ABSTRACT

PAEPLOW, COLLEEN GRAHAM. Easy as 1, 2, 3: Exploring the Implementation of Standards-Based Grading in Wake County Elementary Schools. (Under the direction of Dr. Bonnie Fusarelli.)

Wake County Public School System's (WCPSS) 102 elementary schools have implemented standards-based grading. This grading practice is aligned with North Carolina's Student Accountability Standards and the WCPSS Promotion/Intervention policy. Standards-based report cards were designed to reflect student mastery of state standards and provide an objective measure of student grade level performance. With its focus on student mastery of content material, standards-based grading is intended to reduce teacher subjectivity which may bias a student's grade, and therefore provide a more equitable grading system resulting in a more meaningful grade. This grade is communicated to parents via the student's report card. The goal of this study was to examine the implementation of this grading practice. Utilizing a mixed methods study design, teachers' understanding and use of standards-based grading and the equity of the resulting grades were examined. Quantitative methods were utilized in two ways: 1) to select a sample of teachers for participation in focus groups, and 2) to examine the distribution of students' grades by subgroup in order to analyze standards-based grading as a equitable grading practice. An intensity sample of six schools with the strongest and weakest correlations between classroom grades and End-of-Grade scores (a previously validated measure of student knowledge of state standards) were the primary data source for this study. Within the sample of schools, four to twelve teachers who participated in a focus group at their school informed the qualitative exploration of the level of understanding and resulting implementation of standards-based grading within WCPSS.

Teachers' understanding and use of this student progress reporting practice was examined qualitatively to determine the degree to which standards-based grading has been implemented.

The fundamental characteristics of standards-based grading—mastery and the separation of homework from content grades—were described in WCPSS' documentation and clearly articulated by teachers. WCPSS' standards-based grading system is consistent with the research recommended practices of mastery and separation of homework from content grades; however, WCPSS' system of combining objective grades into one final grade was inconsistent with research recommended practices. The analysis of WCPSS' standards-based grading revealed a strong relationship between students' classroom grades and EOG scores indicating this grading system accomplishes its intended purpose of assessing students' knowledge of North Carolina's curriculum. Although grades varied considerably by ethnicity, additional analysis revealed similar correlations between fourth-quarter grades and EOG scores across ethnic groups and academic risk factor (ranging <0.1 by subgroup for reading and mathematics). Furthermore, the ability to use second-quarter grades to predict students' success on EOG exams would provide educators with a valuable mid-year indicator used to identify students who with additional support could be on grade level by the end of the year. Indeed, the results of this study indicate standards-based grading may have value beyond traditional grading practices. The benefits of this grading practice include providing a grading system with equity potential, providing a predictive tool to identify struggling students, and requiring teachers to offer and assess students' understanding.

This study's findings enlighten grading research by providing evidence of the application of standards-based grading within a large school district and an indication of the equity potential inherit within this grading system. In light of the scarcity of grading research on the implementation of standards-based grading and the absence of prior research examining the equity potential inherit within this grading system, this study's findings inform both research and practice. Indeed, given this research was conducted within a large diverse school system, this study's findings has the potential to inform state and national grading practices.

Easy as 1, 2, 3: Exploring the Implementation of Standards-Based Grading in
Wake County Elementary Schools

by
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DEDICATION

This dissertation is dedicated to my sons, Alexander and Zachary, in hopes they realize they too will be able to accomplish anything they put their minds and effort into and to my husband, Jon, without his support and understanding I would never have finished.

BIOGRAPHY

I graduated from Florida State University with a Bachelors in Science degree in

Political Science in 1993 and a Masters in Science degree in Sociology in 1995.

ACKNOWLEDGEMENTS

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CHAPTER 1

INTRODUCTION TO THE STUDY

To be competitive in the global labor market, today's students are required to learn an ever-widening amount of information. The large amount of material covered by North Carolina's Standard Course of Study (NCSCS) represents the desire of educators to prepare students to be competitive on a global scale. Given the amount of material that must be taught, how do we know if students understand the material covered? Exactly how students should be assessed on this information is currently being debated by educators. For many years researchers have been concerned with the imprecision of the United States' A-F grading system. As evidence of this imprecision, researchers point to the standardized tests results for students earning A's and B's in high poverty areas being comparable to students in more affluent schools earning C's and D's (Lekholm & Cliffordson, 2008; U.S. Department of Education, 1994).

What constitutes an A is not always clear. A-F grading scales that dominate American school systems on the surface give the impression that they are accurate and reliable reflections of student learning. In most U.S. classrooms grades represent an average of a student's performance throughout the class, but which factors actually go into determining students' grades vary greatly between states, districts, schools, and even classrooms within the same school. Student performance on tests, homework, class participation, projects, and other factors are often combined into a single grade. However, the combination of factors and the weight given to each varies substantially between classrooms. Furthermore, the

culmination of a student's work is often assessed relative to the performance of other students.

Some educators have embraced standards-based grading as an alternative to an A-F grading system (Perlstein, 2003). Standards-based report cards provide detailed information on the skills a student is expected to master either through a narrative or with numbers or symbols (Manzo, 2001; O'Conner, 2007). Standards-based grading is focused on student mastery of content material which researchers argue is a more objective measure of student knowledge (Guskey, 2001; Marzano, 1998; O'Conner, 2007). While there is limited research comparing the reliability of standards-based grading to that of traditional grading, initial grading research conducted by Haptonstall (2010) indicated a greater correlation between standards-based grades and the Colorado Student Assessment Program (CSAP), a standardized assessment, than found between traditional grades and the CSAP.

North Carolina's Wake County Public School System (WCPSS) has implemented standards-based grading at the elementary school level. The purpose of this research study is to investigate teachers' understanding of WCPSS' standards-based grading and explore how this grading practice has been implemented. Grading practices focused on student mastery should reduce teacher subjectivity which may bias a student's grade, and therefore provide a more equitable and accurate grading system. Examining the implementation of standards-based grading will inform research in this area. Moreover, a primary purpose of this study was to inform practice; thus, WCPSS staff can use the findings to inform training needs and current grading discussions regarding the possible expansion of standards-based grading into higher grade levels.

Background of the Study

Districts across the United States have been expanding and changing the traditional A-F letter grading system to more detailed standards-based reporting (Manzo, 2001). Unlike traditional grades, standards-based grades communicate student proficiency on set criteria. Given that traditional grading has been a mainstay in the U.S. it is helpful to briefly consider the origins of standards-based grading nationally and within WCPSS. In order to understand the context in which standards-based grading developed it is helpful to examine the development of the standards movement.

Overview of the Standards Movement

Among educational researchers and policy-makers there has been an increased focus on standards. The implementation of the No Child Left Behind Act (NCLB) of 2001 has heightened the emphasis on ensuring all students learn their state's standard course of study as measured by standardized tests. The modern standards movement can be traced to the publication of *A Nation At Risk* in 1983. "Researcher Laurie Shepard (1993) states that this widely read and controversial report caused a dramatic shift in the rhetoric of education reform, so that it came to embody a concern for the basic safety of our nation" (Marzano, 1998, p. 1). *A Nation At Risk* held that the mediocrity of the American educational system threatened our very future causing many Americans deep concern for the quality of our educational system (Marzano, 1998). In response to concerns regarding the quality of education in America, by 1998, standards had been defined for most of the content areas taught in U.S. schools.

"With standards and assessments now in place, educators face the daunting task of how best to grade and report student learning in terms of those standards" (Guskey, 2001, p. 20). How can we be sure our students are learning the state standards and that student grades reflect that knowledge? "When reporting on student work, educators need a clear, comprehensive grading system that shows how students are measuring up to standards" (Guskey, 2001, p. 20). Standards-based grading with its emphasis on measuring student achievement against established criteria offers us a method of communicating whether students are meeting set standards.

Federal and State Guidance

Although changes at the federal level have elevated the importance of state standards, there are no federal policies regarding standards-based grading. The federal government has, however, issued guidelines for the implementation of standards-based grading. As part of the U.S. Department of Education's Teacher-to-Teacher 2008 Summer workshops series, the Standards-Based Education and Student Report Cards workshop provided a description of standards-based grading (Robertson, 2008). At the state level, there are many examples of how standards-based grading has been interpreted and implemented across states and school districts. Although the implementation has varied by state and school district, there are key factors that are common in each including: reflecting the standards, improving grading consistency, improving communication with parents, and most importantly, measuring student learning against an established standard.

Wake County Public School System

Due to a concern that students' grades were not consistent, that students' mastery of the NCSCS was not reflected on their report card, and that parents were not properly informed of student progress, WCPSS implemented a standards-based grading system and report card at the elementary school level. In 2001-02, WCPSS piloted a new performance-based report card utilizing standards-based grading at five elementary schools. Administrators, teachers, and parents at the five schools participating in the pilot worked for two years to develop a new elementary school grading system and report card designed to promote consistency in the grading process and provide parents better information regarding their child's progress toward mastering the NCSCS (K-5 Standards-Based Grading and Reporting: Fact Sheet, 2003). In 2003-04, twenty-two additional schools implemented the new standards-based grading practice and resulting report card. In 2005-06, the balance of WCPSS' 88 elementary schools adopted this new grading system. The number of elementary schools was expanded to 102 in 2009-10 due to the addition of new schools.

The standards-based report card was implemented to align with North Carolina's Student Accountability Standards and the WCPSS Promotion/Intervention policy. This new tool was designed to provide parents and students with details about the student's performance on grade level standards. The standards-based report card measures a student's academic progress against a uniform standard. The report card includes a section for teacher comments designed to capture student strengths and areas of need (K-5 Standards-Based Grading and Reporting: Fact Sheet, 2003; Understanding the Elementary School Report

Card, 2010). Student performance on content material is considered separate from their work habits and conduct.

Purpose of the Study

Standards-based grading represents a departure from the A-F grading scale historically used in schools and from what most teachers were taught and have previously employed within their classrooms. Thus, the degree to which this policy has been understood and implemented is of interest. The purpose of this research was to investigate teachers' understanding of standards-based grading, to explore how standards-based grading has been implemented within WCPSS elementary schools, and to evaluate the assumption that this method of grading is an equitable grading practice. Teacher responses generated from school level focus groups informed the qualitative exploration of the level of understanding and resulting implementation of standards-based grading within WCPSS. The implementation of standards-based grading was examined in terms of teachers' understanding and application of this grading method and explored through the use of teacher focus groups and document analysis of grading practices. The examination of teacher understanding was important to this study since it impacts the level of implementation and since the fidelity of implementation was pivotal to providing a true assessment of this grading practice and the resulting report card. Finally, the quantitative examination of student grades informed the equity considerations implicit in standards-based grading.

The data generated from this study could have practical application for the school district such as: informing standards-based grading training needs and enlightening current grading discussions within WCPSS regarding the possible expansion of standards-based

grading into higher grade levels. Therefore, a fundamental reason for this research was to inform decision makers regarding the implementation of standards-based grading within WCPSS elementary schools. In order to provide a common understanding of what is meant by key terminology, the next section will provide definitions of key concepts discussed in this study.

Definition of Key Terminology

In order to understand the grading debate it is critical to clarify key terminology. The first distinction that must be addressed is the basic difference between a standards-based grading system and the A-F grading system. Table 1.1 highlights common grading practices associated with both traditional A-F grading systems and standards-based grading systems. Common elements within traditional A-F grading systems include norm-referenced grading where students are graded in relation to their peers, teacher subjectivity whereby teachers are given greater freedom to determine what elements are included in a student's grade, and summative grading which reflects the culmination of students' efforts within the class. Grades have also traditionally served as a sorting mechanism enabling schools to place students in course trajectories based on prior classroom performance (Resh, 2009). While this grading purpose has wider implications both at the secondary and college levels since this study is focused at the elementary level and WCPSS elementary students receive core instruction within randomly assigned grade-level classrooms, this grading purpose will not be examined as part of this study. While there are variations in standards-based grading systems, there are key elements they have in common. Standards-based grading is criterion-referenced; thus, students must display mastery of objectives within a subject, and work

habits are considered separately from subject content. Since a set criteria must be met and

grades reflects only student performance within the subject area, teacher subjectivity is

reduced and reliability and validity of grades are improved.

