Use of New Knowledge and Skills*

- How frequently did teachers perceive they implemented the Creating Great Classrooms Professional development initiative (CGCPDI) in classrooms?
- What were the teacher perceptions of the impact of the Creating Great Classrooms professional development initiative on teaching practices?

### *Student Learning Outcomes*

- What were teacher perceptions of the impact of the Creating Great Classrooms professional development initiative on student achievement?
- What were administrator perceptions of the impact of the Creating Great Classrooms professional development initiative on student achievement?

- What was the relationship between teacher and administrator perception on the impact of the Creating Great Classrooms professional development initiative on student achievement?
- What trends in student outcome data occurred during the time of the professional development initiative?

To address the research questions, this study analyzed three sets of data.

One set of data was a survey that provided quantitative results, the second set of data was a survey that provided qualitative results, and the third set of data was trends in student outcome data that occurred during the six years of the professional development initiative. The remainder of this chapter is divided into five sections. The first section describes the demographic data of the respondents. The second section addresses the research questions that pertain to teacher perceptions of the frequency of implementation and teachers' perceived impact of the professional development initiative on classroom practice. The third section addresses the research question that pertains to teacher and administrator perceptions of the impact of the professional development initiative on student achievement. The fourth section addresses the research question that pertains to teacher and administrator perceptions about the professional development initiative being systemic and sustained for a six year period. The fifth section includes a qualitative analysis of principal responses to a follow up survey about the professional development initiative. The final section will address the trends in student outcome data that occurred during the six years of the professional development initiative.



### Survey Respondent Demographic Data

Teachers and administrators in Cumberland County Schools voluntarily completed an anonymous online survey as part of a district needs assessment process in the spring of 2009. A follow up open-ended survey was administered to principals at a monthly Leadership meeting in the fall of 2009 to determine their perceptions on the rationale for the positive responses that emerged from the initial survey and to gather more data to plan for future district professional development initiatives. Results from both surveys were analyzed in this study.

The District Needs Assessment survey was electronically sent to the entire population of teachers, assistant principals, and principals in Cumberland County Schools. A total of 5,549 electronic surveys were distributed. Surveys were returned by 2,938 participants for a response rate of 52.9%. Among the respondents, 629 identified themselves in categories other than Principals, Assistant Principals, or Teachers, and for the purpose of this study those surveys were not analyzed. A total of 2,309 responses were categorized as principals, assistant principals, or teachers. Of the 87 principals in the district, a total of sixty-eight principals responded for a principal response rate of 78%. A total of 66% of the principals that responded were at the elementary level, 18% were at the middle school level, 16% were at the high school level.

Of the 125 assistant principals in the district, eighty seven responded for a response rate of 70%. Among the assistant principals that responded , 28% were

at the elementary level, 20% were at the middle school level, and 20% were at the high school level.

There are 3,574 employees categorized as teachers in Cumberland County Schools. Of those, 2,309 teachers responded for a response rate of 65%. The survey allowed participants to designate themselves as Classroom Teachers, Itinerant Teachers, or Resource Teachers. Of the teacher respondents, 40% identified themselves as Classroom Teachers. Among the teacher respondents, 46% were at the elementary level, while 20% were at the middle grades level, 24% were at the high school level, and a small percentage identified themselves as K-12 teachers. Table 3 indicates the number of respondents by position and grade level.

#### Analysis of Research Questions Addressing Teacher Perceptions of the Professional Development Initiative

Research questions that address teacher perceptions attempted to elicit teacher's self assessment of their implementation of the Creating Great Classrooms professional development initiative (CGCPDI). In addition, the teacher perceptions were elicited to evaluate the process of professional development delivery as well as the perceived impact of this initiative on teacher practice and student achievement.

#### *Participant Use of New Knowledge and Skills*

- How frequently did teachers perceive they implemented CGCPDI in classrooms?

Table 3

*Number/Percentage of Respondents by Position and Grade Level*

Position	Pre-K – 5	6-8	9-12	K-12	Total
Principal	45/66%	12/18%	11/16%	0	68
Assistant Principal	36/41%	26/30%	25/29%	0	87
Classroom Teacher	924/47%	433/22%	537/28%	52/3%	1946
Itinerant Teacher	9/41%	4/18%	2/9%	7/32%	22
Resource Teacher	145/78%	22/12%	16/9%	3/1%	186

In the District Needs Assessment survey, Cumberland County teachers were asked to indicate the frequency of implementation of the Creating Great Classrooms characteristics in their teaching practice. Teachers could choose from a frequency range of not at all, daily/weekly, monthly, or quarterly.

Table 4 reflects that teachers at all grade levels selected daily/weekly as the frequency they implement the six characteristics of the CGCPDI. While the frequency range of implementing daily/weekly was similar in most categories ranking 80% or higher, the category of itinerant teachers indicated a frequency of daily/weekly implementation at 63% which was approximately 20% less than the other categories indicated.

#### *Organizational Support and Change*

- How did teachers perceive the CGCPDI to be delivered at the school site?

From the beginning of the Cumberland County Schools CGCPDI in 2003, the training was delivered monthly to a group of school assigned triads consisting of the principal, the literacy coach, and a central office representative. This triad was responsible for delivering the same professional development at their respective school sites with the flexibility of conducting it in the format most suitable to the school. In the District Needs Assessment survey, Cumberland County teachers were asked to indicate the delivery format of the professional development by the originally trained triad at their school. Table 5 shows the responses to the delivery format. Teachers could choose from a range of not at all, in Vertical Teams/Grade Levels/Departments, in Whole Faculty Settings,

Table 4

*Participant Perception Implementation of CGCPDI*

	Pre-K- 5 <sup>th</sup> Teacher	6-8 <sup>th</sup> Teacher	9-12 <sup>th</sup> Teacher	K-12 Teacher	Itinerant Teacher	Resource Teacher
Not at all	5/0.54%	5/1.15%	11/2.05%	0/0%	4/18.18%	3/1.61%
Daily/Weekly	873/94.48%	391/90.30%	474/88.27%	43/82.69%	14/63.64%	163/87.63%
Monthly	37/4.0%	36/8.31%	38/7.08%	8/15.38%	4/18.18%	11/5.91%
Quarterly	9/0.97%	1/0.23%	14/2.61%	1/1.92%	0/0%	9/4.84%
Total Number of Responses for Category	924	433	537	52	22	186

Table 5

*Participant Perception of CGCPDI Delivery*

	Pre-K-5 <sup>th</sup> Teacher	6-8 <sup>th</sup> Teacher	9-12 <sup>th</sup> Teacher	K-12 Teacher	Itinerant Teacher	Resource Teacher
Not at all	12/1.30%	15/3.46%	8/1.49%	0/0%	0/0%	1/0.54%
In departments/vertical teams/grade levels	313/33.87%	236/54.50%	225/41.90%	22/42.31%	10/45.45%	51/27.42%
Whole faculty settings	778/84.20%	334/77.14%	431/80.26%	41/78.85%	19/86.36%	152/81.72%
I have not been employed in CCS during all 6 years	169/18.29%	58/13.39%	93/17.32%	8/15.38%	2/9.09%	30/16.13%
Total Number of Responses for Category	*1272 (only 924different respondents, but they could have selected more than one answer for this question)	*643 (only 433 different respondents, but they could have selected more than one answer for this question)	*737 (only 537 different respondents, but they could have selected more than one answer for this question)	*71 (only 52 different respondents, but they could have selected more than one answer for this question)	*31 (only 22 different respondents, but they could have selected more than one answer for this question)	*234 (only 186 different respondents, but they could have selected more than one answer for this question)

or they could indicate that they had not worked in Cumberland County Schools for all six years of the initiative. This research question provided teacher perceptions about the delivery format at each school site. Survey data indicated that over 80% of the teachers reported that the training was delivered at the school site in whole faculty settings. Also important to note, is that there were very few instances in which teacher groups reported that the training was not delivered at all at their school sites. Based on this analysis, this training was primarily delivered in whole faculty settings as reported by an average of approximately 80% of the teachers at each grade level.

#### *Participant Use of New Knowledge and Skills*

- What were the teacher perceptions of the impact of the Creating Great Classrooms professional development initiative on teaching practices?

In the District Needs Assessment survey, Cumberland County teachers were asked to indicate the extent to which they perceived the CGCPDI had impacted their teaching practices. Respondents could choose to indicate a range from not at all, to some extent, to a moderate extent, or to a great extent. As shown in Table 6, over thirty five percent of each group reported it had impacted their practice to some degree. Of the respondents, 34% of the groups reported that it had impacted their practice to a moderate extent; however, a small percentage (7%) of each category did report that the training had not impacted their practice at all. Results of this question indicate that most teachers perceived that the CGCPDI had impacted their practice to some extent or to a moderate extent with over 70% of the respondents selecting one of the two choices.

