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The dissertation of Linda L. Birdsong entitled *Development of an Instrument to Ascertain Teachers' Use of CFIP as a Tool for Improving Instruction and Learning*, submitted to the School of Education in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Instructional Leadership for Changing Populations at Notre Dame of Maryland University has been read and approved by the Committee.

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Development of an Instrument to Ascertain Teachers' Use of CFIP as a Tool for Improving Classroom Instruction and Learning

by

Linda L. Birdsong

A Dissertation

Submitted in Partial Fulfillment of

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Abstract

This research was designed to develop an instrument to evaluate how use of the Classroom Focused Improvement Process (CFIP) affected teachers' perceptions of using student data. The CFIP process requires that teacher teams regularly analyze student data, to strategically plan, reevaluate, and re-plan. Teams own achievement for all students. Ainsworth (2006) asserted teams must use collaboratively created short-cycle assessments to ensure common student growth. Data guide team-adjusted teaching, and professional development. Teacher belief in interim assessments' potential derives from formative assessment research, particularly studies demonstrating formative assessments and daily classroom feedback can improve teaching and student performance (Goertz, Olah, & Riggan, 2009). Engaging in this process, perhaps teachers can shift data perceptions from an accountability tool, to a means to improve student learning. The *No Child Left Behind Act* stipulated every child should test on-grade-level in reading and mathematics by 2014, evidenced by state standardized tests. Federal funding formulas required states to decrease achievement gaps, increase graduation rates, and prepare students for careers or college. The March 2010 draft *Reauthorization of the ESEA* stated teachers believe colleague collaboration is imperative to improve student achievement (USDE, 2010, p. 5), and Daniels (2009) testified that school structures must exist for teachers/administrators to analyze data and set goals. Additional research noted achievement gains when teachers examined student data in Professional Learning Communities (Aylsworth, 2012; Gallagher, Means, & Padilla, 2008; Galligan, 2011; Goddard, Hoy, & Hoy, 2000; Roberts, 2010). This research developed an instrument to discern CFIP's use in improving instruction and learning. The research design was a

mixed methods concurrent design using survey research with quantitative analysis and open-ended qualitative questions, and qualitative structured, teacher interviews. Participants included 81 teachers from four CFIP and four non-CFIP elementary schools in two U.S.A. Mid-Atlantic suburban school systems. Conclusions indicated that value exists in pursuing research to discern if teacher teams using data literacy methods consistently and frequently can improve classroom instruction and student learning. Surveyed teachers identified the need and desire for more time for team data analysis and data literacy coaching. Educational leaders must consider providing this time and training for all teacher teams.

Dedication

This work is dedicated to my husband, Scott K. Birdsong, whose dedication and unending support led me to fulfill my dreams of becoming a teacher and teacher leader, and completing my doctoral journey. It is also dedicated to the teachers who shared their knowledge and ideas with me to accomplish my goal.

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When I began the Ph.D. journey in 2007, I was convinced that this would be a long, but very worthwhile endeavor. That conviction has not wavered, but the support, love, and guidance I have experienced from so many has made this fruition possible, and I am truly grateful.

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Finally I owe a huge debt of thanks to my dear friends, whose encouragement and unfailing faith in my ability to complete this dissertation were beacons during the journey. A very special thanks is reserved last for my dear friend, mentor, professor, guide, and champion, Dr. Diane Davis, whose periodic checks on my progress, encouraging words, sage advice, belief in me, and promise to not fully retire and relocate until I finished this dissertation were golden nuggets that always fueled my optimism and kept me going. Education has had a true friend and advocate in Dr. Davis, and so have I!

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Chapter I

INTRODUCTION

With the challenges in American society centering upon accountability, fiscal responsibility, and global competition, focus upon the United States' public education system is forefront. Legislation relevant to reform in American education included the draft 2010 reauthorization of the 2002 *No Child Left Behind Act* (*NCLB*), which required strategic state assessment and accountability to insure that each child maximally learns. This 2010 bill stated that teachers believe they must collaborate with colleagues to improve student achievement using provided structures for data analysis to individualize student goals and enhance student achievement (U.S.D.E., 2010, p. 5). As a precursor to this proposed reauthorization, Halverson, Grigg, and Prichett (2005) noted "recent discussions in data-driven decision making have focused on the generation, analysis, and use of student achievement data with teachers as the primary response to accountability demands" (p. 57).

Additionally the federal 2009 *Race to the Top* (U.S.D.E., 2009) bill increased accountability measures to reverse school failures, prepare and keep great teachers in classrooms, use data to inform instruction, maintain rigor in standards, and sustain effective reform.

With increased demand in accountability for success of all students, there were several issues that warranted further research, including: assessment as an accountability measure or tool for improving teaching and learning; use of Professional Learning Communities (PLCs), which emphasize collaboration to ensure student achievement; distributed leadership in schools to drive improvement; data-driven instructionimprovement; and, the redefining of professional development for teachers to better meet their learning needs and improve instruction.

While many studies have been conducted on the previously named topics, it may be beneficial for teachers to identify or create a process that integrates and incorporates all of these elements. Suggestions from researchers examining implications for educational practice and suggestions for further research noted that an effective PLC must incorporate and integrate multiple factors. Aylsworth (2012) noted that schools incorporating PLCs must: set a collaborative vision for the work team; understand and implement exemplary PLC structures and visions; provide resources and ongoing support; and, develop supportive PLC leadership.

Roberts (2010) purported from her research that teachers evidenced strength in collaboration and experience in teaching to ensure high-level student learning. Teachers noted, however, that they required dedicated time to collaborate, and to receive training in data analysis. Her resultant suggestion was that “district personnel need to be involved in developing a more consistent process and consistent PLC forms to be used in all schools” (p. 3).

Dial (2011) described research in which teacher teams assisted in using data analysis to change classroom practice and noted dramatic effects in student outcomes in a

fifth grade team. The team used their data to design a program, which enabled 98% of their students to attain proficient or advanced levels in mathematics. Ziskind (2013) also described research findings wherein a staff in a high performing Title One elementary school used data-driven decision making with teams to “make significant gains in student learning and school improvement” (p. 83). Mandinach, Honey, and Light (2006) maintained that “educators must have specific uses in mind when examining data, and the decisions they make must be both strategic and timely” (p.6). Datnow, Park, and Kennedy-Lewis (2012) added that teachers must have specific measurable student goals in mind to intentionally focus on planning to meet the needs of every student. Teachers must believe that each child can learn and that the teacher in the classroom holds the major key to that learning. No longer can teachers blame student failure on social class, low motivation, English language skills, etc.; yet teachers must feel efficacious and prepared to connect student data to classroom instruction (Petrilli, 2013).

One process that might show promise in setting a collaborative vision, understanding and implementing exemplary PLC structures and visions, providing resources and ongoing support, developing supportive PLC leadership, and developing a consistent process with consistent data analysis forms is the “Classroom Focused Improvement Process” (CFIP). While there have been attempts to create local systemic and school-based school improvement imperatives to assess students and hold educators accountable for ensuring that every child succeeds academically, CFIP now incorporates most of the elements of exemplary teacher collaboration to assess, understand, and maximally plan for and instruct each child. CFIP delineates a method for examining student performance via collaborative analysis, planning, and team accountability for all

students in a grade level or content area. Developed by Dr. Michael Hickey and Dr. Ronald Thomas from Towson University, CFIP includes six steps to analyze data in collaborative teacher teams to decide what steps will logically be implemented to improve instruction resulting in increased student achievement. Steps include: 1) reviewing relative assessments and terms used in the assessment reports; 2) designing and using data dialogue questions; 3) discerning each student's strengths and needs at the classroom level using multiple data sources; 4) examining instructional factors contributing to student weaknesses, and steps the team will take to positively intervene; 5) looking both at students who excelled and those who need assistance and classroom interventions and enrichments to put into place for all students; and, 6) describing one or two interventions teachers will implement in future instruction. The team then selects one or two strategic classroom enrichments and interventions to implement. Emphasis is first upon students in the classroom, then the school, the district, and finally the state accountability and assessment systems. Teacher teams get to know the "faces" behind the data as unique and special children who all deserve the right to learn maximally and to achieve at high levels. Hickey and Thomas maintain that CFIP is a process that empowers teachers to continuously learn and improve their craft. This research endeavors to shed light on the new accountability tools that teachers have at their disposal and will use proficiently (Thomas, 2010).

Richardson (2011) noted that DuFours' vision of PLCs includes teacher collaboration to develop common assessments, analyze and learn from results, and then develop interventions for students. Thomas (2011) expanded upon those ideas by describing "nine truths" of data analysis, with the goal of increasing student achievement

for all and eliminating learning gaps. Thomas (2010) added that because teacher teams drive CFIP, it picks up where the school improvement plans stop, identifying questions the data did not answer and deciding how the team will pursue those answers. Thomas (2010) concluded "CFIP provides a data reduction process that enables school teams to analyze and act on a large volume of data. It empowers teachers to act decisively to increase student learning" (p.57). Thomas noted that according to Mike Markoe (an Assistant Superintendent in a mid-Atlantic state school system which uses CFIP), CFIP can "transform a school" (p. 57).

What then is the state of the art of empowering teachers to design and use student data to improve learning for themselves and their students? In this accountability age teachers fear that state and/or local assessments threaten their professionalism and power and unfairly singularly judge their performance (Ingram, Seashore, & Schroeder, 2004; Winkler, 2002). As partners in the assessment process teachers can develop formative assessments used at the classroom level to drive learning forward, allow students to demonstrate mastery of concepts in the classroom, and improve their teaching craft (Black, Harrison, Lee, Marshall, & William, 2001; Dirksen, 2011; Goertz, Olah, & Riggan, 2009; Heritage, 2007). Melucci (2013) noted in her qualitative research study that teachers' "initial perceptions toward using data to drive instruction were cautious. They were hesitant. Some felt it would not be accurate" (p. 83). Further they reported that their professional development often left them confused and unable to interpret data correctly or use it to make wise instructional decisions (p. 83).

McCann, Jones, and Aronoff (2010) avowed that improving quality of instruction in all classrooms is paramount to enhancing student achievement. To effect this change

teachers' data literacy must focus upon cycles of continuous inquiry, and data used to drive instruction (Ronka, Lachat, Slaughter, & Meltzer, 2008/2009). Yet, teachers have not been provided the assessment literacy they need to use data productively. Thus, there needs to be a balance between standardized learning assessments and classroom assessments for learning (Stiggins & DuFour, 2009).

Another strategy to enhance teacher and student learning is use of Professional Learning Communities (PLCs), defined as:

> Educators committed to working collaboratively in ongoing processes of collective inquiry and action research to achieve better results for the students they serve. Professional learning communities operate under the assumption that the key to improved learning for students is continuous, job-embedded learning for educators. (DuFour, DuFour, Eaker, & Many, 2006)

Fullan (2009) added that members of a PLC working collaboratively clarify what each student must learn, monitor learning on a timely basis, provide struggling students with systematic interventions, and extend/enrich learning for students who have mastered intended outcomes (p. 92). If as Fullan (2009) stated, "the fundamental purpose of the school is to ensure all students learn at high levels, and that the future success of students will depend on how effective educators are in achieving that fundamental purpose" (p. 92), then teams such as PLCs are critical to owning the success of all students in the school and moving their success forward.

Fullan (2009) noted properties of PLCs include: shared mission, vision, values, and goals, focus by all on student learning; collaborative culture with a learning focus; collective inquiry and best practice about teaching and learning; action orientation; commitment to continuous improvement; and, a results orientation (pp. 88-91). Additionally PLCs "learn by doing," develop, administer, analyze, and learn from

frequent common formative assessments, provide teachers with timely and relevant information about students, and use a systematic response when students do not learn, and a process for expanding and enriching learning for students who are already proficient (pp. 98-100).

Another compelling issue is the question, “Why then should teachers collaborate to use student data to improve both teacher and student learning?” Love’s (2009) research findings denoted that grade level or content area collaborative teacher “data” teams used assessment data “frequently and in depth to guide instructional improvement” (p. 13). Types of data included: formative classroom assessment data; formative common assessment data; benchmark common assessment data; demographic, enrollment, dropout, teacher characteristics data; and summative assessment data. Data dialogue conversations focused on identifying student learning problems, verifying causes, generating solutions, implementing instructional practices and supports, monitoring progress, celebrating achievement, and using results to refocus next steps. Love shared six powerful school system/school success stories from using data processes of collaborative inquiry to boost student achievement to share dramatic success of using data in PLCs.

PLCs also empowered teachers to become teacher leaders in their own building and district, demonstrating a third construct of “distributed leadership.” Kennedy, Deuel, Nelson, and Slavit (2011) noted that PLCs plus distributed leadership increased teachers’ sense of collective responsibility for improving the learning of every student and deepened the knowledge and expertise of teachers. Marks and Lewis (1997) avowed that

teacher empowerment and participation in school decision making enhance teachers' commitment, expertise, and consequently, student achievement.

While there has been a preponderance of studies that purported to support the effectiveness of PLCs in raising student achievement, there are some studies that failed to show a significant difference in the relationship between PLCs and student achievement. Wiseman (2011; 2012) used a meta-evaluation research design to examine the question, "Do Professional Learning Communities have a positive impact on student achievement?" Wiseman and Arroyo (2012) extracted 13 relevant dissertation studies conducted between 2008 and 2010 from Proquest, representing public elementary and high schools with diverse socioeconomic, geographical, academic, and ethnic populations. Data analysis demonstrated that nine (69%) of the 13 studies rendered a statistically significant relationship between PLC implementation and student achievement, e.g., PLCs had a positive effect on test scores. The other four studies did not denote statistically significant relationships between implementation of PLCs and student achievement. Two of those studies found positive relationships with some sub-domains of a PLC. One, a study of 11 Title I elementary schools in Maryland, noted that "*Supportive Conditions (Structure)"* and "*Shared and Supportive Leadership*" may factor into improving student achievement. A second study that sampled 115 public high schools in Pennsylvania found no statistically significant relationship between PLC implementation and student achievement. It did find that creating continuous learning opportunities for teachers had a statistically significant positive effect on both mathematics and reading achievement.

Wiseman and Arroyo (2012) noted “There was a considerable discrepancy in the instruments used to assess the implementation of PLCs,” and that “implementation of PLCs was highly inconsistent” (p. 1). The 13 researchers each suggested recommendations for implementing PLCs. When combined into categories or themes those suggestions included: “understanding and implementation of PLCs; resources and structures for PLCs; and, leadership within PLCs” (p. 2). Those recommendations were considered in this researcher’s development of a reliable and valid questionnaire to discern the impact that PLCs using CFIP may have on teachers’ perceptions of student data use as an accountability tool juxtaposed with its use as a positive, valuable tool to improve classroom instruction and student learning. Finally, Wiseman and Arroyo noted, “there is a need for ongoing member training for the PLC to maintain fidelity to its implementation” (2012, p. 3). The CFIP process implements this ongoing training via data coaches who work with schools until the CFIP teams have mastered the process, implemented resultant best practices in classroom instruction, and assessed the impact to improved student learning.

A final consideration is the redefining of professional development for teachers to better meet their learning needs and improve instruction. Clearly there needs to be a focus on how and why to create PLCs, how to use data to drive instruction, and how to focus upon active learning, coherence, collective participation, and content (Azzam, 2008/2009; Desimone, 2011; Hirsh, 2009).

Inherent in all of these foci on improving teaching and student learning to promote student achievement are critical elements that need to be integrated and combined into a sensible, user-friendly schema to focus upon a classroom-centered, data-

driven, rich collaborative effort to continuously improve instruction in every classroom. One process, which claims to accomplish these goals, is the Classroom Focused Improvement Process, or CFIP. Described previously, CFIP appears to include all necessary ingredients for effective organization, functioning, and evaluation of dynamic, efficacious collaborative teacher teams that can close the achievement gap and enhance learning for all. If this is indeed a reality, it seems logical that teachers would welcome the perceived shift in assessment from merely an accountability-for-teaching-tool, to that of a tool to improve teacher learning, classroom instruction, and student learning.

Rationale

In this era of high-stakes testing to hold educators and school systems accountable for every student's academic success, much confusion exists around the issue of how to use, interpret, and comprehend student data to maximize student achievement. At the core of this research is the question, "Why does teachers' use of the data matter?" The U.S. Department of Education's *Teachers' Use of Student Data Systems to Improve Instruction* (2009) research report notes:

> Even though nearly three quarters of all teachers (74 percent) reported having access to student data systems in 2007, the proportion of teachers with data system access who also have tools for making instructional decisions informed by data remains below 20 percent (p. 13).

Researchers have demonstrated the powerful effectiveness of teachers' collaboration in teams to analyze and interpret student data to improve instruction and student achievement (Aylsworth, 2012; Gallagher, Means, & Padilla, 2008; Galligan, 2011; Goddard, Hoy, & Hoy, 2000; Roberts, 2010). This study was intended to determine if implementing and using the Classroom Focused Improvement Process would change teachers' perceptions of student data from an accountability tool, to a powerful tool they

can use to improve classroom instruction and student learning. If, in fact, CFIP is a contributor to success of teachers' instruction and students' learning, the process would be well worth sharing with other schools and districts. While this research could contribute to the strategic use of student data to improve instruction and student learning, there is no valid and reliable instrument available to specifically measure teachers' perception of student data on this topic.

Purpose of Study

The original intent of this dissertation research was to discern if using CFIP in schools could change teachers' perceptions of data use from a punitive tool for accountability to a positive tool for improving instruction and student learning. This necessitates use of a pretest, posttest instrument to measure teachers' perceptions of student data use. As previously mentioned, no appropriate tool seems to exist to measure those perceptions. Thus the focus of this research became the development and pilot testing of an instrument for this purpose. The study outlined in Chapter 5 is proposed research that could be conducted after the instrument has been successfully developed and field-tested. This further elucidates and validates the reason for which the instrument was developed. To date, no such instrument has been developed,; and yet educators are engaged in these practices on a daily basis, tasked with generating improved instruction and student learning.

Problem

The problem for consideration in this research is the development and pilot testing of a reliable and valid instrument to assess teachers' use of data and data analysis as a tool for improving classroom instruction and student learning.

Significance of the Study

Researchers have documented important factors affecting use of data by school and district staff. These include: focus on data due to state accountability systems; timeliness and accessibility of data; teachers' views of assessment results as valid measurements of student's abilities and knowledge; and, extent to which the school's staff received data analysis and interpretation support and training (Kerr, Marsh, Ikemoto, Darilek, & Barney, 2006, pp. 514-515). Kerr et al., (2006) also noted that "despite the increasing focus on data use in practice, research has just begun to investigate whether and how this strategy leads to improvements in teaching and learning" (p. 497). Their research focused on factors that contribute to or inhibit effective data use (p. 497).

The development of a reliable and valid tool to assess teachers' use of data and their expertise in analyzing, sharing with the team, and using data results to improve classroom instruction and student learning should contribute to continued research in this arena.

Definition of Key Terms

CFIP (Classroom Focused Improvement Process) is a six-step process or protocol based on questions that teacher teams ask and answer using data analysis. It focuses on using external (state/district) and internal (classroom/team-created) summative and formative data to discern classwide and individual student strengths and weaknesses. Teams then converge upon a plan to teach, regroup, reassess, and re-plan to meet the needs of every student. Interventions and enrichments are implemented so each student can maximally learn and achieve (Thomas, 2010).

PLC (Professional Learning Community) is defined as:

> Educators committed to working collaboratively in ongoing processes of collective inquiry and action research to achieve better results for the students they serve. Professional learning communities operate under the assumption that the key to improved learning for students is continuous job-embedded learning for educators. (DuFour, DuFour, Eaker, & Many, 2006)

Acronyms in this Study

Alt. Ed.-Alternative Education. Alternative education programs provide academic and behavioral interventions and supports parent outreach, case management services, conflict resolution and anger management skill development, and ongoing progress monitoring. Services include small class sizes with close adult supervision, frequent home-school contact, and specific learning strategies and approaches designed to meet students' individual needs.

DIBELS- Dynamic Indicators of Basic Early Literacy Skills includes assessment measures and procedures to discern acquisition of early literacy skills from kindergarten through sixth grade.

DQIE- Designing Quality Inclusive Education

ELL-English Language Learner refers to students who speak a language other than English at home and upon entering school, score below proficient on English assessments.

ESOL-English for Speakers of Other Languages is the study and use of English in schools.

FARMS—Free and Reduced Meals is a federally funded school breakfast and lunch program for children from families with incomes at or below 130% of the poverty level.

Children from families with incomes at or below 130% of the poverty level can receive free meals or reduced fee meals for incomes between 130% and 185% of the poverty level.

IEP-Individualized Educational Program is a Special Education document, detailing delivery of special education services and supports for students with disabilities.

IIT-Instructional Intervention Team is a school-based committee whose focus is helping at-risk students excel in the school's regular education program. It may include: teachers; special education teachers; team leaders; administrators; guidance counselors; health professionals, school psychologists, etc.

MST-Mathematics Support Teachers are school-based mathematics curriculum specialists who observe students, assist teachers, work with individual students, provide strategies and research-based professional development on best-practices, and receive special training from central office supervisors.

MAP- Measures of Academic Progress is a computerized assessment taken by individual students to provide an estimate of the student's achievement level.

RST-Reading Support Teachers are school-based language arts curriculum specialists who observe students, assist teachers, work with individual students, provide strategies and research-based professional development on best-practices, and receive special training from central office supervisors.

SLO-Student Learning Objectives are measurable instructional goals created for a specific student group and measured over a specified time period. SLOs may serve as measures of student growth for state teacher evaluation systems.

SPED-Special Education is the process of educating students with special needs by creating an individualized plan to set goals, implement and monitor them, and provide adapted materials, equipment, and settings. Interventions are designed so students with special needs achieve maximum personal self-sufficiency and success in their school and community.

SST-Student Support Teams are school-based problem-solving teams that explore and recommend processes, strategies, goals, and plans to promote success for referred students. They may include teachers, special education teachers, counselors, school psychologists, administrators, and education professionals.

Research Questions and Developed Tools

The research questions in this study relate to the creation of a survey instrument to assess use of *The Classroom Focused Improvement Process* (CFIP) as a tool for improving instruction and student learning. Since no appropriate tool seems to exist to measure the effect of CFIP on teachers' data analysis team process and subsequent improvement of instruction and student learning, the focus of this research became the development and pilot testing of an instrument for this purpose.

Quantitative Instrument- *Using Student Data to Improve Instruction and Student Learning Data-Gathering Tool*

Qualitative Tool- *Teachers' Perceptions of Student Data Interview Assessment Tool*

Research questions in this study include:

Research question 1- Is the instrument reliable? What is the evidence for this?

Research question 2- Is the instrument valid? What is the evidence for this?

Research question 3- How often are teacher teams using data?

Research question 4- How competent do the teachers feel using data?

Research question 5- Do the qualitative data from the survey and the interview data support findings from the quantitative survey?

Chapter II

LITERATURE REVIEW

The presented study considers the current demands for teacher accountability in using student data to improve instruction and student learning and achievement. Researchers have documented factors affecting data use by school and district staff. Forefront are: focus on data due to state accountability systems; accessibility and timeliness of data; teachers' views of assessment results as valid measures of student's knowledge and abilities; and, extent to which the school's staff received data analysis and interpretation support and training. It is this last point that stirred this researcher's interest in discerning if there are extant processes or programs that can help teachers and teams use student data productively, and with confidence and positive results for all students. One such process that purports to make a difference in teachers' owning, understanding, and using data analysis to positively impact student achievement is the Classroom Focused Improvement Process (CFIP). In order to conduct research to ascertain use of the CFIP as a tool for improving instruction and student learning, the researcher searched for a reliable and valid instrument to align with that purpose. None was found, thus the current focus for this study became construction of an appropriate reliable and valid instrument for this purpose.