Table 1.1

Elements Associated with Traditional A-F Grading Compared to Standards-Based Grading

Grading System	Historical Background	Elements of Grading System
A-F	Dominant grading system in U.S. throughout 20th century (Manzo, 2001)	Norm-referenced Teacher Subjectivity Summative
Standards-Based Grading	Developed from Standards-Movement ushered in following "A Nation at Risk" in 1983 (Marzano, 1998).	Criterion-referenced Separation of Work habits Reduction of Teacher Subjectivity Increased Reliability and Validity

Since this study focused on WCPSS' standards-based grading system, it is imperative to

define what is meant by standards-based grading within WCPSS. Within WCPSS' standards-

based grading system the determination of a student's performance level is based on a variety

of assessment data on each objective presented during the grading period. Work habits and

conduct are graded separately from the student's proficiency on content material

(Understanding the Elementary School Report Card, 2010). "The student performance levels

of 1 to 4 indicate whether students have met the expectations set by the state in the Standard

Course of Study and indicate whether the student has the necessary skills and concepts to be

successful in the next quarter or next grade" (K-5 Standards Based Grading and Reporting:

Fact Sheet, 2003, p.1). Rather than averaging the student's cumulative work, standards-based

grading assesses a student's mastery of an objective (a minimum of three observations are

required for each objective) and assigns a 1-4 rating for that objective (see Table 1.2). When

a student has three recorded observations with a performance level 3 or better for an

objective then the student has mastered that objective.

Table 1.2

WCPSS Standards-Based Grading Performance Levels

Level	Meaning
1	Insufficient performance of targeted grade level standards with support.
2	Inconsistent and needs support to meet targeted grade level standards.
3	Demonstrates proficiency of targeted grade level standard.
3*	Demonstrated proficiency of targeted grade level standards with evidence of application.
4	Extends targeted grade level standards.

Data Source: K-5 Standards-Based Grading and Reporting: Fact Sheet, 2003, p.1

Work habits are not considered a part of the student's performance on a given objective, but

are captured under a separate 1-3 rating. WCPSS's elementary report cards separate student

performance from the student's conduct and work habits.

North Carolina's Standard Course of Study (NCSCS) refers to a set curriculum that

"should be" provided to every student in North Carolina (NC DPI, 2010). In 1898, North

Carolina established a Standard Course of Study to determine competencies on a rigorous set of a statewide uniform standards for each grade level and each high school course (NC DPI, 2010).

Another key concept to consider is WCPSS' definition of work habits. To assess student work habits and conduct, teachers are asked to report whether a student has met "expectations in cooperating with others, respecting others, and observing rules and procedures" (Understanding the Elementary School Report Card, 2010, p. 2). Teachers indicate if a student "uses time wisely, listens carefully, completes assignments, writes legibly, works independently or seeks help when needed, and completes work" (Understanding the Elementary School Report Card, 2010, p. 2). Students conduct and work habits are rated as: 3 - meets expectations, 2 - inconsistently meets expectations, or 1 - does not meet expectations (Understanding the Elementary School Report Card, 2010).

The final concept to consider is the definition of equity as it applies to grading. Within the classroom equity refers to allowing all students the ability to learn in a manner that meets their needs. Furthermore, all students are valued and treated fairly. As educators in order to understand the meaning of grades we must start with the shared expectation that all students will be treated fairly (Friedman, 1998). Fair or equitable treatment of students in terms of how they are assessed within a classroom is the foundation of an equitable grading system. With a general understanding of the development of standards-based grading, the purpose of this study, and the key terminology associated with the grading debate, the next section outlines the significance of this study and its contribution to current grading discussions.

Significance of the Study

Standards-based grading emerged from the standards movement. There has be a renewed emphasis on ensuring all students receive a core set of knowledge and that students comprehend this essential information (Wheelock, 1995). The standards movement addressed the concern that students were only partially exposed to the state standard course of study. Districts across the U.S. have been expanding and changing the traditional A-F letter grading system with more detailed standards-based reporting. While school systems that have implemented a standards-based report card detailing student progress have found mixed results, current research is sparse. Standards-based grading with a focus on student mastery is posited as a less subjective and therefore more equitable and accurate grading practice. However, to realize its potential as an equitable grading system, standards-based grading must be implemented with fidelity. Equitable policies are only equitable when practice is also equitable.

This study offers invaluable information on the implementation and application of standards-based grading. Due to the difficulty of assessing the implementation of this grading system through quantitative methods alone, qualitative methods were utilized to elicit greater understanding of the implementation of standards-based grading. This study explored the degree to which WCPSS's standards-based grading practices were understood and implemented with fidelity. WCPSS's standards-based grading system was born out of the desire to ensure that all students were exposed to and assessed on North Carolina's standard course of study. While the intent of the policy was clear, the degree to which it has been understood and implemented needs to be explored. In order to do so, I conducted two teacher

interviews as part of a small pilot study in 2006; these preliminary data suggested that the

level of implementation was impacted by teacher's level of experience with this grading

practice. An interview with a new teacher revealed she was not offering level 4 learning

opportunities, nor was she assessing any students at level 4 during the first quarter. She

reported that none of her students received a level 4 on their first quarter report since she was

not certain how to recognize student work at this level. Thus, whether level 4 opportunities

are consistently offered across WCPSS classrooms is not certain. The degree to which

teaching to level 4 and providing level 4 opportunities for all WCPSS students are not

consistent represents unequal access to teaching for understanding and unequal assessment of

that understanding. Level 4 opportunities refer to presenting course material which extends

the targeted grade level standards and provides for assessment of student performance which

demonstrates extension of the targeted grade level standards. Inequality of opportunities and

exposure has the potential to create unequal access to education within WCPSS' elementary

schools. Thus, an examination of whether WCPSS' standards-based grading has reached its

equity potential was necessary. This study's examination of student grades by subgroup

illuminates the level of equity within WCPSS' standards-based grading.

Although numerous researchers discuss standards-based grading, there is limited

research regarding the implementation and application of this grading practice. Both the

potential for equity and the questions generated during the pilot study indicated the necessity

for research examining the implementation and application of standards-based grading. Thus,

the significance of this study rests in enlightening the current grading discussion by

providing data on teacher understanding and the implementation and application of standards-based grading within a large school district.

Overview of the Approach

The primary goal of this mixed methods study was to examine the implementation and application of WCPSS' standards-based grading system. Teachers' understanding and use of this grading practice was examined to determine the degree to which standards-based grading has been implemented. Student grades were examined to elucidate the level of equity within WCPSS' standards-based grading system. An intensity sample of six schools with the strongest and weakest correlations between classroom grades and End-of-Grade scores (a previously validated measure of student knowledge of state standards) were the primary data source for this study. This sequential explanatory mixed method study utilized quantitative and qualitative methods. The quantitative portion included two elements: 1) an examination of the correlation between grades and EOG scores which enabled the selection of schools from which to elicit a sample of teachers and 2) an examination of grading distribution by subgroups to investigate equity within this grading practice. A qualitative exploration of the level of understanding and resulting implementation of standards-based grading within WCPSS was informed by teachers from the sampled schools. Information generated from this study could inform standards-based grading training needs and enlighten current grading discussions within WCPSS regarding the possible expansion of standards-based grading into higher grade levels.

Chapter Summary

WCPSS implemented a standards-based policy aligned with North Carolina's Student Accountability Standards and the WCPSS Promotion/Intervention policy. WCPSS' 102 elementary schools utilize standards-based report cards designed to reflect student mastery of state standards and provide an objective measure of student grade level performance. Research suggests that standard-based grading offers a more equitable grading system with a focus on student mastery of content material which should reduce teacher subjectivity and the resulting biases within a student's grade. Chapter 2 provides a description of the development of standards-based grading, its potential to be a more equitable grading system, and suggests next steps for grading research. Chapter 3 describes the mixed methods research design—including the research questions and the methodology utilized for data collection and analysis.

CHAPTER 2

REVIEW OF THE LITERATURE

The purpose of this chapter is to explore grading literature regarding the development, prevalence, and equity potential of standards-based grading. This chapter is organized around addressing the who, what, where, when, and why of standards-based grading. By utilizing grading literature to answer each question this chapter presents the development of standards-based grading, its potential to be a more equitable grading system, and suggests next steps for grading research. Prior to a discussion of the current grading debate and the development of standards-based grading, it is essential to first examine the purpose of grades.

What are the Purposes of Grades?

At the most rudimentary level, grades provide a "process of abstracting a great deal of information into a single symbol for ease of communication" (Stiggins, 2005, p. 278). While grades may serve a variety of purposes, educational researchers have identified a few fundamental reasons for assigning grades. Many researchers agree that grades serve as a communication tool (Carlson, 2003; Jung & Guskey, 2007; Marzano, 2000; O'Conner, 2002, 2007; Stiggins, 2005; Tomlinson, 2005), a method of providing feedback on student achievement (Marzano, 2000), an instructional planning tool (Marzano, 2000), a method of motivation or incentive (Marzano, 2000; O'Conner, 2002, 2007) and a sorting mechanism (Resh, 2009).

Grades are used to communicate student understanding of subject material to students and parents, depending on the type of grading practice used; however, grades may also be

used to communicate student behavior (Carlson, 2003; Jung & Guskey, 2007; O'Conner, 2007; Tomlinson, 2005). The fact that grades communicate multiple factors is problematic since "putting together such a variety of information makes it very difficult to clearly understand what grades mean" (O'Conner, 2002, p. 16). Guskey (2002) found that while teachers, parents, and students, as the primary stakeholders regarding grades, all recognized the importance of including multiple sources of information to determine a student's grade, parents were the least knowledgeable about what evidence is considered in determining a student's grade. Moreover, teachers, parents, and students ranked communication with parents, feedback to students, selection or grouping, provision of incentives, evaluation of school programs, and lack of effort and responsibility in the same order of importance in determining a student's grade (Guskey, 2002). However, as grade level increased all parties tended to rate communication with parents as less important and feedback to students as a more important purpose of grading (Guskey, 2002).

While extraneous factors are often included in a student's grade, a primary purpose of grades is to communicate student achievement (Marzano, 2000). Although communication and providing feedback on student achievement are the top priorities for grades, another key purpose is to guide teachers' instructional practices (O'Conner, 2007). Grades are also commonly used to motivate students; however, this form of motivation only works with some students. The use of grades to motivate students is not always effective or appropriate. Since grades are extrinsic motivators, students do not internalize this form of motivation (O'Conner, 2007). "We need to communicate to students that their goal should be knowing more when they walk out of class than when they walked in" (Huhn, 2005, p. 81). Grades

should be the result of knowledge gained rather than the goal (Huhn, 2005). Furthermore, traditional grades have served as a sorting mechanism in which schools sort students into course trajectories based on prior classroom performance (Resh, 2009). While this grading purpose has implications at the secondary and college levels it is beyond the scope of this study. Within WCPSS elementary schools students receive core instruction within randomly assigned grade-level classrooms; thus, the implications of sorting would not manifest at this level.

Using grades as an effective method of communicating student achievement requires that grades be valid representations of student knowledge on a given subject and reliable across classrooms. To this end, educators are currently engaged in a debate regarding the merits of traditional grading versus the potential of standards-based grading. The next section of this paper will outline this grading debate.