Table 6

*Participant Perception of Impact of CGCPDI on Teaching Practice*

	Pre-K – 5 <sup>th</sup> Teacher	6-8 <sup>th</sup> Teacher	9-12 <sup>th</sup> Teacher	K-12 Teacher	Itinerant Teacher	Resource Teacher
Not at all	37/4.0%	20/4.62%	48/8.94%	4/7.69%	4/18.18%	8/4.30%
To some extent	312/33.77%	150/34.64%	201/37.43%	19/36.54%	9/40.91%	64/34.41%
To a moderate extent	354/38.31%	171/39.49%	174/32.40%	15/28.65%	7/31.82%	68/36.56%
To a great extent	221/23.92%	92/21.25%	114/21.23%	14/26.92%	2/9.09%	46/24.73%
Total Number of Responses for Category	924	433	537	52	22	186



### *Student Learning Outcomes*

- What are teacher perceptions of the impact of the Creating Great Classrooms professional development initiative on student achievement?

In the District Needs Assessment survey, Cumberland County teachers were asked to indicate the extent to which they perceived the CGCPDI had impacted student achievement. Respondents could choose to indicate a range from not at all, to some extent, to a moderate extent, or to a great extent. As shown in Table 7, 73% of the categories of teachers indicated that the CGCPDI had impacted student achievement to some extent or to a moderate extent. An average of 10% of the respondents in each category did not think it had impacted student achievement at all. Respondents in the itinerant teacher category were least convinced that it impacted student achievement with as many as 18% indicating that it had not.

This analysis shows that most of the teachers who responded to this survey perceived the CGCPDI as impacting their teaching practices. The next section will address administrator perceptions of the CGCPDI.

### *Analysis of Research Questions Addressing Administrator Perceptions of the Professional Development Initiative's Impact on Student Achievement*

Research questions that address administrator perceptions attempted to elicit administrator perception of the CGCPDI. Specifically, the administrator

Table 7

*Teacher Perception of Impact of CGCPDI on Student Achievement*

	Pre-K-5 <sup>th</sup> Teacher	6-8 <sup>th</sup> Teacher	9-12 <sup>th</sup> Teacher	K-12 Teacher	Itinerant Teacher	Resource Teacher
Not at all	48/5.19%	28/6.47%	61/11.36%	7/13.46%	4/18.18%	12/6.45%
To some extent	353/38.20%	168/38.80%	223/41.53%	23/44.23%	9/40.91%	77/41.40%
To a moderate extent	347/37.55%	161/37.18%	179/33.33%	16/30.77%	6/27.27%	65/34.95%
To a great extent	176/19.05%	76/17.55%	74/13.78%	6/11.54%	3/13.64%	32/17.20%
Total Number of Responses for Category	924	433	537	52	22	186

perceptions were elicited to evaluate the systemic, sustained process of the professional development delivery as well as the perceived impact of this initiative on student achievement.

#### *Student Learning Outcomes*

- What were administrator perceptions of the impact of the Creating Great Classrooms professional development initiative on student achievement?

In the District Needs Assessment survey, Cumberland County principals and assistant principals were asked to indicate the extent to which they perceived the CGCPDI had impacted student achievement. Respondents could choose to indicate a range from not at all, to some extent, to a moderate extent, or to a great extent. Table 8 shows that while four administrators indicated that the professional development initiative had not impacted student achievement at all, an average of 60% of the administrators selected that it impacted student achievement to a great extent.

To further analyze the similarities and differences between administrator and teacher perceptions on the impact of the professional development initiative on student achievement, a Fisher's exact test was computed. The non-parametric statistic Fisher's exact test was chosen because the data were categorical and represented a 2x2 analysis of teacher responses as compared to administrator responses. The Fisher's exact test was used to determine if there were nonrandom associations between the two categorical variables. The formula for computing the Fisher's exact test is as follows (Sheskin, p. 506):

2x2 Frequency Table

a	b
c	d

$$P = \frac{(a + c)! (b + d)! (a + b)! (c + d)!}{n! a! b! c! d!}$$

where

$P$  is the probability of obtaining the observed frequencies.

a, b, c, d are the categorical frequencies observed.

n is the sample size.

For each of the Fisher's exact tests conducted in this study, the level of significance was set at .05, or  $p < .05$ . The statistical analyses for the Fisher's exact tests were performed using the SPSS 17.0 quantitative software package.

The results for the Fisher's exact are reported below (see Table 9). It should be noted that a likert scale was used on the survey with responses ranging from not at all, to some extent, to a moderate extent, and to a great extent. For the purposes of analysis with the Fisher's exact test, the researcher decided to combine the responses and allow "not at all" and "to

Table 8

*Administrator Perception of Impact of CGCPDI on Student Achievement*

	Pre-K-5 <sup>th</sup> Administrator	6-8 <sup>th</sup> Administrator	9-12 <sup>th</sup> Administrator
Not at all	2/.024%	0/0%	2/.055%
To some extent	5/.060%	2/.052%	6/17%
To a moderate extent	17/20%	10/26%	13/36%
To a great extent	58/71%	26/68%	15/42%
Total Number of Responses for Category	82	38	36

Table 9

*Comparison of Administrator and Teacher Perception of the Impact of the Professional Development Initiative on Student Achievement*

			Response		Total
			Not at All	To Some Degree	
Position	Teacher	Count	1013	1141	2154
		% within Position	47.0%	53.0%	100.0%
		% of Total	43.9%	49.4%	93.3%
	Administrator	Count	26	129	155
		% within Position	16.8%	83.2%	100.0%
		% of Total	1.1%	5.6%	6.7%
Total		Count	1039	1270	2309
		% within Position	45.0%	55.0%	100.0%
		% of Total	45.0%	55.0%	100.0%

*Note.*

a. 0 cells (.0%) have expected count less than 5. The minimum expected

Count is 69.75.

b. Computed only for a 2x2 table.

some extent” be labeled as “not at all,” and to allow the responses of “to a moderate extent” and “to a great extent” to be labeled as “to some extent.” While other groupings of responses could have been made, this was the decision the researcher made for the purposes of a 2x2 analysis.

According to the Fisher’s exact test as reflected above, there was a significant relationship at the .000 level between the responses of administrators and teachers on their perceptions of the impact of the professional development initiative on student achievement. This analysis shows that administrators and teachers both indicated that they perceived the professional development initiative as impacting student achievement at a higher percentage than would have been expected by chance.

Analysis of the Research Question Addressing Teacher Perceptions of the  
Sustained Systemic Elements of the Professional Development Initiative  
Over a Period of Six Years

In the District Needs Assessment survey, Cumberland County teachers were asked to indicate the extent to which they were satisfied with the systemic, stakeholder driven, sustained, elements of the CGCPDI over a six year period. Respondents could choose to indicate a range from “not at all,” “to some extent,” “to a moderate extent,” or “to a great extent.”

*Participant Reaction*

- What was the level of satisfaction among teachers in Cumberland County Schools with the fact that the CGCPDI had been sustained and systemic for six years?

As shown in Table 10, most levels of teachers indicated satisfaction with the fact that the professional development initiative had been systemic and sustained for six years. Specifically, an average of 36% expressed satisfaction to some degree, 33% indicated a moderate level of satisfaction, and 21% indicated satisfaction to a great extent. Less than 10% indicated that they were not satisfied with the initiative being sustained and systemic over six years.

Analysis of the Research Question Addressing Administrator Perceptions of the  
Sustained Systemic Elements of the Professional Development Initiative  
Over a Period of Six Years

In the District Needs Assessment survey, Cumberland County principals and assistant principals were asked to indicate the extent to which they were satisfied with the systemic, stakeholder driven, sustained elements of the CGCPDI over a six year period. Respondents could choose to indicate a range from “not at all,” “to some extent,” “to a moderate extent,” or “to a great extent.”

*Participant Reaction*

- What was the level of satisfaction among administrators in Cumberland County Schools with the fact that the CGCPDI had been sustained and systemic for six years?

As shown in Table 11, for every level of administrator, the extent of satisfaction with the fact that the professional development initiative had been sustained over a six year period most selected was to a great extent. An average of 61% of administrators selected a satisfaction level of to a great extent. Less



Table 10

*Level of Satisfaction Among Teachers with Sustained/Systemic Implementation of CGCPDI*

	Pre-K-5 <sup>th</sup> Teacher	6-8 <sup>th</sup> Teacher	9-12 <sup>th</sup> Teacher	K-12 Teacher	Itinerant Teacher	Resource Teacher
Not at all	68/.07%	35/.08%	62/11%	5/.096	3./13%	17/.091%
To some extent	314/33%	134/31%	198/37%	19/37%	10/45%	60/32%
To a moderate extent	317/34%	150/35%	159/30%	18/35%	6/27%	66/35%
To a great extent	225/24%	114/26%	118/22%	10/19%	3/13%	43/23%
Total Number of Responses for Category	924	433	537	52	22	186

Table 11

*Level of Satisfaction Among Administrators with Sustained/Systemic  
Implementation of CGCPDI*

	Pre-K-5 <sup>th</sup> Administrator	6-8 <sup>th</sup> Administrator	9-12 <sup>th</sup> Administrator
Not at all	1/012%	0/0%	2/055%
To some extent	5/06%	2/052	6/16%
To a moderate extent	17/20%	10/26%	13/36%
To a great extent	58/72%	26/68%	15/42%
Total Number of Responses for Category	81	38	36

than 1% expressed no satisfaction with these elements of the professional development initiative.