Background of the Study

With the passage of *No Child Left Behind* (*NCLB,* 2001), there is increased emphasis on school reform, which holds teachers, administrators, and local and state school systems accountable for ensuring academic achievement and success for all students. The 2002 *No Child Left Behind Act* (*NCLB*), which augmented the 1965 *Elementary and Secondary Education Act* (*ESEA*), requires strategic state assessment and accountability to insure that each child in the United States maximally learns. It demands publicly available accountability data for individual student learning. The proposed March 2010 *Reauthorization of the Elementary and Secondary Education Act* notes that teachers believe colleague collaboration is key to improving student achievement (USDE, 2010, p, 5), and that there must be a structure in place in schools for teachers and administrators to analyze data and set goals for the school and for each student (Kaufman, Graham, Picciano, Popham, &Wiley, 2014).

One issue that arises is the “accountability versus organizational learning” metaphor addressed by Anderson, Leithwood, and Strauss (2010). These researchers noted that districts with a high capacity for using data tended to depend more on formative assessments to inform student assistance and differentiated instruction and to enrich learning and inform grading practices. Conversely, districts with low capacities for using data more frequently used test data as diagnostic tools to place students into remedial classes. Clearly then education districts, schools, and teachers all need to make data literacy and using data to inform instruction and increase student learning a high priority.

While these data literacy goals are lofty, yet necessary, the emphasis on accountability for teachers to ensure that all students learn to their highest potential has increased stress and pressure perceived by some teachers.

McKinley, (2014) in her doctoral research noted that:

> The national emphasis on accountability for student assessment results added additional pressure on teachers. The teachers' instinctive response to looking at student data was to become fearful and self-conscious if their students did not do well. Irene shared: "It was hard in a school where there is only one class per grade, if those (assessment) results were not as robust as we would have wanted for the children. We needed to get across that it wasn't a pox on you teacher, but rather let's analyze how we could have made adjustments earlier or used multiple intelligences to get through to those kids." The mindset had to become one where they could accept the data as a means to their student achievement goals. (p. 94)

Further, the 2009 *Race to the Top* U.S. federal initiative granted funds to states that submitted winning proposals to turn around failing schools by:

1) designing and implementing rigorous standards and high-quality assessments;
2) attracting and keeping great teachers and leaders in classrooms;
3) supporting data systems that inform decisions to improve instruction by implementing statewide longitudinal data systems;
4) assessing and using data to improve instruction;
5) ensuring data accessibility to key stakeholders;
6) using innovative, effective approaches to turn-around struggling schools; and,
7) demonstrating and sustaining education reform (U.S. Department of Education, 2009).

As mentioned in Chapter I, these increased accountability demands have highlighted educational issues including: assessment tools and processes; Professional Learning Communities (PLCs) with colleague collaboration; distributed or "shared" leadership; data-driven instruction; and, redefinition of effective teacher development. These five educational issues are the focus of the literature review and will be addressed individually for clarity, and then collectively as they are inherently integrated in CFIP.

Assessment Tools and Processes

In the arena of using assessment as an accountability measure or tool for improving teaching and learning, stark realities emerge. Teachers tend to fear that the use of a state standardized achievement test results in loss of their professionalism and power (Winkler, 2002). Teachers also have concerns about the kind of information that is available and how it is used to judge their performance (Ingram, Seashore, & Schroeder, 2004). Gallagher (2004) noted a need to create accountability systems that protect and enhance local systems' control and teachers' professionalism.

Assessment that is seen as valuable and capable of modifying teacher instruction daily is formative assessment that drives learning forward (Dirksen, 2011; Heritage, 2007). Formative assessment provides feedback that gives students multiple opportunities to demonstrate understanding and mastery to teachers within single classroom periods (Black, Harrison, Lee, Marshall, & William, 2001; Goertz, Olah, & Riggan, 2009). Herman, Wardrip, Hall, and Chimino (2012) documented use of weekly formative assessments by teachers in a common grade level team to provide "actionable, timely" data (p. 29). Black and Wiliam (1998) noted that use of formative assessment can raise student performance and achievement by 20%-40%. Wiggins (2011) also noted that

assessment needs to examine actual performances for which students should be proficient and then design “authentic” complex contextual challenges to measure performances, rather than testing static and fragmented tasks.

Jacobson (2010) cautioned that while analyzing assessment data yields good teaching ideas, “analysis alone won’t help teachers translate these ideas into classroom practices” (p. 40). Brainstorming around assessment results only utilizes teachers’ current teaching practices and repertoires. While PLCs’ intention is to share teachers’ expert knowledge and use it to improve teaching and learning, the goal of PLCs is to “build this collective expertise as well” (p. 40).

While there is debate about the types of assessments that best serve student achievement, there is broad consensus that districts’ efforts to design and implement interim assessments to test their standardized curricula are helpful to teachers and students (Goertz, Olah, & Riggan, 2009).

McCann, Jones, and Aronoff (2010) suggested that to improve student achievement, schools must ignore the business-oriented accountability movement rhetoric, and focus on improving quality of instruction in all classrooms. One way to do this is to devise a framework for building teachers’ data literacy around a cycle of continuous inquiry, and data used to drive instruction (Ronka, Lachat, Slaughter, & Meltzer, 2008/2009). Stiggins (2004) added that teachers have not been provided the assessment literacy they need to use data productively. This needs to be addressed in professional development for teachers. Further he urged a balance between standardized learning assessments and classroom assessments for learning. CFIP purports to do this, focusing on all types of data that teachers must analyze.

Professional Learning Communities

A second way to enhance teacher performance and student achievement is use of Professional Learning Communities (PLCs) collaborating to analyze student data and use findings to improve instruction for all students (Goddard, Hoy, & Hoy, 2004; Nelson, Slavit, & Deuel, 2012; Lewis, Madison-Harris, Muoneke, &Times, 2010). David (2008/ 2009) noted that when teachers collaborate, posing and answering questions informed by their students' data, teacher knowledge grows and practice changes. Thus systemic, collaborative work increases student learning (Goddard, Goddard, & Tschannen-Moran, 2007; Strong, 2010).

Thessin and Starr (2011) emphasized:

> Now, in the face of increased accountability and districts' desires to improve educator effectiveness, many school systems are implementing professional learning communities (PLCs) to support teachers in collectively using assessment data and student work to identify instructional strategies to meet students' learning needs. (p. 49)

These researchers claimed that even when districts or schools provide common time for teams to meet and plan, districts must be deliberate in their efforts to teach teachers how to collaborate (p. 50). They further outlined a process of: "inquire; analyze data; look at student work; examine instruction; assess student progress; reflect," and return to inquiry (p. 50). When implementing the PLC process, districts and schools must ensure that teachers have a pivotal role in four key roles, including: ownership and support; professional development; a clear improvement process (i.e., how does the work of the PLC specifically fit into the school and district's overall improvement process?); and, specific differentiated support unique to the needs of each school and team (p. 51). Thessin and Starr (2011) demonstrated that using PLCs as a mechanism and process to

engage teachers in collaborative data reviews, common assessment development, sharing of best-practices, and consistent review of each student's progress, the state assessment scores rose. Thessin and Starr shared:

> Results show that PLC time has enabled teachers to work together and make a difference for their students. The 2009 Connecticut Mastery Test results illustrated strong improvements in achievement, especially in grades 6 and 8 in math, grades 5 and 8 in reading, and grade 8 in writing. Particularly, white, black, and Hispanic students showed higher overall achievement in the percentage of students scoring at or above "goal" when compared to students' performance statewide. In 2010, Stamford students' performance on Connecticut's state test continued on an upward trend, particularly in math. In grades 3, 5, and 8, the gain in the percentage of students who scored at or above goal in Stamford exceeded gains by the state. Overall, since the 2006-07 school year, math scores improved by 13% in grade 5 and 15% in grade 6. No one reform can be cited for Stamford's improvements, but teachers clearly believe that PLCs have helped them improve their practice. 'PLCs have afforded us dedicated time on a weekly basis to discuss and share best practice strategies with colleagues in order to meet the individual needs of students. Prior to having this time, we had no way to learn what a teacher who may have had a lot of success in teaching a specific skill had actually done in the classroom to yield those results,' said Amy Beldotti, an elementary learning needs coach and a member of the PLC Steering Committee. (pp. 52-53)

When teachers perceive that their collaborative planning and assessing of student needs can improve teaching and learning and yield improved student achievement scores, feelings of efficacy and empowerment can also lead to teachers' satisfaction and a desire to remain in education and improve their craft.

Further when teachers collaborate to design and implement common assessments those assessments are built around clear learning targets, standards-based instruction, effective communication, and high-quality assessments that can then be collaboratively analyzed and used to improve grade level instruction (Goddard, Hoy, & Hoy, 2004; Pomson, 2005; Routman, 2012; Schmoker, 2004; Steele & Boudett, 2008/2009; Stiggins & DuFour, 2009).

Another benefit of teacher collaboration in PLCs is that, as student performance increases with PLC data analysis and instructional strategy augmentation, teachers become more satisfied with their jobs and experience increased sense of efficacy, control, and mastery over students' learning (Galligan, 2011; Goddard, Hoy, & Hoy, 2000; Nelson, Perkins, & Hawthorn, 2008; Penuel, Fishman, Yamaguchi, & Gallagher, 2007). They also learn to work better as a team, and develop shared responsibility for student learning (Hirsh & Killion, 2009; Thessin & Starr, 2011). As noted previously, there have been research studies validating improvement in student performance with implementation of PLCs (Aylsworth, 2012; Gallagher, L., Means, & Padilla, 2008; Galligan, 2011; Goddard, Hoy, & Hoy, 2000; Roberts, 2010).

Another important point relevant to PLCs collaborating to analyze and use student data was made by Venables (2014), who stated, "I believe that the teachers who own the data ought to be the teachers who review the data" (p. 14). He noted that when teacher teams make sense of their data together and draw conclusions as a team about what to do with the data analysis, they own the data and data response or actions, thus fostering greater buy-in by all PLC members (p. 14).

A doctoral dissertation by Bloom (2013) offered further insights into the value of having teachers form PLCs. He conducted a qualitative study with four eighth grade social studies teachers in Long Island, New York, who he assisted in forming a PLC that met weekly for 10 weeks. At the conclusion of the 10 weeks, the 120 student participants taught by the PLC teachers were given several exams. Scores were compared with similar students' scores the previous year and were higher. Though this was a small sample, the

researcher concluded that positive change resulted in the teachers' perceptions of working together to design, implement, and assess teacher growth and student progress.

Findings included identification of three major themes: "creation of a collaborative culture of sharing best practices; increased knowledge of content and needs of students; and, systematic review of data in instructional decision-making" (pp. 67-68). Of those three themes, teachers identified the domain of systematically reviewing and analyzing data as a strength in their PLC, noting that "they believed it helped create new opportunities for instructional delivery and assessment" (p. 68).

Bloom shared comments and perceptions of the teachers in the PLC such as the value members noted in: sharing best-practices and strategies to implement in their lessons and classrooms; giving up some of their older, ineffective teaching modalities; observing each other's teaching to gain insight and new ideas; creating common lessons, formative assessments, rubrics, etc.; and, having all of the teachers "on the same page" to benefit students. The author also noted that while previously the teachers tended to close their classroom doors and work in silos, they now appreciated getting together to collaborate and co-plan, using student data to assist in the process (pp. 69-71).

A caution shared by Jacobson (2010) is that effective PLCs must consider three "dimensions of coherence," including: coordinating work of all teams in the school so they build on each other's work and do not work at cross purposes; supporting dedicated common planning time for each team so they build on previous meetings and don't "unfold in a haphazard, scattershot manner"; and, integrating ongoing professional development on teaching strategies into the PLC's ongoing work (p. 40).

It would seem, therefore, that there must be a strategic and well-supported plan in place before PLCs can be expected to maximize their efforts, output, and effectiveness.

Distributed Leadership

A third construct being examined to enhance school and student improvement is distributed leadership. Jacobson (2011) noted that effects of leadership on students' achievement and sustained school success in high-poverty schools included professional self-renewal and distributed teacher leadership. Kennedy, Deuel, Nelson, and Slavit (2011) added that PLCs plus distributed leadership increased teachers' sense of collective responsibility for improving the learning of every student and deepened the knowledge and expertise of teachers. D'Entremont, Norton, Bennett, and Piazza (2012) discerned that Boston schools, which received the *Schools on the Move* awards, all used data-driven instruction and distributed leadership. McKinley (2014) noted that teachers and administrators in those schools collaboratively made decisions regarding curriculum and instruction. This "distribution of traditional leader roles fostered a shared sense of responsibility and accountability amongst the staff for implementation of schoolwide strategies, including data-driven instruction" (p. 23).

Further advantages of distributed leadership include the ability to utilize the unique and diverse expertise of individual professionals in the school. Mayrowetz, (2008) exemplified this point in noting, "Since specific individuals like coaches or lead teachers may have considerable expertise regarding content instruction, for example, it is likely to be effective to distribute or redistribute leadership practice to take advantage of that knowledge" (p.429). McKinley (2014) summarized saying, "As teachers develop expertise in data use and assume leadership roles with their peers in the collaborative

process, their sense of efficacy increases" (p. 24).

As teachers see increased student achievement evolving from teachers sharing leadership roles, learning to analyze and use student data in teams, and collaboratively planning, assessing, and monitoring to ensure that all students maximally learn, they will question old practices, welcome new strategies and research-based ideas, and learn that data are their best informant and guide.

Data-Driven Instruction

The fourth issue considered in school improvement research is the use of data-driven instructional improvement. Teachers are encouraged to collaborate in grade level or content teams, i.e., PLCs, to analyze student data, create common assessments, and discuss strategies for differentiating instruction and formative assessment to meet all students' needs (Blank, 2009; Hamilton, et. al., 2009; Ikemoto, & Marsh, 2007; Lewis, Madison-Harris, Muoneke, & Times, 2010; Robinson, 2010; Schmoker, 2008/2009; Simpson, 2011). Teachers are also requesting more professional development around use of data (Flowers, & Carpenter, 2009; Gallagher, Means, & Padilla, 2008; Means, Padilla, Gallagher, & SRI International, 2010). Means, Padilla, Gallagher, & SRI International, (2010) noted that when data literacy time with a data coach was built into their schedules, the teachers began to have data discussion sessions monthly rather than every three months. One teacher noted that prior to the data coach's sessions, she collected data but never knew how to use it to improve teaching and student learning (p. 70). Additionally data from another elementary school denoted that during weekly cluster meetings, instructional content coaches led data discussions, alternating between the math and literacy coaches every other week. Teachers and coaches brought individual student

concerns to the team and all brainstormed ideas to improve instruction and success for individual students (p. 69-70). From their research the above authors made the following recommendations for schools: setting clear expectations around use of student data as decision making bases; integrating collaborative data exploration into existing structures for joint teacher planning and reflecting on teaching; providing safe environments for teachers to examine their students' performance; and, supporting teachers in making connections between data and alternative instructional strategies (p. 87).

One model, which embodies the use of structured student data analysis by teacher teams, is the Classroom Focused Improvement Process, or CFIP. CFIP is a six-step process or protocol based on questions that teacher teams ask and answer during data analysis team meetings. It focuses on using external (state/district) and internal (classroom/team-created) summative and formative data to discern classwide and individual student strengths and weaknesses. Teams then collaboratively design a plan to teach, monitor, regroup, reassess, and replan to meet the needs of every student. Teacher teams also create and score common formative and summative assessments based on district standards. Interventions and enrichments are implemented, monitored, and evaluated so each student can maximally learn and achieve (Thomas, 2010). As the name, CFIP implies, this process has as its focus instruction in the classroom, where teacher and student interactions and teachers' content knowledge, pedagogical expertise, and knowing about each student and their families are key to students' achievement. The spotlight is focused on how each member to the team can assist each team member in targeting best instructional practices for every student. The team thus owns the success of all students in the grade level or content area.

Connecting the previously mentioned research to CFIP, similarities exist between the CFIP data analysis process done in teacher teams with data coaches, and educational researchers' suggestions for school's implementation of effective PLCs. CFIP teacher teams develop formative and summative common assessments, and common plans to instruct in the classroom, regroup students, reassess, and replan in a continuous cycle of data assessment to drive student achievement (Thomas, 2010).

Young's (2006) research concluded that providing training and knowledge for teachers in data systems and data analysis and interpretation, created an effective culture in schools to support teachers in use of data-driven instruction. Young asserted, "School leaders aspiring to establish effective and systematic data use need to embed teaching and learning and their improvement in the heart of data-related activities" (p. 544).

Jacobson (2010) added:

> The results-oriented approach structures collaborative work around two critical activities. Priority learning goals allow teachers of the same subject to give students a common foundation for their future studies. Common formative assessments create opportunities to improve assessment design skills, analyze results across classrooms, and collaborate on how to adjust instruction accordingly. (p. 39)

Redefining Teacher Professional Development

The fifth issue underpinning this current research is the redefining of professional development for teachers to better meet all students' learning needs. McColl-Kennedy and Anderson (2002) noted that as leaders direct their attention toward individual personnel such as teachers, this "increases levels of enthusiasm and optimism, reduces frustration, transmits a sense of mission, and indirectly increases performance" (p. 21).

Clearly there needs to be a focus on how and why to create PLCs, how to use data to drive instruction, and how to focus upon active learning, coherence, collective

participation, and content (Azzam, 2008/2009; Desimone, 2011; Hirsh, 2009). Bringing these educational issues together in a powerful, integrated whole process seems like a logical and dynamic positive step forward in helping all students achieve.

Richardson (2011) alluded to this integration in noting that DuFours' vision of PLCs includes teacher collaboration to develop common assessments, analyze results and learn from them, and then develop interventions to serve students.

It seems that the "what" and "so what" of using teacher PLCs to enhance both teachers' and students' learning are clear. The "what," is teachers using dedicated team time to learn to use student data analysis as a cohesive whole in order to strategize and plan targeted classroom instruction to meet each student's differentiated needs. The team then reassesses and reforms instruction based upon formative and summative data results. The "so what" is logically the results…i.e., to improve classroom instruction and subsequent student learning. The "how" becomes the plan that teams devise based upon their increasing knowledge of data literacy, data assessment tools and usage, and ever-improving collaboration and trust among team members. Jacobson (2010) summarized this process as follows:

> The advantage of the inquiry-oriented approach is that teachers can identify challenges, take ownership of the process, develop their own inquiry skills, and learn or deepen their knowledge of effective teaching strategies. Yet it requires relatively high levels of leadership, direction, initiative, and collaborative expertise to chart a productive course of inquiry and carry it through effectively. Some teams may not make good use of common planning time and may be discouraged. Also, teams may veer off in different directions, diluting the development of schoolwide expertise and coherence. (p. 39)

It is apparent that in order for PLCs to effectively and efficiently use student data and data analysis to improve teaching and learning, a strategic data training program and dedicated team collaboration time must be incorporated within the formation and

sustainability of the PLC. It is incumbent upon school administrators and leaders to devote time, expertise, and training to augment success of the PLCs using data to inform and drive instruction and student learning.

Citing the "nine truths" of data analysis, Thomas (2011) expanded upon those ideas by describing CFIP, with the goal of increasing student achievement for all and eliminating learning gaps. Thomas (2010) added that because teacher teams drive CFIP, it picks up where the school improvement plans stop, identifying questions the data did not answer and deciding how the team will pursue those answers. As cited in Chapter 1, Thomas (2010) purported that CFIP embodies a data process that supports teacher teams in analysis and strategic usage of data. Thus teachers act "collaboratively, decisively, and individually in classrooms to increase student learning" (Thomas, 2010, p. 57). Questions that rightfully arise may include: Does CFIP promote collaboration? Is CFIP consistent with the operation of PLCs? Does CFIP promote distributed leadership?

While there have been instruments developed to evaluate PLCs (e.g. Roberts, 2010; Wiseman, 2011, who listed six PLC surveys; Aylsworth, 2012; Hord, 1997), none of these captured the intent or uniqueness of what CFIP is designed to do as a package or program.

Conclusion

There appears to be no appropriate extant survey instrument to examine CFIP's effects on teacher perceptions of student data usage. Indeed, Ahearn (2012) purported that literature advocating for teams using data-driven decisions describes philosophies, criteria, and procedures for success, but "research data articulating the feelings and

perceptions of teachers as they utilize the Data Team Process to focus attention on each child's student achievement are minimal" (p. 1).

What exist thus far are many positive subjective testimonials about CFIP, like the one cited in Chapter 1 by Markoe. What needs to exist is a credible research basis that will substantiate or debunk these claims. This is precisely what this instrument was designed to determine. Thus for this dissertation, instrument development and piloting of the instrument were the focus of the research.

Chapter III

RESEARCH METHOD

This chapter outlines methods used to develop an instrument to assess teachers' use of student data to improve instruction and student learning. While the original purpose of this research was to compare teachers' perceptions of using data in teams to improve instruction and increase student learning, the researcher discovered that an appropriate pretest/posttest instrument did not exist. Thus the focus of this research became the development and pilot testing of an instrument for this purpose.

The participants, instrumentation development procedures, and procedures for data analysis are presented. Results from this study may assist educators and administrators who may desire to improve methods and processes for teachers to become proficient in using data to augment instruction and student learning.

Background in Instrument Search

After a thorough search of the literature that included 325 research articles, 55 doctoral dissertations, 45 books on the topic, and state and federal legislation such as *NCLB, Race to the Top*, and state department of education documents, this researcher found no appropriate research instrument. Thus this dissertation research is focused on creating a survey specifically to measure teachers' perceptions of student data and data analysis to improve teaching and student learning. One survey instrument that provided

ideas for a prototype is the "*Aylsworth PLC Survey,"* designed to demonstrate the relationship between teachers' perceptions of their work and student achievement results. This four-part survey consists of demographic data, PLC structure of the teacher's primary PLC, teamwork in the PLC, and questions related to DuFour, Dufour, Eaker, and Many's (2006) four PLC questions:

1. What do we want students to know and be able to do?
2. How will we know when students have learned it?
3. How will we respond when students do not learn it?
4. How will we respond when students already know it? (p. 103-110).

Assessing teachers' and students' data, the *Aylsworth* tool was a one-point-in-time online survey targeting the 39 teachers who met study criteria. All teachers responded. The survey used a four-point Likert scale with options of strongly disagree, disagree, agree, and strongly agree (Aylsworth, 2012).

The Aylsworth PLC Survey was based upon Shirley Hord's 1997 survey of five attributes of a PLC, which helped understand the degree to which a school performs as a PLC (p. 51). Aylsworth (2012) notes that Hord's instrument was "rigorously tested" for validity and reliability using Cronbach's alpha rating of 0.92 (a score of 0.70 or above indicates appropriate instrument internal consistency). Test-retest measurement for reliability was 0.94, again indicating internal consistency or reliability. Although Aylsworth does not report reliability and validity statistics for his survey instrument, he does include a table showing connections between Hord's questions and Aylsworth's questions.

This tool offers possible examples, based on an extant reliable and valid survey tool, for the development of a research tool to evaluate how use of the Classroom Focused Improvement Process (CFIP) affects teachers' perceptions of using student data.

Research Design

This research used a mixed methods concurrent design with survey research for quantitative analysis, open-ended qualitative questions in the survey, and structured, teacher interviews for qualitative analysis. Cresswell (2009) quoted a statement from Cresswell and Plano Clark (2007) describing mixed methods research as an inquiry approach combining both qualitative and quantitative forms and philosophical assumptions. The process uses qualitative and quantitative approaches, mixing both in one study. "Thus, it is more than simply collecting and analyzing both kinds of data; it also involves the use of both approaches in tandem so that the overall strength of a study is greater than either qualitative or quantitative research" (p. 4).