What is the Current Grading Debate?

Across the U.S. educators are debating the value of two fundamentally different grading systems: traditional grading verses standards-based grading. While the reliability of the A-F grading system has led some to question our current grading practices, including a small politically motivated group calling for the elimination of grading, "grading still stands as the premiere method of informing students, parents, educators, administrators, and community stakeholders regarding an individual student's acquisition of essential skills and knowledge" (Carlson, 2003, p. 513). Grades remain a core element of the public education system's accountability practices (Carlson, 2003). The inaccuracy introduced by a lack of

reliability with the A-F grading system in light of increased accountability requirements has

led to an increased focus on the standards movement and standards-based grading.

Traditional A-F Grading

Concerns have been raised over the use of norm-referenced grading, the level of

teacher subjectivity, and summative grading practices which are characteristics associated

with A-F grading systems (Cross & Frary, 1999; Guskey, 2001; O'Conner, 2007; Perlstein,

2003). These factors contribute to a lack of validity and reliability in traditional grading.

Empirical evidence has confirmed the relationship between student grades and standardized

assessments (Paeplow, 2008b; U.S. Department of Education, 1994). The variation in the

number of A's and B's across student subgroups elicits questions regarding the reliability and

validity of traditional grades (Paeplow, 2008b). Researchers have also found variations in the

number A's and B's across college classrooms (DeBoer, Anderson, & Elfessi, 2007).While

there is limited empirical evidence comparing the reliability of standards-based grading and

traditional grading practices, in a recent study Haptonstall (2010) found a greater correlation

between standards-based grades and the Colorado Student Assessment Program (CSAP), a

standardized assessment, than found between traditional grades and the CSAP.

Norm-Referenced Grading. Using a norm-referenced standard, a student's

performance is compared to other class or group members. Thus, their performance is

considered relative to the performance of their classmates. Students' grades are ranked from

highest to lowest along a normal curve with usually 10 to 20 percent of the students assigned

the highest grade, 20 to 30 percent receiving the next highest grade, etc. This grading system

places students in competition with one another. While the normal curve provides consistent

grade distributions between classrooms, norming the student performances sets students in

competition for the highest grades. By definition a normal curve requires half of the students

to be below average and half above average (Guskey, 2001). Winter (2002) suggests that

through the process of normalization, raw scores are converted into "context free evaluation"

in which a student's performance is considered relative to other students. However, some

researchers question whether this grading practice is an accurate reflection of student

knowledge. Grades must reflect actual student understanding of criterion-referenced

standards and not artificially determined distributions (O'Conner, 2002).

   Teacher Subjectivity. Another element associated with an A-F grading system is a

high level of teacher discretion in determining a student's grade. "Grading the work of others

is a subjective experience even under the best of circumstances. As instructors, we try to be

fair, unbiased, and objective, but the basic element of our humanity prevents our attaining a

truly objective state" (Jae & Cowling, 2009, p. 54). It should be noted that grading does, and

should, require teachers' professional judgment. "The question is not whether it is subjective,

but whether it is defensible and credible" (O'Conner, 2007, p. 13). Traditionally teachers are

given leeway in deciding what work constitutes an A or F. Teachers form tests that reflect the

required objectives as they see them and may "tweak grades at the margins" by including

homework or class participation (Perlstein, 2003, p. 1). Thus, a teacher may increase a

student's grade from a C to a B to reward the student's efforts. "Grades, in other words, have

signified a bit more than a sum of a child's knowledge and academic abilities. Altering that

will not be easy" (Perlstein, 2003, p. 1). The fact that combining assessment scores requires

teacher subjectivity, which may bias a student's grades, is seen as less problematic than not capturing a student's work habits, conduct, ability, and growth (Cross & Frary, 1999).

Teacher subjectivity is visible when we consider grading variations (such as the number of A's given) and instructors' attitudes toward their own grading practices. DeBoer, et. al. (2007) not only found considerable variation in the number of A's and B's given by the 78 college instructors they sampled, but they also found vastly different attitudes regarding grading. Some teachers seemed to take pride in giving few A's, viewing this as evidence that their course was challenging while other instructors viewed struggling students as a reflection on their ability to teach the subject material. In Guskey's (2006) grading study, he elicited from teachers and professors their experience as students and found that educators had clear recollections, some more than 20 years prior, of grading experiences they felt were unfair or biased. Guskey (2006) concluded that:

> At all levels of education, therefore, educators must strive to ensure that the procedures they use in assigning grades or marks to students' work are explicit, clear, and as objective as possible. They also must work hard to guarantee that their personal opinions and unconscious biases do not influence their grading practices. Above all, teachers and professors must base their grading policies and practices on criteria that will be judged by all to be just, equitable, and unprejudiced. (p. 13)

Summative Grading. When multiple student grades are combined into a single grade, that grade no longer communicates a student's knowledge of an individual standard (O'Conner, 2007). While individually the assessments may be valid if not combined appropriately, they may render an invalid grade (Brookhart, 1999). The final class grade

received by students does not clearly communicate the student's level of understanding.

O'Conner (2007) suggests that grades should be organized around standard objectives and

that student report cards should reflect the student's competency with these standards. Grades

must reflect student knowledge of course material. This is an easily attained goal when

grading one assignment, but becomes more difficult when the student's grade encompasses

multiple assignments (Brookhart, 1999; O'Conner, 2007; Winters, 2002). Since traditional

grading practices often mean that the student's grade may include behavioral factors or may

have missing grades counted as zeros, the average student grade represents more than just the

level of their content understanding.

     Including Behavior in Grades. While measurement specialists recommend

separating work habits and student achievement, combining behavior and subject knowledge

remains a common practice (Bookhart, 1994). Grades communicate student achievement, but

when behavioral factors are included in the student's grade grades are poor communicators

of student knowledge. "Everyone who has a need to know about a student's performance in

school certainly can be told that she or he is 'a nice student who tries hard,' but they also

have a right to know the specific level of her or his knowledge in a particular subject at a

given point in time" (O'Conner, 2007, p. 19). However, not only have academic and

behavioral factors been traditionally combined into a single grade, but there is a great deal of

acceptance for this grading practice. In fact, Cross and Frary (1999) found that just over half

of teachers surveyed felt that grades should include "ability". Furthermore, nearly three-

fourth of teachers admitted that they had raised the grade of a "low-ability" student.

Including Zeros in Grades. Another way in which summative grading produces an invalid grade is by including zeros in the final grade. McMillian, Myran, and Workman's (2002) research found that a substantial percentage of teachers at the elementary level included zeros in their calculation of student grades. Zeros are often factored into the grade either as punishment (due to behavioral infractions such as cheating) or due to a missing assignment. When zeros are included in a student's cumulative grade the resulting grade does not accurately reflect student achievement (O'Conner, 2007). O'Conner (2007) identified three major problems with including zeros in a student's grade:

- Zeros give a numerical value to something that has never been assessed and that therefore has no basis in reality.

- They can have counterproductive effects on student motivation.

- They involve inappropriate mathematics. (p. 86)

Since the zero does not represent student knowledge, or lack thereof, the grade produced gives a mathematically incorrect evaluation of student achievement. Furthermore, students who receive more than one zero may feel hopeless and thus become disengaged; these apathetic students may become discipline problems (O'Conner, 2007). Factors such as norm-referenced grading, teacher subjectivity, and summative grading practices, which are common with traditional grading, decrease the validity and/or reliability of the resulting grades.

Lack of Validity and Reliability of Grades. Grades, assessments, and scores should be valid and reliable representations of a student's grades. "Validity refers to the degree to which a score is meaningful and appropriate for its intended purpose" (Brookhart, 1999, p.

23). "Information from classroom assessments--grades, scores, and judgments about students'

work resulting from tests, assignments, projects, and other work--must be meaningful and

accurate (that is, valid and reliable)" (Brookhart, 1999, p. iii). The resulting grades should

accurately reflect a student's level of achievement (Brookhart, 1999). Student grades that

encompass multiple assignments make it more difficult to achieve this goal (Brookhart,

1999; Winters, 2002). It is critical that grades "carry real meaning" and accurately reflect this

meaning (Brookhart, 1999).

Reliability refers to consistency of grades across classrooms for similar academic

performance. Teachers strive to evaluate their students in a fair manner that represents the

student's achievement and thus provides a reliable assessment of the student's knowledge.

Although the measurement community has an obligation to identify the technical

complexities of measuring and including these factors in grades and of the bias these

factors may introduce to grades, we have to recognize that to students, teachers,

administrators, and possibly parents, there is considerable face validity to grades that

include extraneous factors. (Cross & Frary, 1999, p. 59)

Due to the face validity of including student work habits in the final grade, this practice and

the subjectivity it introduces into a student's grade often go unexamined.

Students, parents, and community members assume that grades are reliable measures

of student achievement. The assumption is that a grade of C indicates a student understands

course content at a basic level but does not have an exceptional understanding of the

material, while a student receiving a grade of A indicates the student fully understands course

material (Marzano, 2000). However, these grades may vary widely depending on the factors

that are considered in determining a student's grade. K-12 educators and administrators

constantly strive to establish and implement equitable and meaningful grades that accurately

represent student performance (Carlson, 2003). While a student receiving an A in science

may tell her parent that their child really knows her chemistry it could also reflect her

participation in class—raising her hand often and turning in signed quizzes promptly.

However, it will not communicate the difficulty of those quizzes or whether they were far

easier than those given at another school or even another classroom within the same school

(Perlstein, 2003). Standards-based grading provides an alternate method of assessing student

performance in the classroom.

Standards-Based Grading

Recently educators have amplified report cards by providing information on a

student's proficiency on various standards as an initial step toward standardizing grades

(Perlstein, 2003). Districts across the U.S. have been expanding and changing the traditional

A-F letter grading system with more detailed standards-based reporting. Through either a

narrative evaluation format or with numbers or symbols these standards-based report cards

provide detailed information on skills a student is expected to master (Manzo, 2001).

However, parents and the public have been reticent to abandon the letter grading system that

has been a fixture of the U.S. education system throughout the last century. The expanded

report cards provide parents with information on specific skills that their child is able to

master rather than just a letter grade for each subject (Manzo, 2001).

However, school systems that have implemented standards-based report cards

detailing student progress have found mixed results. According to anecdotal evidence

presented by Principal Amy Jordan of Ashland Elementary in Manassas, her teachers and

parents both embraced the new report cards. However, the new Chancellor of New York

City, Joel I. Klein, immediately discontinued use of the newly implemented elementary

school report card since its 10 pages detailing over 100 skills was found to be "too

mystifying for parents and too taxing for teachers" (Perlstein, 2003, p. 2). In spite of the

scarcity of research on the implementation of standards-based grading and the mixed results

in the research that does exist, standards-based grading is likely to gain in popularity in light

of the current focus on accountability and students meeting set educational standards under

the No Child Left Behind Act of 2001. A fundamental component of standards-based grading

is the assessment of student mastery against a criterion-referenced standard.

Criterion-Referenced Standards. Criterion-referenced grading is a key element of

the standards movement with its emphasis on assessing student knowledge of set standards.

"In a standards-based system, grading and reporting must be criterion-referenced" (Guskey,

2001, p. 20). With criterion-referenced standards a student's performance is measured against

established criteria with differentiated levels of quality. Assessment of student performance

is not measured against the performance of other students, but against the set performance

standards (Guskey, 2001). Since the primary goal of standards-based grading is for students

to be proficient on all objectives within the curriculum, "the key to reaching this goal is to

evaluate every student's achievement using similar criteria, consistently applied at all levels"

(O'Conner, 2007, p. 3).

Work Habits Assessed Separately. Another key element associated with standards-

based grading is assessing student work habits and subject knowledge separately.