To further analyze the similarities and differences between administrator and teacher perceptions on the satisfaction with the fact that the professional development had been sustained for a period of six years, the non-parametric statistic Fisher's exact test was used and the results are reported in Table 12. It should be noted that a likert scale was used on the survey with responses ranging from "not at all," "to some extent," "to a moderate extent," and "to a great extent." For the purposes of analysis with the Fisher's exact test, the researcher decided to combine the responses and allow "not at all" and "to some extent" to be labeled as "not at all," and to allow the responses of "to a moderate extent" and "to a great extent" to be labeled as "to some extent." While other groupings of responses could have been made, this was the decision the researcher made for the purposes of a 2x2 analysis.

As reflected in the results of the Fisher's Exact test, a significant relationship at the .000 level did exist between administrator and teacher responses with regard to their level of satisfaction with the fact that the professional development initiative had been sustained over a six year period. This analysis shows that the percentage of both teachers and administrators that indicated they were satisfied with the sustained, systemic elements of the professional development initiative was greater than would have been expected by chance. This means that both administrators and teachers were satisfied with

Table 12

*Comparison of Administrator and Teacher Responses Regarding the Satisfaction with the Sustained Systemic Elements of the CGCPDI*

	Case Processing Summary					
	Valid Cases		Missing Cases		Total Cases	
	N	Percent	N	Percent	N	Percent
Position * Response	2309	100.0%	0	.0%	2309	100.0%

Position \* Response Crosstabulation

			Response		Total
			Not at All	To Some Extent	
Position	Teacher	Count	925	1229	2154
		% within Position	42.9%	57.1%	100.0%
		% of Total	40.1%	53.2%	93.3%
	Administrator	Count	16	139	155
		% within Position	10.3%	89.7%	100.0%
		% of Total	.7%	6.0%	6.7%
Total		Count	941	1368	2309
		% within Position	40.8%	59.2%	100.0%
		% of Total	40.8%	59.2%	100.0%

*Note.*

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 63.17.

b. Computed only for a 2x2 table.

the systemic implementation and efforts to sustain the implementation of the CGCPDI.

Qualitative Analysis of Principals' Perceptions of the Rationale  
for the Success of the Professional Development Initiative

In an effort to continuously improve and plan for future initiatives, a follow up survey was administered by the district in a monthly leadership meeting in the fall of 2009. The survey was open-ended and was administered to all eighty seven principals in the school district. Seventy-seven principals responded for a response rate of 89%. The purpose of the survey was to determine what principals viewed as contributors to the positive teacher responses on the initial survey and what their recommendations were for future district-wide professional development initiatives. Specifically, this survey attempted to elicit perceptions of the three elements of the Creating Great Classrooms professional development initiative: systemic, stakeholder-driven, and sustained. A tally system was used to record the number of responses that included similar terms. Table 13 reflects specific wording found in the responses for each of elements, as well as the number of instances similar terms were used and coded for correspondence. The questions on the survey are also shown below along with a narrative recount of the responses and some specific quotes principals included about each area.

Question (1)

*What do you think contributed to the positive perceptions on the "Creating Great Classrooms" professional development initiative as it relates to the*

Table 13

*Frequency of Principal Responses on Systemic Implementation of CGCPDI*

Element	Terms Used in Responses	Frequency of Repeated Similar Terms
Systemic	“universal language”	46
	“involvement at all levels of organization”	17
	“unified focus”	8
	“supportive infrastructure”	5

*systemic implementation district wide? Describe specific positives and any challenges that might have been overcome with regard to this element?*

Of the seventy-seven survey responses, forty-six respondents (60%) included the benefit of having a “universal language” that permeated the school system. Seventeen respondents (22%) indicated that input from all levels of the organization in the identification and development of the content contributed to the receptiveness of the initiative. Eight respondents (10%) identified having a “continuous unified focus” was responsible for the success of the initiative. One principal wrote this as a specific positive: “It was a continuous unified focus that involved all levels of the organization in planning and implementation.”

In terms of challenges that related to the systemic implementation of the professional development initiative, a tally system was also used to record number of responses that included similar terms. Ten respondents (13%) mentioned the varying levels of implementation across the district since some schools had larger numbers of new staff than others in different years. Also, 12 principals (15%) mentioned concerns about the difficulty of finding time to deliver the information to their staffs.

The majority of principals noted the benefit a systemic professional development initiative provides is ensuring a universal language among all teachers and administrators. While they indicate other benefits, this was expressed most frequently.

Time to train staffs between sessions was the biggest issue among principals with 15% reporting that as a concern. No other significant patterns emerged as concerns.

Question (2)

*What do you think contributed to the positive perceptions on the “Creating Great Classrooms” professional development initiative as it relates to the stakeholder input district wide? Describe specific positives and any challenges that might have been overcome with regard to this element?*

Question 2 addressed the stakeholder-driven element of the Creating Great Classrooms professional development initiative. Again, a tally system was used to discover the frequency of responses and the researcher made a determination of which terms had similar meanings. Table 14 reflects terms that were frequently used in responses as well as numbers indicated the frequency of similar terms.

Of the seventy-seven respondents, thirty-seven (48%) indicated the value of stakeholder input in the positive perceptions of the initiative. A sample comment was “The fact that stakeholders were involved gave them buy-in to what we are all doing. It is always good to hear teachers discussing lessons that they taught emphasizing the six characteristics of Great Classrooms. It was also wonderful to have our literacy coaches and central office representatives involved.” Another principal wrote “Stakeholder input is the key to the success of this program.” The only specific challenge noted by 13 principals (16%) in this



Table 14

*Frequency of Principal Responses on Stakeholder Input of CGCPDI*

Element	Terms Used in Responses	Frequency of Repeated Similar terms
Stakeholder-Driven	“opportunities for input”	37
	“our ideas”	6

area was that stakeholders continue to change and the system needs to seek ways to involve stakeholders each year in contributing to the continuous improvement of the initiative so buy-in continues as the system employs new teachers. The high percentage of respondents (48%) noting the value of stakeholder input indicates that this is a significant factor to include in a professional development initiative.

Question (3)

*What do you think contributed to the positive perceptions on the “Creating Great Classrooms” professional development initiative as it relates to the sustained implementation district wide? Describe specific positives and any challenges that might have been overcome with regard to this element?*

Question 3 addressed the element of sustained implementation. Again, a tally system was used to discover the frequency of responses and the researcher made a determination of which terms had similar meanings. Table 15 reflects terms that were frequently used in responses as well as numbers indicated the frequency of similar terms.

Of the seventy seven respondents, twenty respondents (26%) indicated that the positive perceptions about the length of time of the implementation of the professional development initiative could be attributed to the fact that it was not a “fly by night” initiative and that it was consistent and ongoing. One comment was “The argument against professional development many times has been that it is

Table 15

*Frequency of Principal Responses on Sustained Element of CGCPDI*

Element	Terms Used in Responses	Frequency of Repeated Similar Terms
Sustained	“time to measure”	14
	“not a fly by night initiative”	11
	“ongoing and continuous”	9

a passing fad. Staying the course has certainly alleviated that perception.”

Another said, “It has been refreshing to see this last instead of fizzling out over time.”

Fourteen respondents (18%) referenced the fact that longevity of implementation allowed time to measure its effectiveness and that led to the positive perceptions. One respondent said “Sustained implementation gave the initiative depth and time to actually see results in our teachers’ classrooms.”

Specific positives that were mentioned included six respondents (7%) mentioning the fact that all new teachers were required to take the original training and that it was part of the school system culture. One principal noted “We can be sure that all of our teachers have had the training.”

Challenges related to the length of time the initiative has been sustained included two comments about the difficulty of keeping the ideas fresh and maintaining excitement of staff. One principal wrote “The challenge is keeping the information fresh. The brain seeks patterns with helps with recall, but information can become redundant if not presented in a fresh way.” Again, the difficulty of finding time to deliver the information to staffs was mentioned by eight respondents (10%).

The number of positive responses regarding the fact that this professional development initiative was implemented over a period of six years indicates that this is an important element to include in a professional development initiative.