Both methods were used in this study to design the instrument and analyze findings.

Procedures and Data Analysis

Since no extant research instrument seemed to exist to examine CFIP's effects on teacher perceptions of student data usage, instrument development was the research focus. Steps in the research process included:

1. Reviewing the literature to find appropriate instruments.
2. Developing an instrument, the *Using Student Data to Improve Instruction and Student Learning Data-Gathering Tool* (41-item Likert scale survey), to discern if teachers view team data/analysis as an accountability tool or tool to

improve classroom instruction and student learning (Appendix A).

3. Developing a demographic survey instrument (Appendix B).
4. Developing a qualitative interview instrument, *Teachers' Perceptions of Student Data Interview Assessment* (Appendix C), to gather additional data relevant to teachers' perceptions of student data use to improve instruction and student learning.
5. Creating and working with a 12-24 person focus team of experts in questionnaire creation and data analysis from NDMU and from several state school districts to improve the instrument. This team included university professors/researchers, CFIP and non-CFIP teachers with diverse years of teaching experience, administrators, central office leaders, resource teachers, and central office school system mentors for non-tenured teachers.
6. Developing with several focus team members and university professors, a semi-structured, qualitative interview tool to provide deeper meaning of information gained from the quantitative survey.
7. Constructing a letter including research purpose, scope, and sequence of the pilot, to send to principals and grade-level team leaders and participants, soliciting their assistance in piloting the instrument. Anonymity and confidentiality were assured for schools, administrators, and teachers.
8. Obtaining permission to conduct research in each of the two participating state school districts.
9. Sending letters to principals, requesting them to provide names of teachers in their schools.

10. Piloting the Using Student Data to Improve Instruction and Student Learning Data-Gathering Tool with teachers in eight elementary schools, two non-CFIP and two CFIP schools, in each of two Mid-Atlantic state school districts.
11. Distributing research packets in teachers' school mailboxes with demographic and Likert surveys stapled. Included were a letter of introduction, purpose of the study, anonymity assurance, appreciation and participation awards (new pen, new $2.00 bill, and notice that all who returned completed surveys would be entered into a drawing for eight gift cards), and directions to complete the survey, consent form, and demographic information, and return them in the stamped, researcher-addressed envelope within two weeks. A thank you letter was included in each participant packet.
12. Randomly selecting 50 names from all survey participants and sending a letter explaining the interview process using the Teachers' Perceptions of Student Data Interview Assessment Tool. Eleven teachers from one district responded. The first 10 respondents were selected. They represented two CFIP and two non-CFIP schools. Interviewees included five participants from CFIP and five from non-CFIP schools.
13. Analyzing results for validity and reliability.
14. Addressing recommendations for use of the survey instruments with further research in Chapter 5.
15. Reporting limitations of the study/instruments, and serendipitous findings in Chapter 5.

The researcher also met with the co-developers of CFIP, Dr. Michael Hickey and Dr. Ronald Thomas (Director and Associate Director, respectively, of the Center for Leadership in Education at Towson University), to develop a thorough understanding of CFIP. The researcher visited a CFIP elementary team in one public school system to silently observe CFIP implementation in progress. This led to better understanding of CFIP and its processes. The researcher then developed the *Teachers' Perceptions of Student Data Interview Assessment Tool* in consultation with NDMU faculty and teachers in the two study districts. The researcher used the interview tool simultaneously with distribution of the surveys to further discern teachers' perceptions about how their teams use collaboration and data analysis to inform and improve instruction and student achievement.

Permissions

Permission was obtained from the two state school districts' Central Office Research Departments and NDMU's Institutional Review Board to send the survey to teachers in these schools. When that permission was affirmed, the researcher informed administrators about the study via

e-mail, a letter, and copies of the instruments and consent forms, to obtain approval and address concerns. Letters explaining the purpose, scope, and sequence of the pilot, were sent to principals with a consent form to return to the researcher, and a request to provide a list of teachers with whom the researcher could pilot the instruments. Anonymity of schools and participants was assured.

The researcher prepared teacher packets with informed consent permission letters and hand-delivered them to each school to be placed in teachers' mailboxes. Signed

consent forms and completed surveys were mailed to the researcher's assistant in a self-addressed stamped envelope. Code numbers were assigned by the research assistant to insure anonymity and confidentiality. Development and pilot testing of instruments followed. Both the *Using Student Data to Improve Instruction and Student Learning Data-Gathering Tool* and the *Teachers' Perceptions of Student Data Interview Assessment Tool* were developed, and field-tested in eight elementary schools in two similar public school districts. All findings are included in Chapter 4 and discussed in Chapter 5 in the conclusions and discussion section, addressing limitations, problems that may have occurred, and proposed suggestions for further research.

Plans were made to publish the study findings if results were found to be beneficial to educational professionals and/or school systems.

Instruments

A research instrument was developed and field-tested for reliability and validity for use in a possible subsequent research study described below. Reliability for the quantitative survey instrument was established using the Cronbach's alpha coefficient. Validity was established using content, cognitive, and usability standards validity confirmation by a focus group of experts. It is noted that survey instruments should meet standards for content, cognitive understanding, and usability (Presser et al., 2004). Content standards purport that types, numbers of questions asked, and specific subject matter addressed cover the domains of the instrument adequately. Cognitive standards ensure that research participants interpret the questions as the researcher conceptualized and intentioned. Finally usability standards assess the ease of taking and administering

the survey (2004). When validity tests are deemed sufficient, the survey can be administered in field tests and then assessed for reliability.

The instruments and tools include a quantitative 40-item Likert scale survey, a demographic questionnaire, and a Qualitative Teachers' Perceptions of Student Data Interview Assessment Tool. All findings are written in the conclusions and discussion section, addressing limitations, problems that may have occurred, and proposed suggestions for further research.

Rationale: The original intent of this dissertation research was to discern if using CFIP in schools could change teachers' perceptions of data use from a punitive tool for accountability to a positive tool for improving instruction and student learning. This necessitates use of a pretest, posttest instrument to measure teachers' perceptions of student data use. As previously mentioned, no appropriate tool seemed to exist to measure those perceptions. Thus the focus of this research became the development and pilot testing of an instrument for this purpose. The study outlined in Chapter 5 is proposed research that could be conducted after the instrument has been successfully developed and field-tested. This elucidates and validates the reason for which the instrument is being developed.

Development of the Quantitative Survey Instrument

The use of focus groups to establish validity of content in surveys was well documented by Ouimet, Bunnage, Carini, Kuh, and Kennedy (2004, p. 239), who noted that their focus groups provided valuable information in three main areas: instrument appearance and ease of completion; item clarity; and, accuracy of response categories.

This researcher selected focus group participation to ensure that these same parameters were met.

The researcher used experts, concepts, and constructs from the literature review in consultation with university professor experts to create preliminary categories from which to compose a bank of possible questions for the survey and interviews. These are presented in the next section.

Instrument Development Steps

The following five categories were initially created to develop and correlate the *Using Student Data to Improve Instruction and Student Learning Data-Gathering Tool* with the *Teachers' Perceptions of Student Data Interview Assessment Tool.*

These five categories served as prototypes for the quantitative and qualitative interview tools. Categories for survey and interview questions were discerned from experts and themes documented in the literature review. From this document the survey and interview categories were selected. Interview questions were then cross-referenced with categories from the *Using Student Data to Improve Instruction and Student Learning Data-Gathering Tool* in order to have interview questions correlate and substantiate data from the survey instrument.

"Final survey category" refers to the four main categories in the *Using Student Data to Improve Instruction and Student Learning Data-Gathering Tool.*

Corresponding Questions from Interview Document (CQID) indicates the interview questions that correspond to each category in this document.

***Category I. Structure of the team**:*

Final survey category 3—*Operation of the Team*

1. What are the positions (e.g. teacher, team leader, guidance counselor, etc.) of the team members who lead the team's data discussions? Do all team members have the opportunity to hold that leadership role?

   CQID: Questions 5 a, b.

2. Are there opportunities in your team's meetings for ***you*** to develop or share leadership roles (e.g. lead the meeting, share research or relevant information you have found)?

   CQID: Questions 5 b and 15.

Category II. Professional development for the team's work:

Final survey category 2—*Analysis of Data*

1. What type of professional development/training did your team have in use of student data analysis to improve instruction and learning? Do you feel that your team needed additional training? Why?

   CQID: Questions 8 a, b.

2. How was your team trained in the use of the data analysis process?

   CQID: Question 8 a.

3. What ideas do you have about the most valuable aspects of this training, and how it might have been improved?

   CQID: Question 9.

Category III. Data analyzed by the team:

Final survey category 3—*Operation of the Team*

1. What types of data does your team review? Why does the team review those specific data?

   CQID: Questions 6 a, b.

2. Which types of data reviewed do you find most important or helpful? Are there additional data sources you think your team should use?

   CQID: Questions 7 a, b.

3. How important is it for your team and/or you to consistently analyze student data to improve instruction? Why?

   CQID: Questions 3 a, b.

Category IV. Data processes used by the team:

Final survey categories 1-- *Frequency of Data Analysis* and 2—*Analysis of Data*

1. Please describe the data analysis process used by your team.

   CQID: Question 4.

2. What are the goals of your team's student data analysis process? How were the goals developed? By whom? Were you part of the process? Do you feel that the goals are realistic/useful?

   CQID: Questions 1 a-e.

3. Are all of the goals being met? If "no," which ones are not being met? Describe the evidence you have for those goals being met. Why do you think some goals are not being met?

   CQID: Questions 2 a-c.

4. What is the structure of your team's data analysis time (e.g. ___times/week for _____minutes; whole meeting or part of the meeting devoted to data discussion)?

   CQID: Question 10.

5. Would you advocate continuing to use the data analysis process your team now uses, change it in some way, or eliminate it? Why?

   CQID: Question 17.

Category V. Results of data analysis sessions:

Final survey category 4—*Results of the Data Analysis*

1. How does the team develop and implement a specific plan using the results of the data discussion: a) to improve classroom instruction, and b) to individualize instruction to meet each student's needs?

   CQID: Question 11.

2. Do you believe that your team's use of student data analysis has helped you improve your classroom instruction? If so, can you provide specific examples? If not, why not?

   CQID: Question 12.

3. How could your team's data analysis process be improved?

   CQID: Question 13.

4. How has the use of the data analysis process affected you as a teacher?

   CQID: Question 14.

5. Are you a more effective, more confident, more capable, and/or more positive teacher today as a result of your team's use of student data conversations? Please address each of these four descriptors and explain why or why not. *CQID: Question 16.*

Collaborating with four expert professors in the education field, the researcher developed thematic categories for the survey to discern how, when, and why teachers and teacher teams use student data to improve their instruction and student learning. These include: *Frequency of Data Analysis, Analysis of Data, Operation of the Team,* and *Results of the Data Analysis.* The researcher, with input from professors, and three central office resource teachers then selected relevant questions to use in each category. The researcher constructed a quantitative, Likert-scale survey with additional qualitative questions for specificity of Likert items. The instrument was again shared with four professors for clarity and refinement and was reconstructed. Thus the instrument's content validity was established via use of an expert focus group. The survey was sent to 24 educators in three district school systems. They completed the survey and responded with suggestions for clarification and edits.

Respondents included 24 educators: two university professors; one curriculum coordinator; one staff developer; five teachers in two districts (one completing his first year of teaching); four elementary school principals; two high school assistant principals; three central office curriculum resource teachers; one area superintendent; and, one central office instructional facilitator. After reviewing all comments, the researcher revised the survey to include focus group members' suggestions.

A subset of 12 focus group members then met for four hours to review and further revise the instrument. Members reviewed the feedback and commented critically on each question. From that feedback the researcher re-crafted the survey instrument. Two university professors overseeing the research again reviewed and made minor edits to the final instrument was constructed and was included in the research proposal reviewed and approved by the researcher's Institutional Review Board (IRB). These reviewers were not in the pilot participant pool. The final instrument is included in Appendix A.

The survey was delivered via packets placed in teachers' school mailboxes to 188 potential participants. Eighty-one (43.9%) completed surveys were returned. Likert scale means were reported for all quantitative questions.

Data analysis included frequency word counts, collapsed into concept/content patterns and theme categories for the qualitative questions on the survey and for the structured interview data.

Reliability Evidence

Reliability for the survey instrument was established using the Cronbach's alpha coefficient. Reynaldo and Santos (1999) noted that Cronbach's alpha is a reliability index associated with variations accounted for by underlying constructs, or the hypothetical variables being measured. Alpha coefficients ranging in values from 0 to 1 may be used to describe the reliability of factors extracted from multi-point formatted questionnaires or scales such as Likert scales (e.g., rating scale: 1 = poor, 5 = excellent). The higher the alpha coefficient score, the more reliable the generated scale is. Nunnally (1978, p. 245) recommends that instruments used in basic research have reliability of .70 or better. Royal (2011) shared the following parameters for interpreting Cronbach's alpha.

Figure 1: Interpretation of Reliability Based on Cronbach's Alpha

Cronbach's Alpha	Internal Consistency
$0.9 \leq \alpha$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.6 \leq \alpha < 0.7$	Questionable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Note. From Royal, K. (2011, p. 14)

A second instrument for teacher interviews was constructed to corroborate data findings from the qualitative survey instrument. That instrument includes 17 open-ended questions. Participants included five teachers from two CFIP schools and five from two non-CFIP schools in one of the study districts. While potential participants were randomly selected from both districts, and contacted by letters of invitation to participate, teachers from only one district agreed to be interviewed. All interviews were conducted by the researcher and were then analyzed via frequency word counts, and coded into categories via themes/patterns of concept areas. Miles, Huberman, and Saldana (2014) noted that "codes are labels that assign symbolic meaning to the descriptive or inferential information compiled during a study" (p. 71). This coding is a "data condensation task" that assembles data chunks that go together to let the researcher "further condense the bulk into analyzable units" called "pattern codes," (p. 73) consisting of categories or themes (p. 87). The researcher used this process to analyze the interview data. It was also

used to analyze the qualitative questions included in the *Using Student Data to Improve Instruction and Student Learning Data-Gathering Tool.*

Participants

Two suburban district school systems were selected from a United States Mid-Atlantic state. They were selected based upon the fact that school demographics were similar in both districts. Since the original intent of this research was to compare teachers in CFIP and non-CFIP schools, two CFIP and two non-CFIP elementary schools were selected from each of the study districts. District 1 had CFIP in only two schools, thus the Research Coordinator for that district selected the two CFIP schools plus two other schools with similar demographics. In District II the only elementary schools using CFIP with fidelity were Title I schools, thus those schools were chosen. The Research Coordinator approved the use of two other Title I elementary schools to maintain similar demographic status. Resultant limitations on the results will be discussed in Chapter 5.

Demographic/assessment data from the two districts were similar. The following data were extracted from the state department of education, which is not included in the references to insure anonymity of the two districts.

Participants included 81 teachers in eight elementary schools, two non-CFIP and two CFIP in each district. Thirty-eight respondents were from CFIP schools and 43 were from non-CFIP schools.

Table 1 shows demographics of the sample districts. Table 2 compares demographics of the sample schools.

Sample School Districts

With regard to race, District I is higher than District II in Hispanic/Latino students by 0.7%, White students by 14.6%, and Hawaiian/Pacific Islander students by 0.2%. District II is higher than District I in Asian students by 14.8%, and Black/African American students by 1.0%, and Two or More Races students by 0.7%.

Noting differences between numbers of students receiving support services, District I is 15% higher in students with Free and Reduced Meals (FARMS), while District II is 4% higher in students receiving Special Education and 4.6% higher in students receiving Title I services. District II has a 1% higher attendance rate, 3% higher graduation rate, and 1% higher per pupil expenditure. District I's student population is 1.5 % greater and has 1.6% more schools than District II. Years of teacher experience in District II are only 0.3% higher than District I.

Districts I and II both share state assessment scores that exceed the average scores for the state in all areas of assessment. In terms of achievement in the two districts' 2013 high school assessment data showed that District II exceeds District I's scores by 9.3% in algebra and biology, 7.3% in English, and 6.3% in government. District II also exceeded in SAT mean scores by 9% in reading and mathematics and 12% in writing. District I exceeded District II's scores in grade 3 math by 1.7%, grade 5 math by 2.3%, and Grade 5 science by 0.4%. District II exceeded District I's scores in grade 3 reading by 0.7% and in Grade 5 reading by 3.1%.

With regard to the eight sample elementary schools, demographic and assessment data from the two districts were also similar. The following data was extracted from the

state department of education but was not included in the references to insure anonymity of the eight schools.

Regarding race, District I study schools' average percent is higher than District II in Caucasian students by 44%. District II is higher than District I in Asian students by 4.6%, Black/African American students by 31.8%, Hispanic/Latino students by 8.4%, and "Two or More Races" students by 1.4%.

District I study schools average 1.4% higher in students with Free and Reduced Meals (FARMS) and 3.6% higher in students receiving Special Education services, while District II is 6.2% higher in students receiving ELL assistance.

State assessment for schools portrayed the following differences in means of percentages of Proficient and Advanced scores on the 2013 assessments. District I study schools exceeded District II study schools by 11.9% in grade 3 reading, 13% in grade 3 math, 10.9% in grade 5 mathematics, and 14.5% in grade 5 science. District II exceeded District I by 4.3% in grade 5 reading.

It should be noted again that District I's study schools' scores include no Title I schools, while District II's study schools include only Title I schools, as those schools were selected because they were the schools using CFIP with fidelity.

Table 1

Descriptive Statistics of Sample Districts

Factor	District I	District 2
	Difference of percentages	
Race		
Asian		+14.8
Black/African American		+1.0
Hawaiian/Pacific Islander	+0.2	
Hispanic/Latino	+0.7	
White	+14.6	
Two or More Races		+0.7
Free and Reduced Meals	+15.0	
Limited English Proficient	Below 5%	Below 5%
Special Education		+0.4
Title I		+4.6
Attendance rate		+1.0
Graduation rate		+3.0

Per pupil expenditure		+1.0
Student population	+0.7	
Number of schools	+0.6	
Years of teacher experience		+2.4
2013 state high school assessments		
Algebra		+9.3
Biology		+9.3
English		+7.3
Government		+6.3
2013 SAT (means)		
Reading		+9.0
Mathematics		+9.0
Writing		+12.0
Exceeded state assessment scores by:		
Reading	2.5	11.1
Mathematics	4.3	13.8
Writing	2.0	14.1

2013 state assessments (% Proficient + Advanced)		
Grade 3 Reading		+0.7
Grade 3 Mathematics	+1.7	
Grade 5 Reading		+3.1
Grade 5 Mathematics	+2.3	
Grade 5 Science	+0.4	

* Note. Statistics obtained from district and state data

Table 2

Descriptive Statistics of Sample Elementary Schools in Districts I and II

Factor: Race	Difference in percentages	
	District I (N=4 schools)	District 2 (N=4 schools)
Asian		+4.6
Black/African American		+31.8
Hawaiian/Pacific Islander	--	--
Hispanic/Latino		+8.4
White	+44.0	
Two or more races		+1.4
Difference in means of percentages from the study schools per district		
Free and Reduced Meals	+1.4	
Limited English Proficient		+6.2
Special Education	+3.6	
Difference in means of % of Proficient and Advanced on 2013 state assessments		
Grade 3 Reading	+11.9	
Grade 3 Mathematics	+13	

Grade 5 Reading		+4.3
Grade 5 Mathematics	+10.9	
Grade 5 Science	+14.5	

Data Analysis for Research Questions

Research question 1- Is the instrument reliable? What is the evidence for this?

To test the first research question, Cronbach's alpha coefficients were determined statistically for the overall instrument as well as for individual questions.

Research question 2- Is the instrument valid? What is the evidence for this?

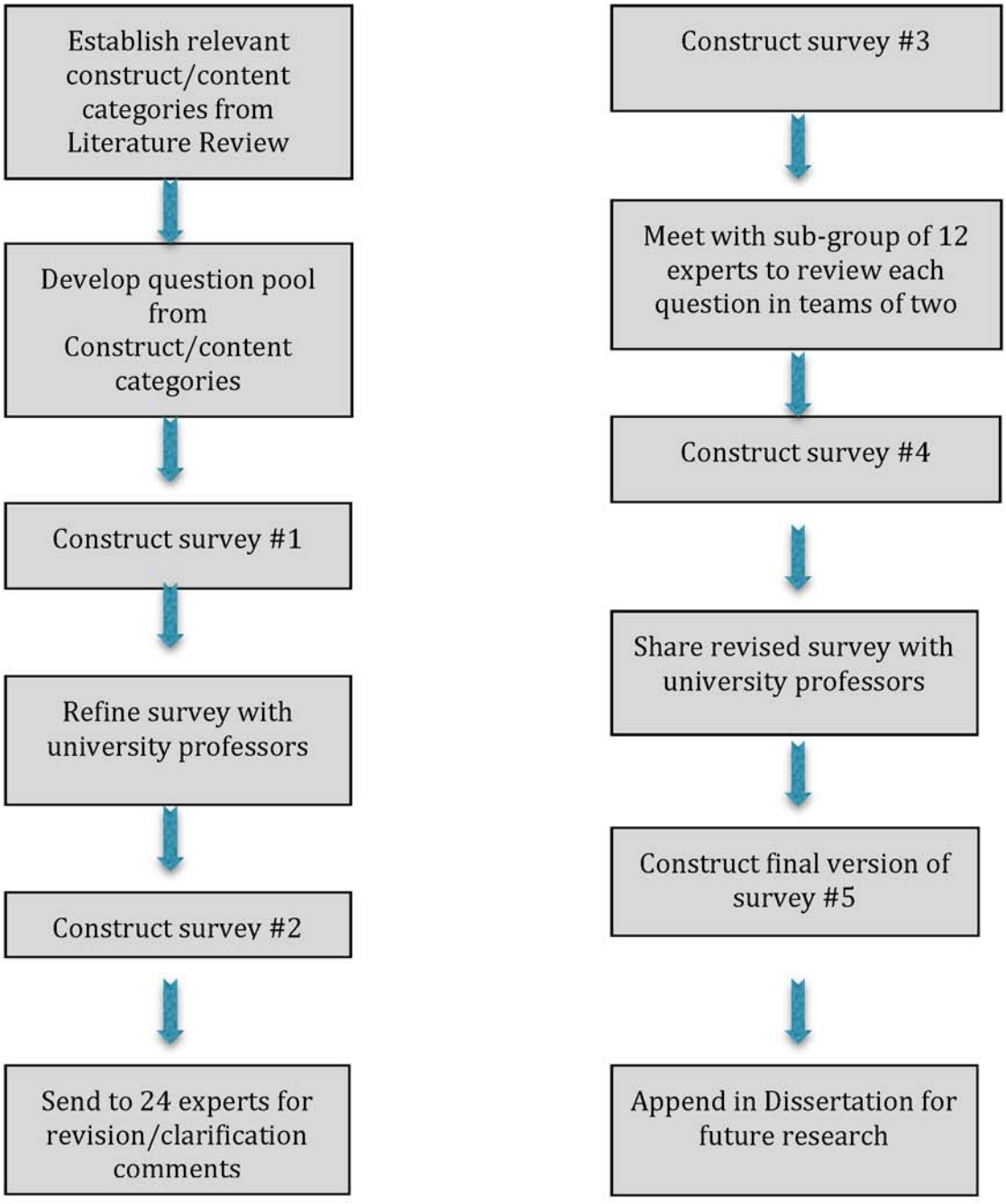
Validity was established using content, cognitive, and usability standards validity confirmation by a focus group of experts. Presser et al. (2004) noted survey instruments should meet standards for content, cognitive understanding, and usability.