Measurement specialists recommend grades not incorporate a student's attitude, effort, and conduct, along with academic performance and growth. "If teachers were to embrace grading practices as recommended by most measurement specialists, more valid indicators of academic achievement would result" (Cross & Frary, 1999, p. 58). Given this recommendation why are parents, school administrators, or the general public not calling for reform (Cross & Frary, 1999)? A key factor in this lack of public outcry is an expectation that uniformly high performance in each area will combine to a high overall score and at the same time an acceptance that the student's overall score will be lowered by poor performance in any area (Cross & Frary, 1999). Therefore, parents, teachers, and students accept that work habits are a contributing factor in a student's final grade. While measurement specialists have maintained that separating work habits from student performance would more accurately reflect student achievement and decrease teacher subjectivity, there remains wide spread acceptance of the merging of work habits with performance to produce the student's overall grades (Cross & Frary, 1999).

Although McMillian, et. al.'s (2002) research found that behavioral problems, fellow teacher grade distributions, and norm-referenced interpretations factored little into student grades, the study, which included a factor analysis, found several behaviors—effort, student participation, academic improvement, student ability, and discussion—combined to form what they termed "Academic Enablers." These factors, in addition to actual academic performance, were combined to produce students' final grades (McMillian, et. al., 2002). McMillian, et. al.'s (2002) findings that elementary teachers include a multitude of other factors when determining a student's grade were consistent with prior research by Brookhart

(1994) and Cizek et al. (1996). Among the "hodgepodge" of factors included in student

grades academic performance remained the most important factor. However, their study

found that nontest performance and behavior factors—work habits, extra credit, and

participation—were important factors in determining student grades (McMillian, et al.,

2002).

Under standards-based grading students' grades are based on their performance on

the standard course of study and work habits and conduct are treated separately. "Reporting

achievement separately from behaviors means that everyone can know as accurately as

possible what a grade means in achievement terms" (O'Conner, 2007, p. 21). Current

research has found mixed results regarding the utility of a standards-based grading system

(Perlstein, 2003). Regardless of these mixed finding, measurement specialists maintain that

more accurate grading would result from the separation of work habits and student

performance (Cross & Frary, 1999).

Validity and Reliability of Grades. "The most fundamental measurement principle

related to meaningful assessment and grading is the principle of validity" (Allen, 2005, p.

218). Validity in grading refers both to the validity of the assessment itself and its ability to

communicate accurately to others (Allen, 2005). One way of examining the validity of grades

is to examine the correlation between these two measures of student knowledge—

standardized tests and grades. Empirical evidence has confirmed the relationship been

student grades and standardized assessments (Paeplow, 2008a; Paeplow, 2008b; U.S.

Department of Education, 1994). However, the degree to which grades are equitably

distributed, in other words, are accurate reflections of students' understanding of content

material, remains unclear. DeBoer, et. al. (2007) not only found considerable variation in the

number of A's and B's given by the 78 college instructors they sampled, but they also found

vastly different attitudes regarding grading with some professors taking pride in the limited

number of A's given to students. The unequal distribution of grades by student subgroup

within standardized achievement level calls into question the reliability and validity of grades

(Paeplow, 2008b). While there is limited empirical evidence comparing the reliability of

standards-based grading and traditional grading practices, in a recent study Haptonstall

(2010) found a greater correlation between standards-based grades and the Colorado Student

Assessment Program (CSAP), a standardized assessment, than found between traditional

grades and the CSAP.

By removing extraneous factors and reflecting only student achievement, standards-

based grades are a more valid method of communicating student knowledge of the subject

matter. For grades to accurately communicate student achievement educators must "...add

greater detail to the reporting system, by identifying the achievement targets covered by the

grade reported" (Stiggins, 2005, p. 301).

The increased focus on educational standards represents the desire to increase grading

reliability. Even within the same subject there may be a great deal of variation in the

concepts that are presented across classrooms. "In an attempt to alleviate this problem,

'standards' have been identified in virtually every major subject area both at the national and

state levels" (Marzano, 2000, p. 31). Standards-based grading attempts to address both the

validity and reliability of grading, but from where did standards-based grading emerge? Why

now?

When and Why Standards-Based Grading Developed?

Districts across the United States have been expanding and changing the traditional A-F letter grading system to more detailed standards-based reporting (Manzo, 2001). Unlike traditional grades, standards-based grades communicate student proficiency on set criteria. Given that traditional grading has been a mainstay in the U.S. it is helpful to now consider the origins of standards-based grading. In order to understand the context in which standards-based grading developed it is helpful to examine the development of the standards movement.

Standards Movement

The standards movement ushered in a renewed emphasis on ensuring all students receive a core set of knowledge and that students comprehend this essential information (Wheelock, 1995). Even with curriculum guides in place current research has found that these guides often do not transfer into classroom procedure. Within the classroom, each teacher makes judgment calls as to what should be emphasized, added, or even excluded from the lessons (Marzano, 1998). This subjectivity translates into different learning experiences across classrooms. The standards movement addresses the concern that students were only partially exposed to the state standard course of study. The modern standards movement can be traced to the publication of *A Nation At Risk* in 1983. This publication caused a dramatic shift in educational reform rhetoric "so that it came to embody a concern for the basic safety of our nation" (Marzano, 1998, p. 1). *A Nation At Risk* held that the mediocrity of the American educational system threatened our future and produced in many Americans a deep concern for the quality of our educational system (Marzano, 1998). In September 1987, the

concern spurred by this report led to the first educational summit in Charlottesville, Virginia attended by President George H. W. Bush and the state governors. Six broad goals set at the conference were later published in *The National Education Goals Report: Building a Nation of Learners* (National Education Goals Panel [NEGP], 1991). Two of the six goals were focused on specific academic standards (Marzano, 1998). Following the summit content area standards were established by national subject-matter organizations with the guidance of the National Council of Teachers of Mathematics. By 1998, standards had been defined for most of the content areas taught in U.S. schools. While the U.S. Department of Education funded much of the efforts to identify these standards, most states set their own standards (Marzano, 1998). *A Nation At Risk* described the problems with the U.S. education system and turned the spotlight on the current system (Marzano, 1998).

No Child Left Behind (NCLB)

With the implementation of the No Child Left Behind Act (NCLB) of 2001 there has been an increased emphasis on ensuring all students learn their state's standard course of study as measured by standardized tests. Once content standards were in place states were faced with how best to reflect and report student knowledge of these standards (Guskey, 2001). As educators, we must be confident that our students are learning the state's standards and that student grades reflect that knowledge. "When reporting on student work, educators need a clear; comprehensive grading system that shows how students are measuring up to standards" (Guskey, 2001, p. 20). Standards-based grading with its emphasis on measuring student achievement against established criteria offers us a method of communicating whether students are meeting set standards.

Development of Standards-Based Grading

It soon became apparent that standards-based education had the potential to improve two areas of the American education system: (1) development of a well-articulated curriculum, and (2) change focus from educational outputs to educational inputs (Marzano, 1998). According to Marzano (1998) the standards movement has great potential to improve student achievement. While the transition to focusing on standards has been clumsy, it has initiated a conversation around what our students should know about a given subject. The standards movement has moved the conversation away from questioning if academic achievement is important, to viewing the importance of academic achievement as a foregone conclusion (Scherer, 2001). As standards are put into place it is critical that educators are mindful of what factors contribute to the successful use of standards within our schools, districts, and states. Standards-based report cards have been implemented in public school systems across the United States as one method of implementing standards-based grading (Cherniss, 2010).

Standards-based grading addresses the primary purpose of grades identified by educational researchers and thereby addresses the limitations associated with traditional grading systems. Since standards-based grading systems require the separation of work habits from student achievement, it is a more effective communication tool reflecting the level of student understanding. Furthermore, the requirement that students meet a certain criteria rather than utilizing summative grading reduces the level of teacher subjectivity. Now that the what and when of standards-based grading have been addressed the next section of this chapter will focus on the where.

Where has Standards-Based Grading been Employed?

While the federal government has elevated the importance of state standards, there are no federal policies regarding standards-based grading. The federal government has however provided some guidance as to the implementation of standards-based grading. There are many examples of how standards-based grading has been interpreted and implemented across states and school districts.

Federal Guidance

Given that "education is a domain that is implicitly reserved to the states by the Tenth Amendment of the U.S. Constitution," it is only fitting that there is no federal policy directing states to implement standards-based grading (Fowler, 2004, p. 141). As part of the U.S. Department of Education's Teacher-to-Teacher 2008 Summer workshops series, the Standards-Based Education and Student Report Cards workshop provided a description of standards-based grading. This workshop explored the implication of standards on student report cards, provided practical ways to integrate standards-based instruction with assessment and grading to increase student learning, provided a strategy for using standards-based grading in a high stakes testing environment, and encouraged study groups at the district or school level to explore classroom level assessments and its connections to grading and report cards (Robertson, 2008). In addition to considering what guidance is available at the federal level, another way of examining the prevalence of standards-based grading is to consider what other states are doing in regards to this relatively new grading practice. There are many examples of how standards-based grading has been interpreted and implemented across states and school districts.

State and District Examples

In response to the increased emphasis on standards some states have implemented standards-based grading. While just how standards-based grading has been implemented varies by states and school districts, there are some key factors that are common in each. Table 2.1 displays state examples of standards-based grading programs implemented throughout the U.S.

Table 2.1

Non-Inclusive List of State and District Examples of Standards-Based Grading

Location	Scale	Grade Level	Year	Reasons for Adoption		
				Improve Comm-unication w/ parents	Reflect Student perform-ance on standards	Grading Consist-ency
Alaska RISC (15 Districts)	-	K-12	*	-	✔	✔
Florida Bay District Schools of Panama City	-	K-5	2003	-	✔	✔
Maryland Montgomery County Public Schools	**O,S,N** (Grades 1-2) **A,B,C,D,E** (Grades 3-5)	K-8	2006-07	✔	✔	✔
Massachusetts Duxbury	**B**eginning **D**eveloping **P**roficient	K-3	2007-08	✔	✔	-
Massachusetts Norton Public School System	**1** Exceeds standard **2** Meets standard **3** Progressing toward standard **4** Not meeting standard	K-5	2007-08	✔	✔	-
Massachusetts Winthrop	**1** Exceeds standard **2** Meets standard **3** Progressing toward standard **4** Not yet meeting standard	K-5	-	✔	✔	-
South Dakota South Canyon Elementary	**1** Advanced **2** Proficient **3** Basic **4** Below Basic	-	-	✔	✔	✔
North Carolina WCPSS	**1** Insufficient **2** Inconsistent **3** Proficient **3*** Proficient with application **4** Extends standards	**K-5**	2001-02	✔	✔	✔

Dash (-) indicates information not available

While there are some variations in how standards-based grading has been

implemented, within these examples there are some shared elements—reflecting the

standards, grading consistency, improving communication with parents. The thread that is at

the basis of standards-based grading, however, is the idea that student learning is measured

against an established standard. South Dakota's South Canyon Elementary school posits that

their standards-based grading report card is based on a mastery learning philosophy that all

students given enough time and appropriate instruction can learn. Mastery occurs at different

times for different learners. With accurate assessment aligned to the state's objectives and

appropriate corrections when students have not learned the material all students can and will

master the curriculum objectives (South Canyon Elementary, 2008).

While mastery of standards is consistent across examples, other elements are present

within some systems and not in others. For instance, similar to WCPSS, South Canyon

instituted standards-based grading to increase consistency in grading across teachers and

grade levels. South Canyon's 1-4 standards-based grading scale corresponds to WCPSS with

two notable exceptions: (1) WCPSS added the 3* in response to teacher feedback regarding

the difficulty distinguishing between a level 3 and 4 during the pilot at five schools, and (2)

level 4 at South Canyon is defined as working above grade level while WCPSS' level 4 does

not indicate students working above grade level, but rather extending the targeted grade level

standards (South Canyon Elementary, 2008).