Question (4)

*Is there any other element you would recommend to district leaders when planning a system-wide professional development initiative?*

Question 4 asked principals to highlight any considerations for future implementation of professional development initiatives. Again, the researcher used a tally system to code similar responses and determined which terms were related.

Forty seven respondents (61%) chose to include recommendations. These recommendations varied and did not include much similarity in concept. Two of the most frequent recommendations included 7 respondents (10%) suggesting that the focus be unified throughout the district and four respondents (5%) indicating that stakeholders should continue to be involved.

In terms of challenges, the respondents were more unified. Fourteen respondents (6%) specifically mentioned the consideration of time for future initiatives. They spoke to a need for more time in between trainings and implementation at the school. One noted "The timing is critical as we try to go back and deliver to our staff, get their feedback and homework assignment as we plan to return to the next training session." Another said "I would recommend the district invest more time to train the administrators. It is overwhelming when we rush through the training sessions. I would love to see more time."

While not significant in terms of percentage responding, a few other recommendations were noted. Two of the respondents (.02 %) recommended that the district give consideration to providing training in different sessions for

administrators of different levels. One specific comment was “It is wonderful to have a system-wide initiative but we need to always remember the different grade configurations and unique needs of each.”

Based on the respondents who chose to respond to this question, most seemed to suggest that future professional development initiatives be planned and implemented in a similar format to the Creating Great Classrooms professional development initiative. The recommendation made by most is just to pay close attention to the amount of time it will take for principals to train staffs and to allow sufficient time between trainings for implementation and observation.

Analysis of Student Outcome Data During the Six Year Implementation  
Period of the Creating Great Classrooms Professional  
Development Initiative

To address the final set of questions, this study attempted to link student achievement results to the Creating Great Classrooms professional development initiative over a period of six years. To do this, the study analyzed the district’s composite of 3<sup>rd</sup> through 8<sup>th</sup> grade North Carolina End of Grade Test percent proficient results in the areas of reading and mathematics and the 9<sup>th</sup> through 12<sup>th</sup> grade North Carolina End of Course Test results in the areas of English I and Algebra I from 2003-2009 which were the years the Creating Great Classrooms professional development initiative was implemented.

As required by North Carolina legislation, students in grades 3<sup>rd</sup> through 8<sup>th</sup> take the End of Grade tests (EOGs) designed to measure a student's subject knowledge as specified by the North Carolina Standard Course of Study.

Students in grades 9 through 12 take End of Course tests (EOCs) to measure a student's mastery of course contents as specified in the North Carolina Standard Course of Study. Scores from previous year tests were used to estimate a student's knowledge level at the beginning of the year and are compared with scores at the end of the year to determine growth.

While the state makes determinations each year on subject specific tests, the U.S. Department of Education's No Child Left Behind (NCLB) Act of 2001 requires that all public schools in the country measure and report Adequate Yearly Progress (AYP) in the areas of mathematics and reading. For AYP, a yearly target is set and progress of students in each student sub-group is measured. Student groups include: (1) the school as a whole; (2) White; (3) Black; (4) Hispanic; (5) Native American; (6) Asian; (7) Multiracial; (8) Economically Disadvantaged Students; (9) Limited English Proficient Students; and (10) Students with Disabilities. There must be a minimum of 40 students identified to be designated as a group for AYP purposes. For grades 9 through 12, the areas of reading and mathematics are designated as English I and Algebra I. Tables 16-19 reflect the performance of the subgroups of students designated as Black Students, White Students, and All Students in Cumberland County and in North Carolina in the areas of Reading, Mathematics, English I,

Table 16

*Percentage of CCS & NC Students Proficient in Reading for Grades 3-8 from  
2003-2009*

	2003	2004	2005	2006	2007	*2008	2009
CCS							
Black	75.8	76.9	77.3	78.0	78.3	*39.2	53.3
White	90.0	90.8	91.3	91.3	91.4	*68.6	79.4
All	82.6	83.6	84.0	84.2	84.5	*53.0	65.5
NC							
Black	72.4	74.0	74.7	75.3	76.1	*35.6	49.1
White	90.3	90.9	91.2	91.4	91.7	*68.7	79.4
All	83.3	84.3	84.7	84.9	85.5	*55.6	67.4

*Note.* \*Indicates test re-norming occurred in that year.



Table 17

*Percentage of CCS & NC Students Proficient in Mathematics for Grades 3-8 from 2003-2009*

	2003	2004	2005	*2006	2007	2008	2009
CCS							
Black	79.2	80.7	79.3	*42.3	44.6	49.1	63.2
White	92.6	92.6	92.6	*72.1	73.5	76.4	85.3
All	85.7	86.6	85.8	*56.3	58.2	62.1	73.8
NC							
Black	77.8	79.3	77.5	*42.6	46.4	50.9	64.4
White	93.2	93.6	93.0	*75.2	77.7	80.6	88.3
All	74.6	88.5	87.4	*63.4	66.4	69.9	79.8

*Note.* \*Indicates test re-norming occurred in that year.

Table 18

*Percentage of CCS & NC Students Proficient in English 1 for Grades 9-12 from  
2003-2009*

	2003	2004	2005	2006	*2007	2008	2009
CCS							
Black	46.4	53.6	34.4	42.6	*41.9	52.8	54.1
White	73.9	75.0	57.2	63.7	*63.6	77.7	77.6
All	59.7	64.1	45.1	53.2	*52.5	63.8	64.7
NC							
Black	43.6	46.2	30.0	38.0	*36.9	47.5	48.6
White	75.3	76.0	57.0	62.5	*59.5	75.9	75.9
All	64.7	65.6	47.3	53.8	*51.4	65.7	65.9

*Note.* \*Indicates test re-norming occurred in that year.

Table 19

*Percentage of CCS & NC Students Proficient in Algebra 1 for Grades 9-12 from 2003-2009*

	2003	2004	2005	2006	*2007	2008	2009
CCS							
Black	46.8	52.1	64.4	64.5	*64.9	46.5	51.1
White	73.3	77.8	84.1	84.7	*82.3	73.1	77.4
All	59.3	64.7	73.7	73.8	*73.8	58.9	63.0
NC							
Black	49.2	51.5	64.4	67.4	*68.0	48.1	55.3
White	80.0	80.9	87.6	88.6	*88.4	78.1	82.0
All	70.0	71.1	79.8	81.4	*81.4	68.1	73.1

*Note.* \*Indicates test re-norming occurred in that year.

and Algebra I during the years the professional development initiative was implemented in Cumberland County Schools.

Table 16 reflects the reading proficiency of students in grades 3-8 in Cumberland County as well as North Carolina students in the categories of Black Students, White Students, and All Students. While the percentages of students in the categories of All students and White students in Cumberland County performed in line with those same categories of students in the state, Black students in Cumberland County consistently outperformed Black students in the state. All groups consistently demonstrated improvements each year with the exception of the year the test was re-normed, but an upward swing can be seen again the next year for each group. Overall, Table 16 reflects similar patterns of growth in the area of Reading proficiency for both CCS students as well as NC students during the time period from 2003-2009.

Table 17 reflects the mathematics proficiency of Cumberland County students as well as North Carolina students in the categories of Black Students, White Students, and All Students. While the categories of both All Students and White students in Cumberland County performed lower than those categories of students in the state during most years shown, Black Students in Cumberland County outperformed the same category of students in the state for three years prior to the re-norming of the test. In the year the test was re-normed, all categories of students declined significantly in both the district and the state, but an upward trend can be seen the remaining years.

Table 18 reflects the English I proficiency of Cumberland County students as well as North Carolina students in the categories of Black Students, White Students, and All Students. There was a significant difference between the performance of black students and white students in both the district and the state in the area of English I during the years from 2003-2009. While Black students in Cumberland County consistently outperformed Black students in NC in the area of English I during these years, overall, the patterns of English I growth were similar for students in Cumberland County as well as in North Carolina.

Table 19 reflects the Algebra I proficiency of Cumberland County students as well as North Carolina students in the categories of Black Students, White Students, and All Students. While White students significantly outperformed Black students, in both the district and state, all categories of students were showing growth in Algebra I during the years prior the year the test was re-normed and an upward swing can be seen in the years remaining. Overall, Table 19 shows similar patterns in Algebra I proficiency among students in the district and in the state.

#### 2003-2009 Analysis of AYP Target Status Data in the Areas of Reading and Mathematics for CCS & NC

Another way to examine this data is to compare the AYP target status for both the district and state. The U.S. Department of Education's No Child Left Behind (NCLB) Act of 2001 requires that all public schools in the country

measure and report Adequate Yearly Progress (AYP) in the areas of mathematics and reading. AYP proficiency target goals define the percentage of students expected to meet or exceed the state's proficient level (grade level) in reading/language arts and math each year. Target goals are the same for each group of students. The progress of students in each student sub-group is measured as either "Met" or "Not Met." Tables 20 and 21 reflect the AYP status in the areas of reading and mathematics for Black Students, White Students, and All Students in Cumberland County as well as in North Carolina during the years from 2003-2009.