Validity was established using content, cognitive, and usability standards validity confirmation by focus group experts and university professors in a multi-step survey reconstruction process. The initial literature review served to identify relevant constructs and concepts. Categories were then established, question banks written, survey created, piloted with a focus group of experts, reconstructed, finalized with a subset of the focus group, and then edited by university professors.

See the following researcher-created schematic depicting steps in the validation process.

Figure 2.

Flow Chart for Developing Instrument Validity Using Expert Focus Groups



Research question 3- How often are teacher teams using data?

Evidence for this question comes from survey questions 2 and 5a, and interview question 10: “What is the structure of your team’s data analysis time (e.g. ___times/week for _____minutes; whole meeting or part of the meeting devoted to data discussion?”

Research question 4- How competent do the teachers feel using data?

Evidence for this question comes from survey question 4 and interview questions

12: A. Do you believe that your team’s use of student data analysis has helped you improve your classroom instruction?

B. If so, can you provide specific examples? If not, why not?

14: How has the use of the data analysis process affected you as a teacher?

16: A. Are you a more effective, more confident, more capable, and/or more positive teacher today as a result of your team’s use of student data conversations?

B. Please address each of these four descriptors and explain why or why not.

Research question 5- Does the qualitative data from the survey and the interview data support findings from the survey?

The qualitative data from both the survey and the interviews were examined for corroborating evidence with the quantitative Likert-scale survey data. Results are represented in the tables and comparison discussions that follow in Chapter 4.

Chapter IV

RESULTS AND ANALYSIS

This chapter presents the results of the analyses that were completed for each of the four research questions. Each question will be addressed along with the tests that were run and the associated findings. Discussions of results precede data tables.

Research question 1- Is the instrument reliable? What is the evidence for this?

Yes, the instrument is reliable. Evidence is presented in Table 3 with Cronbach alpha statistics overall and for each individual question.

The Cronbach alpha score for the survey instrument developed in this study was 0.90, indicating excellent/high reliability.

Table 3

Cronbach Alpha Scores for Reliability of the Survey Instrument

Question	Theme/Category	Cronbach's alpha if item deleted
	Overall Cronbach Alpha for the Entire Instrument = .90	
	Frequency of Data Analysis	
2	How often does your team analyze data?	.90
	Analysis of Data	
3	My team has received training in data analysis.	.90
4	I feel competent to analyze data.	.90
5	My team is provided sufficient dedicated time each week to analyze data during the scheduled school day.	.90
6	My team has been taught a specific structured protocol to analyze data.	.90
7	My team feels empowered to make instructional decisions in response to the results of our data analysis (e.g. adjust instruction, student groupings, interventions; refer to IIT; seek additional human/material teacher resources, etc.).	.90
8	My team has been provided sufficient data coaching to analyze student achievement.	.90

Operation of the Team

11	My team uses state assessment data to guide instructional improvement to support increased student learning.	.91
12	My team uses short cycle assessment data to guide instructional improvement to support increased student learning.	.90
13	My team uses attendance data to guide instructional improvement to support increased student learning.	.90
14	My team uses quarterly assessment data to guide instructional improvement to support increased student learning.	.90
15	My team uses IEP data to guide instructional improvement to support increased student learning.	.90
16	My team uses ELL data to guide instructional improvement to support increased student learning.	.90
17	My team uses teacher-made formative assessment data to guide instructional improvement to support increased student learning.	.90
18	My team uses teacher-made summative assessment data to guide instructional improvement to support increased student learning.	.90

19	My team uses diagnostic assessment data to guide instructional improvement to support increased student learning.	.90
20	My team uses OTHER assessment data to guide instructional improvement to support increased student learning.	.90
21	Analyzing data has helped my colleagues and me become a more collaborative team.	.89
22	Analyzing data collaboratively with the team members makes it more likely that I will follow up on ideas from my teammates.	.90

Results of the Data Analysis

(For questions 24-38)
To what extent do the data analyses that you and your team complete . .

24	help you improve classroom instruction?	.90
25	help you use data analysis to improve student achievement?	.90
26	help you understand better what the data that you are asked to analyze mean?	.90
27	help frame/create important questions to guide further analysis?	.90
28	enable you to determine classwide strengths in the content assessed?	.90
29	enable you to determine grade level strengths in the content assessed?	.90
30	enable you to determine classwide learning needs in the content assessed?	.90
31	enable you to determine grade level needs in the content assessed?	.90
32	help you to determine skills to re-teach certain content to the whole class?	.90
33	help you identify students who are ready for advanced work or enrichment?	.90
34	help you identify students who need further interventions to master the content?	.90

35	help you structure enrichment activities?	.90
36	help you implement enrichments?	.90
37	help you assess the success or effectiveness of interventions?	.90
38	help you plan for improvements in future units?	.90

Research question 2- Is the instrument valid? What is the evidence for this?

The instrument is valid based upon use of an expert focus group and pilot testing processes used to create, clarify, categorize, and pilot test the instrument. Validity was established using content, cognitive, and usability standards validity confirmation by a focus group of experts. It is noted that survey instruments should meet standards for content, cognitive understanding, and usability (Presser et al., 2004). See the following researcher-created schematic depicting steps in the validation process (p. 56)

Research question 3- How often are teacher teams using data?

Frequency of Data Analysis

The mean of 2.6 indicates that, on average, teachers in teams analyze data less frequently than weekly but more frequently than twice each month. This information was corroborated by the interview data in which teachers said their teams meet once a week or twice a month. One CFIP school noted that the team meets every week and has data discussions at every meeting, focusing on individual students or a whole class each time.

Survey Question 2. How often does your team analyze data?

Table 4.

Frequency of Data Analysis

	Frequency	Percent
Daily	3	3.8
Weekly	5	6.4
Twice per month	5	6.4
Monthly	17	21.8
Less frequently than monthly	48	61.5
Total	78	100.0

Research question 4- How competent do the teachers feel using data?

Survey question four (N=77; mean = 1.7) weekly/daily, indicates that most teachers feel competent analyzing data every week, if not even every day.

This information was corroborated by interviewed teachers' remarks who indicated that the whole team has input into data collection, analysis, and team-generated steps to take as a result. Comments included: "We all have different ideas and share our ideas;" "we tailor our instruction accordingly to each student's learning needs that we see

from the assessments;" "we might otherwise miss specific needs of students;" "we look at our ESOL kids who get lost in the shuffle, and not because of behavior problems;" "this process holds each teacher more accountable but together we identify specific needs in small groups, individual students, or the whole class, teaching what each needs;" and, "I can now know how each student is doing and can show each student's growth." Interviewed teachers seemed to appreciate the time they could analyze data with team members and have more targeted goals to inform instruction in the classroom.

Research question 5-Does the qualitative data from the survey and the interview data support findings from the quantitative survey?

Yes, the qualitative data from both the survey and the interviews substantiated evidence from the quantitative Likert-scale survey information. Results are represented in the tables and comparison discussions that follow.

Overview of data results from the survey and interviews

Results from the Survey: *Using Student Data to Improve Instruction and Student Learning Data-Gathering Tool*

Question 1. What data do you or your team routinely analyze? (Results are included in the subsequent section on qualitative results from the survey).

Frequency of Data Analysis

Question 2. How often does your team analyze data?

The mean of 2.6 (N=80) indicates that teachers in teams analyze data approximately weekly or two times a month. This information was corroborated by the interview data in which teachers said their teams meet once a week or twice a month.

Analysis of Data

Question 3. My team has received training in data analysis.

For question three (mean = 4.3), most teachers indicated that their team received data analysis training less than once a month. Again this is a finding reinforced during the interviews, where it was stated in more than 80% of the interviews that increased time with teams to analyze and interpret data is a major need.

Question 4. I feel competent to analyze data.

Question four (mean = 1.7) indicates that most teachers feel competent analyzing data every week, if not even every day.

Question 5. My team is provided sufficient dedicated time each week to analyze data during the scheduled school day.

Question five (mean=3.2) denotes that teachers are given the opportunity to meet in teams to discuss their student data only twice monthly, validating responses from question two.

Question 5 A. How much time are you allocated for your team to analyze data during the scheduled school day? Please answer in number of minutes per week.

Question 5 A (mean = 30 minutes per week) is somewhat different from the values stated in the interviews. Most interviewed teachers noted that their teams meet for 60 minutes, yet some stated they meet weekly and others that they meet twice a month for 60 minutes.

Question 6. My team has been taught a specific structured protocol to analyze data.

Question six (mean = 3.9) denotes that teams may use a structured protocol, but only twice a month or monthly.

Evidence from the structured interviews shows that teams using CFIP tend to meet weekly or at least every other week for 60 minutes, and they use a structured

protocol during each meeting to analyze data and discern how to use that data in instruction to improve student learning as a team.

Question six A asks respondents to *name the protocol their team uses if there is one.* The following were listed as specific structured protocols teams used to analyze data: CFIP (N=17); SLOs (N=2); Running records (N=2); 12-point scoring rubrics (N=1); professional development in team meetings (N=1); Aspen (N=1); planning period (N=1); MMSR (N=1); data discussions (N=1); monthly reading data minutes; reading and writing rubrics and math scoring guides (N=1); Achievement series (N=1); and, through reading instructor (N=1).

Question 7. My team feels empowered to make instructional decisions in response to the results of our data analysis (e.g., adjust instruction, student groupings, interventions; refer to IIT; seek additional human/material teacher resources, etc.).

Question seven (mean = 2.1) indicates that teacher teams do feel empowered to make decisions based upon data every week regarding adjusting instruction, forming student groups, initiating interventions, etc. Again this is a finding confirmed during the interviews.

Question 8. My team has been provided sufficient data coaching to analyze student achievement.

Question eight (mean = 3.9) denotes that teachers feel they have been provided data coaching to analyze student data approximately twice a month. In the interviews respondents indicated a need for more data coaching and data analysis training.

Questions 9 and 10 (see qualitative analysis for survey section)

Table 5

Analysis of data

1=Daily 2=Weekly 3=Twice monthly 4=Monthly 5=Less than monthly

Question		N	Mean
3	My team has received training in data analysis.	79	4.3
4	I feel competent to analyze data.	77	1.7
5	My team is provided sufficient dedicated time each week to analyze data during the scheduled school day.	78	3.2
6	My team has been taught a specific structured protocol to analyze data.	75	3.9
7	My team feels empowered to make instructional decisions in response to the results of our data analysis (e.g. adjust instruction, student groupings, interventions; refer to IIT; seek additional human/material teacher resources, etc.).	78	2.1
8	My team has been provided sufficient data coaching to analyze student achievement.	77	3.9

Table 6
Frequency (F) and percent (%) of responses for analysis of data questions (Qs)

Q			Daily	Weekly	2 x/ Month	Monthly	Less than Monthly	Totals
3	My team has received training in data analysis	F	3	5	5	17	48	78
		%	3.8	6.4	6.4	21.8	61.5	100
4	I feel competent to analyze data.	F	39	14	10	7	1	71
		%	54.9	19.7	14.1	9.9	1.4	100
5	My team is provided dedicated time to analyze data during the scheduled school day	F	4	24	13	15	19	75
		%	5.3	32	17.3	20.0	25.3	100
6	My team has been taught a specific structured protocol to analyze data	F	4	7	9	20	26	67
		%	6.0	10.4	13.4	29.9	38.8	100
7	My team feels empowered to make instructional decisions in response to results of our data analysis . . .	F	28	18	13	9	3	71
		%	39.4	25.4	18.3	12.7	4.2	100
8	My team has been provided sufficient data coaching . . .	F	11	10	12	15	22	70
		%	15.7	14.3	17.1	21.4	31.4	100

Operation of the team

Question 11. My team uses MSA assessment data to guide instructional improvement to support increased student learning.

Question 11 (mean = 3.4) denotes that teachers are *neutral/disagree* that their teams use state assessment data to guide instructional improvement to support increased student learning.

Results of the interviews agreed with this rating. Respondents mentioned that, often only the administrators and team leaders have access to this information, and some teachers felt it should be shared with the whole team. Some felt that the results from state assessments are not timely as they often are not returned until the summer after the students are gone.

Question 12. My team uses short cycle assessment data to guide instructional improvement to support increased student learning.

Question 12 (mean = 1.7) indicates that teachers *agree/strongly agree* that their team uses short cycle assessment data to guide instructional improvement to support increased student learning.

Again this is a finding supported by the interview data. Most of the 10 respondents indicated that formative/classroom assessments and team-created, team-scored assessments are their best and most timely sources of data to see student growth and needs.

Question 13. My team uses attendance data to guide instructional improvement to support increased student learning.

Question 13 (mean = 2.7) reveals that teachers are *neutral/agree* that the team uses attendance data guide instructional improvement to support increased student learning.

In interview responses, the teachers in the non-CFIP schools mentioned attendance data more often as a source of gaps in student learning when students miss many days of school.

Question 14. My team uses quarterly assessment data to guide instructional improvement to support increased student learning.

Question 14 (mean = 2.0) conveys that teachers *agree* that their team uses quarterly assessment data to guide instructional improvement to support increased student learning.

In interviews, six of the 10 respondents noted that the team uses quarterly assessment data from the district.

Question 15. My team uses IEP data to guide instructional improvement to support increased student learning.

Question 15 (mean = 2.0) denotes that teachers *agree* that their team uses IEP data to guide instructional improvement to support increased student learning.

Only two teachers who were interviewed mentioned use of IEP or “SPED” data.

Question 16. My team uses ELL data to guide instructional improvement to support increased student learning.

Question 16 (mean = 2.4) indicates that teachers slightly *agree/are neutral* that their team uses ELL data to guide instructional improvement to support increased student learning.

Four interview respondents mentioned use of ELL data.

Question 17. My team uses teacher-made formative assessment data to guide instructional improvement to support increased student learning.

Question 17 (mean = 1.6) implies that teachers *agree/strongly agree* that their team uses teacher-made formative assessment data to guide instructional improvement to support increased student learning.

Eight of the 10 interview respondents mentioned use of formative assessment data.

Question 18. My team uses teacher-made summative assessment data to guide instructional improvement to support increased student learning.

Question 18 (mean = 1.7) conveys that teachers *agree/strongly agree* that their team uses teacher-made summative assessment data to guide instructional improvement to support increased student learning.

Nine interviewees noted that the team uses summative assessment data.

Question 19. My team uses diagnostic assessment data to guide instructional improvement to support increased student learning.

Question 19 (mean = 1.9) denotes that teachers *agree/strongly agree* that their team uses diagnostic assessment to guide instructional improvement to support increased student learning.

Five of the 10 interviewed teachers mentioned use of forms of diagnostic data use in their teams.

Question 20. My team uses OTHER assessment data to guide instructional improvement to support increased student learning.

Question 20 (mean = 1.9) denotes that teachers *agree/strongly agree* that their team uses "other" assessments to guide instructional improvement to support increased student learning.

Three respondents in interviews noted the use of other types of assessment, particularly team-created math, reading, and writing assessments.

Question 21. Analyzing data has helped my colleagues and me become a more collaborative team.

Question 21 (mean = 1.8) purports that teachers *agree/strongly agree* that analyzing data has helped them and their colleagues to become a more collaborative team.

Interviewed teachers noted that analyzing data has advantages such as: making sure all grades have the same training; having consistency in scoring when teams create their own assessments and score all of them together; and, "making sure we are all on the same page."

Question 22. Analyzing data collaboratively with the team members makes it more likely that I will follow up on ideas from my teammates.

Question 22 (mean = 1.8) denotes that teachers *agree/strongly agree* that analyzing data collaboratively with their team members makes it more likely that they will follow up on ideas from their teammates.

Survey respondents noted that collaboration holds each team member more accountable, and causes each teacher to "teach what they [students] need, and not just what I think they may need."

Question 23 (see qualitative analysis for survey section).

Table 7

Operation of the team

1=Strongly agree 2=Agree 3=Neither agree nor disagree 4=Disagree 5=Strongly disagree

Question		N	Mean
11	My team uses state assessment data to guide instructional improvement to support increased student learning.	79	3.4
12	My team uses short cycle assessment data to guide instructional improvement to support increased student learning.	79	1.7
13	My team uses attendance data to guide instructional improvement to support increased student learning.	80	2.7
14	My team uses quarterly assessment data to guide instructional improvement to support increased student learning.	80	2.0
15	My team uses IEP data to guide instructional improvement to support increased student learning.	79	2.0
16	My team uses ELL data to guide instructional improvement to support increased student learning.	79	2.4

Table 7 (continued)

Operation of the team			
1=Strongly agree 2=Agree 3=Neither agree nor disagree 4=Disagree 5=Strongly disagree			
17	My team uses teacher-made formative assessment data to guide instructional improvement to support increased student learning.	80	1.6
18	My team uses teacher-made summative assessment data to guide instructional improvement to support increased student learning.	79	1.7
19	My team uses diagnostic assessment data to guide instructional improvement to support increased student learning.	79	1.9
20	My team uses OTHER assessment data to guide instructional improvement to support increased student learning.	81	1.9
21	Analyzing data has helped my colleagues and me become a more collaborative team.	80	1.8
22	Analyzing data collaboratively with the team members makes it more likely that I will follow up on ideas from my teammates.	80	1.8

Table 8
Frequency (F) and percent (%) of responses for *Operation of the Team* questions (Q) (SA=Strongly agree; A=Agree; NAD=Neither agree nor disagree; D=Disagree; and, SD=Strongly disagree)

Q			SA	A	NAD	D	SD	Totals
11	My team uses state assessment data to guide instructional improvement to support increased student learning.	F	6	20	14	16	22	78
		%	7.7	25.6	17.9	20.5	28.2	100
12	My team uses short cycle assessment data to guide instructional improvement to support increased student learning.	F	40	25	6	4	1	77
		%	51.9	32.5	7.8	5.2	1.3	100
	My team uses attendance data to guide instructional improvement to support increased student learning.							
13	My team uses attendance data to guide instructional improvement to support increased student learning	F	11	28	19	15	5	79
		%	13.9	35.4	24.1	19.0	6.3	100

Table 8 (continued)

			SA	A	NAD	D	SD	Totals
14	My team uses quarterly assessment data to guide instructional improvement to support increased student learning	F	40	25	6	4	1	77
		%	51.9	32.5	7.8	5.2	1.3	100
15	My team uses IEP data to guide instructional improvement to support increased student learning	F	30	28	8	10	2	78
		%	38.5	35.9	10.3	12.8	2.6	100
16	My team uses ELL data to guide instructional improvement to support increased student learning	F	18	31	17	11	2	79
		%	22.8	39.2	21.5	13.9	2.5	100
17	My team uses teacher-made formative assessment data to guide instructional improvement to support increased student learning	F	47	26	3	4	0	80
		%	58.8	32.5	3.8	5.0	0	100

Table 8 (continued)

			SA	A	NAD	D	SD	Totals
18	My team uses teacher-made summative assessment data to guide instructional improvement to support increased student learning	F	38	32	5	4	0	79
		%	48.1	40.5	6.3	5.1	0	100
19	My team uses diagnostic assessment data to guide instructional improvement to support increased student learning	F	38	32	5	4	0	79
		%	48.1	40.5	6.3	5.1	25.3	100
20	My team uses OTHER assessment data to guide instructional improvement to support increased student learning	F	27	38	11	5	0	81
		%	33.3	46.9	13.6	6.2	0	100
21	Analyzing data has helped my colleagues and me become a more collaborative team	F	32	35	9	3	0	79
		%	40.5	44.3	11.4	3.8	0	100

Table 8 (continued)

			SA	A	NAD	D	SD	Totals
22	Analyzing data collaboratively with the team members makes it more likely that I will follow up on ideas from my teammates	F	30	33	14	2	0	79
		%	38.0	41.8	17.7	2.5	0	100

Results of the data analysis (rankings are *italicized)*

Question 24. To what extent do the data analyses that you and your team complete help you improve classroom instruction?

Question 24 (mean = 2.7) The data analyses that you and your team complete helps you improve classroom instruction *a lot*/*a little.*

Question 25. To what extent do the data analyses that you and your team complete help you use data analysis to improve student achievement?

Question 25 (mean = 2.7) The data analyses that you and your team complete helps you use data analysis to improve student achievement *a lot/a little*.

Question 26. To what extent do the data analyses that you and your team complete help you understand better what the data that you are asked to analyze mean?

Question 26 (mean = 2.4) The data analyses that you and your team completed helped you understand *a little/a lot* better what the data you are asked to analyze means.

Question 27. To what extent do the data analyses that you and your team complete help frame/create important questions to guide further analysis?

Question 27 (mean = 2.5) The data analyses process that you and your team completed helped you *a little/a lot* to frame important questions to guide further analysis.

Question 28. To what extent do the data analyses that you and your team complete enable you to determine classwide strengths in the content assessed?

Question 28 (mean = 2.7) The data analyses you and your team completed enabled you to determine classwide strengths in the content assessed *a lot/a little*.

Question 29. To what extent do the data analyses that you and your team complete enable you to determine grade level strengths in the content assessed?

Question 29 (mean = 2.6) The data analyses you and your team completed enabled you to determine grade level learning strengths in the content assessed *a lot/a little*.

Question 30. To what extent do the data analyses that you and your team complete enable you to determine classwide learning needs in the content assessed?

Question 30 (mean = 2.8) The data analyses you and your team completed enabled you to determine classwide learning needs in the content assessed *a lot/a little*.

Question 31. To what extent do the data analyses that you and your team complete enable you to determine grade level needs in the content assessed?

Question 31 (mean = 2.6) The data analyses you and your team completed enabled you to determine grade level needs in the content assessed *a lot/a little*.

Question 32. To what extent do the data analyses that you and your team complete help you to determine skills to reteach certain content to the whole class?

Question 32 (mean = 2.7) The data analyses you and your team completed helped you to determine skills to reteach certain content to the whole class *a lot/a little*.

Question 33. To what extent do the data analyses that you and your team complete help you identify students who are ready for advanced work or enrichment?

Question 33 (mean = 2.7) The data analyses you and your team completed helped you identify students who are ready for advanced work or enrichment *a lot/a little*.

Enrichment was mentioned only by two of the 10 interviewed teachers. One teacher noted that the team could devote more time to enrichment if they "were not always having to talk about the Title I students needs."

Question 34. To what extent do the data analyses that you and your team complete help you identify students who need further interventions to master the content?

Question 34 (mean = 2.8) The data analyses that you and your team completed helped you identify students who need further interventions to master the content *a lot/a little*.

Interviewed teachers noted use of data analysis to identify strengths and weaknesses in 7/10 responses. Interview respondents all believed that analyzing data helps them to identify areas of growth and need in all students. They did not all agree that the process their team uses to analyze data is the best it could be.

Question 35. To what extent do the data analyses that you and your team complete help you structure enrichment activities?

Question 35 (mean = 2.3) The data analyses you and your team completed helped you structure enrichment activities *a little/a lot*.

Again only 2/10 interview respondents mentioned enrichment and most concentrated on needs-based strategies to close the achievement gap.

Question 36. To what extent do the data analyses that you and your team complete help you implement enrichments?

Question 36 (mean = 2.1) The data analyses you and your team completed helped you implement enrichments *a little/a lot*.

Interviewed teachers all responded positively to the idea of teams meeting to analyze student data and plan strategies to regroup, reteach, and instruct in the classroom. Six out of 10 teachers would suggest changes to the process their team uses, such as: "find ways to improve data conversations;" provide more opportunities to look at data; improve the way we collect data; look at our highest priorities first; find out new strategies to use; and use CFIP to look at SLO progress. All 10 interviewed teachers noted the need for more time for teams to meet and analyze data.