Still other states instituting standards-based grading have put in place a grading

system which combines basic tenants from the traditional A-F grading system with those of

standards-based grading. In Maryland, for instance, students' homework is considered

practice in grades K-5 and students are assigned grades which do not include homework.

However, for students in secondary schools homework evaluated for practice is still included,

accounting for 10% of the student's grade while homework evaluated for learning may count

in the remaining grade. For students in grades 1-8 learning habits (defined as the ability to

work individually in grades K-5 and consistency in grades 6-8) are reflected separately from

academic achievement on student report cards (Montgomery County Public Schools, 2008).

In a 2010 qualitative study of standards-based grading, Cherniss provided further evidence of the implementation of standards-based report cards. In this study of a K-5 school in Southern California, teachers reported that "the standards based report card was the logical and necessary next step in aligning state standards to student achievement" (Cherniss, 2010, Abstract).

While there are numerous researchers (Guskey, 2002; Marzano, 1998; O'Conner, 2007; etc.) questioning traditional grading and calling for standards-based grading practices, there has been little to no research discussing the social justice implications around moving toward a less subjective approach to grading. The next section of this chapter addresses the why of standards-based grading.

Why is this Significant?

Standards-based grading, with its emphasis on ensuring all students receive a core set of knowledge, addresses many of the threats to validity and reliability common with traditional grading systems. Thus, standards-based grading has the potential to be a more equitable grading system. There are many researchers discussing traditional grading versus standards-based grading; however, there is little to no research examining the equity potential of moving toward a less subjective approach to grading. Although educational researchers posit standards-based grading as a more objective grading system, the connection to increased equity has not been established. While the research on equity of standards-based grading is limited, social justice literature can provide context for this discussion.

Link Between Social Justice and Grading

With grading comes questions of fairness and justice; thus, an examination of the research concerning equitable grading practices and the impact of grading on sub-populations of students (Asian, Black/African American, American Indian, Hispanic/Latino, White, Multiracial, Students with Disabilities, Free or Reduced-Priced Lunch recipients, and Limited English Proficient students) is necessary (Schrag, 2001). Prior to discussing fair grading it is important to examine this concept. Schrage (2001) calls for "grading policies designed to foster a more egalitarian ethos" (Schrage, 2001, p. 5).

> To the extent that we egalitarians are serious about instituting greater equality and not merely formulating theories for our colleagues to ponder, we need to consider our own and our institution's grading practice in light of their potential role in inching us toward a more egalitarian society. (Schrag, 2001, p. 8)

While Schrag (2001) goes on to call for additional student effort to be rewarded, which is counter to standards-based grading, the author recognizes both the potential and necessity for grades to equitably reflect student performance. Indeed, it was Friedman's (1998) assertion that, "if we do not begin with the expectation that all students will be treated fairly (to the extent this is humanly possible), it will be impossible to know what grades mean" (p.81). Traditional grading relies heavily on teacher's professional judgment which is a subjective measure. Given that subjectivity in grading is addressed by standards-based grading (Malouff, 2008; Perlstein, 2003) and teacher subjectivity may bias a student's grade, it follows that standards-based grading should provide a more equitable grading system.

One way of examining equity and its relationship to student learning is through the lens of social justice. While there is a lack of consensus among educational researchers as to the definition of social justice, most of the key published literature on social justice (e.g., Adams et al. 1997; Ayers et al. 1998; Cochran-Smith 1999, 2004; Darling-Hammond et al. 2002; Michelli & Keiser 2005; Oakes & Lipton 1999; Villegas & Lucas 2002; Zeichner 2003) agrees that the core of teaching is not only improving students' learning, but also impacting students' life chances by challenging inequalities present in schools and the wider society. A fundamental requirement of this perspective is the recognition of the unequal "distribution of educational opportunities, resources, achievement, and positive outcomes between minority or low-income students and their white, middle-class counterparts" (Cochran-Smith, Shakman, Jong, Terrell, Barnatt, & McQuillan, 2009, p. 350). There is also a shared belief that teachers should operate both as educators and advocates committed to their role in reducing existing inequalities by redistributing educational opportunities (Cochran-Smith, et al., 2009; Ludlow, Enterline, & Cochran-Smith, 2008).

Social justice in schools is significant in that it not only impacts student motivation and chances of educational success, but "the experience of 'just' or 'unjust' distribution of resources in school is a form of hidden curriculum that may be a factor in shaping students' worldview, social perspectives, and actual behavior" (Resh, 2010, p. 12). Resh (2010) studied grades and grading perceptions of 4,500 15 year old students in Israel and found grades and students' sense of justice to be correlated with socio-economic status (SES). These results indicated that students with "weak" family backgrounds were less likely to perform well academically, receive lower grades, and feel more deprived than students who

have "strong" family backgrounds. Resh (2010) used five indicators of family background including mother's educations, father's education, mother or father's occupation (higher of the two), wealth, and an index of educational resources within the home. Although the magnitude of the correlation between SES and academic achievement was greater than that of SES and grade distribution or students' sense of deprivation, Resh posited that this finding could be due to the legitimization of grading practices even in light of inequalities. Resh (2010) stated that "educational systems (as well as other socializing agencies) are probably successful in inculcating meritocratic, equalitarian norms to students of all SES levels. Hence, 'weak' students coming from lower SES strata, adjust their entitlement accordingly and accept their (lower) grades as just" (p. 13). Effective grading practices rely on students' perceived fairness (Pepper & Pathak, 2008). A sense of justice or injustice is person dependent. Indeed, Resh (2010) stated that "a sense of (in)justice is a subjective perception of an individual that the reward s/he receives (actual reward) does not match the reward s/he deserves (just reward)" (p. 1). While a sense of justice or injustice may be subjective, Pepper and Pathak (2008) asserted that students perceive grades fairly if they are based on fair grading practices. They found that grading practices that were based on explicit rules, included frequent feedback, and incorporated proactive teacher techniques (i.e encouraged participation) were perceived as fair. Regardless of students' sense of fairness student grades maybe impacted by teachers' perceptions; thus, the next section addresses the role of teachers' perceptions and its impact on student achievement.

     Teachers' Perceptions. Since all grading practices require some level of teachers' professional judgment—i.e. teacher discretion—it is important to consider teachers'

perceptions and grading practices as they relate to equity. Guttmann and Bar-Tal (1982) found that when teachers (who participated in an in-training service of the Israeli Ministry of Education) were provided information regarding only students' ethnic origins they responded stereotypically—perceiving Asian-African students (this ethnic classification is commonly used by the Israeli Census Bureau Abstracts in reference to the Jewish population) to have "lower academic ability, less academic interest, less diligence, and worse home conditions than students of European-American origin" (p. 525). McKown and Weinstein (2008) found that in classrooms where students reported teachers differential treatment of high and low achieving students, "teacher expectations of European American and Asian American students were between .75 and 1.00 standard deviations higher than teacher expectations of African American and Latino students with similar records of achievement" (p. 235).

In addition to the negative perceptions held by teachers based on students' racial group, teachers may also hold negative perceptions of low-income students. Benner and Mistry (2007) found a high percentage of teachers with low expectations for low-income students with almost half (48%) not expecting these students to graduate high school and the vast majority (80%) not expecting postsecondary school attendance. These results demonstrate how teachers' negative perceptions can lessen their expectations for students. Thus, in order to understand how teacher biases manifest within a classroom we must next consider how these biases may affect teacher expectations and in turn impact students.

Teacher prejudice can affect the teachers' expectations of student potential. Prejudices based on a student's subgroup (i.e. minority or low-income) can create biases within the classroom. This bias may take the form of differential teacher expectations based

on a student's subgroup which in turn impacts student achievement. Figure 1.1 provides a

visual diagram of the theoretical relationship between these factors.
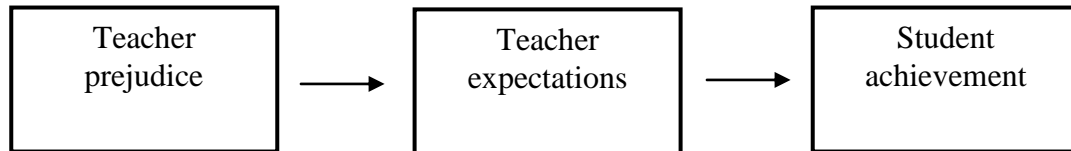
Figure 1.1. Theoretical relationship between teacher prejudice, teacher expectations, and student achievement

Low expectations within the classroom affect teaching practices: "studies find that

teachers with low expectations tend to provide students less positive attention and

reinforcement and fewer opportunities to learn" (Benner & Mistry, 2007, p. 150).

Additionally, teacher expectations may manifest in the climate created and in the difficulty

level of the material provided. Teachers may provide a "warmer socioemotional climate" and

more challenging learning materials to students for which they hold high expectations

(Bergh, et al., 2010). Teacher expectations may also impact grading practices. Resh (2009)

compared grading considerations and student capacity and revealed that approximately half

of the teachers held that differentially grading "weak" and "strong" students was just. The

teachers reported weighting effort and the "need for encouragement" more heavily in their

"weak" students' grades (p. 315).

Another way in which teacher perceptions may impact students' educational

experiences is the affect on students' perceived and realized academic outcomes. For

instance, Benner and Mistry (2007) found a strong relationship between teacher expectations

and students' educational expectations, competency beliefs, and academic achievement.

Rubie-Davies' (2006) study confirmed the effect of teacher expectations on students' self

perception. She found that although students entered the year with similar self-perceptions, students with high-expectation teachers ended the year with slightly higher academic self perception while students with low-expectation teachers experienced a dramatic decrease in self perception. In Rubie-Davies' (2010) study she found teachers with low expectations for their students perceived students as trying hard. While these teachers held expectations below students' actual achievement, they viewed work habits more positively. However, teachers' positive perception of work habits did not seem sufficient to counter negative perceptions of their academic abilities since the study's findings indicate that these teachers had a weak relationship with student achievement while high expectation teachers had a strong positive relationship to student achievement. Teachers' biases and lowered expectations toward certain student groups are particularly problematic when they negatively impact student achievement.

Impact on Student Achievement. Teachers' expectations not only impact how students perceive their academic abilities, but also their academic achievement. As students move through the educational system their learning trajectories diverge (Grubb, 2009). There is a cumulative effect of inequality on student learning trajectories such that over time differential educational experiences create greater divergence in the learning trajectory. Achievement gaps are the manifestation of differential educational experiences. As a result, achievement gaps between minority student groups often increase rather than decrease as students progress through our K-12 system (Bergh, Denessen, Hornstra, Voeten, & Holland, 2010; Grubb, 2009). Thus, small differences in kindergarten are often magnified as students move through the education system (Grubb, 2009).