Table 20 shows that overall, Black Students, White Students, and the category of All Students reached the AYP target in reading in Cumberland County Schools on a consistent basis. In 2008, 3<sup>rd</sup>-8<sup>th</sup> grade Black students in CCS did not make the target and in 2003, 9<sup>th</sup>-12<sup>th</sup> grade Black Students did not make the target. In comparison, Black students in North Carolina have been inconsistent in making AYP targets in the area of Reading during the years shown.

Table 21 reflects that Black students in CCS as well as in the state are not meeting the AYP target in the area of mathematics. Overall, the patterns for reaching AYP targets in CCS are comparable to the patterns in the state.

While improvements were seen in student achievement in Cumberland County Schools over the six year period the CGCPDI was implemented, similar improvements could be noted in other school systems not implementing the

CCGPDI across the state. Results that surpassed the state outcomes were not seen consistently enough to make the case that the CGCPDI can conclusively be linked to improvements in student outcomes in Cumberland County Schools. The last chapter will discuss how future studies can make a stronger case for linking a professional development initiative to student outcomes.





Table 20

*2003-2009 AYP Target Status for 3<sup>rd</sup>-12<sup>th</sup> Grade Students in the Area of Reading  
in CCS and NC (continued)*

	2003	2004	2005	2006	2007	2008	2009
NC Grades 9-12 English I							
Black	Not Met	Not Met	Not Met	Met	Met	Met	Met
White	Met	Met	Met	Met	Met	Met	Met
All	Met	Met	Met	Met	Met	Met	Met

*Note.* \*Safe Harbor (SH) If a particular subgroup meets the 95% participation rate but does *not* meet an annual measurable objective (AMO) for a subject area, the subgroup can still meet the AMO if: 1. the subgroup has reduced the percent of students not proficient by 10% from the preceding year for the subject area; and 2. the subgroup shows progress on the other academic indicators (OAI) which are attendance or graduation rates. \*Confidence Interval (CI) The confidence interval is a way of taking into account the precision of the performance composite.

\*A school's growth status is determined by its growth calculation and its change ratio (a measure of the percent of students meeting their individual growth targets).

Table 21

*2003-2009 AYP Target Status for 3<sup>rd</sup>-12<sup>th</sup> Grade Students in the Area of  
Mathematics in CCS and NC*

	2003	2004	2005	2006	2007	2008	2009
CCS Grades 3-8 Math							
Black	Met	Met	Not Met	Not Met	Not Met	Not Met	Met w/SH
White	Met	Met	Met	Met	Met	Met w/SH	Met
All	Met	Met	Met	Met w/SH	Not Met	Not Met	Met w/SH
CCS Grades 9-12 Algebra I							
Black	Not Met	Not Met	Met	Not Met	Not Met	Not Met	Not Met
White	Met	Met	Met	Met	Met	Met	Met
All	Met	Met	Met	Met	Met	Not Met	Met w/SH
NC Grades 3-8 Math							
Black	Met	Met	Not Met	Not Met	Not Met	Not Met	Met w/SH
White	Met	Met	Met	Met	Met	Met	Met
All	Met	Met	Met	Met	Met	Not Met	Met

Table 21

*2003-2009 AYP Target Status for 3<sup>rd</sup>-12<sup>th</sup> Grade Students in the Area of  
Mathematics in CCS and NC (continued)*

	2003	2004	2005	2006	2007	2008	2009
NC Grades 9-12 Algebra I							
Black	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met	Met w/SH
White	Met	Met	Met	Met	Met	Met	Met
All	Met	Met	Met	Met	Met	Not Met	Met

*Note.* \*Safe Harbor (SH) If a particular subgroup meets the 95% participation rate but does not meet an annual measurable objective (AMO) for a subject area, the subgroup can still meet the AMO if: 1. the subgroup has reduced the percent of students not proficient by 10% from the preceding year for the subject area; and 2. the subgroup shows progress on the other academic indicators (OAI) which are attendance or graduation rate.

## CHAPTER 5: CONCLUSIONS, RECOMMENDATIONS, AND SUMMARY

### Introduction

The value of professional development continues to be emphasized on both educational and governmental levels. Even as this study was being conducted, the U.S. Department of Education launched a new \$4.35 billion dollar grant that includes improving teacher effectiveness as one of the core components of the intent of the grant (Retrieved February 20, 2010, from (<http://www2.ed.gov/legislation/FedRegister/announcements/2009-4/111809c.html>)). While the importance of the professional development of educators is clear, what is less clear is the type of professional development that transforms teaching practices and positively impacts student outcomes.

The purpose of this study was to evaluate a professional development initiative in one large school system in North Carolina by examining specific elements of the initiative, surveying teacher and administrator perceptions of the initiative, and analyzing trends in student outcomes that occurred during the six year period the initiative was implemented. Evaluations of professional development programs are critical to identifying ways to impact teacher practice and ultimately student outcomes. Guskey (2000) outlined a model for evaluating professional development that measures impact on the change in teacher attitudes and beliefs, knowledge, and skills. Based on the work of Joyce and Showers (1988), Guskey's evaluation model recognizes that in order for professional development to translate into student achievement, teachers must

first be convinced of the need to implement the strategies learned through professional development in their teaching practices. For this study, the evaluation model analyzed the perceptions of four levels of information collection: participant reaction, organization support and change, participant use of knowledge and skills, and student learning outcomes.

This study utilized Guskey's levels to evaluate teacher and administrator perceptions of the effectiveness of a six-year professional development initiative implemented in Cumberland County Schools in Fayetteville, North Carolina, entitled the Creating Great Classrooms professional development initiative (CGCPDI). It is important to note that since this program evaluation took place seven years after the beginning of this initiative, the level of participant learning was not evaluated with the existing data collected by the school district because the focus of this study was to assess the overall impact of the initiative and not the individual teacher's level of knowledge of the initiative since the types of learning Guskey (2000) associates with this level were not part of the design of the initiative. A mixed methodology approach using both quantitative and qualitative analysis of survey data was used to address each evaluation level. In addition, trends in student outcome data were also analyzed.

## Summary of the Findings

### *Evaluation of Participant Reaction*

To address this evaluation level, the question of satisfaction with the professional development initiative being systemic and sustained over six years was asked on the initial survey of both teachers and administrators.

*What were the levels of satisfaction among teachers and administrators of the sustained and systemic elements of the CGCPDI over a period of six years?*

Consistent with research from Firestone et al. (2005), Lowden (2005), and Kedro and Short (2004), this study found that participants express more satisfaction with professional development initiatives when they are implemented systemically and create a common language among participants. In this study, most teachers indicated some level of satisfaction with the fact that the professional development initiative had been systemically implemented and sustained for six years. Specifically, an average of 36% expressed satisfaction to some degree, 33% indicated a moderate level of satisfaction, and 21% indicated satisfaction to a great extent. Less than 10% indicated that they were not satisfied with the initiative being systemically implemented and sustained over six years.

Additionally, 60% of the administrators expressed a great extent of satisfaction with the fact that the professional development initiative had been systemically implemented and sustained over a six year period. Less than 1%

expressed no satisfaction with these elements of the professional development initiative.

As reflected in the results of the Fisher's exact test, a significant relationship at the .000 level did exist between administrator and teacher responses with regard to their level of satisfaction with the fact that the professional development initiative had been sustained over a six year period. This analysis shows that the percentage of both teachers and administrators that indicated they were satisfied with the systemic, sustained elements of the professional development initiative was greater than would have been expected by chance. This means that both administrators and teachers were satisfied with the systemic implementation and efforts to sustain the implementation of the CGCPDI.

Participants clearly indicated satisfaction with the fact that this initiative was systemic and sustained over a six year period. As Guskey (2000) notes, measuring participant satisfaction of professional development can improve the design and delivery of future training. Analyses of the survey responses that address this evaluation level substantiate the need for administrators to ensure a district professional development initiative is designed and delivered systemically and sustained over a period of time.

Guskey (2000) also indicates that in most cases, it is necessary to have positive reactions from participants at this level of evaluation in order to achieve high evaluation results at subsequent evaluation levels. It is true for this study

that the positive responses at this level are indicative of what was found at the higher levels of evaluation as well.

### *Evaluation of Organization Support and Change*

This level of evaluation focuses on the organizational context in which the professional development occurs. Specifically, Guskey (2000) identifies the factors that contribute to this level include the district policies, alignment with organizational goals, resource allocation, and school and district administrator support. To address this level of evaluation, teachers were asked how the training was delivered at their sites and principals were asked to explain why each of the elements received such positive feedback on an initial survey and to elaborate on specific positives as well as challenges they encountered with each of the three elements of the professional development initiative.