Question 37. To what extent do the data analyses that you and your team complete help you assess the success or effectiveness of interventions?

Question 37 (mean = 2.6) The data analyses you and your team completed helped you assess the effectiveness of interventions *a lot/a little*.

All 10 interviewed teachers noted that data analysis helps them assess effectiveness of interventions and where to next proceed.

Question 38. To what extent do the data analyses that you and your team complete help you plan for improvements in future units?

Question 38 (mean = 2.6) The data analyses you and your team completed helped you plan for improvements in future units *a lot/a little*.

While interviewees did not specifically state that data analysis helps plan for improved future units, they did mention that the team identifies students who need reading specialists or reteaching, creates team rubrics, shares ideas and strategies to use

in the classroom, and regroups to rotate students through classroom stations for specific skill development.

Table 9

Results of the data analysis

1=None at all 2=A little 3=A lot

	To what extent do the data analyses Processes that you and your team complete…	N	Mean
24	help you improve classroom instruction?	79	2.7
25	help you use data analysis to improve student achievement?	80	2.7
26	help you understand better what the data that you are asked to analyze mean?	79	2.4
27	help frame important questions to guide further analysis?	81	2.5
28	enable you to determine classwide strengths in the content assessed?	79	2.7
29	enable you to determine grade level learning needs in the content assessed?	79	2.6
30	enable you to determine classwide learning needs in the content assessed	79	2.8
31	enable you to determine grade level needs in the content assessed?	79	2.6
32	enable you to determine classwide learning needs in the content assessed?	79	2.7
33	help you identify students who are ready for advanced work or enrichment?	79	2.7

Table 9 (Continued)

Results of the data analysis

1=None at all 2=A little 3=A lot

34	help you identify students who need further interventions to master the content?	80	2.8
35	help you structure enrichment activities?	78	2.3
36	help you implement enrichments?	78	2.1
37	help you assess the success or effectiveness of interventions?	80	2.6
38	help you plan for improvements in future units?	80	2.6

Table 10
Frequency (F) and percent (%) of responses for *Results of the Data Analysis* Questions (Q)
(For questions 24-38) **To what extent do the data analyses that you and your team complete. . .**

Q			None at all	A little	A lot	Totals
24	…help you improve classroom instruction?	F	0	21	58	79
		%	0	26.6	73.4	100
25	…help you use data analysis to improve student achievement?	F	3	20	57	80
		%	3.8	25.0	71.3	100
26	…help you understand better what the data that you are asked to analyze mean?	F	5	33	41	79
		%	6.3	41.8	51.9	100
27	…help frame/create important questions to guide further analysis?	F	6	31	44	81
		%	7.4	38.3	54.3	100
28	…enable you to determine classwide strengths in the content assessed?	F	4	17	58	79
		%	5.1	21.5	73.4	100
29	…enable you to determine grade level strengths in the content assessed?	F	3	21	55	79
		%	3.8	26.6	69.6	100

Table 10 (continued)

Q			None at all	A little	A lot	Totals
30	…enable you to determine classwide learning needs in the content assessed?	F	0	17	62	79
		%	0	21.5	78.5	100
31	…enable you to determine grade level needs in the content assessed?	F	2	23	54	79
		%	2.5	29.1	68.4	100
32	…help you to determine skills to re-teach certain content to the whole class?	F	3	12	64	79
		%	3.8	15.2	81.0	100
33	…help you identify students who are ready for advanced work or enrichment?	F	3	19	57	79
		%	3.8	24.1	72.2	100
34	…help you identify students who need further interventions to master the content?	F	2	13	65	80
		%	2.5	16.3	81.3	100
35	…help you structure enrichments activities?	F	7	36	35	78
		%	9.0	46.2	44.9	100
36	…help you implement enrichments?	F	15	35	28	78
			19.2	44.9	35.9	100

Table 10 (continued)

Q			None at all	A little	A lot	Totals
37	…help you assess the success or effectiveness of interventions?	F	4	28	48	80
		%	5.0	35.0	60.0	100
38	…help you plan for improvements in future units?	F	6	21	52	79
		%	7.6	26.6	65.8	100

Section Summary

On almost all questions respondents indicated that use of data analysis results enhances teachers' abilities to determine how to best improve classroom instruction, create questions to guide further analysis, determine classwide and grade level strengths and needs in content areas, know which skills to reteach, identify students who need interventions and enrichments, and assess effectiveness of those interventions or enrichments. The exceptions are in the area of structuring and implementing enrichment activities, where teachers scored *"a little."*

Questions 40 and 41 (see qualitative analysis for survey section).

A second important data source in the *Using Student Data to Improve Instruction and Student Learning Data-Gathering Tool* is the qualitative data obtained in questions 1, 9, 10, 23, 39, 40, and 41. For this data and the qualitative interview data word counts and coding were conducted to look for themes and patterns within concept/construct areas. These data were separated into CFIP and Non-CFIP schools to see if any patterns might emerge.

Examining each question in the survey's qualitative data questions produced the following results.

Question 1. What data do you or your team routinely analyze?

CFIP teachers' responses were higher than non-CFIP teachers in the categories of developmental assessments (26 CFIP /19 Non CFIP) and state/district assessments/SLOs/Curriculum (94 CFIP /77 Non-CFIP). Non-CFIP teachers scored higher in summative/formative/tests/quizzes (48 CFIP /65 Non-CFIP) and in strengths/weaknesses (15 CFIP /36 Non-CFIP).

Table 11

*Survey Questions Word Counts CFIP and Non-CFIP**
Code Words Collapsed Into Patterns/Themes
Q. 1. What data do you or your team routinely analyze?

Term	CFIP	Non-CFIP
Attendance	2	3
Behavior	4	13
Benchmark	7	16
Developmental assessments	26	19
State/District assessments/Curriculum/SLOs	94	77
Summative /Formative/ Tests/Quizzes	48	65
Strengths/Weaknesses	15	36

Notes. *One code word scored per teacher, per question, e.g., if the teacher used the same word three times in the question, it was scored only once. Coded words were identified as curriculum assessments or developmental assessments.
Curriculum assessments: Language arts; Math Common Core; Counting skills; Math facts; Rote counting; Reading fluency; BCRs; Cluster test; On-demand writing samples; Unit tests; Word lists; DIBELS; Spiral reviews; Science tests; Spelling test; Performance skills test; Sight words; Rubrics; Letter identification; Sound identification; etc.
Developmental assessments: Woodcock Johnson; SAW; Running records; Dreambox; Special Education assessments; J and P Benchmarks, etc.

Question 9. Describe how your team analyzes and uses student data to improve your teaching.

CFIP teachers' responses were higher than non-CFIP teachers in the categories of struggling/excelling/strengths/mastery (32 CFIP /5 Non-CFIP), adjust instruction/ strategies/ resources (72 CFIP /53 Non-CFIP), target/focus/identify/inform/ goals/objectives (57 CFIP /19 Non-CFIP), and assessing/evaluating/data (62 CFIP /21 Non-CFIP). Non-CFIP teachers scored higher in behavior (1 CFIP /4 Non-CFIP). CFIP and Non-CFIP teachers were more similar in the categories of needs of all students (24 CFIP /20 Non-CFIP), interventions/implementations (53 CFIP/41 Non-CFIP), and teams/common time/discussions (37 CFIP/31 Non-CFIP).

Table 12

*Survey Questions Word Counts CFIP and Non-CFIP**
Code Words Collapsed Into Patterns/Themes
Q. 9 Please describe specifically how your team analyzes and uses student data to improve your teaching.

Term	CFIP	Non-CFIP
Struggling/Excelling/strengths/mastery	32	5
Needs of all students	24	20
Adjust instruction/strategies/resources	72	53
Interventions/Implementations	53	41
Target/Focus/Identify/Inform/Goals/Objectives	57	19
Assessing/Evaluating/Data	62	21
Teams/Common time/Discussions	37	31
Behavior/PBIS	1	4

Notes. *One code word scored per teacher, per question, e.g., if the teacher used the same word three times in the question, it was scored only once.

Question 10. Describe specifically how your team analyzes and uses student data to improve student learning.

CFIP teachers' responses were higher than Non-CFIP teachers in the categories of targeted (43 CFIP /21 Non-CFIP), and struggling/weaknesses/needs (16 CFIP /7 Non-CFIP). Non-CFIP teachers scored higher in behavior (5 CFIP /8 Non-CFIP), assessments

(19 CFIP /25 Non-CFIP) and mastery/strengths/enrich (6 CFIP /14 Non-CFIP). CFIP and Non-CFIP teachers were more similar in the categories of needs of all students (16 CFIP /12 Non-CFIP), and adjust instruction (52 CFIP /44 Non-CFIP).

Table 13

*Survey Questions Word Counts CFIP and Non-CFIP**
Code Words Collapsed Into Patterns/Themes
Q. 10. Please describe specifically how your team analyzes and uses student data to improve student learning.

Term	CFIP	Non-CFIP
Assessments	19	25
Targeted	43	21
Behavior	5	8
Mastery/strengths/enrich	6	14
Struggling/weaknesses/needs	16	7
Needs of all students	16	12
Adjust instruction	52	44

Notes. *One code word scored per teacher, per question, e.g., if the teacher used the same word three times in the question, it was scored only once.

Question 23. Describe specifically how your team considers specific data, such as state assessment, short cycle assessments, attendance data, and other data, and uses that data to guide instructional improvement and increase student achievement.

CFIP teachers' responses were higher than Non-CFIP teachers in the categories of adjust instructional practices/interventions (28 CFIP /18 Non-CFIP), assessments (state/other) (37 CFIP /26 Non-CFIP), meet needs of each student (53 CFIP /35 Non-CFIP), and trends/patterns/focus (13 CFIP /5 Non-CFIP). Non-CFIP teachers scored higher in behavior (0 CFIP /2…CFIP/non CFIP). CFIP and Non-CFIP teachers were more similar in the categories of attendance (12 CFIP /13 Non-CFIP), time (5 CFIP /1 Non-CFIP), and team/collaborate (14 CFIP /16 Non-CFIP).

Table 14

*Survey Questions Word Counts CFIP and Non-CFIP**
Code Words Collapsed Into Patterns/Themes
Q. 23. Please describe specifically how your team considers specific data, such as state assessment data, short cycle assessments, attendance data, and other data, and uses that data to guide instructional improvement and increase student achievement.

Term	CFIP	Non-CFIP
Adjust instructional practices/Interventions	28	18
Assessments (State/other)	37	26
Attendance	12	13
Behavior	0	2
Time: Daily/Weekly	5	1
Trends/Patterns/Focus	13	5

Notes. *One code word scored per teacher, per question, e.g., if the teacher used the same word three times in the question, it was scored only once. Coded words included the following identified assessments: Assessments: Reading; Class work; curriculum; ELS; observations; spelling list; Common Core; MAP; cluster tests; exit tickets; Running records; DIBELS; pretests; report card grades; fluency; watch lists; family programming; short-cycle; number sense; benchmarks; homework; summative; formative; and, skills.

Question 39. Describe specifically how the results of the data analysis undertaken by your team are useful in helping you identify student, classroom, and grade level strengths and weaknesses.

CFIP teachers' responses were higher than Non-CFIP teachers in the categories of focus/target (20/14…CFIP/Non-CFIP), data analysis/patterns/trends (80/23), strengths/weaknesses/needs (42/25), and ELL/Special Education (6/3). Non-CFIP teachers scored higher in Common Core/math/MAP/Dreambox (2/4…CFIP/Non-CFIP), and behavior/PBIS (3/6). CFIP and Non-CFIP teachers were more similar in the categories of instruction/intervention/implementations (58/44…CFIP/Non-CFIP), and team (6/6).

Table 15

*Survey Questions Word Counts CFIP and Non-CFIP**
Code Words Collapsed Into Patterns/Themes
Q. 39. Please describe specifically how results of the data analysis undertaken by your team are useful in helping you identify student, classroom, and grade level strengths and weaknesses.

Term	CFIP	Non-CFIP
Focus/Target/Concept	20	14
Data analysis/Patterns/Trends	80	23
Instruction/Intervention/Implementations	58	44
Common Core/Math/MAP/Dreambox	2	4
Strengths/Weaknesses or Needs	42	25
Behavior/PBIS	3	6
ELL/Special Ed.	6	3
Team	6	6

Notes. *One code word scored per teacher, per question, e.g., if the teacher used the same word three times in the question, it was scored only once. Coded words included the following identified assessments: Assessments: Dreambox; Common Core; Math; and, MAP.

Question 40. How does this help you plan and implement interventions and enrichments in your teaching?

CFIP teachers' responses were higher than Non-CFIP teachers in the categories of analyzing data/collecting data/data discussions/brainstorm/track/outcome/outliers (6

CFIP/0 Non-CFIP), and instructional adjustments (85 CFIP /59 Non-CFIP), team (8 CFIP /1 Non-CFIP). Non-CFIP teachers scored higher in assessment (2 CFIP /5 Non-CFIP). CFIP and Non-CFIP teachers were more similar in the categories of strengths (3 CFIP /1 Non-CFIP), targeted/identify/focus (10 CFIP /7 Non-CFIP), weaknesses or needs (11 CFIP /10 Non-CFIP), and time (1 CFIP /1 Non-CFIP).

Table 16

*Survey Questions Word Counts CFIP and Non-CFIP**
Code Words Collapsed Into Patterns/Themes
Q. 40. How does this help you plan and implement interventions and enrichments in your teaching?

Term	CFIP	Non-CFIP
Analyzing data/Collecting data/Data discussions/Brainstorm/Track/Outcomes/Outliers	6	0
Assessment	2	5
Instructional adjustments	85	59
Strengths	3	1
Targeted/Identify/Focus	10	7
Team	8	1
Time	1	1
Weaknesses or Needs	11	10

Notes. *One code word scored per teacher, per question, e.g., if the teacher used the same word three times in the question, it was scored only once. No response=2 CFIP and 6 Non-CFIP. Coded words include: Interventions; Outcomes; Grouping; Connections; Enrichment; Reinforcement; Challenge; Learner; Lessons; Units; Strategies; Specific; Customize; Co-teacher; ELL; Special Ed; Plan instruction; Student centered; Implement; Create; Specialized instruction; Restructure; Adjustments; Differentiating; Resources.

Question 41. Do you have any comments that would improve the team's performance in analysis of student data?

CFIP teachers' responses were higher than non-CFIP teachers in the categories of longitudinal data (3 CFIP /0 Non-CFIP), team should meet consistently and have data ready to share (4 CFIP /2 Non-CFIP), continue CFIP to increase effectiveness of discussions/CFIP works and shows if kids can solve real problems in the world (5 CFIP /0 Non-CFIP). Non-CFIP teachers scored higher in need specific plan/form for collecting and discussing information/spend time gathering and analyzing data but little time learning to use results (0 CFIP /4 Non-CFIP), increase focus on behavior and attendance data to improve performance (0 CFIP /1 Non-CFIP), put all data online so we could see it for the whole grade (0 CFIP /1 Non-CFIP), have teachers with certain strengths teach to those strengths and share students with other teachers of different strengths (0 CFIP /1 Non-CFIP), post data in a data room for all teachers to see and use (0 CFIP /1 Non-CFIP), and regroup students often based on daily data/students who need extra support are put into the room with a Special Education teacher and assistant (0 CFIP /1 Non-CFIP). CFIP and Non-CFIP teachers were more similar in the more time (5 CFIP /5 Non-CFIP), not using all assessment data collected (3 CFIP /1 Non-CFIP), need training on how to analyze and use data (4 CFIP /3 Non-CFIP), and focus more on enrichments and strengths rather than only on students who are not achieving (1 CFIP /1 Non-CFIP).

Table 17

*Survey Questions Word Counts CFIP and Non-CFIP**
Code Words Collapsed Into Patterns/Themes
Q. *41. Do you have any comments that would improve the team's performance in analysis of student data?*

Term	CFIP	Non-CFIP
More time.	5	5
Longitudinal data/analyze with other schools to compare.	3	0
Not using all assessment data collected.	3	1
Team should meet consistently and have data ready to share.	4	2
Need training on how to analyze and use data.	4	3
Continuing CFIP would increase the effectiveness of discussions/continue CFIP/ instruction is positively impacted through our discussions. CFIP works. CFIP shows if kids can solve real problems in the world.	5	0
Need specific plan/form for collecting and discussing information/spend time gathering & analyzing data but little time learning to use results.	0	4
We could focus more on enrichment opportunities and strengths rather than only students who are not achieving.	1	1
Increase focus on behavior and attendance data to improve performance.	0	1

Table 17 (continued)

Term	CFIP	Non-CFIP
Put all data online so we could see it for the whole grade.	0	1
Have teachers with certain strengths teach to those strengths and share students with other teachers of different strengths.	0	1
Post data in a data room for all teachers to see and use.	0	1
Regroup students often based on daily data; Students who need extra support are put into the room with a Special Ed. Teacher and assistant.	0	1

Notes. *One code word scored per teacher, per question, e.g., if the teacher used the same word three times in the question, it was scored only once.

Section Summary

Several themes evolved from the open-ended survey question responses. These themes also tended to correlate positively with the Likert scale responses. One example is the category of Team Operation and types of assessments analyzed by teams to guide student instruction and achievement. For state assessment data only 33.3% strongly agreed/agreed) that their teams used these data. Open-ended qualitative responses noted that teachers believed the data were not useful as results came too late in the school year and that results were typically only shared with administrators and team leaders. For short-cycle (formative data), 84.4% strongly agreed/agreed that their teams used these data. Open-ended results noted that 80% of the respondents said these data provided the

most timely, immediate feedback to assess students' needs and strengths. Other correlations were extant in the area of data analysis improving instruction. Likert responses revealed "a lot"=73.4%; qualitative responses revealed, "helps us target instruction, set goals and objectives, identify strengths/weaknesses, and make instructional adjustments." In every Likert survey question accompanied by a corresponding open-ended question, there was validation of the Likert item by the qualitative responses. Many of these were addressed in the discussion of results paragraph(s) preceding tables.

A second instrument for teacher interviews, the *Teachers' Perceptions of Student Data Interview Assessment Tool,* was constructed to corroborate data findings from the qualitative survey instrument. That instrument included 17 open-ended questions. Participants included five teachers from two CFIP schools and five from two Non-CFIP schools in one of the study districts. While potential participants were randomly selected from both districts, and were sent a letter to participate with an incentive of $20 for the first 10 who responded, 11 teachers from only one district responded and agreed to be interviewed. All interviews were conducted by the researcher and were then analyzed via frequency word counts, coded into categories via themes/patterns of concept/construct areas. Results are included in Appendix C. Major themes include need for: more time; improved technology for entering data for each student from multiple sources (state, district, school, team, individual, e.g. IEP data); and, more data analysis training; increased team time to collaborate for use of data analysis and application to student/classroom learning. Almost all teachers indicated that data and data analysis "drive" their planning and resultant student learning.

A more in depth look at the data indicates wide variety in the process used, amount of time devoted to team analysis of data, leadership of the data analysis process/team discussions, and specific types of data considered in each school or team.

Results from the Structured Interviews

Interview tool: *Using Student Data to Improve Instruction and Student Learning Data-Gathering Tool*

In the frequency count of key words/phrases in total qualitative interviews all words pertaining to a code of educational data, assessments, teams, analysis and results of data, student achievement/growth, time dedicated to team analysis, intervention, classrooms, accountability, etc. were captured. Words were then coded into categories; yet some words or phrases comprised their own category in order to not lose the essence of the data. For example only CFIP teachers responded to teacher accountability, use of data in classroom functions, and noted that CFIP "changed the way data is collected and used as data tells the story." CFIP teachers also tended to more frequently use the words: re-teach and revisit results (16 CFIP/1 Non-CFIP); drive or focus instruction (25 CFIP /3 Non-CFIP); specific, differentiated, targeted, student needs/weaknesses/ CFIP strengths/regrouping (40 CFIP /14 Non-CFIP); data analysis/diagnostic/data patterns/ research focus (27 CFIP /10 Non-CFIP); and team planning/team scoring; common time; whole team input, protocol or process; goals (53 CFIP /9); team/our group/intervention staff (26 CFIP /13 Non-CFIP); and, student achievement/growth (13 CFIP /0 Non-CFIP). Non-CFIP teachers scored higher in word counts for student behavior (0 CFIP /2 Non-CFIP). Word counts were more similar in the categories of Time (10 CFIP /8 Non-CFIP) and Data/ Benchmark/district/ summative/ formative/ state assessment/SLOs/work

samples/artifacts/attendance/ home and parents/exit tickets/progress reports/ MAP (53 CFIP/ 42 Non-CFIP).

Table 18.

Overall Frequency Count of Key Words/Phrases in Total Qualitative Interviews

	CFIP n=5 teachers	Non-CFIP n= 5 teachers
Teacher accountability	2	0
Use in classroom	9	0
Reteach; revisit results	16	1
Time	10	8
Behavior or student behavior	0	2
Data: Benchmark; district; summative; formative; MAP; STATE ASSESSMENT; SLOs; work samples; exit tickets; observations; progress reports; report cards; artifacts; attendance; home/parents	53	42
Data analysis or Analyze data; Diagnostic; Ask questions about the data; Grade level (on, above, below); Patterns or trends in data; Research focus;	27	10
Drive instruction/focus instruction/be intentional with instruction	25	3
Specific/differentiated/targeted student needs/student strengths/weaknesses/Student groups or regrouping	40	14
Student achievement/growth	13	0
Team or our group/Intervention staff	26	13
Team: planning; assessments; scoring; common time; whole team input; protocol or process; goals	53	9
Changed the way data is collected and used/"Data tells the story."	2	0

Major themes from interview data were then correlated with corresponding categories from the survey instrument.

Table 19

Major Themes from Interview Data with Corresponding Categories from the Survey Instrument

Theme	Correspond-ing Survey Category	Code phrases (Interviews)
Most important data your team uses.	3 Interview question #6 a, b	Most important: Benchmark; Running Records; work samples; team-created math quarterlies; ESOL, SPED, Alt. Ed. Data; district assessments; formative classroom data; and, Common Core data. Data to adjust groupings made a difference.
Additional sources you think should be used.	3 Interview question 7B	Should add: More time; more data analysis training; MAP training; parent surveys in native languages; addressing every math standard; Nothing—it takes too long to grade reading assessments.
All teams or teachers use data or data analysis to improve instruction and student learning	4 Interview question #6a	District/state assessments; Common Core tasks; report card and progress report data; on-demand writing rubrics; developmental checklists; benchmark data; MAP data; exit tickets; artifacts; SPED data; SLO data; quarterly assessments; and, on-demand writing samples.
Most valuable aspects of the training.	2 Interview question #9	Done as a team so all are on the same page. Consistency scoring and rubric construction is good. Loved the every week training. Had practice with good examples, assessments, data, and what to do with it.

Theme	Correspond-ing Survey Category	Code phrases
How to improve the data analysis training.	2 Interview question #9	Provide more time. (10/10 respondents). Give the same training to each grade. Train the new teachers. Provide more and differentiated training. Teach all teachers to analyze the data…not just the team leaders. Provide MAP training. Make the process schoolwide so all can know how to clarify and interpret. Improve technology to help input multiple data required. Need consistent grading practices. Give training earlier and use smaller groups. Give refresher training to those who are already trained.
Structure of the team's data analysis time.	2 Interview question #10	CFIP schools-60 min, /week. Discuss data using CFIP process at each meeting. Non-CFIP schools-60 min every other week. Bring up students who are a concern.
Type of professional development or training the team had in the use of student data analysis to improve instruction and learning.	2 Interview question #8 a	CFIP (whole school); Benchmark; reading and math best practices using modules and rubrics; inter-rater reliability training with rubrics and scoring.