Achievement gaps exist not only across schools, but across classrooms within a school. Some of the differences across classrooms could be the result of teacher attitudes (Bergh et al., 2010). Guttman and Bar-Tal (1982) found that "teachers' stereotypic perception causes differential expectations of students' academic achievement" (p. 526). It should be noted, however, when additional information was available and teachers were asked to provide expectations for matched students within their own classroom there was no relationship between ethnic origin and student grades. These results indicate the necessity of further research on the connection between teachers' perception and student grades (Guttmann & Bar-Tal, 1982). Since teachers assign grades within their own classroom, grades are more likely to reflect the teacher's perception. Thus, studies that examine student achievement (beyond grades) may offer additional insight. More recent research has found a relationship between teacher expectations and student achievement (Bergh et al., 2010; Rubie-Davies, Hattie, & Hamilton, 2006). Bergh et al.'s (2010) study of the relationship between teacher expectations and student achievement found that although student achievement gaps were unrelated to teachers' self-reported measure of prejudiced attitudes, "the implicit measure of teacher prejudiced attitudes, however, was found to explain differing ethnic achievement gap sizes across classrooms via teacher expectations" (p. 497). In fact, they found that teachers with negative prejudiced attitudes toward ethnic minorities (students of Turkish and Moroccan origin) were more likely to evaluate these students as less intelligent with less promising school careers. Their research also indicated that negative teacher attitudes impacted on student performance with larger achievement gaps between ethnic minority students and majority students (students of Dutch origin) in the classrooms of

more prejudiced teachers than in the classrooms of less prejudiced teachers. Rubie-Davies, et

al. (2006) examined teacher expectations at the beginning of the year and student

achievement at the end of the year and found teacher expectations to be significantly higher

for all ethnic groups with the exception of Maori students (the four ethnic groups included in

the study were New Zealand European, Maori, Pacific Islander, and Asian). They also found

that while the students (including the Maori) entered the year with similar academic

achievement, at the end of the year the Maori had made the least gains of all student groups.

Thus, the student group in which teachers expected the least experienced the least amount of

growth. Given the influence teachers have on student learning and the potential for bias,

teacher preparation programs have begun to address issues of equity and social justice.

Teacher Preparation Programs. Increasingly teacher preparation programs are

incorporating social justice into their programs' curricula in order to provide new teachers

with an understanding of how to reach all learners. As would be expected considering the

variability of the definition of social justice, there is considerable variation in what is meant

by the phrase "teacher education for social justice" (Ludlow, et. al., 2008, p. 194). At the

core teaching social justice includes the recognition of unequal access to educational

opportunities and resources and the resulting disparities in educational achievement

outcomes between minority and low-income students and their white middle-class

counterparts; and the expectation that teachers operate both as educators and advocates

committed to reducing achievement gaps between student groups (Ludlow, 2008).

While some educators have criticized the inclusion of social justice as too politically

motivated or merely a self-esteem building program without a focus on student learning,

Cochran-Smith, et al.'s (2009) qualitative study found that this was not the case. Indeed,

through teacher interviews and classroom observations they found that:

> … teacher candidates focused on ensuring pupils' learning rather than merely
>
> boosting their self-esteem or spreading political ideologies, as critics of the
>
> social justice agenda suggest. In classrooms, candidates concentrated on
>
> teaching content and skills but also had a critical perspective, built on pupils'
>
> cultural resources, and attempted to reach every pupil. We argue that teaching
>
> for social justice, or what we title "good and just teaching," reflects an
>
> essential purpose of teaching in a democratic society in which the teacher is
>
> an advocate for students whose work supports larger efforts for social change.
>
> (p. 347)

Furthermore, critics of the inclusion of social justice in teacher education programs

suggests that the purposeful or targeted inclusion of social justice is not necessary since the

practices posited under such an umbrella represent good teaching practices and therefore do

not need to be a concentrated effort. Cochran-Smith (2009) suggested that this is true when

good teaching is conceptualized to include challenges to educational inequality such that all

students are provided "rich learning opportunities that have historically been reserved for the

privileged" (p. 375). Thus, good teaching requires both rich learning opportunities coupled

with the questioning of social, economic, and institutional barriers that constrain the life

chances of individual students or student sub-groups. From their perspective, "teaching for

social justice is not an option but a crucial and fundamental part of good and just teaching"

(Cochran-Smith, 2009, p. 375). However, while ideally this is true, until this practice is

uniformly accepted the purposeful inclusion of social justice into teacher training may be the best way to ensure this key educational value is not overlooked.

The connection between social justice and standards-based grading has not yet been made within the research and thus provides an opportunity for this study to explore this, as yet, undeveloped research area. However, for standards-based grading, as with any initiative, to reach its full potential it must be implemented with fidelity.

Implementation and Equity Considerations

Implementing standards-based grading within WCPSS requires teachers provide opportunities for students to be exposed to, and assessed on, a 1-4 assessment scale. The standards-based grading system implemented in WCPSS' elementary schools requires students demonstrate understanding by applying and extending knowledge of the standard-course of study in order to reach the highest achievement level, level 4 (K5 Standards-Based Grading and Reporting, 2003). However, the degree to which level 4 instruction and assessment is not provided equally across classrooms would create unequal access to education at the K-5 level. It is therefore critical that the level 4 opportunities be offered within all WCPSS classrooms to ensure equal access to education for all students. Thus, as has always been the case, the education of students rests on the ability of our teachers to provide opportunities for students to internalize and truly understand material presented. Policy requiring the education of students is necessary but not sufficient to ensuring education at the primary level. The implementation of the policy within each and every classroom is essential to educating our students.

While there are numerous researchers discussing standards-based grading, there is limited empirical research on this grading practice and its implementation within classrooms and virtually no research examining its potential for increased equity in student grades across student subgroups. Thus, this study will seek to address both the implementation of standards-based grading and its impact on student subgroups within a large school district. The next section describes the subjects of this grading study.

Who will be the Focus of the Grading Study?

This literature review informs the study of how standards-based grading has been implemented within WCPSS elementary schools and evaluates the assumption that this method of grading is an equitable measurement of students' mastery of the NCSCS. Standards-based grading was born out of the desire to ensure all students are exposed to, and assessed on, the NCSCS. Due to a concern that students' grades were not consistent, students' mastery of the NCSCS was not reflected on report cards, and that parents were not properly informed of student progress, WCPSS implemented a standards-based grading report card at the elementary level.

Background

In 2001-02, WCPSS piloted a new performance based report card utilizing standards-based grading at five elementary schools. Following the two year pilot a new elementary school report card designed to promote consistency in the grading process and provide parents better information regarding their child's knowledge of the NCSCS was developed. The standards-based grading report card was created with input from administrators, teachers, and parent (K-5 Standards-Based Grading and Reporting: Fact Sheet, 2003). In

2003-04, the new Standards-Based Grading report card was implemented at an additional 22 elementary schools and expanded district-wide to all 88 WCPSS elementary schools in 2005-06. Due to the addition of new schools within WCPSS the number of elementary schools was expanded to 102 by 2009-10. An exploration of how standards-based grading has been implemented within WCPSS elementary schools could be used to inform current grading discussions within WCPSS regarding the possible expansion of standards-based grading into middle school.

Aligned with NCSCS and the WCPSS Promotion/Intervention policy the standards-based report card was designed to provide parents and students with details about the student's performance on grade level standards. Student's academic progress is measured against a uniform standard, rather than using subjective assessments, and reported separately from student work habits (Understanding the Elementary School Report Card, 2005; K-5 Standards-Based Grading and Reporting: Fact Sheet, 2003).

Grading Levels 1 through 4. The standards-based report cards provide parents and students with details about the student's academic progress against uniform grade level standards. Performance levels (1 to 4) indicate whether students have successfully met the Standard Course of Study expectations set by the state of North Carolina and whether students have the needed skills and knowledge of the concepts necessary to be successful in the next quarter or next grade. The report card included a section for teacher comments designed to capture students' strengths and areas of need (see Appendix H) (*K-5 Standards-Based Grading and Reporting: Fact Sheet* (2003); *Understanding the Elementary School Report Card* (2005)).

Table 2.2

WCPSS Standards-Based Grading Performance Level Descriptions

Level	Meaning	Description
1	Insufficient performance of targeted grade level standards with support.	Indicates that the student has not yet met grade level expectations set by the state and that a student does not have the necessary skills and concepts to be successful in the next grade or quarter. This should alert parents that close communication is needed for further student support.
2	Inconsistent and needs support to meet targeted grade level standards.	Indicates that the student has not yet met grade level expectations set by the state and that a student does not have the necessary skills and concepts to be successful in the next grade or quarter. This should alert parents that close communication is needed for further student support. If the student seldom turns in math homework and does not cooperate in group problem solving in math, this student's work habits and conduct grade may indicate Level 2.
3	Demonstrates proficiency of targeted grade level standard.	Represents the student meeting the grade level expectations set by the state and indicates that a student has the necessary skills and concepts to be successful in the next grade or quarter.
3*	Demonstrated proficiency of targeted grade level standards with evidence of application.	Represents the student meeting the grade level expectations set by the state with evidence of application and that a student has the necessary skills and concepts to be successful and confident in the next grade or quarter. Example: If a third-grader clearly understands the concept of multiplication, can recall the facts quickly, and can use the multiplication to solve everyday problems. The teacher has collected evidence of this mastery and recorded it on the student's math profile. The student's assessment may indicate Level 3* work.
4	Extends targeted grade level standards.	Represents the student exceeding grade level expectations set by the state and that a student will be successful in the next grade or quarter and whose curriculum may be enriched.

Data Source: K-5 Standards-Based Grading and Reporting: Fact Sheet, 2003, p.1

Standards-based grading assesses a student's mastery of an objective (a minimum of three observations are required for each objective) and each observation is assigned a 1-4 rating. Student scores are not averaged rather when a student has three recorded observations with a performance level 3 or better for an objective then the student has mastered that objective. Work habits are captured under a separate 1-3 rating. "The Rating Scale for Conduct and Work Habits rates students with a 1 through 3, where students receive: 3 meets expectations, 2 inconsistently meets expectations, 1 does not meet expectations" (Understanding the Elementary School Report Card, p. 1).

Table 2.3

WCPSS Standards-Based Grading Work Habits Levels

Level	Meaning
1	Does not meet expectations.
2	Inconsistently meets expectations.
3	Meets expectations.

Data Source: K-5 Standards-Based Grading and Reporting: Fact Sheet, 2003, p.1

Building a Student's Grade. In order to demystify standards-based grading it is helpful to consider the process of assessing student performance and developing meaningful report card grades. While standards-based grading has reduced the level of teacher subjectivity by measuring students against state defined standard objectives, WCPSS' process of combining objectives into a single subject grades for report cards still requires teacher judgment in reconciling students' final grades. WCPSS's K-5 Standards-Based Grading and Reporting Guide to Reporting Progress addresses the composition of student

grades and the teacher's role in producing them. Teachers assess and evaluate student

performance in terms of practice (formative) and evaluation (summative) evidence to

determine a student's grade. Within WCPSS's elementary schools students' grades are not

based on percentages; rather after an objective has been observed three times students'

receive a 1-4 performance level reflecting the student's mastery of the standard course of

study (K-5 Standards-Based Grading and Reporting Guide to Reporting Progress, 2003).

Teachers must consider all reading objectives to determine the student's final reading grade

which is then reflected on the student's report card. Now that the timeline and the procedures

for WCPSS' version of standards-based grading has been outlined, the next factor to consider

are the policies that regulate grading in WCPSS.

WCPSS Policies Regulating Standards-Based Grading

Educational policies are enacted for a myriad of reasons ranging from student safety

to political pressure. Policies set standards in an attempt to equalize students' experiences

within an educational system. WCPSS standards-based grading system seeks to do just that,

by setting a grading system with uniform criteria for all elementary schools. Thus, regardless

of which of WCPSS's 102 elementary schools a student finds herself attending, she should

expect to be assessed in a similar manner. WCPSS's grading policy does not speak directly to

the standards-based grading system; however, direct reference to standards-based grading

can be found within the regulations and procedures associated with WCPSS' homework

policy. The three tenants of WCPSS' grading policy 5520 are:

☐ 5520.1—Meaningful evaluation shall include consideration of all activity

    that has occurred during the particular evaluation period. Such activities

should include (1) homework, (2) projects, (3) reports, (4) class

participation, and (5) tests which shall include unit tests...

☐ 5520.2—Parent conferences are a valuable method of reporting to parents.