*How did teachers perceive the Creating Great Classrooms professional development training to be delivered at the school site?*

Survey data indicated that over 80% of the teachers reported that the trainings were delivered at the school site in whole faculty settings. Also important to note, is that only 36 teachers, or less than one percent, reported that the training was not delivered at all at their school sites. These responses indicate the majority of teachers in the school district received the training systemically. In order to further analyze the perceptions of the systemic and sustained implementation, this study asked another question of school administrators:



*What are administrator's perceptions of challenges and successes among the three elements of the CGCPD initiative?*

This question was administered to principals to determine what needs existed when planning future professional development initiatives. A qualitative analysis was conducted on these open-ended responses and the researcher coded the responses in similar categories and tallied those that fell into the categories. 60% of the principals noted the benefit a systemic professional development initiative provides is ensuring a universal language among all teachers and administrators. While they indicate other benefits, this was expressed most frequently.

Time to train staffs between sessions was the biggest issue among principals with 15% reporting that as a concern. No other significant patterns emerged as concerns.

Another factor considered at this level are the district policies that support or hinder the initiative. At the end of the first year of the professional development initiative, the Cumberland County Board of Education approved an addendum to all new teacher and administrator contracts which required completion of the Creating Great Classrooms training. This ensured consistent focus and a common language among all teachers and administrators. This was echoed as a positive by principals repeatedly in the survey responses. They specifically identified the benefit of knowing their entire staff had been trained and the fact that their expectations were clearly communicated from a district standpoint.

In terms of school and district administrator support of the initiative, one of the expectations was that a triad consisting of the principal, literacy coach, and a central office representative participated in the training together and then delivered the training as a triad to the assigned school staff. Handouts, notebooks, and resources were compiled at the district level and delivered to each school site for all staff members. Resources were also posted electronically on the district's internal web site. The district also invested in the development of an electronic walkthrough template which included the components of the district professional development initiative. Additionally, the district purchased a handheld PDA on which the software was loaded so that administrators could document their observations of the implementation of the six characteristics.

It is clear that the district had policies in place that related to this initiative and also aligned personnel and resources at the district level to support the initiative. As mentioned in chapter 2, according to Laine and Otto (2000) it is critical that district leadership is committed to funding and transmitting messages related to the professional development throughout the organization. Further, Lowden's (2005) research affirms that for long-term transformation to occur in professional development planning and implementation there must be support from the whole organization.

Richard Elmore (2002) noted that "educational improvement is about moving the whole organization of teachers, administrators, and schools toward the culture, structure, norms, and processes that support quality professional

development in the service of student learning” (p.15). Both teachers and administrators in this study expressed satisfaction with the fact that this initiative was systemic.

#### *Evaluation of Participant Use of Knowledge and Skills*

To address this evaluation level, teacher perceptions were elicited to determine the impact of the initiative on teacher practices. Teachers were asked the following question:

*How frequently do you implement the six characteristics of the CGCPDI in your classroom?*

Of the 2,309 responses, an average of 84% indicated that they utilized the six characteristics of the professional development initiative daily or weekly which was the most regular utilization choice on the likert scale. As indicated in chapter 2, many researchers (Fullan & Stiegelbauer, 1991; Guskey, 2005; Kent, 2004), have lamented that teachers who participate in staff development do not always translate their new learning into practice. It is ultimately the teacher who decides how much change in practice occurs (Kent). The data reflect that the majority of teachers in Cumberland County self-reported that they were implementing the six characteristics of the CGCPDI in their classrooms.

A second question that was asked of teachers that addresses this level was:

*What were the teacher perceptions of the impact of the CGCPDI on their teaching practices?*

Respondents could choose to indicate a range from not at all, to some extent, to a moderate extent, or to a great extent. Over 35% of each group reported it had impacted their practice to some degree. 34% of the groups reported that it had impacted their practice to a moderate extent; however, a small percentage (7%) of each category did report that the training had not impacted their practice at all. Results of this question indicate that most teachers perceived that the CGCPDI had impacted their practice to some extent or to a moderate extent with over 70% of the respondents selecting one of the two choices.

As noted in chapter 2 of this study, absent collaborative decision making that is based on available research related to teacher, school and district needs, and the practicality of implementing the recommended strategies, a professional development initiative will likely not be implemented, and thus not be able to impact student outcomes. Collective action is necessary to induce school improvement and systemic change (Joyce & Showers, 1988; O'Day, 2002). Stakeholders were involved in the planning and implementation of this initiative.

In order to impact teacher practice and ultimately student outcomes, professional development initiatives must be sustained and not viewed as fragmented or faddish. As Darling-Hammond (1998) found, professional development that is sustained positively impacts teacher perception of practice and also yields learning gains for students. Both teachers and administrators in

this study expressed satisfaction with the fact that this initiative was sustained over a six year period.

In this study, teachers and administrators expressed satisfaction with the fact that this professional development initiative was systemically planned and implemented and sustained over a period of six years. Teachers also indicated that the professional development was conducted at their sites with whole faculty groups. The majority of teachers self reported that they utilized what was learned in the district-wide professional development initiative and the majority indicated that the initiative impacted their instructional practice. Teachers and administrators as well indicated that they perceived the initiative positively impacted student outcomes.

#### *Evaluation of Student Learning Outcomes*

*To address this evaluation level, the researcher utilized several resources.* One component that was used was the survey question asked of both teachers and administrators about their perceptions of the impact of the CGCPDI on student achievement.

*What were teacher perceptions of the impact of the CGCPDI on student achievement?*

Seventy-three percent of the categories of teachers indicated that the Creating Great Classrooms professional development initiative had impacted student achievement to some extent or to a moderate extent. An average of 10% of the respondents in each category did not think it had impacted student

achievement at all. Respondents in the Itinerant teacher category were least convinced that it impacted student achievement with as many as 18% indicating that it had not.

As outlined in chapter 2 of this study, Guskey (2002) has argued that in order to impact teacher practice, staff developers need to pay attention to the process of teacher change. He notes that professional development programs alone do not bring about teacher change, and that actually, it is only when the teacher sees that the change in classroom practices leads to positive student outcomes that the professional development actually produces a lasting impact on teachers' beliefs. Guskey's model, suggests a linear chain of events that reflect changes in teacher attitudes and beliefs after having an opportunity to employ new methods and experiencing success in student achievement. In this study, the majority of teachers indicated that this professional development initiative did have an impact on student achievement.

*What were administrator perceptions of the impact of the CGCPDI on student achievement?*

As found in the review of literature with studies by Dyson (2007) and Lowden (2003), the professional development initiative must be seen as a priority for administrators. In this study, the professional development initiative was implemented by principals at the school sites, which reflected it as a priority and the overwhelming positive feedback about the initiative by principals on the follow up survey.

While four administrators indicated that the professional development initiative had not impacted student achievement at all, 60% of the administrators selected that it impacted student achievement to a great extent. Similar to the results from Darling-Hammond's 2009 research indicating a need for teachers to perceive a professional development as effective, so too, do administrators need to share that perception. Studies conducted by Dyson (2007) and Lowden (2003) clearly indicate that for change in practice to occur, the professional development initiative must be seen as a priority for administrators.

*How did the responses of teachers and administrators regarding their perceptions of the impact of the professional development initiative on student achievement compare?*

The data indicated that there was a significant relationship at the .000 level between the responses of administrators and teachers on their perceptions of the impact of the professional development initiative on student achievement. This analysis shows that administrators and teachers both indicated that they perceived the professional development initiative as impacting student achievement at a higher percentage than would have been expected by chance.

Additional information used for this level of evaluation were trends in student outcome data in reading and math for 3<sup>rd</sup> through 9<sup>th</sup> graders during the years the professional development initiative was implemented. Overall, the trends in student outcome data were not significantly different than those seen at

the state level. While gains were made, they were at about the same rate and in the same areas as those in the state.

### Conclusions

This study focused on one large school district in North Carolina. Although the results may not be generalizable to all school districts, there are many implications for school and district leaders. Guskey's (2000) evaluation model was helpful in evaluating this initiative because it provided a framework on which to base the evaluation. Based on the findings of this research, the following are implications to consider:

#### Implications for Principals

Studies conducted by Dyson (2007) and Lowden (2003) indicate that for change in practice to occur, the professional development initiative must be seen as a priority for administrators. Principals should model, support, and celebrate the efforts of the professional development initiative. Principals must provide the planning time, collaboration opportunities with other teachers, and resources for teachers to effectively implement the strategies. Principals must also provide feedback and support for teachers as they implement new strategies.