Theme	Correspond-ing Survey Category	Code phrases
Does your team need additional training and why?	2 Interview question #8 b	All agreed they need more data analysis training, except 2 CFIP teachers who said schoolwide training is adequate. Yes, to increase understanding of data we use to group and use data maximally. Yes, rubrics are changing. Yes, done before the first day of school. Yes, need refreshers. Yes, in best practices. Should differentiate our training.
Importance of the team's consistently analyzing data. Why?	3 and 4 Interview question #3	Meets the needs of each student. Incorporates paraeducators, Special Ed. Staff, reading and math support teachers, reading specialists, Title I teachers. Use data to group and regroup students, decide on best plan of action and strategies. Lets us focus on and target instruction for each child.
Can you share leadership roles, research findings, and relevant information?	3 Interview question #15	Yes=9 No=1 Instructional Team Leader or Teacher Development Leader leads the meetings. We train together and have a research focus with data analysis. Team members feel free to share research finding, best practices, new strategies, and student information.

Theme	Correspond-ing Survey Category	Code phrases
How to improve the team's data analysis process.	2 and 3 Interview question #13	Need: more time (all respondents) to meet as teams and to analyze our own data with consistent, schoolwide training; to know how to analyze their own data; better technology to cross-record the many types of data we need to keep; a new team planning tool (Non-CFIP school); to have our data/artifacts ready for team meetings; and, to have all involved and have ownership of all students on the team.
Process used for data analysis.	4 Interview question #4	CFIP uses structured six-step process. All input data before meeting

Theme	Correspond-ing Survey Category	Code phrases
Process could be improved by better technology to record all data	4 Interview question #13	Record many pieces of data and there is overlap. Need to have technology to streamline data input and analysis.
Not all teachers have input into designing the data analysis process or goals.	2 Interview question #1	CFIP team; Administrators; SST
Goals of team's data analysis process.	2 and 4 Interview question #1a	Meet the needs of all students. Measure, monitor, plan focused, targeted instruction, group students, each, assess, re-teach, and collaborate with specialists and interventionists.
Goals were developed by:	3 Interview question #1b	CFIP team; Administrators; SST team; Title I teachers.

Theme	Correspond-ing Survey Category	Code Phrases
Do teachers feel they are more effective, confident, capable, and/or more positive as a result of the team's use of student data conversations?	2 Interview question #16	All 10 respondents answered yes.

Theme	Correspond-ing Survey Category	Code phrases
Are all goals being met? What evidence do you have for that?	4 Interview question #2 a, c	Yes=1 (CFIP) No=9 CFIP and Non-CFIP "Gains in math and language arts." "Showing progress." "Altered instruction and some responded and achieved their goals." Evidence: the data DATA: CFIP: SLO; ESOL; Running records; MAP data; state and district assessment scores; exit tickets (common for each grade level); behavior records; work samples; sight words; and, on-above-below grade level data. Non- CFIP: Running records; formative data; open-ended questions; videos of students; test scores; SLOs; "math and writing folders"; student files informal data; principal's rewards for behavior; and, PTS conferences with student goal-setting measurements.
Which goals are not being met and why?	4 Interview question #2 b, d	Not met: third grade; reading; math; Hispanic; Special education; FARMS; and, Title I students. Why? Some issues out of our control, e.g. home life, don't do homework; poor attendance; migrant students miss months of school; change (we departmentalized last year).

Theme	Correspond-ing Survey Category	Code phrases
Data analysis has improved my teaching	4 Interview question #12 a, b and #14	Know my students' needs. Reflect more and am more accountable.
All respondents believe that their team's use of student data has helped improve their classroom instruction and their students' learning.	4 Interview question #12, 14	Isolate specific skills needs areas. Plan to re-teach or have an expert work with students below grade level for a skill. It helps me know how each student is doing and shows growth. Team groups students. Tailors instruction to each student's learning needs identified by assessment data.

Results from Structured Interview's Individual Questions

Question 1 A: Goals for team's data analysis process.

CFIP teachers described goals to inform/guide instruction, measure/monitor student growth, assess/analyze individual student's strengths and needs, and create instruction to meet each student's needs.

Non-CFIP teachers were similar in assessing and analyzing each student's strengths and needs to see if support was needed and provide interventions. They also mentioned collaborating with specialists and planning/changing student groups.

Table 20

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 1 A. What are the goals of your team's student data analysis process?

CFIP	NON-CFIP
Inform and guide instruction.	Assess/analyze individual students to see strengths and needs.
Monitor and measure student growth.	See if support is needed and provide interventions.
Continue to use CFIP.	Collaborate with specialists.
Assess/analyze individual students to see strengths and needs.	Plan student groups and change them.
Look at trends in the data.	Assess students and help move them up and have them be challenged.
Monitor student achievement and progress.	
Team creates instruction to meet each student's needs.	

Question 1 B, C, D, E How were goals developed and by whom, were they a part of goal development, and are the goals realistic and useful?

CFIP teachers indicated the team developed the goals and that most of them were part of the process (N=3/5). All felt that the goals were realistic and useful (N=5/5).

Non-CFIP teachers indicated that the SST and administrators developed the goals using district standards. One teacher did not know how goals were developed or by whom. Non-CFIP teachers indicated they were not part of the process (N=2 and NR=2). The only Non-CFIP teacher who indicated she was part of the process noted that she helped develop goals last year "because we were CFIP last year…not this year anymore." All perceived that the goals were realistic and useful (N=5/5).

Table 21

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 1 B, C. How were the goals developed? By whom?

CFIP	NON-CFIP
TEAM using Title I guidelines.	I don't know.
CFIP with teams' and individual student assessments with input from RSTs, MSTs.	With district standards.
Goals are reset quarter 2 using quarter 1 CFIP data.	By the school SST and administrators.
	Last year by CFIP team when we had it and SST and Title I team also.

Table 22

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 1 D. Were you part of the process?

CFIP	NON-CFIP
YES (N=3)	YES (N=1) because we were CFIP last year…(not this year any more).
NO (N=2) NR=0	NO (N=2) NR=2

Table 23

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 1 E. Do you feel the goals are realistic and useful?

CFIP	NON-CFIP
YES (N=5)	YES (N=5)

Question 2 A, C. Are all goals being met? If not, which ones are not being met? Why?

CFIP teachers were divided on this question and only two responded. One perceived that yes, the goals were met, except those not in their control, e.g. home issues and non-completion of homework. One said no because third grade reading instruction was changed; thus some did not achieve their goals. Respondents also noted that new

staff needs CFIP training. Other reasons cited for not meeting goals included grouping errors, lack of sufficient support for special-needs students, low attendance, and the "time of day for instruction."

Three Non-CFIP teachers indicated no because some students missed lots of school, and some are below grade level in math and reading, especially Hispanic students and students receiving Title I, FARMS, and special education services. Other reasons cited for not meeting goals included, school changes such as departmentalization, homelessness, home problems, medical problems, new teachers, the new teacher evaluation system, and transition to the Common Core Standards.

Table 24

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 2 A. Are all goals being met? If not, which ones are not being met?

CFIP	NON-CFIP
Yes (N=1) Those in our control. Home issues and homework are not in our control. Students need more practice since they don't get it at home.	No (N=3) Some below-grade-level in math and reading; some missed lots of school; Hispanic, Title I, FARMS, SPED not met.
No (N=1) Third grade reading instruction got altered so some achieved their goals but not all.	No, but we are showing progress in math and ELA.
	No, because of change (we departmentalized last year).

Table 25

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 2 C. Why do you think some goals are not being met?

CFIP	NON-CFIP
We need to increase our support for ELLs	Poor attendance.
Home problems.	Diverse population with special needs (Title I, SPED, Hispanic Migrant families travel and students miss months of school, poverty.)
New staff need CFIP training.	Homelessness.
Home/life issues like skipping breakfast.	Home problems.
Grouping errors.	Medical problems.
Special needs students need more support (ELL, SPED).	Too much change: New teachers; new teacher evaluation system; Common Core transition.
Attendance lower in special needs students.	Behavior—wrong groupings therefore levels are too difficult.
Time of day for instruction.	

Question 2 B. Describe the evidence you have for these goals being met.

CFIP teachers listed 12 data sources used as evidence and Non-CFIP teachers listed 10. Listings generally included state, district, summative, and formative data, on-above-below grade level data, team-created assessments and rubrics, diagnostic

assessment data, Special Education IEP goal assessments, and specific assessments such as Running Records, DIBELS, and on-demand writing assessments.

Table 26

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 2 B. Describe the evidence you have for these goals being met.

CFIP	NON-CFIP
Scores indication on, above, below grade level.	Test scores.
We use data to insure we are providing the best instruction to meet each learner's needs.	Running records.
Running records	Formative data
SLOs	Performance-based scores
Teachers' Perceptions of Student Data Interview Assessment Tools	Videos of students
	Open-ended questions data
District assessments	SLO data
Exit tickets	Math and reading assessments
Sight words	Writing samples
Behavior records	Goal-setting measurements
Work samples	
MAP data	
ESOL data	

Question 3 A, B How important is it for your team and/or you to consistently analyze student data to improve instruction? Why is it important for your team and/or you to consistently analyze student data to improve instruction?

In both CFIP and Non-CFIP groups, 4 out of 5 respondents noted that it is essential, critical, very important, and most important to consistently analyze student data to improve instruction. “Why” was listed by CFIP teachers as data help the team to communicate/collaborate to plan intervention strategies for all students; data is essential for the team to record, analyze, identify students’ needs to inform instruction, increase student achievement, and meet all students’ needs.

“Why” was interpreted by Non-CFIP teachers as to adjust instruction to meet students’ needs, and form small groups to work on specific skills.

Table 27

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 3 A. How important is it for your team and/or you to consistently analyze student data to improve instruction?
Question 3 B Why is it important for your team and/or you to consistently analyze student data to improve instruction?

CFIP	NON-CFIP
VERY important (N=3)	Essential (N=1)
Essential N=1)	Critical for SPED (N=1)
	Easy in Math. More challenging in Language.
Data helps team to communicate/collaborate to plan intervention strategies for all students.	Very (N=1)
Data is essential for the team to record, analyze, and identify student needs and strengths, to meet all students' needs.	Most important (N=1)
Focuses instruction and intentionality.	
Informs instruction.	To adjust instruction to meet students' needs.
Increases student achievement.	To form small groups to work on specific skills.

Question 4. Describe the data analysis process used by your team.

CFIP teachers noted that they: have team time each week using data analysis; pick a class and/or individual students as a focus weekly; ask questions about the data; use nine common data sources and team-made assessments; all collect CFIP data and upload to Google docs to read all teachers' notes before the meetings; use the six-step CFIP process; decide as a team the next steps; teach the skill and re-evaluate; and, re-teach or enrich.

Non-CFIP noted that they: share papers and grades with consistent scoring; consider social/emotional needs of students; consider out-of-school factors like parent in jail; are needs-based; and, use six main data sources for information.

Table 28

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 4. Please describe the data analysis process used by your team.

CFIP	NON-CFIP
TEAM time each week with data analysis each time.	Share papers/ grades with consistent scoring.
Pick a class to focus on plus individual students/outliers.	Consider the social/emotional needs of each student.
Ask questions. What did teachers see or notice with the data?	Consider out-of-school factors, e.g. Parent in jail.
Reanalyze to assess improvement.	Needs-based.
Use nine common data sources and team-made assessments.	Six main data sources used.
All team members collect CFIP data and upload to Google document to read all teachers' notes before the CFIP meeting.	
Ask questions and share observations about the data.	
Teach skills; reevaluate. Reteach or enrich.	
Use the six-step CFIP process.	
Team decides the next steps.	

1. **Question 5 A, B.**

   A. **What are the positions (e.g., teacher, team leader, guidance counselor, etc.) of the team members who lead the team's data discussions?**

   B. Do all team members have the opportunity to hold that leadership role?

CFIP teachers noted that the Instructional Team Leaders or other team members lead the data discussions. Three teachers said that all members can hold the leadership role and two said no.

Non-CFIP teachers said the Instructional Team Leaders, or Math and Reading Support teachers lead the discussions. Four Non-CFIP teachers noted that all team members can lead the meeting while one said no.

Table 29

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 5 A. What are the positions of the team's members who lead the team's data discussion (e.g. teacher, team leader (ITL), guidance counselor, etc.)?

CFIP	NON-CFIP
NR=2	NR=2
ITL (N=2)	ITL (N=2)
ITL or other team members	ITL, MST, or RST

Table 30

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 5 B. Do all team members have the opportunity to hold that leadership role?

CFIP	NON-CFIP
YES=(N=3)	YES=(N=4)
NO=(N=2)	NO=(N=1)

Question 6 A, B What types of data does your team review? Why?

CFIP teachers shared the following types of data: district, writing; benchmark; Running records; team-created math quarterlies; reading and scoring together; weekly team assessments; class work; Common Core assessments; report card and progress reports; development checklists; MAP data; and formative assessment data. Why? : to see each student's performance and inform team's discussion and decisions in making changes for students, classes, and teachers; to determine growth and needs for each student; and use district's checklists and assessment to give specific information we need to best inform instruction.

Non-CFIP listed: team data; SLOs; exit tickets; SPED data; math facts tests; district quarterlies; writing, and formative. Why: create our own team assessment tools; to show the impact of our instruction; challenge or re-teach; and move students to another class.

Table 31

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 6 A. What types of data does your team review?

CFIP—N=14 types of data	NON-CFIP N=8 types of data
District (N=4)	"Team Data"
Writing (N=2)	SLOs (N=2)
Benchmark data	Exit tickets (N=2)
Running records	SPED data
Team-created math quarterly assessments	Math facts tests
We read and score together.	District quarterly assessments
Weekly team assessments	Writing
Class work	Formative
Common Core assessments	
Report card data	
Progress report data	
Developmental checklists.	
MAP data	
Formative assessment data	

Table 32

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 6 B. Why does the team review those specific data?

CFIP	NON-CFIP
See each student's most recent performance information to inform the team's discussion and decisions in making changes for students, classes, and teachers.	Create our own team assessment tools.
To determine growth and needs for each student.	To show the impact of our instruction, challenge or reteach, and move students to another class.
Use district's checklist and assessments to give specific information we need to best inform instruction.	

Question 7 A, B Which types of data reviewed do you find the most important or helpful? Are there any additional data sources you think your team should use?

CFIP teachers listed as most helpful: Running records; team-created math quarterlies; benchmark data; spelling data; checklist; work samples; observation data; student goals and review; and student-led parent-teacher conference data. Additional data sources suggested include: Map training for next year: more time; sharing of all scores with the whole team, not just the ITL; parent surveys in native languages; MAP and PARCC training; assessment from end-of-year grade to send to the new grade level; and previous year's scores per schools.

Non-CFIP listed as most helpful: team data; SLOs; SPED data; math facts tests; district quarterlies; writing, and formative assessments. Why do this: create our own team assessment tools; to show the impact of our instruction, challenge or reteach, and move students to another class. Additional data sources suggested include: "still figuring this out;" no more...it takes too long to grade reading assessments; should assess each math standard; and, should send home information regarding the reading assessments.

Table 33

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 7 A. Which types of data reviewed do you find the most important or helpful?

CFIP	NON-CFIP
Running records (N=2)	Team assessments and rubrics.
Team-created math quarterly assessments.	District assessments.
Benchmark data (N=2)	ESOL, Alt. Ed., SPED data.
Spelling data.	Formative classroom data.
Checklists.	Retention data.
Work samples.	Common core artifacts.
Observation data.	Written responses.
Student goals and reviews.	Alfresco small math tasks data.
Student-led Parent-Teacher conference data.	

Table 34

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 7 B. Are there any additional data sources you think your team should use?

CFIP	NON-CFIP
MAP training for next year.	Still figuring this out.
More time (N=2).	No (N=2) It takes too long to grade reading assessments.
Should share state assessment scores with the whole team…not just the ITL	We should assess each math standard.
Need a parent survey in the parents' native language.	We should send home information regarding the reading assessments.
Map and PARCC training.	
Assessment from end-of-year grade to send to new grade level.	
Previous year's scores per school.	

Question 8 A, B What type of professional development or training did your team have in the use of student data analysis to improve instruction and learning?

Do you feel that your team needs additional training? If so, why?

CFIP teachers listed training by the RST; benchmark training, whole school CFIP training; CFIP videos and watching CFIP in action in other schools; CFIP training by school psychologist; and observations by the founder of CFIP in their school. Three of

the five CFIP teachers said they need more training and refreshers to increase understanding of data and data analysis to see trends and outcomes, and use groups maximally. One said they are very comfortable schoolwide and don't need further training.

Non-CFIP listed that they need a half-day district workshop on data analysis; had training at school by RST/MST; math modules training; DQIE workshops; and training for inter-rater reliability in rubric scoring. Two of the five Non-CFIP teachers said they need more training to see trend/outcomes in the district and also need to differentiate the training.

Table 35

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 8 A. What type of professional development or training did your team have in the use of student data analysis to improve instruction and learning?

CFIP	NON-CFIP
Trained by our RST.	Half-day district workshop on data analysis.
Benchmark training.	Training at school by the RST/MST.
Our ITL had the CFIP training.	In my graduate courses.
Our whole school had CFIP training.	DQIE workshops.
We saw videos on CFIP.	Training for inter-rater reliability in rubric scoring.
We watched CFIP in action in other schools.	Math Modules training.
School psychologist now trains us on CFIP.	
Dr. Hickey observed CFIP in our school.	

Table 36

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 8 B. Do you feel that your team needs additional training? If so, why?

CFIP	NON-CFIP
Yes: N=3	Yes: N=2
No: N=2	NR=3
Yes, to increase understanding of data.	Yes to see trends//outcomes in the district.
Yes, we use to groups maximally.	Yes, we need to differentiate our training.
Use data analysis to understand trends and outcomes from district data.	
We need refreshers.	
Schoolwide we are very comfortable.	

Question 9. What ideas do you have about the most valuable aspects of this training and how it might have been improved?

CFIP teachers identified the positives as team-centered; consistent scoring is good and the team is on the same page. Improvement ideas included: be sure all grades have the same training and that it is schoolwide; get better technology to collect the data; and focus less on protocol and more on what we want to achieve.

Non-CFIP teacher identified the positives as: like it as it is-- one hour training per month; and, continue to let the RST/MST lead the discussions. Improvement ideas

included: we need more time, consistent grading practices, more training earlier and in small groups, and a more research-based focus.

Table 37

Collapsed Data for Interviews
CFIP and NON-CFIP

Question 9. What ideas do you have about the most valuable aspects of this training and how it might have been improved?

CFIP	NON-CFIP
Positive:	Positive:
Team-centered	Keep it at one-hour training/month.
Team is all on the same page.	Continue to let RST/MST lead it.
Consistent scoring is good.	
Improvement Ideas:	*Improvement Ideas:*
Make sure all grades have the same training.	Need more research-based.
Make training schoolwide so all know how to interpret the data.	Need more TIME.
Need better technology to collect the data.	Need consistent grading practices.
Focus less on protocol and more on what we want to achieve.	Need more training…earlier and in small groups.

Question 10. What is the structure of your team's data analysis time (e.g. ___times/week for _____minute; whole meeting or part of the meeting devoted to data discussion)?

CFIP teachers responded either one time/week for 60 minutes (N=3) or two times/month for 60 minutes (N=1). There was one "no response."

Non-CFIP teachers responded two times/month for 60 minutes; one time/month for 40 minutes in grade-level teams; one time/week for 60 minutes; and, two times/quarter for 60 minutes.

Table 38

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 10. What is the structure of your team's data analysis time (e.g. ___times/week for __minutes; whole meeting or part of the meeting devoted to data discussion)?

CFIP	NON-CFIP
1 time/week for 60 min. (N=3)	2 time/month for 60 min.
2 time/month for 60 min. (N=1)	1 time/month for 40 min. in grade-level teams.
	1 time/week for 60 min.
	2 times/quarter for 60 min.

Question 11. . How does the team develop and implement a specific plan using the results of the data discussion to: a) improve classroom instruction, and b) individualize instruction to meet each student's needs?

CFIP teachers responded: teams meet weekly to select a skill to work on; team sets reading objectives and sees who need reteaching of specific skills; team reforms groups to enhance skill development; we monitor, reteach, reassess, and get weekly information from MST, RST, Intervention specialists who provide extra assistance to students in need.

Non-CFIP teachers answered: team reviews on-above-below grade level students in reading and writing, organizes groups by needs, and, provide ESOL support; give neediest paraeducator support, Title I math interventions, and rotate through classroom skills stations; and, we "divide and conquer."

Table 39

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 11. How does the team develop and implement a specific plan using the results of the data discussion to: a) improve classroom instruction, and b) individualize instruction to meet each student's needs?

CFIP	NON-CFIP
Team sets reading objectives. Sees who needs reteaching of specific skills.	Team reviews on, above, below grade level students in reading and writing.
Monitors assessments.	Organize groups by needs.
Regroup/reteach accordingly; Reassess.	Divide and conquer.
Team meets weekly to select a skill to work on.	Provide ESOL support.
Reform groups to help skill development.	Provide Title I math interventions.
Create TEAM rubrics to assess skills.	Give neediest one-on-one paraeducator or teacher.
Teach and reassess.	Rotate them through classroom skills stations.
Team gets weekly input from MST, RST. Intervention specialist.	
Intervention specialist helps students who need extra assistance.	

Question 12. Do you believe that your team's use of student data analysis has helped you improve your classroom instruction?

If so, can you provide specific examples? If not, why not?

CFIP teachers responded Yes (5/5). It holds each teacher more accountable; identifies specific needs in small groups or classrooms; team assessed the needs of each student, including ESOL, who may get lost in the shuffle and not because of behavior problems; we can isolate needs in skill areas and reteach or have an expert work with below-grade level students on specific skills; we teach what they need and not just what I think they need; team scores the on-demand writing samples to see who is not growing and then tailors instruction to meet each student's needs. We then reteach and reassess to see growth; identifies strengths and weaknesses of each student; and, we partner with parents to send home progress reports so they can help teach their child at home.

Non-CFIP teachers responded Yes (5/5). We share ideas, make the SLOs, use data to group students and show each student's growth; plan with the reading specialist, and use mid-year assessments to target specific skills.

Table 40

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 12. Do you believe that your team's use of student data analysis has helped you improve your classroom instruction? If so, can you provide specific examples? If not, why not?

CFIP	NON-CFIP
Yes=5/5	Yes=5/5
Team scores on-demand writing samples to see who is not growing. Tailor instruction to meet each student's needs. Then reteach and reassess to see growth.	Helps group students.
Holds each teacher more accountable.	Shows each student's growth.
Identifies specific needs in small groups or classrooms.	We share ideas.
We teach what they need and not just what I think they need.	Plan with the reading specialist.
Team assesses the needs of each student, including ESOL, who may get lost in the shuffle—NOT because they have behavior problems.	Team makes SLOs.
Identifies student strengths and weaknesses.	Mid-year assessment targets specific skills.
We can isolate needs in skills areas.	
We re-teach or have an expert work with below-grade level students on specific skills.	
Partner with parents to send home progress reports so they can help teach their child at home.	

Question 13. How could your team's data analysis process be improved?

CFIP teachers responded: increase time to increase collaboration (N=3/4); have consistency in schoolwide training; have more training in data analysis; CFIP things only when needed; and have the whole team, not just ITLs giving data analysis/CFIP training.

Non-CFIP teachers answered: Increase time (5/5); provide better technology to cross-record the many data types we need to keep; we need a new planning tool; streamline data collection and reporting; have data ready and bring it to meetings; and, involve all teachers and have them take ownership for all students on the team.