Conferences regarding a student's progress in a particular class shall

include the teacher of that class.

☐ 5520.3—Parents shall be notified by the midpoint of each grading period

if a student is failing a course or if his course grade has declined by a

letter grade (Grading Policy 5520).

Since the separation of homework from a student's academic performance is a primary

component of WCPSS' standards-based grading system, it is also necessary to consider

WCPSS Homework policy 5510. The primary tenants of the Homework policy are:

☐ 5510.1—Since each student spends a major part of each weekday in class

and since there are other valuable experiences to be gained outside school,

homework shall be planned carefully and evaluated periodically regarding

its appropriateness.

☐ 5510.2—It is assumed by the Board of Education that homework will be

done by students outside of school hours. The amount of work required of

students shall increase as grade levels increase and shall be commensurate

with abilities and course content.

☐ 5510.3—The staff of each school shall develop a homework plan to assure

that this policy is fully and properly implemented. Each school's plan shall

be submitted for approval to a member of the administrative staff

designated by the superintendent. Once approve, the staff of each school

shall be responsible for informing students and parents of the homework

plan. Additionally, it shall be the responsibility of each teacher to

understand the homework plan and participate in it (Homework Policy

5510).

While a primary intent of the standards-based grading system is to ensure students are prepared for the next quarter or grade level, neither the Promotion and Intervention policy (5530) nor the procedures and regulations associated with the policy specifically mention standards-based grading. While WCPSS's grading, homework, and promotion and intervention policies do not speak directly to standards-based grading, within the Homework Regulations and Procedures (WCPSS 5510 R&P) there is a direct reference to the separation of homework from academic performance at the elementary school level. According to the Homework Regulations and Procedures "Homework is considered practice in grades K-5; therefore, it is reflected in the Work Habits grade" (WCPSS 5510 R&P). The regulations further specify that at grades 6-12 homework should not exceed 15% of a student's academic grade.

Chapter Summary

Grades are probably the most common and public use of educational measurement. They are an integral part of classroom instruction. They also engender emotional responses from teachers, students, and parents. They are, therefore, an excellent place to focus theory and refine practice. (Bookhart, 1994, p. 299)

Standards-based grading emerged from the standards movement in response to the renewed emphasis on ensuring all students receive a core set of knowledge and that students comprehend this essential information. The standards movement addressed the concern that students were only partially exposed to the state standard course of study. Districts across the U.S. have been expanding and changing the traditional A-F letter grading system with more detailed standards-based reporting. While school systems that have implemented a standards-based report card detailing student progress have found mixed results, current research is sparse. Further study on the implementation of standards-based grading would offer invaluable information.

Standards-based grading offers the possibility of a more equitable grading system. By removing extraneous factors from student grades the remaining grade can serve as an accurate reflection of student knowledge of the subject matter. As with all educational endeavors, for this grading practice to truly live up to its potential it would need to be implemented correctly. Teachers would need to have sufficient training and support to ensure teachers understand of grading practices. Furthermore, and most crucial for equitable grading to occur, students would need to have similar access to educational opportunities so that assessment is distributed fairly.

Since this grading method represents a departure from the A-F grading scale historically used in schools and from what most teachers are taught and have previously employed within their classrooms, the degree to which this policy is understood and implemented is of interest. Although there are many researchers discussing traditional grading versus standards-based grading, a study examining how this policy has moved to

practice and the linking of social justice research with standards-based grading and the

implications of moving toward a less subjective approach to grading could add valuable

insight into the current grading debate. Chapter 3 explains the mixed-methods research

design that will be utilized in this study. A detailed description of both the quantitative and

qualitative research procedures is provided.

CHAPTER 3

METHODOLOGY

Concerns have been raised over the use of norm-referenced grading, the level of

teacher subjectivity, and summative grading practices associated with A-F grading systems

(Cross & Frary, 1999; Guskey, 2001, O'Conner, 2007; Perlstein, 2003). In response to

concerns regarding the consistency of an A-F grading system some school systems have

implemented standards-based grading (Perlstein, 2003). Standards-based report cards

(through narrative or with numbers or symbols) provide detailed information on the skills a

student is expected to master (Manzo, 2001; O'Conner, 2007). Students' grades represent

mastery of the subject matter rather than the culmination of effort and achievement

throughout the school year. Since standards-based grading represents a departure from the

traditional A-F grading system that most teachers are familiar with, the degree to which this

policy has been understood and implemented is of interest.

The purpose of this research was to investigate teachers' understanding of standards-

based grading, explore how standards-based grading has been implemented within Wake

County Public School System (WCPSS) elementary schools, and examine the potential for

greater equity. A quantitative examination of student grades was utilized to inform the equity

considerations implicit in standards-based grading. Student grades were examined by

comparing classroom grades of students with similar EOG scores by subgroup (Asian,

Black/African American, American Indian, Hispanic/Latino, White, Multiracial, Students

with Disabilities, Free or Reduced-Priced Lunch recipients, and Limited English Proficient

students). Teacher participation was elicited from a purposeful intensity selection of schools

with the strongest and weakest correlations between student grades and EOG. Teachers who participated in focus group interviews informed the qualitative exploration of the level of understanding and resulting implementation of standards-based grading within WCPSS. This information can inform practical application of training needs and enlighten current grading discussions within WCPSS regarding the possible expansion of standards-based grading into higher grade levels.

Research Design

This exploratory research study employed a sequential explanatory quan-Qual mixed methods design. Following Creswell & Clark's (2007) mixed methods description the lower case 'q' on quan and the upper case 'Q' on Qual indicate a greater reliance on qualitative methods. This sequential explanatory mixed method study utilized both quantitative and qualitative methods. Quantitative methods were used for two purposes: 1) to examine the correlation between grades and EOG scores at all 102 WCPSS elementary schools to identify schools from which a purposeful sample of teachers was drawn and 2) to examine the grading distributions by subgroups which enabled an investigation of the level of equity within WCPSS' standards-based grading system. The implementation was assessed qualitatively through the use of focus groups and document analysis of grading practices. In this study, a mixed method design was used to compare and expand on quantitative results with qualitative findings (Creswell & Clark, 2007). Figure 3.1 provides a visual diagram of the study's sequence.
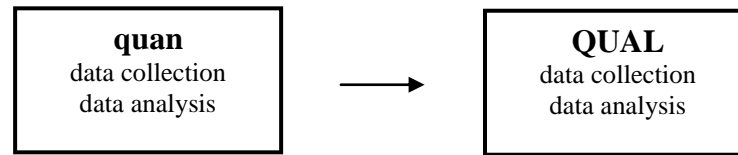
Figure 3.1. Sequential Explanatory Mixed Methods Study Design (Creswell, 2009)

Since EOG scores and standards-based grading both measure students' understanding of the NCSCS there should be a strong correlation between these measures of student knowledge. Thus, EOGs were used as a proxy for student knowledge of the NCSCS. The impact of grading practices on equity for sub-populations of students (Asian, Black/African American, American Indian, Hispanic/Latino, White, Multiracial, Students with Disabilities, Free or Reduced-Priced Lunch recipients, and Limited English Proficient students) were considered by examining the classroom grades of students with similar EOG scores by subgroup for reading and mathematics. Grading, as with any form of student assessment, introduces questions of equity and fairness. Thus, an examination of the impact of grading practices on equity for sub-populations of students was necessary. Moreover, five of the 101 WCPSS elementary schools (with available grade data) with the strongest and weakest correlations were investigated at the classroom level to see if there were differences in the implementation of standards-based grading between these schools. Correlations between EOGs and standards-based grades guided the selection of subjects who participated in the qualitative portion of this study.

An intensity sample of eight schools—four schools with the strongest and four schools with the weakest correlations between grades and EOG scores—were identified.

Principals at each of these schools were contacted and the teachers from these schools were

invited to participate in focus group interviews regarding the level of implementation within

the classroom. Focus groups were conducted at five of the eight schools contacted. The

implementation of standards-based grading was examined in terms of teachers'

understanding and application of this grading method. The examination of teacher

understanding was important to this study since it impacts the level of implementation and

since the fidelity of implementation was pivotal to providing a true assessment of this

grading practice.

　　　　While there are numerous researchers discussing standards-based grading, there is

limited research regarding the implementation of this grading practice, and virtually no

research examining its potential for increased equity in student grades across student

subgroups. Thus, this study addressed both the implementation and application of standards-

based grading and its impact on student subgroups within WCPSS, a large urban school

district. The connection between social justice and standards-based grading has not yet been

made within the research and thus provided an opportunity to explore this, as yet,

undeveloped research area.

Research Questions

　　　　The primary and secondary questions addressed by this study focused on the

connection of grades to the NCSCS and the implementation of the standards-based grading

system at the classroom level.

1) What is the level of grading equity across student subgroups?

    a. What is the distribution of students' reading and mathematics grades by

       demographic subgroup?

    b. How are grades distributed among students similar EOG achievement by

       student subgroup for reading and mathematics?

2) How has standard-based grading been implemented at the classroom level?

    a. How does teacher understanding of and experience with standards-based

       grading impact the application of this grading method?

    b. How does teacher understanding of standards-based grading impact students'

       opportunities *to engage in* and *to be graded for* level 4 learning?

Quantitative Methods

The correlation of classroom grades and EOG scores served two purposes within this study—1) informed the sample selection of schools and 2) enabled an exploration of grading equity across student subgroups. EOG scores and classroom grades are designed to reflect a student's knowledge of the NCSCS; thus, the relationship between grades and their EOG scores were examined. Students' grades were correlated to EOG scores to determine the degree to which standard-based grades reflect a student's knowledge of the NCSCS. According to NCDPI the EOG exams were created to measure a student's performance on the grade level goals and objectives as stated in the NCSCS (North Carolina Testing Program, 2003). While each test version does not cover all objectives within the NCSCS, each test version represents a sample of objectives for that grade level. Thus, EOG scores are used as a proxy for the NCSCS and are analyzed to determine the correlation of grades to the NCSCS as measured by the EOGs.

The correlation of grades and EOG scores within the total population of WCPSS' 101 elementary schools (with available grade data) informed the selection of five schools for study participation. Based on the correlation results, initially a purposeful intensity sample of eight of the 101 elementary schools (with available grade data) with strongest and weakest correlations was generated, and five of the eight schools participated in the qualitative portion of this sample. An intensity sample refers to samples that include "information-rich cases that manifest the phenomenon of interest intensely" (Patton, 2003, p. 234). Since both standards-based grading and EOGs measure student mastery of the NCSCS, there should be a strong correlation between these two assessment instruments. However, initial research uncovered variations in the correlation by school; thus, an intensity sample was utilized to select four schools with a strong correlation and four schools with weak correlation between grades and EOG scores (Paeplow, 2008a). This sample selection method was utilized to provide "information-rich cases." The qualitative methods sampling section will provide greater detail regarding the application of the intensity sampling method.

The second purpose for examining correlations between EOG scores and classroom grades within WCPSS' elementary schools was to study the equity considerations implicit in standards-based grading. Student grades were examined by comparing students with similar EOG achievement scores by student demographic subgroup to determine if grades were equally distributed across subgroups of students. Student grades were examined for the following demographic groups: Asian, Black/African American, American Indian, Hispanic/Latino, White, Multiracial, Students with Disabilities, Free or Reduced-Priced Lunch recipients, and Limited English Proficient students.

Data Collection

The data collection methods used to determine the what (in terms of data instruments) and how (in terms of procedures) grades and EOG scores were examined to assess their relationship as measures of student knowledge of the NCSCS are described in this section. Appendix A details the data collection and analysis timeline.