#### Implications for District Leaders

In 2002, Sparks noted that "district and school leaders play an essential and irreplaceable role in creating high-quality professional learning for all teachers" (pp. 11-14). Likewise, in examining school districts that have shown dramatic improvements in student performance, Odden and Archibald (2009)



found that school districts that doubled their performance systematically employed an effective professional development plan.

Kent (2004) also noted that many school districts are not investing their professional development funds in coherent models that solicit input from teachers or that are sustained over time.

This study focused on a district that has concentrated its resources on a systemic professional development model that included internal teacher and administrator input as well as national brain research on its content and strategies. Additionally, the initiative was sustained over a period of six years. The findings of this corroborate the research mentioned above. Teachers and administrators expressed satisfaction with the model and perceived that it positively impacted instructional practice and student achievement.

Research suggests that a district-wide coherent professional development model is far better than for each school to implement its own program. Additionally, Laine and Otto (2000) conducted a study for the North Central Regional Educational Laboratory that examined an exemplary private organization and a school district with proven results. Their findings indicate that it is critical that district leadership is committed to funding and transmitting messages related to the professional development throughout the organization. District leaders should coordinate planning efforts to include all stakeholders in developing a professional development program. A process for evaluation must be designed during the planning phase. Planning efforts should be focused on

district student outcome data and organizational goals. Resources and personnel should be allocated to support the effort and messages from the district office must regularly emphasize the importance and rationale of the initiative. District leaders should also participate in the planning, implementation, support, and evaluation of the professional development initiative. District indicators as well as individual student baseline data, such as the academic change of individual students should be collected and ongoing evaluation should occur to monitor the progress of the initiative to more accurately measure the impact on student outcomes.

Research, not opinion, should be the basis for any professional development initiative. While the content of this initiative was based on stakeholder input, which is a critical element to the success of a professional development initiative, research of what constituted effective classrooms could have been the basis for the stakeholder input, and not merely the perception of what constituted effective classrooms.

District leaders can impact classroom instruction. Corcoran et al. (2001) support this by stating that district leaders can play an important role in improving instruction by providing vision, support, and policy coordination via the three elements of professional development in this study which were: systemic implementation, stakeholder-input, and sustained efforts. A follow up study was administered to principals to examine their perceptions on why reactions from teachers and administrators had been so positive on the initial survey about the

professional development initiative. Principals specifically indicated that the success of the initiative in terms of positively impacting teacher perception, teacher practice, and student outcomes was largely due to the fact that it was planned and delivered systemically, it included stakeholder-input from all levels, and it was sustained over a period time.

#### Board of Education Members

District leaders can impact classroom instruction. Corcoran et al. (2001) support this by stating that district leaders can play an important role in improving instruction by providing vision, support, and policy coordination. Board of Education Members should develop policies that support the professional development initiative and ensure that the investment can be sustained. As reflected in the responses by principals in this study, there must be consideration given to how new employees will be indoctrinated in the initiative. Principals indicated one of the strong points of this initiative was that due to the policy requiring new employees receive the training they could be assured that all of their teachers shared the same language and knew the expectations.

#### State Departments of Education

Research indicates that school and district leaders are able to impact student achievement but they must have the knowledge and tools to plan and implement effective professional development activities as outlined by the NSDC standards and research based practice (Darling-Hammond & Richardson, 2009b; Guskey & Yoon, 2009; Odden & Archibald, 2009). The issue, then, is to identify

the elements of effective professional development that will best help school and district leaders in this effort. Guskey (2000) acknowledges that absolute proof that professional development is the sole contributor to any educational improvements is not possible in the complex business of education. Too many other intervening variables could potentially account for improving student outcomes making isolating the effects of any single professional development activity impossible. Yet Guskey, (2000) does state “in the absence of proof, you can collect very good ‘evidence’ about whether or not professional development is contributing to specific gains in student learning” (p. 87).

State Departments of Education should lead the way in providing the latest research based professional development strategies for local school systems. They should also provide guidance for evaluating professional development programs so that there is a consistent method of evaluating, thereby, comparing results of different school system initiatives. With the large monetary investments that continue to be made in professional development, it is critical to include a process for evaluation in the planning phase. Evaluation of this particular professional development initiative was difficult because there was no baseline of teacher perceptions or student performance on which to base comparisons as a result of the initiative.

### Recommendations

Research that links professional development to student achievement continues to be needed. As noted in chapter 2 of this study, while there are still

intervening factors which make it difficult to conclusively link the relationship of effective professional development for teachers to improved outcomes for students, there is certainly no shortage of research that seems to provide what Guskey (2000) referred to as 'good evidence' (p. 87) pointing to the link. One recommendation is that districts should outline an evaluation model and all of the necessary indicators to be measured as well as data collection methods and timelines during the planning phase.

It is also recommended that measures other than self-perceptions be included in formative and summative evaluations of professional development initiatives. Measures to indicate teacher understanding, perception, and implementation of the new knowledge and skills should also be examined. It is also important to include pre-assessments and post-assessments to better gauge the level of improvement. This was not part of this study; however, since the study was conducted six years after implementation, it was an assumption of the study that all teachers understood the content of the initiative enough to implement it.

To more accurately measure the impact of a professional development initiative on student achievement, it is recommended for future studies, that baseline student outcome data be recorded and systematically measured formatively during the implementation of a professional development initiative. Individual student academic change should be analyzed as well as overall district data.

Another recommendation would be to include student perceptions as part of the evaluation process. This study did not incorporate student perceptions. Future studies could explore student perception of change in teacher practice, frequency of teacher implementation, and impact on their learning.

### Summary

This study corroborates the recent findings from Guskey and Yoon (2009) which continue to perpetuate the difficulties in linking professional development to student learning and underscore the need for continuous research on the impact of professional development on student outcomes. No single study will conclusively link professional development to student achievement. More longitudinal studies that formatively measure student outcomes and teacher knowledge and practice prior to, during, and after the implementation of a professional development initiative need to be conducted. The coordination of personnel, resources, and policies to support the initiative, as well as the degree of both school level and district level support also need to be measured formatively throughout the process.

As established in the seminal work of Joyce and Showers (1988) over a decade ago, professional development will only be translated into teaching practices if the professional development program is effective. They also noted that if not implemented, the impact of these practices on student outcomes could not be measured. While the study does not conclusively link professional development to improved student outcomes, the contribution of this study is that

professional development that is systemically implemented, is based on stakeholder-input, and is sustained over time is likely to be implemented in teacher practice and supported by building administrators.

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APPENDIX A: 2008 FEEDBACK FROM CREATING GREAT CLASSROOMS

TEACHER SELF ASSESSMENT

<b>2008 Feedback from Creating Great Classrooms Teacher Self Assessment</b>	
<b>Characteristic &amp; Definition as developed by CCS Teachers &amp; Administrators in 2003</b>	<b>Teacher Self-Assessment</b>
<p style="text-align: center;"><b>A POSITIVE EMOTIONAL CLIMATE</b></p> <ol style="list-style-type: none"> <li>1. In my classroom, all relationships are valued, respected and supported.</li> <li>2. My classroom environment is safe and non-threatening.</li> <li>3. The physical structure of my classroom is inviting.</li> <li>4. My students and I share an enthusiasm for learning.</li> </ol>	<p>On a scale of 1-4 with 4 being the highest, rate the level at which <u>you</u> apply the characteristics of a <b>POSITIVE EMOTIONAL CLIMATE</b> in your classroom</p> <p style="text-align: center;"><b>69%</b></p>
<p style="text-align: center;"><b>AN ORGANIZED LESSON BUILT AROUND A CLEAR, MEASURABLE GOAL</b></p> <ol style="list-style-type: none"> <li>1. I clearly communicate learning goals in order to set a purpose and establish student ownership.</li> <li>2. My goals are written to reflect measurable progress.</li> <li>3. I develop organized lessons designed to achieve the goals.</li> </ol>	<p>On a scale of 1-4 with 4 being the highest, rate the level at which <u>you</u> apply the characteristics of <b>ORGANIZED LESSONS</b> in your classroom</p> <p style="text-align: center;"><b>62%</b></p>
<p style="text-align: center;"><b>ALL STUDENTS ARE ACTIVELY ENGAGED</b></p> <ol style="list-style-type: none"> <li>1. I facilitate student-centered lessons.</li> <li>2. My classroom management plan is conducive for active participation.</li> <li>3. In my classroom, learning is not optional for any student.</li> </ol>	<p>On a scale of 1-4 with 4 being the highest, rate the level at which <u>you</u> apply the characteristics of <b>ACTIVE ENGAGEMENT</b> in your classroom</p> <p style="text-align: center;"><b>62%</b></p>