Table 41

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 13. How could your team's data analysis process be improved?

CFIP	NON—-CFIP
One NR (no response)	Increase TIME n=5/5
Increase TIME to increase collaboration N=3/4	Need better technology to cross-record many data types we need to keep.
Consistency in schoolwide training.	Need a new planning tool.
More training in data analysis.	Streamline data collection/reporting.
Whole team, not just ITLs, need data analysis/CFIP training.	Have data ready and bring to meetings.
We should CFIP things only when needed.	All teachers should be involved and have ownership.

Question 14. How has the use of the data analysis process affected you as a teacher?

CFIP teachers responded: instruction is more focused, intentional, and targeted; student needs are targeted; teacher reflection and accountability are increased and I like to try new initiatives now; our team decides what to keep or change based on the data; and, instruction is more individualized for students.

Non-CFIP teachers noted: there is more work and more is expected of us; demands are large and more time-consuming, but important; there is too much data keeping to do without adequate technology; we reflect upon and follow each student's

progress and use data to see where the kids "really are and what they need;" and, we can conscientiously and specifically improve practice.

Table 42

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 14. How has the use of the data analysis process affected you as a teacher?

CFIP	NON-CFIP
Instruction is more individualized for students.	There is more work and more is expected of us.
We have increased teacher reflection and accountability.	Demands are large and more time-consuming, but important.
I like to try new initiatives now.	There is too much data keeping to do without adequate technology.
Our TEAM decides what to keep or change based on the data.	We can conscientiously and specifically improve practice.
Instruction is more focused.	We follow each student's progress.
Student needs are targeted.	We reflect about each student.
Instruction is more intentional.	We use data to see where the kids "really are and what they need."
Instruction is more intentional, more focused, and targets student needs.	

Question 15. Are there opportunities in your team's meetings for you to develop or share leadership roles (e.g. lead the meeting, or share research or relevant information you have found?

CFIP teachers responded Yes (4/5). We share ideas, train together, and have a research focus with data. We all have the same chance to share.

Non-CFIP teachers replied Yes (5/5). The ITL and TDL lead the meetings and we share research strategies.

Table 43

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 15. Are there opportunities in your team's meetings for you to develop or share leadership roles (e.g. lead the meeting, or share research or relevant information you have found?

CFIP	NON—CFIP
Yes=4/5	Yes=5/5
We share ideas and train together.	We share research strategies.
Teachers all have the same chance to share.	The ITL and TDL lead the meetings.
We have a research focus with data.	

Question 16. Are you a more effective, more competent, more capable, and/or more positive teacher today as a result of your team's use of student data conversations? Please address these four descriptors and explain why or why not?

CFIP teachers responded Yes (5/5). I am more focused, reassured, fresh, targeted, and needs-based; instruction is intentional and backed with evidence; no

student slips through the cracks; we question if things are effective; and, morale decreases when we concentrate on our Title I students.

Non-CFIP teachers responded Yes (5/5). I am always positive and always took the time to know my learners; data drives everything; we share, collaborate, and are more reflective; different strategies bring positive change for kids.

Table 44

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 16. Are you a more effective, more competent, more capable, and/or more positive teacher today as a result of your team's use of student data conversations? Please address these four descriptors and explain why or why not?

CFIP	NON-CFIP
YES=5	YES=5
No student slips through the cracks.	I'm always positive.
Morale decreases when we concentrate on Title I students.	Data drives everything.
We question if things are effective. Instruction is intentional and backed with evidence.	We share, collaborate, and are more reflective.
Reassures me. I stay fresh and not bogged down.	I always took time to know my learners.
Collaboration increased our team's effectiveness.	Different strategies bring positive change for kids.
I am more focused, targeted, and needs-based.	

Question 17. Would you advocate for continuing to use the data analysis process your team now uses, change it in some way, or eliminate it? Why?

CFIP teachers noted: continue (N=4) and change (N=1): “love doing this as a team” but change by giving more time; anyone can bring up student issues. Continue: Yes, it will increase student achievement; focus on problems, not protocol; should use CFIP for our SLOs; make it more fluid and give us more training and time; and find ways to improve data conversations; and, be flexible and respectful.

Non-CFIP teachers stated: continue (N=2) and change (N=3): Changes are demanding; be flexible with change; find the best tools for the best information; need long-range planning; set priorities first; find new, more effective strategies; and, increase best technology to better record and track data.

Table 45

Collapsed Data for Interviews
CFIP and NON-CFIP
Question 17. Would you advocate continuing to use the data analysis process your team now uses, change it in some way, or eliminate it? Why?

CFIP	NON-CFIP
Continue=4	Continue=2
Change=1	Change=3
Change by giving more TIME.	Changes are demanding.
Love doing as a team.	Find the best tools for best information.
Anyone can bring up student issues.	Increase best technology to better record and track data.
CONTINUE: find ways to improve data conversations. Be flexible and respectful.	Need long-range planning.
Yes, it will increase student achievement.	Set priorities first.
Need more training and TIME.	Be flexible with change.
Make it more fluid.	Find new, more effective strategies.
Focus on problems—not protocol.	
Use CFIP for SLOs.	

Section Summary

Themes that emerged in the data analysis from structured interviews included apparent usage of more precise data dialogue language by CFIP teachers. For example in the question regarding the question "describe the data process used by your team," CFIP teachers responded that they: have team time every week to analyze data; pick a class or specific students to focus upon weekly; ask questions about the data; use nine major data sources and team-made assessments; all collect data, record it on Google docs, and pre-read data before each meeting; use the six-step CFIP process; make a team plan for next steps; teach; monitor; reevaluate; reteach/enrich; reassess; and repeat the cycle.

Non-CFIP teachers responded: we share papers and grades; score consistently; consider the social/emotional needs of students; are needs-based, and use six main sources of data.

Another emergent theme was in the arena of the type of professional development teams had regarding use of student data analysis. CFIP teachers responded: whole-school CFIP training with videos, observation of CFIP teams in other schools, coaching and observation by the CFIP data coach; benchmark training; and, data training by specialists (MST; school psychologist; Special Education team leader). CFIP teachers identified the need for increased data analysis training to refresh and improve knowledge and skills.

Non-CFIP teachers identified training they received as rubric scoring and training by specialists (RST/MST/Special Education team leader). Non-CFIP teachers (2 out of 5) noted that they need additional training to see trends and outcomes from district data. One person desired a "one-half day district workshop" in data analysis training.

A third theme addressed the question, why it is important for teams to consistently analyze student data? CFIP teachers responded: it helps the team communicate and collaborate to plan intervention strategies for all students; data is important for the team to record and analyze so we can identify student needs to inform instruction, increase student achievement, and meet all students' needs.

Non-CFIP teachers responded that it helps adjust instruction to meet students' needs and to form small groups for specific skills work.

Fourth, in response to the question regarding the valuable aspects of data analysis training and how to improve that training, CFIP teachers noted that this training was: team-centered; the team is now always on the "same page," and that consistent scoring by the team was valuable. Improvements suggested were to ensure that all grade levels get the same training, and that better technology be provided to input and record all data.

Non-CFIP teachers noted that they "like it as it is," and that they prefer one hour of training per month by the reading or math support teachers. Identified suggested improvements included a need for more time, consistent grading practices, more differentiated training earlier in the year in small groups, and more research-based training.

A fifth theme was relevant to time allotted for teams to meet to analyze student data. CFIP teachers reported meeting once a week for 60 minutes (N=3), or twice a month for 60 minutes (average =50 minutes/week.) Non-CFIP teachers noted that their teams meet once a week for 60 minutes, twice a month for 60 minutes, once a month for 40 minutes, or once a quarter for 60 minutes (average =25 minutes/week.)

While several other themes emerged in the data analysis one final one is presented to compare CFIP and Non-CFIP responses, i.e. how does your team develop and implement a specific plan to improve classroom instruction and individualize instruction to meet each student's needs? CFIP teachers noted that the team: meets weekly to select a skill to work on; sets reading objectives; decides who needs reteaching of specific skills; reforms groups to enhance skill development; monitors, reteaches, reassesses, gets weekly data from specialists (RST, MST, Intervention specialists)…to provide individualized instruction to each student.

Non-CFIP teachers described their teams' plan to implement specific instruction to improve teaching and student learning as we: review on-above-below grade level students in reading and writing; organize groups by needs; give ESOL support; give neediest students the paraeducator support; provide assistance as needed; give Title I math interventions; rotate students through skills stations; and, "divide and conquer."

From each of these theme comparisons it is apparent that all teacher respondents have the best interest of their students in mind. What seems different is the manner in which teams go about the process of analyzing and using student data to inform practice in a collaborative, strategic way to meet each student's needs. It appears that all teams/teachers use student data in varying degrees and ways. The question remains whether CFIP or any other data analysis team process can make a definitive positive difference in how teachers and teams use student data in the most effective, efficient, productive, and results-oriented manner. The CFIP teachers in this study seemed to find the CFIP process beneficial in meeting students' needs, improving instruction, and maximizing learning and student achievement for all students. While no other specific

team data analysis process was identified by Non-CFIP teachers as a structure for team meetings, it cannot be concluded that teams do not use a specific method of their own creation when analyzing and using student data.

Chapter V

CONCLUSIONS AND RECOMMENDATIONS

This chapter discusses the results of each research question, including information gleaned from analysis of both the quantitative survey and qualitative interviews, which substantiated the validity and reliability of the survey instrument.

This chapter also includes sections on implications of the findings, limitations of the research, and directions for future research.

The purpose of this research was to develop a reliable and valid instrument to ascertain teachers' perceptions of student data analysis as a tool to improve instruction and student learning and achievement. The developed instrument can be refined and used to help school leaders assess where teachers are and need to be in understanding how to use data and team processes and results to help every student achieve maximally.

Research question 1- Is the instrument reliable? Yes.

Quantitative Instrument -*Using Student Data to Improve Instruction and Student Learning Data-Gathering Tool*

What is the evidence for this?

Internal consistency, reflecting instrument stability (Reynaldo and Santos, 1999) was measured using Cronbach's alpha to determine instrument reliability. Overall reliability was .90, which is considered excellent.

Research question 2- Is the instrument valid? Yes. What is the evidence for this?

As demonstrated in Chapter 4, a paradigm including: establishing of construct/content categories from the literature review; developing a question pool from those categories; constructing the instrument with expert advice from university professors; sending the instrument to 24 focus group experts to take and comment upon critically; reconstructing the instrument; assembling a subgroup from the focus group to meet in person and review questions in partner groups, then share with the whole group for consensus; reconstructing the instrument using all focus group feedback; reviewing with university professors for final edits; and sending the survey to 188 teachers, with a return of 81 responses.

Research question 3- How often are teacher teams using data?

Surveyed teachers reported analyzing and using data in teams in the following percentages: Daily (3.8%); Weekly (6.4%); Twice per month (6.4%); Monthly (21.8%); and, Less frequently than monthly (61.5%). In interview data teachers said their teams meet once a week or twice a month. One CFIP school's teachers noted that their teams meet weekly with data discussions as the focus of every meeting. All interviewed teachers noted the need for more time for teachers to meet to analyze student data and use findings to augment targeted instruction in the classroom.

Research question 4- How competent do the teachers feel using data?

Surveyed teachers noted that they feel competent using data in the following percentages: Daily (54.9%); Weekly (19.7%); Twice per month (14.1%); Monthly (9.9%); and, Less frequently than monthly (1.4%). These data suggest the majority of surveyed teachers analyze and use data every week, if not even every day. Interviewed

teachers also indicated that their whole team has input into data collection, analysis, and team-generated steps to take as a result. CFIP schools' teachers noted that they feel competent using the six-step CFIP process, including: inputting data into a Google form before each meeting; coming prepared, having read each teacher's data input; discussing analyzed data the team leader presents; asking questions and sharing observations about the data; looking at questions informed by the data; deciding upon a team plan for goals/strategies to use in classroom instruction; teaching the skill; collecting more data; reteaching if needed; and, deciding next steps. Several teachers noted the value of sharing ideas and strategies in team meetings, targeting instruction to meet every student's needs; creating team assessments and rubrics; scoring assessments as a team; using multiple data sources to analyze each student's needs; and, planning to individualize instruction for all students.

Research question 5-Does the qualitative data from the survey and the interview data support findings from the quantitative survey?

Yes, the qualitative data from both the survey and the interviews substantiated evidence from the quantitative Likert-scale survey information. As shared in the section summaries in Chapter 4, there were positive correlations between the Likert data and the open-ended question responses in the survey. One example was that for short-cycle (formative data), 84.4% strongly agreed/agreed that their teams used this data. Qualitative survey responses results determined that 80% of the respondents said this data provides the most timely, immediate feedback to assess students' needs and strengths. A second example in the area of data analysis improving instruction denoted that quantitative data revealed teachers agreed with this statement "a lot"=73.4%. Qualitative responses

revealed that data analysis improves instruction e.g., “helps us target instruction, set goals and objectives, identify strengths/weaknesses, and make instructional adjustments.” In every Likert survey question accompanied by a corresponding open-ended question, there was validation of the Likert item by the qualitative responses. These findings were addressed in the discussion of results paragraph(s) preceding tables.

Further evidence that the qualitative data from the survey and the interview data support findings from the quantitative survey is evident in the table correlating questions from the survey with questions from the interview. In two examples from survey questions asking, “to what extent do the data analyses that you and your team complete…” “help you identify skills to reteach” (q. 32—81% said “a lot”), and “assess the effectiveness of interventions” (q. 37-95% said “a lot/a little”), interview respondents voiced similar beliefs. Interviewed teachers stated that data analysis identified: students who need interventions; reteaching; time in specific “skills stations;” Title I math interventions; targeted instruction; and, reteaching time with paraeducators and specialists. Regarding assessing the effectiveness of interventions, interviewed teachers shared that data analysis helps them: determine the needs and strengths of each student; develop a team plan to differentiate instruction based upon those needs and strengths; monitor progress; reassess; regroup; and, reteach. These are several examples demonstrating that evidence from qualitative data supported and correlated with evidence from the quantitative survey questions. “Correlation” is not intended to indicate “statistical correlation,” but rather a relationship between data from the two data gathering tools.

Limitations

Relating to the research method

There were many lessons learned during the construction, administration, and data analysis phases of instrument development. While it was necessary to use both Title I elementary schools in one district (they were the only ones using CFIP with fidelity) and non-Title I schools in the second district (only ones using CFIP), this factor presents limitations when applying findings to general populations or all schools in a district. It is noted that while the District 1 schools did have a similar demographic population and were not among the higher achieving schools in the district, this variable prevents wide generalization of findings.

In future research it would be preferential to use schools that are comparable in terms of achievement to increase feasibility of generalizing results.

Relating to the survey instrument –Scale values reversed in the last category, *Results of the Data Analysis*, (None at all, A little, A lot). The researcher had to reverse that scale to align with the previous sections indicating the lowest value of strongly agree on the *left* and strongly disagree on the *right* to run the Cronbach's alpha statistics. A new prototype of the survey is included in Appendix E, noting those revisions, where strongly agree is now on the right and strongly disagree on the left of the Likert scale items.

For clarification, simplification, and consistency in survey questions four through eight, suggested improvements might include revision of the Likert scale categories (currently Daily; Weekly; Twice each month; Monthly; and, Less frequently than monthly) to: Strongly agree; Agree; Neither agree nor disagree; Disagree, and Strongly disagree. These questions are not truly measurements of frequency, but rather strength of

opinion. While this researcher has included those improvements for future use, this new instrument would have to be again piloted to discern reliability and validity with a new participant group of teachers.

Relating to the structured interviews – A limitation in using participants from only one of the two study school systems is that it may introduce bias. Further, since the researcher was the only interviewer, this may have also been a consideration for bias and lack of the opportunity for inter-rater reliability checks. In future research it would be beneficial to tape record interviews and have two independent research assistants be trained to listen for and record code words from the interviews. Inter-rater reliability could then be determined, decreasing the potential for rater bias.

Future Research

While this instrument appears to be statistically reliable and valid, future refinements with subsequent retesting would prove valuable. One goal of instrument development would lead to a proposed research study comparing teachers' perceptions in schools using CFIP with those not using CFIP. The importance of developing the instrument is to be able to measure whether the CFIP process influences teachers' perceptions of the importance and use of student data. Additionally, will CFIP serve as a process to help teams use data analysis, team ownership of every student's progress, and ability of all teachers to maximally use data to improve classroom instruction and student learning?

Currently CFIP is fully explained and detailed on a Mid-Atlantic state's website as a recommended process for school leaders to consider using for their school teacher teams to establish and use a data protocol to improve instruction, student learning, and

student achievement for all students. Major components of CFIP are listed as “dialogue, protocols, and triangulation of data” (MSDE, 2014). The process utilizes expert data coaches who train school leaders and teachers and follow their progress. Requirements for use of CFIP with fidelity include dedicated team time, having all team members provide and bring student data to each meeting to analyze, sharing of leadership roles by all team members, using the data analysis to develop lessons and instructional activities, and collaboratively creating team formative and summative assessments to provide continuous data about each student’s achievement, needs, and enrichment opportunities. As described in Chapter 1, CFIP is a six-step process including:

1. reviewing relevant assessments and terms used in the assessment reports
2. designing and using data dialogue questions
3. discerning each student’s strengths and needs at the classroom level using multiple data sources
4) examining instructional factors contributing to student weaknesses, and steps the team will take to positively intervene
5) looking at students who excelled and those who need assistance, and planning classroom interventions, and enrichments for all students
6) describing one or two interventions teachers will implement in future instruction. The team selects one or two strategic classroom enrichments and interventions to implement.

Each of these steps has been addressed in the quantitative survey instrument developed for this research and in the qualitative interview tool created to augment findings from the survey instrument. Teachers noted the importance of using student data from diverse assessment tools and reports to identify students’ strengths and needs (steps

1 and 3). Teachers also described steps the team takes to examine instruction and design a team plan to provide intervention strategies, enrichment activities, and strategic classroom instruction plans for future instruction (4,5, and 6). The only step in the CFIP process not specifically mentioned by teachers in the survey or interviews was step 2, designing and using data dialogue questions. Perhaps this is a strength of the CFIP process, which CFIP teachers found useful and meaningful in data analysis conversations and dialogue? This could be an area to consider for exploration in future research.

It is germane to draw comparisons between CFIP and the five targeted areas of focus currently forefront in considering how and why teachers use data analysis in teams rather than solely individually. As noted in Chapters 1 and 2, the five areas of focus in this research background and literature review included: assessment tools and processes; professional learning communities; distributed leadership; data-driven instruction; and, redefining teacher professional development. CFIP seems to embody each of those focus areas into a composite process that empowers teachers in teams to use the data analysis process to design individualized and group learning for all students according to their unique needs. If that is the case, it seems prudent to pursue research, comparing teams that use CFIP, another data analysis protocol, or no protocol at all. It is to that end that the following future research is proposed.

Recommendations for further study: A proposed future study using the research instrument developed in this study.

As discussed earlier, the development of this instrument evolved from a desire to conduct research on the use of CFIP as a tool to help teachers learn to use data as a means to improve classroom instruction and thus student achievement. The following outlines a potential research study using the developed instrument in this dissertation.

A quasi-experimental mixed-methods research design may be conducted. The experimental group would consist of four elementary schools (two each in two similar public school districts), which are beginning to use the CFIP process in the beginning of a school year. The control group would consist of four elementary schools (two each in two similar public school districts), which are not using the CFIP process**.** The researcher would ascertain if those Non-CFIP schools are using another specific process to analyze and use student data to improve instruction. It would be important to discern if those schools, which are using a data analysis method to improve instruction, are actually using a schoolwide, prescribed, and structured process like CFIP. The researcher would ask for the templates that teachers use or a copy of processes or data protocols that all teams are expected to follow.

The independent variable in this study would be the use of CFIP, and the dependent variable would be teachers' perceptions of student data, measured with a 41-item Likert scale survey, created by the researcher and focus team, and a researcher/focus team-created *Teachers' Perceptions of Student Data Interview Assessment Tool.*

Participants would be teacher teams in five grade-level teams in each of the study schools. The schools would be elementary schools with similar achievement levels to

provide some control over level of internal and external support systems (federal, state, and local). While this would limit generalizing of results, extraneous variables would be better controlled.

A limitation in this research study would be the fact that CFIP may not be the only factor in the school in the study period that could be making a significant difference in how teachers perceive data and data analysis as a constructive tool to improve teaching and student learning. For example, if there is a new reading strategy implemented or if the school is implementing arts integration, those factors may confound findings. The researcher would collect data relevant to other special programs that are being used in each school and note this in the findings. A second limitation already noted is that results could not be generalized beyond elementary schools whose achievement levels are similar to those in the study schools.

Future implications for use of the developed instrument

1. In possible future implementation of a research design, the instrument developed in this dissertation could serve as a pretest given to control group teachers and CFIP-schools teachers prior to CFIP exposure at the beginning of the school year. At the conclusion of the academic year, the instrument could be given as a post-test to study groups. All data could then be analyzed using appropriate statistical tests. Statistical analysis for pretest/posttest comparison could use differences between pretest and posttest scores, i.e. “net scores” or gain scores. Descriptive statistics would be computed (mean, median, mode, standard deviations) to compare pretest and posttest data for each control versus experimental student

scores on the science unit test. A “t-test” could be used to assess whether the means of two groups’ scores are statistically different from each other.

2. It should be noted that possible confounding participant variables that may be threats to internal validity might include the fact that teachers in the control group may have prior knowledge of CFIP or other data-driven instructional improvement models and may already infuse CFIP-like concepts into their team meetings. This will be determined through teacher interviews described below.
3. Interviews could be conducted with 20 randomly selected teachers, 10 from CFIP and 10 from Non-CFIP schools. This would provide qualitative data to substantiate and support findings from the quantitative survey data.

Possible research questions related to the proposed future study include:

1. Will there be significant differences in data analysis usage to improve classroom instruction and student learning and achievement with teachers using CFIP and teachers not using CFIP?
2. Will there be a significant difference between the perceptions of data and data analysis as an accountability tool versus a tool to enhance teaching and student learning by teachers who use CFIP and teachers who do not use CFIP?
3. What impact does CFIP training have on teachers’ level of confidence to analyze and use data effectively?
4. How do teachers use data to inform their instructional practice?
5. With what purpose do teachers analyze and use data?
6. How often do teachers analyze and use data? In teams? Individually?
7. Who comprises the team and how does the team function?

8. What training has been provided and is it considered sufficient for teachers to analyze the data?
9. How are new teachers oriented to data analysis training processes?
10. To what extent and for what reasons do teachers advocate continued use of CFIP?

Conclusion

It is anticipated that this instrument development research and possible subsequent studies using the instrument will result in more strategic, meaningful, differentiated, relevant teaching and learning for many students in the near future.

Further, for educators reading this study, the importance of providing professional development for teachers and teams to learn the science and craft of using student data to improve classroom instruction and student learning will be perceived as an imperative rather than a choice. Teachers in this study made it clear that they desire more time to analyze and use student data with teams, and need more data literacy coaching and training. If the ultimate goal of data use is to augment and maximize learning for all students, this research should benefit many educators, teacher leaders, and educational researchers, but most importantly, the students they serve.