<p style="text-align: center;"><b>LEARNING IS MEANINGFUL FOR ALL</b></p> <ol style="list-style-type: none"> <li>1. I design lessons so that students can relate new learning to prior learning, real-life situations / experiences.</li> <li>2. I use research-based instructional strategies to help students make the learning meaningful.</li> <li>3. I provide a variety of differentiated opportunities in a lesson for students to construct meaning.</li> <li>4.</li> </ol>	<p>On a scale of 1-4 with 4 being the highest, rate the level at which <u>you</u> apply the characteristics of <b>MEANINGFUL LEARNING</b> in your classroom</p> <p style="text-align: center;"><b>61%</b></p>
<p style="text-align: center;"><b>ACADEMIC RIGOR WITH HIGH EXPECTATIONS FOR ALL</b></p> <ol style="list-style-type: none"> <li>1. My lessons are challenging for all students.</li> <li>2. I emphasize critical thinking skills in my classroom.</li> <li>3. In my classroom, students are responsible for their own learning.</li> <li>4. I convey the attitude that all students will be successful.</li> </ol>	<p>On a scale of 1-4 with 4 being the highest, rate the level at which <u>you</u> apply the characteristics of <b>ACADEMIC RIGOR</b> in your classroom?</p> <p style="text-align: center;"><b>59%</b></p>
<p style="text-align: center;"><b>FEEDBACK IS CONTINUOUS</b></p> <ol style="list-style-type: none"> <li>1. I provide quality feedback that is positive, specific, meaningful and continuous.</li> <li>2. I provide feedback in various forms to all learners.</li> <li>3. I provide feedback that is aligned to the objective.</li> </ol>	<p>On a scale of 1-4 with 4 being the highest, rate the level at which <u>you</u> apply the characteristics of <b>CONTINUOUS FEEDBACK</b> in your classroom</p> <p style="text-align: center;"><b>63%</b></p>

APPENDIX B: CUMBERLAND COUNTY SCHOOLS' SIX  
CHARACTERISTICS OF CREATING GREAT CLASSROOMS

Positive Emotional Climate (Payne, 1996; Sousa, 2006)

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- All relationships are valued, respected, and supported
- The classroom environment is safe and non-threatening
- The physical structure of the classroom is inviting
- Teachers and students share an enthusiasm for learning

An Organized Lesson is Built Around Clear Measurable Goals  
(Marzano, Pickering, & Pollock, 2001; Sousa, 2006)

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- Learning goals are clearly communicated in order to set purpose and establish student ownership
- Goals are written to reflect measurable progress
- An organized lesson is designed to achieve the goal

Active Engagement (Jensen, 2005; Sousa, 2006)

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- The teacher is the facilitator in student-centered lessons
- Classroom management is evident to allow active participation
- Learning is not optional for any student

Meaningful Learning  
(Payne, 1996; Marzano et al., 2001; Jensen, 2005; Sousa, 2006)

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- Students can relate new learning to prior learning, real life situations/experiences
- The teacher uses research-based instructional strategies to help students make the learning meaningful
- The teacher provides a variety of differentiated opportunities throughout a lesson for students to construct meaning

Academic Rigor (Payne, 1996; Marzano et al., 2001)

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- Lessons are challenging for all students
- Critical thinking skills are emphasized
- Students are responsible for their own learning
- Teacher conveys the attitude that all students will be successful

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### Continuous Feedback (Marzano, 2001)

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- Quality feedback is positive, specific, meaningful and continuous
  - Feedback is initiated by teachers and peers and is provided to all learners in various forms
  - Feedback is aligned to the objective
-

## APPENDIX C: INSITUTIONAL REVIEW BOARD APPROVAL LETTER



January 21, 2010

Anna Theresa Perry  
1218 Rom Wood Dr.  
Fayetteville, NC 28312

**RE: Exempt Certification for UMCIRB #: 10-0017** *ICM*  
Funding Source: unfunded

Title of Research: Systemic, Stakeholder Driven, & Sustained: Exploring Elements that Positively Impact Teacher and Administrator Perception of Professional Development and Student Achievement

Dear Anna Theresa Perry:

On 1.18.10, the University & Medical Center Institutional Review Board (UMCIRB) determined that your research meets ECU requirements and federal exemption criterion 4<sup>c</sup> which includes research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. *NOTE: 1) This information must be existing on the date this IRB application is submitted. 2) The data collection tool may not have an identifier or code that links data to the source of the information.*

It is your responsibility to ensure that this research is conducted in the manner reported in your Internal Processing Form and Protocol, as well as being consistent with the ethical principles of the Belmont Report and your profession.

This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any change, prior to implementing that change, must be submitted to the UMCIRB for review and approval. The UMCIRB will determine if the change impacts the eligibility of the research for exempt status. If more substantive review is required, you will be notified within five business days.

The UMCIRB Office will hold your exemption application for a period of five years from the date of this letter. If you wish to continue this protocol beyond this period, you will need to submit an Exemption Certification Request at least 30 days before the end of the five year period.

Sincerely,

Chairperson, University & Medical Center Institutional Review Board

APPENDIX D: CCS NEEDS ASSESSMENT SURVEY



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## CCS Needs Assessment Survey

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**\* Required Information.**

page 1

**The CCS School Support Survey will be used as a tool to assist your school and our district gather data on a variety of areas that affect instruction. Responses are anonymous and results may be shared externally for research purposes. The survey should not take more than 10 minutes of your time. Thank you for your participation.**

**\* 1. Please select your position: (Select one option)**

- |   |                                    |
|---|------------------------------------|
| <input type="checkbox"/> Principal                                  | Go to Page No. 2                   |
| <input type="checkbox"/> Assistant Principal                        | Go to Page No. 2                   |
| <input type="checkbox"/> Classroom Teacher                          | Go to Page No. 2                   |
| <input type="checkbox"/> Itinerant Teacher                          | Go to Page No. 2                   |
| <input type="checkbox"/> Resource Teacher                           | Go to Page No. 2                   |
| <input type="checkbox"/> Teacher Assistant                          | Go to Page No. 2                   |
| <input type="checkbox"/> Lab Assistant                              | Go to Page No. 2                   |
| <input type="checkbox"/> Other (please type in your position) _____ | Stop, you have finished the survey |

If Did Not Answer Then  
Go to Page No. 2

page 2

**\* 2. Which grade level(s) best describes students you serve:**

- Pre-K - 5
- 6-8
- 9-12
- K-12

**\* 3. How many years have you been employed with Cumberland County Schools?**

- 0-4
- 5-10
- 11-20
- 20+

page 3

**4. Please use the associated scale to rate the following:**

	<b>Not at all</b>	<b>Daily/ Weekly</b>	<b>Monthly</b>	<b>Quarterly</b>
* (I) To what degree do you utilize the six characteristics of Creating Great Classrooms in your instruction? (Select one option)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**5. Please use the associated scale to rate the following:**

	<b>Not at all</b>	<b>To some extent</b>	<b>To a moderate extent</b>	<b>To a great extent</b>
* (a) To what extent has Creating Great Classrooms training impacted instructional practice in your school/classroom? (Select one option)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* (b) To what extent has Creating Great	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Classrooms training impacted student achievement in your school/classroom? (Select one option)				
*(c) To what degree are you satisfied with the fact that Creating Great Classrooms training has been a sustained systemic professional development model in Cumberland County Schools for the past six years? (Select one option)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**\* 6. Each year for the past six years, the district-wide focus on Creating Great Classroom components has been delivered at my school in the following ways: (Check all that apply)**

- In departments, grade levels, or vertical teams
- In whole faculty settings
- Components of Creating Great Classrooms are not delivered to the staff at my school
- N/A ( I have not been employed in CCS for 6 years)



## APPENDIX E: CGC LEADERSHIP SURVEY

There has been overwhelmingly positive feedback on surveys regarding the CCS Creating Great Classrooms Professional Development Initiative (CCS PDI). Three elements that have contributed to that success include:

- 1) **Systemically Implemented** – A continuous, unified focus that involves all levels of the organization in planning and implementation.
- 2) **Sustained** – Ongoing over an extended period of time.
- 3) **Stake-holder Driven** – Input is sought from all who affect student learning.

Please complete the following information which will be used to inform future CCS professional development initiatives and also may be used for external research purposes.

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Please indicate the level at which you are a principal:

High School  
Middle School  
Elementary School

Please indicate the number of years you have been a principal in CCS:

1-5  
6-10  
11-15  
16-20  
20+

1. What do you think contributed to the positive perceptions on the CGC PD as it relates to the **systemic implementation** district wide? Describe specific positives and any challenges that might have been overcome with regard to this element.
2. What do you think contributed to the positive perceptions on the CGC PD as it relates to the **sustained implementation** district wide? Describe specific positives and any challenges that might have been overcome with regard to this element.
3. What do you think contributed to the positive perceptions on the CGC PD as it relates to the **stakeholder input** district wide? Describe specific positives and any challenges that might have been overcome with regard to this element.
4. Is there any other element you would recommend to district leaders when planning a system-wide professional development initiative?