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Appendix A

Using Student Data to Improve Instruction and Student Learning Data-Gathering Tool

Using Student Data to Improve Instruction and Student Learning

Data-Gathering Tool

Introduction: Thank you for taking the time to complete this survey and return it in the pre-stamped, self-addressed envelope. To assist with your understanding of key terms in the survey the following ***definitions*** are provided:

- **Data**—factual information such as measurements or statistics, or information output assessed by the senses. This information must be processed to have meaning and be understood. Examples include: formative assessment data; common test scores (reading assessments, etc.); unit tests; TEACHERS' PERCEPTIONS OF STUDENT DATA INTERVIEW ASSESSMENT TOOL data; county quarterly assessments; articulation data; Instructional Intervention Teams, data; Positive Behavior Intervention Team data; student portfolios, etc.

- **Data analysis—**the process of inspecting, transforming, and interpreting data to highlight and yield useful information.

- **Data protocol**—the process or procedure your school uses to look at data, make factual statements about the data, define what is confirmed or what are surprises, select a focus, goals, implications, and actions based on the data, and plan ongoing data collection and analysis to discern goal attainment.

- **Team(s)—**a group that works together to accomplish common goals, e.g. *grade-level teams* (3rd, 6th, 9th); *content teams* (e.g. science, mathematics, related arts, English), or *special support teams* (Special Education, Counseling services, Media services, etc.).

- **Classwide—**includes the teacher's entire class of students, e.g. 3rd grade class, 6th period science class, 2nd period AP Physics class, Mrs. K.'s kindergarten class, etc.

- **Grade-level**—grade in school, e.g. 1st grade, 9th grade, etc.

- **Short-cycle assessment**—teacher or team-created common assessments, which provide feedback on students across the grade-level or content area to determine levels of student growth at frequent intervals in the school year. This can include daily formative assessments (exit tickets, warm-ups, check-off lists of skills, or a short quiz to check content/concept attainment. Teams can look at this common assessment to discern areas in which to re-teach or develop enrichment activities.

- **Student learning—**all cognitive (knowing), affective (attitudinal), and psychomotor (performance-based "doing" to demonstrate learning) gaining

of knowledge and skills. Student achievement is one component of student learning, as is the measurement of student achievement by standardized, summative tests. Formative assessment provides daily assessment of student learning.

Please complete responses to the following questions.

Please explain in several sentences:

1. What data do you or your team routinely analyze?

_____

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Please complete the appropriate response to the following statements:

	Frequency of Data Analysis					
		Daily	**Weekly**	**Twice each month**	**Monthly**	**Less Frequently than monthly**
2	How often does your team analyze data?	o	o	o	o	0

	Analysis of Data					
		Daily	**Weekly**	**Twice each month**	**Monthly**	**Less Frequently than monthly**
3	My team has received training in data analysis.	o	o	o	o	0
4	I feel competent to analyze data.	o	o	o	o	0
5	My team is provided sufficient dedicated time each week to analyze data during the scheduled school day.	o	o	o	o	0

5a	How much time are you allocated for your team to analyze data during the scheduled school day? Please answer in number of minutes per week. _____minutes per week.					
6	My team has been taught a specific structured protocol to analyze data.	o	o	o	o	o
6a	If your team uses a specific structured protocol in order to analyze data, list the name here: _____					
7	My team feels empowered to make instructional decisions in response to the results of our data analysis (e.g. adjust instruction, student groupings, interventions; refer to IIT; seek additional human/material teacher resources, etc.).	o	o	o	o	o
8	My team has been provided sufficient data coaching to analyze student achievement.	o	o	o	o	o

9. Please describe specifically how your team analyzes and uses student data to improve your teaching.

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10. Please describe specifically how your team analyzes and uses student data to improve student learning.

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	Operation of the Team					
		Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**
11	My team uses TEACHERS' PERCEPTIONS OF STUDENT DATA INTERVIEW ASSESSMENT TOOL assessment data to guide instructional improvement to support increased student learning.	o	o	o	o	0
12	My team uses short cycle assessment data to guide instructional improvement to support increased student learning.	o	o	o	o	0
13	My team uses attendance data to guide instructional improvement to support increased student learning.	o	o	o	o	0
14	My team uses quarterly assessment data to guide instructional improvement to support increased student learning.	o	o	o	o	0
15	My team uses IEP data to guide instructional improvement to support increased student learning.	o	o	o	o	0
16	My team uses ELL data to guide instructional improvement to support increased student learning.	o	o	o	o	0
17	My team uses teacher-made formative assessment data to guide instructional improvement to support increased student learning.	o	o	o	o	0
18	My team uses teacher-made summative assessment data to guide instructional improvement to support increased student learning.	o	o	o	o	0

19	My team uses diagnostic assessment data to guide instructional improvement to support increased student learning.	o	o	o	o	0
20	My team uses OTHER assessment data to guide instructional improvement to support increased student learning.	o	o	o	o	0
21	Analyzing data has helped my colleagues and me become a more collaborative team.	o	o	o	o	0
22	Analyzing data collaboratively with the team members makes it more likely that I will follow up on ideas from my teammates.	o	o	o	o	0

23. Please describe specifically how your team considers specific data, such as state assessment data, short cycle assessments, attendance data, and other data, and uses that data to guide instructional improvement and increase student achievement.

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	Results of the Data Analysis			
	(For questions 24-38) To what extent do the data analyses that you and your team complete . . .			
		None at all	**A little**	**A lot**
24	…help you improve classroom instruction?	o	o	0
25	…help you use data analysis to improve student achievement?	o	0	0
26	…help you understand better what the data that you are asked to analyze mean?	o	0	0
27	…help frame/create important questions to guide further analysis?	o	0	0
28	…enable you to determine classwide strengths in the content assessed?	o	0	0
29	…enable you to determine grade level strengths in the content assessed?	o	0	0
30	…enable you to determine classwide learning needs in the content assessed?	o	0	0
31	…enable you to determine grade level needs in the content assessed?	o	0	0
32	…help you to determine skills to reteach certain content to the whole class?	o	0	0
33	…help you identify students who are ready for advanced work or enrichment?	o	0	0
34	…help you identify students who need further interventions to master the content?	o	0	0
35	…help you structure enrichment activities?	o	0	0
36	…help you implement enrichments?	o	0	0
37	…help you assess the success or effectiveness of interventions?	o	0	0
38	…help you plan for improvements in future units?	o	0	o

39. Please describe specifically how results of the data analysis undertaken by your team are useful in helping you identify student, classroom, and grade level strengths and weaknesses.

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40. How does this help you plan and implement interventions and enrichments in your teaching?

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41. Do you have any comments that would improve the team's performance in analysis of student data? Please share up to ***three*** thoughts as to how your team could increase the effectiveness of your data discussions.

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Thank you most sincerely for your time and effort in completing this survey. When the researcher receives our survey, you will be entered into a drawing for the six prizes described in the introductory letter accompanying this survey. Winners will be notified by reception of an envelope with the prize included in your school mailbox.

Gratefully,

Lynn Birdsong

Ph.D. candidate researcher

Notre Dame of Maryland University

3/21/13

Appendix B

Demographic data survey

Use of Student Data Analysis Survey

Demographic data

Thank you for completing this anonymous survey.

Individual survey respondent's results will be confidential between the researcher and respondents.

Grade level(s) I teach:

____ I am a primary teacher (grades Pre-K, K, 1,2,3)

____ I am an intermediate teacher (grades 4,5,6)

____ Other.
Please specify. _____

(e.g. split grades; primary and intermediate; specialist teaching across grade levels)

I have taught elementary school for:

____0-2 years ____3-4 years ____5-6 years

____7-8 years ____9-10 years ____11 or more years

My age category is:

____20-25 years ____26-30 years ____31-35 years

____36-40 years ____41-45 years ____46-50 years

____51-55 years ____56-70 years ____71 or more years

My school is:

____Rural

____Suburban

____Urban

My school is:

____Title I

____Not Title I

Data Use In My School
My school:

___Uses the CFIP method

___Uses a data analysis method other than CFIP

(Please list the name) _____

____Does not use a prescribed data analysis method

Regarding the person(s) primarily responsible for analyzing student data my school:

____Has our teams analyze and use student data

____Has individual teachers analyze and use student data

____Has team leaders analyze and use student data

Data analyzed by my team includes: (Please check all that apply)

____State Assessment Data

____Interim/Report cards/grades

____Local (County) /benchmark/assessments

____Standardized tests (reading)

____Standardized tests (math)

____Team-created assessments

____Individual teacher assessments

____Other (please specify)

Thank you very much for completing this questionnaire.
Please return this survey in the attached stamped envelope addressed to the researcher along with the *Using Student Data to Improve Instruction and Student Learning Data-Gathering Tool* .

Appendix C

Teachers' Perceptions of Student Data Interview Assessment Tool

Teachers' Perceptions of Student Data Interview Assessment Tool

Time: 30 minutes

"Thank you for agreeing to meet with me to share your thoughts and ideas about using student data to improve instruction and student achievement. Please know that your interview results are totally confidential and you will in no way be identified."

2. A. What are the goals of your team's student data analysis process?

   B. How were the goals developed?

   C. By whom?

   D. Were you part of the process?

   E. Do you feel that the goals are realistic/useful?

3. A. Are all of the goals being met?

   B. If "no," which ones are not being met?

   C. Describe the evidence you have for those goals being met.

   D. Why do you think some goals are not being met?

4. A. How important is it for your team and/or you to consistently analyze student data to improve instruction?

   B. Why?

5. Please describe the data analysis process used by your team.

6. A. What are the positions (e.g. teacher, team leader, guidance counselor, etc.) of the team members who lead the team's data discussions?

   B. Do all team members have the opportunity to hold that leadership role?

7. A. What types of data does your team review?

   B. Why does the team review those specific data?

8. A. Which types of data reviewed do you find most important or helpful?

B. Are there additional data sources you think your team should use?

9. A. What type of professional development/training did your team have in use of student data analysis to improve instruction and learning?

   B. Do you feel that your team needs additional training?

   C. Why?

10. What ideas do you have about the most valuable aspects of this training, and how it might have been improved?

11. What is the structure of your team's data analysis time (e.g. ___times/week for _____minutes; whole meeting or part of the meeting devoted to data discussion)?

12. How does the team develop and implement a specific plan using the results of the data discussion:

    a) to improve classroom instruction, and

    b) to individualize instruction to meet each student's needs?

13. A. Do you believe that your team's use of student data analysis has helped you improve your classroom instruction?

    B. If so, can you provide specific examples? If not, why not?

14. How could your team's data analysis process be improved?

15. How has the use of the data analysis process affected you as a teacher?

16. Are there opportunities in your team's meetings for you to develop or share leadership roles (e.g. lead the meeting, share research or relevant information you have found)?

17. A. Are you a more effective, more confident, more capable, and/or more positive teacher today as a result of your team's use of student data conversations?

    B. Please address each of these four descriptors and explain why or why not.

18. A. Would you advocate continuing to use the data analysis process your team now uses, change it in some way, or eliminate it?

    B. Why?

"Again, thank you for your time and very helpful information."
Provide each participant with a nice thank you pen and $20 bill.

Appendix D

Consent Forms

CONSENT FORM FOR SURVEY RESPONDENTS

Project Title	**Development of a Reliable and Valid Instrument to Ascertain Use of the Classroom Focused Improvement Process (CFIP) as a Tool for Improving Instruction and Student Learning**
Why is this research being done?	This is a research project being conducted by Dr. Gary Thrift and Ms. Linda Birdsong at Notre Dame of Maryland University. We are inviting you to participate in this research project because you currently serve as an elementary school teacher who uses student assessment and data in some way to guide student achievement and instruction. The purpose of this research is to design a research instrument (survey) that will help researchers and educators understand the impact that using student data may have on instruction and student learning.
What will I be asked to do?	1. You will be given a packet containing an information letter describing the research and its purpose, informed consent form for you to read and sign, a survey to fill out and place into the enclosed stamped return envelope, and a description of prizes you are eligible to receive when the researcher receives your survey. 2. The packet will be placed in your mailbox at your school by the researcher. Your information will be confidential and anonymous as your packet will contain only a code number. 3. You will be asked to complete the survey, place it into the self-addressed (researcher) stamped envelope, and mail the stamped envelope.
What are the risks of this research?	There are no risks associated with your participation in this research.
What are the benefits of this research?	We hope that, in the future, educators might benefit from this study through improved understanding of how teachers can use student data to improve instruction and student learning.

What about confidentiality?	The surveys are anonymous and will not contain information that may personally identify you. We will keep your personal information confidential. To help protect your confidentiality: (1) your name will not be included on the surveys and other collected data; (2) a code will be placed on the survey and other collected data; (3) through the use of an identification key, the researcher will be able to link your survey to your identity; (4) only the researcher will have access to the identification key; (5) the researcher will keep codes and names in a locked file cabinet.
Project Title	**Development of a Reliable and Valid Instrument to Ascertain Use of the Classroom Focused Improvement Process (CFIP) as a Tool for Improving Instruction and Student Learning**
What if I have questions?	This research is being conducted by Dr. Gary Thrift in the Department of Education at Notre Dame of Maryland University (NDMU), and Ms. Linda Birdsong, Ph.D. student at NDMU. If you have any questions about the research, please contact: Dr. Thrift, at NDMU, 4701 North Charles Street, Baltimore, MD, 21210, by phone at 410-532-5497, or e-mail at gthrift@ndm.edu, or Ms. Birdsong, at Howard County Public Schools, 8930 Stanford Blvd., Columbia, MD 20745, by phone at 410-313-7019, or e-mail at linda_birdsong@hcpss.org
Do I have to be in this research? May I stop at any time?	Your participation in this research is completely voluntary. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.
Statement of age of subject and consent (parental consent always needed for minors)	Your signature indicates that: • You are at least 18 years of age • The research has been explained to you • Your questions have been fully answered; and • You freely and voluntarily choose to participate in this research project.

Signature and Date (required on the final page of the consent form)	**NAME OF SUBJECT:** _____ **SIGNATURE OF SUBJECT:** _____ **DATE:** _____

*******Please note: When the consent form requires more than one page, please include a space for the subject to initial and date at the top right-hand corner of each page. The corner should appear as:***

Initials_____ Date_____

Also each page must display a page range such as: Page 1 or 2, then Page 2 of 2. This additional information would confirm that the subject agreed to the entire contents of the consent form.

CONSENT FORM FOR INTERVIEW RESPONDENTS

Project Title	**Development of a Reliable and Valid Instrument to Ascertain Use of the Classroom Focused Improvement Process (CFIP) as a Tool for Improving Instruction and Student Learning**
Why is this research being done?	This is a research project being conducted by Dr. Gary Thrift and Ms. Linda Birdsong at Notre Dame of Maryland University. We are inviting you to participate in this research project because you currently serve as an elementary school teacher who uses student assessment and data in some way to guide student achievement and instruction. The purpose of this research is to design a research instrument (survey) that will help researchers and educators understand the impact that using student data may have on instruction and student learning.
What will I be asked to do?	You will be given an information letter describing the research and its purpose, an informed consent form for you to read and sign, a copy of the interview questions, and a description of prizes you are eligible to receive for participating in the interview. Your information will be confidential and anonymous as responses will be coded and kept in a locked file drawer.
What are the risks of this research?	There are no risks associated with your participation in this research.
What are the benefits of this research?	We hope that, in the future, other people might benefit from this study through improved understanding of how teachers can use student data to improve instruction and student learning.
What about confidentiality?	The interview respondents will be assigned a code number through which information will remain anonymous and confidential. Through the use of an identification key, the researcher will be able identify you to contact you if you win one of the prizes. Only the researcher will have access to the identification key. The researcher will keep codes and names in a locked file cabinet.

What if I have questions?	This research is being conducted by Dr. Gary Thrift in the Department of Education at Notre Dame of Maryland University (NDMU), and Ms. Linda Birdsong, Ph.D. student at NDMU. If you have any questions about the research, please contact: Dr. Thrift, at NDMU, 4701 North Charles Street, Baltimore, MD, 21210, by phone at 410-532-5497, or e-mail at gthrift@ndm.edu, or Ms. Birdsong, at Howard County Public Schools, 8930 Stanford Blvd., Columbia, MD 20745, by phone at 410-313-7019, or e-mail at linda_birdsong@hcpss.org.
Project Title	**Development of a Reliable and Valid Instrument to Ascertain Use of the Classroom Focused Improvement Process (CFIP) as a Tool for Improving Instruction and Student Learning**
Do I have to be in this research? May I stop at any time?	Your participation in this research is completely voluntary. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.
Statement of age of subject and consent (parental consent always needed for minors)	Your signature indicates that: • You are at least 18 years of age • The research has been explained to you • Your questions have been fully answered; and • You freely and voluntarily choose to participate in this research project.
Signature and Date (required on the final page of the consent form)	**NAME OF SUBJECT:** _____ **SIGNATURE OF SUBJECT:** _____ **DATE:** _____

*******Please note: When the consent form requires more than one page, please include a space for the subject to initial and date at the top right-hand corner of each page. The corner should appear as:***

Initials_____ Date_____

Also each page must display a page range such as: Page 1 or 2, then Page 2 of 2. This additional information would confirm that the subject agreed to the entire contents of the consent form.

Appendix E

Using Student Data to Improve Instruction and Student Learning Data-Gathering Tool—REVISED FOR FUTURE USE.

Using Student Data to Improve Instruction and Student Learning

Data-Gathering Tool (REVISED FOR FUTURE USE)

Introduction: Thank you for taking the time to complete this survey and return it in the pre-stamped, self-addressed envelope. To assist with your understanding of key terms in the survey the following ***definitions*** are provided:

- **Data**—factual information such as measurements or statistics, or information output assessed by the senses. This information must be processed to have meaning and be understood. Examples include: formative assessment data; common test scores (reading assessments, etc.); unit tests; MSA data; county quarterly assessments; articulation data; Instructional Intervention Teams, data; Positive Behavior Intervention Team data; student portfolios, etc.

- **Data analysis—**the process of inspecting, transforming, and interpreting data to highlight and yield useful information.

- **Data protocol**—the process or procedure your school uses to look at data; make factual statements about the data; define what is confirmed or what are surprises; select a focus, goals, implications, and actions based on the data; and, plan ongoing data collection and analysis to discern goal attainment.

- **Team(s)—**a group that works together to accomplish common goals, e.g., *grade-level teams* (3rd, 6th, 9th); *content teams* (e.g. science, mathematics, related arts, English), or *special support teams* (Special Education, Counseling services, Media services, etc.).

- **Classwide—**includes the teacher's entire class of students, e.g., 3rd grade class, 6th period science class, 2nd period AP Physics class, Mrs. K.'s kindergarten class, etc.

- **Grade-level**—grade in school, e.g. 1st grade, 9th grade, etc.

- **Short-cycle assessment**—teacher or team-created common assessments, which provide feedback on students across the grade-level or content area to determine levels of student growth at frequent intervals in the school year. This can include daily formative assessments (exit tickets, warm-ups, check-off lists of skills, or a short quiz to check content/concept attainment). Teams can look at this common assessment to discern areas in which to re-teach or develop enrichment activities.

- **Student learning—**all cognitive (knowing), affective (attitudinal), and psychomotor (performance-based "doing" to demonstrate learning) gaining

of knowledge and skills. Student achievement is one component of student learning, as is the measurement of student achievement by standardized, summative tests. Formative assessment provides daily assessment of student learning.

Please complete responses to the following questions.

Please explain in several sentences:

2. What data do you or your team routinely analyze?

_____

_____

_____

_____

_____

_____

_____

Please complete the appropriate response to the following statements:

	Frequency of Data Analysis					
		Less Frequently than monthly	**Monthly**	**Twice each month**	**Weekly**	**Daily**
2	How often does your team analyze data?	o	o	o	o	0
3	My team has received training in data analysis…	o	o	o	o	0

	Analysis of Data					
		Strongly disagree	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly agree**
4	I feel competent to analyze data.	o	o	o	o	0
5	My team is provided sufficient dedicated time each week to analyze data during the scheduled school day.	o	o	o	o	0
5a	How much time are you allocated for your team to analyze data during the scheduled school day? Please answer in number of minutes per week. _____minutes per week.					
6	My team has been taught a specific structured protocol to analyze data.	o	o	o	o	0
6a	If your team uses a specific structured protocol in order to analyze data, list the name here: _____					
7	My team feels empowered to make instructional decisions in response to the results of our data analysis (e.g. adjust instruction, student groupings, interventions; refer to IIT; seek additional human/material teacher resources, etc.).	o	o	o	o	0
8	My team has been provided sufficient data coaching to analyze student achievement.	o	o	o	o	0

9. Please describe specifically how your team analyzes and uses student data to improve your teaching.

_____

_____

_____

10. Please describe specifically how your team analyzes and uses student data to improve student learning.

	Operation of the Team					
		Strongly disagree	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly agree**
11	My team uses MSA assessment data to guide instructional improvement to support increased student learning.	o	o	o	o	0
12	My team uses short cycle assessment data to guide instructional improvement to support increased student learning.	o	o	o	o	0
13	My team uses attendance data to guide instructional improvement to support increased student learning.	o	o	o	o	0
14	My team uses quarterly assessment data to guide instructional improvement to support increased student learning.	o	o	o	o	0
15	My team uses IEP data to guide instructional improvement to support increased student learning.	o	o	o	o	0
16	My team uses ELL data to guide instructional improvement to support increased student learning.	o	o	o	o	0
17	My team uses teacher-made formative assessment data to guide instructional improvement to support increased student learning.	o	o	o	o	0
18	My team uses teacher-made summative assessment data to guide instructional improvement to support increased student learning.	o	o	o	o	0

19	My team uses diagnostic assessment data to guide instructional improvement to support increased student learning.	o	o	o	o	0
20	My team uses OTHER assessment data to guide instructional improvement to support increased student learning.	o	o	o	o	0
21	Analyzing data has helped my colleagues and me become a more collaborative team.	o	o	o	o	0
22	Analyzing data collaboratively with the team members makes it more likely that I will follow up on ideas from my teammates.	o	o	o	o	0

23. Please describe specifically how your team considers specific data, such as MSA short cycle assessments, attendance data, and other data, and uses that data to guide instructional improvement and increase student achievement.

_____

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	Results of the Data Analysis			
	(For questions 24-38) To what extent do the data analysis processes that you and your team complete . . .			
		None at all	**A little**	**A lot**
24	…help you improve classroom instruction?	o	o	o
25	…help you use data analysis to improve student achievement?	o	o	o
26	…help you understand better what the data that you are asked to analyze mean?	o	o	o
27	…help frame/create important questions to guide further analysis?	o	o	o
28	…enable you to determine classwide strengths in the content assessed?	o	o	o
29	…enable you to determine grade level strengths in the content assessed?	o	o	o
30	…enable you to determine classwide learning needs in the content assessed?	o	o	o
31	…enable you to determine grade level needs in the content assessed?	o	o	o
32	…help you to determine skills to reteach certain content to the whole class?	o	o	o
33	…help you identify students who are ready for advanced work or enrichment?	o	o	o
34	…help you identify students who need further interventions to master the content?	o	o	o
35	…help you structure enrichment activities?	o	o	o
36	…help you implement enrichments?	o	o	o
37	…help you assess the success or effectiveness of interventions?	o	o	o
38	…help you plan for improvements in future units?	o	o	o

39. Please describe specifically how results of the data analysis undertaken by your team are useful in helping you identify student, classroom, and grade level strengths and weaknesses.

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40. How does this help you plan and implement interventions and enrichments in your teaching?

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41. Do you have any comments that would improve your team's performance in analysis of student data? Please share up to ***three*** thoughts as to how your team could increase the effectiveness of your data discussions.

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Thank you most sincerely for your time and effort in completing this survey. When the researcher receives your survey, you will be entered into a drawing for the six prizes described in the introductory letter accompanying this survey. Winners will be notified by reception of an envelope with the prize included in your school mailbox.

Gratefully,

Lynn Birdsong

Ph.D. candidate researcher

Notre Dame of Maryland University