Instruments. The instruments utilized to elicit demographic data included a data set generated from WCPSS' student locator via NCwise. The North Carolina Window of Information on Student Education or NCwise is an electronic student database that manages WCPSS student records and is stored centrally. North Carolina also has a statewide NCwise system; however, in 2009-10 WCPSS' data was housed locally. Student achievement scores consisted of EOG reading and mathematics test scores also accessed through NCwise (see Appendix G). For students in grades 3-5, grades were students' fourth quarter reading and mathematics grades as reported in WCPSS' electronic grade book. Although all 102 WCPSS elementary schools utilize standards-based grading to assess students within the classroom, these grades were recorded on an electronic grade book and available centrally for 101 of the 102 elementary schools.

Procedures. A research approval from the Institutional Review Board (IRB) for the Use of Human Subjects in Research was requested from North Carolina State University in December 2010 prior to any data collection. Once an IRB approval was received, I submitted a request to WCPSS in order to gain access to student demographic, grade, and EOG data (see Appendixes E and F). WCPSS data was obtained via a WCPSS' External Research Request submitted to the school district in March 2011 (following the same procedure

utilized during the 2006 pilot study). WCPSS meets monthly to review external research

request and approve studies and the use of WCPSS student data.

Once WCPSS approved the research at the district level grading and demographic

data was obtained from WCPSS' Evaluation and Research Department. The grading data

contained 82,591 student records (including grade 5 student scores from 2008-09) and was

obtained from WCPSS' Evaluation and Research department via a research request to the

Information Systems department. The EOG data file contained 68,233 elementary student

records and was obtained from WCPSS' Evaluation and Research department. The EOG data

file also contained 2010-11 student demographic information.

Data Analysis

Descriptive and correlational statistics were used to examine the connection between

reading and mathematics grades and EOG scores (a previously validated measure of student

knowledge of the NCSCS) across 101 WCPSS elementary schools with available grade data.

Descriptive statistics of 2009-10 demographic data was used to describe the student

population included in this study. The student population for this study included students

enrolled in the 101 WCPSS elementary schools in the 2009-10 with available grading data.

2009-10 reading and mathematics fourth-quarter grade data was examined using frequencies

and means across grade levels and schools. Pearson correlations between EOG scores and

students' grades were conducted to determine the degree to which these measures of student

knowledge of the NCSCS correspond. Correlations were run between EOG relative

achievement levels and fourth-quarter grades in reading and mathematics. Relative EOG

levels refer to an expanded version of EOG levels used to create greater variance. While

EOG scales scores were also available, these scores are grade specific and therefore cannot be compared across grade levels. EOG levels allow for cross-grade level comparisons, however, have a restricted range of 1 through 4. WCPSS Evaluation and Research staff developed a relative achievement level based on students' EOG scale scores in order to increase the variance of student scores while maintaining the ability to compare across grade levels. Relative achievement levels were created from EOG scale scores utilizing the same cut points as EOG levels with the addition of two decimal places to create an expanded or relative achievement level.

Descriptive and correlational analyses was conducted by racial group, limited English status, and socio-economic status (as measured by free or reduced-priced lunch status) to determine if there were any differences among these student subgroups. A sample of eight schools was selected based on correlations between 2009-10 fourth-quarter (i.e. end-of-year) reading and mathematics grades and 2009-10 Reading and Mathematics EOG scores. Teachers from five of the eight school selected participated in focus group interviews. The qualitative methods section will provide additional information regarding the focus group data collection and analysis.

Procedures. WCPSS student demographic, grade, and EOG data were compiled and analyzed utilizing SAS software. Student demographic, EOG, and grade data was input into SAS, cleaned to remove students with missing data, and analyzed. Quantitative analysis included:

1. Initial frequencies by study variables (race, SWD, LEP, FRL, reading and mathematics grades, reading and mathematics EOG scores) to verify data.

2. Correlations between grade and EOG score for reading and mathematics by school for the selection of the eight schools used to draw the sample of teachers for participation in six focus groups (five focus groups were conducted due to the availability of teachers).

3. Correlations between grade and EOG score for reading and mathematics by student subgroup to examine the equity of grades across 101 WCPSS elementary schools with available grade data.

This information is displayed in tables and discussed in text in Chapters 3, 4, and 5: Chapter 3 in terms of the methods utilized, Chapter 4 to outline the findings, and Chapter 5 to discuss the implementations of the results.

Validity and Reliability of EOG. The NCDPI has established a high degree of reliability and validity of the reading and mathematics EOGs (http://www.ncpublicschools.org/accountability/testing/technicalreports). North Carolina's EOG validity is measured both in terms of content validity and criterion-related validity (North Carolina Testing Program, 2003). Almost all test items are written and reviewed by at least two North Carolina teachers. NCDPI evaluates the instructional validity through questionnaires designed to elicit teacher feedback on the appropriateness of the test content. Pearson correlation coefficients are used to verify the criterion-validity of the relationship between EOGs and items related to teacher judgment. "The correlation coefficients for the North Carolina EOG and EOC Tests of Mathematics range from 0.49 to 0.89 indicating a moderate to strong correlation between EOG scale scores and its associated variables" (Bazemore, et al., 2006, p. 89).

The validity of a test is the degree to which evidence and theory support the

interpretation of test scores. Validity provides a check on how well a test

fulfills its function. For all forms of test development, the validity of the test is

an issue to be addressed from the first stage of development through analysis

and reporting of scores. The process of validation involves accumulating

evidence to provide a sound scientific basis for the proposed test score

interpretations. Those interpretations of test scores are evaluated rather than

the test itself. (Bazemore, 2006, p. 87)

North Carolina's EOG tests are curriculum-based tests designed to measure the NCSCS.

North Carolina's curriculum is updated every five years, but the process of creating, field-

testing, and administering the exams is continuous (North Carolina Testing Program, 2003).

Reliability refers to the ability to replicate results if the study conditions are repeated.

According to NCDPI:

In testing, if use is to be made of some piece of information, then the

information should be stable, consistent, and dependable…if decisions about

individuals are to be made on the basis of test data, then it is desirable that the

test results be reliable and tests exhibit a reliability coefficient of at least 0.85.

(Bazemore, 2006, p. 62)

The metric used to establish the reliability of North Carolina's EOG and EOC tests of

mathematics is an internal consistency coefficient, coefficient alpha. Internal reliability

"indicates how close the examinee's obtained score would come to the true score if the test

were a perfect measuring instrument" (Charter, 2003, p. 1). A strong reliability (coefficient

alpha 0.90) for reading EOGs in grade 3-8 was found based on analysis of the 1993

administration of the EOG test forms A, B, & C (Sanford, 1996). The coefficient alpha

indices averaged across forms of the mathematics EOG were also high (> 0.94) for grades 3-

8 (Bazemore, et al., 2006). It should be noted that when examining individual student EOG

scores it is necessary to take into consideration the standard error of measurement. Standard

error of measurement is an estimate of the accuracy of a given score on a test using the

standard deviation and the reliability of the test. The standard error on the EOG tests can be

quite high for an individual student's score. Further details regarding the standard error of

measurement can be found at www.wcpss.net/evaluation-

research/reports/2000/mment_error.pdf. Additional information on the validity and reliability

of the EOGs can be obtained at the NCDPI website

(http://www.ncpublicschools.org/accountability/testing/technicalreports).

Validity and Reliability of Grades. Students' grades should be valid and reliable

representations of students' performance (Allen, 2005; O'Conner, 2007). "Information from

classroom assessments—grades, scores, and judgments about students' work resulting from

tests, assignments, projects, and other work—must be meaningful and accurate (that is, valid

and reliable)" (Brookhart, 1999, p. iii). The resulting grades should accurately reflect a

student's level of achievement (Brookhart, 1999). "Validity refers to the degree to which a

score is meaningful and appropriate for its intended purpose" (Brookhart, 1999, p 23).

Reliability refers to consistency of grades across classrooms for similar academic

performance. Teachers strive to evaluate their students in a fair manner that represents the

student's performance and thus provides a reliable assessment of the student's performance.

While most educators would agree our current methods of grading and reporting student performance are inadequate, what are our viable alternatives (Guskey, 2001)? Developing validity and reliability of grades is more easily attained when grading a single assignment, but is complicated when students' grades represent multiple assignments (Brookhart, 1999; Winters, 2002). For instance, if a student scores 100% on two tests, but a zero on the third test, that student will receive a failing average (67%), which does not reflect the student's understanding of the material on the first two tests. Thus, grades on individual assignments may be valid, but become invalid when not combined appropriately (Brookhart, 1999). This study examined the distribution of grades and their correlation to EOG scores in order to assess both consistency of grading (reliability) within WCPSS elementary schools and determine the connection of grades to the NCSCS (validity).

Qualitative Methods

In order to assess how standards-based grading has been implemented within WCPSS elementary school classrooms, this study incorporated information gained from teachers who participated in focus groups and document analysis. Focus groups were used to explore teachers' understanding of standards-based grading and how this understanding impacted their application of this grading method. Furthermore, teachers' responses were used to investigate how teachers' understanding of standards-based grading impacted their students' opportunities to engage and be graded for level 4 learning.

Data Collection

Focus groups and document analysis of WCPSS' policies were utilized in order to study the implementation of standards-based grading at the classroom level (see Appendixes

B and C for the demographic questionnaire and interview script) and document analysis of

WCPSS' policies and procedures (see Appendixes H, I, J, and K for sample documents). The

use of multiple data collection methods is referred to as triangulation and was employed to

improve the reliability of the data collected by verifying findings across methods (Patton,

2003). Standards-based grading represents a grading system divergent from traditional

grading practices. In order to examine the implementation of this policy it is critical to gather

data at the classroom level. Discovering teachers' understanding and the actual

implementation provided invaluable insight into how standards-based grading has moved

from procedural guideline to practice. Qualitative research methods were used in this study to

provide an in-depth analysis of the implementation of standards-based grading and provide a

basis for understanding future data collection and analysis on this topic. While qualitative

data are not generalizable, they provide a rich exploration that is invaluable in areas with

limited research.

      Sample. A purposeful intensity sample of eight of the 101 WCPSS elementary

schools (with available grade data) with the strongest and weakest correlations between

student grades and EOG scores were used to select eight elementary schools within WCPSS,

a large urban school system in North Carolina. The intensity sampling method was employed

to select eight schools from which teachers were solicited for participation in focus groups.

An intensity sample refers to samples that include "information-rich cases that manifest the

phenomenon of interest intensely" (Patton, 2003, p. 234). These "information-rich cases"

were selected in order to explore possible differences in schools with strong and weak

correlations between grades and EOG scores. Since both standards-based grading and EOGs

measure student mastery of the NCSCS, there should be a strong correlation between these two assessment instruments. However, initial research uncovered variations in the correlation by school; thus, an intensity sample enabled the exploration of grading practices within schools at both ends of the continuum (Paeplow, 2008a). Three schools with the strongest correlation and three schools with the weakest correlation between grades and EOG scores represented the intensity sample. The researcher contacted principals at each of the eight schools in an effort to gain access to six schools. Six of the eight principals approved the research at their school; and focus groups were conducted at five of these schools. The goal was to secure six focus groups from the eight schools contacted. Although the principal at the sixth school gave permission to conduct research within the school and a contact person was established, teachers from the sixth school did not participate in the study due to a death in the family of the school contact person and WCPSS' requirement that all research at schools be discontinued between April 15 and September 1 due to end-of-year testing and the closing and opening of schools. The combination of these factors meant that a new contact at the school and a focus group could not be set up within WCPSS' timeline.

From each of the five participating schools four to twelve teachers participated in a school level focus group. Teachers were asked to report their experience level with standards-based grading. Teachers with one or two years of experience with standards-based grading were defined as novice while teachers with three or more years of experience were defined as experienced. Results of an initial pilot study conducted in 2006 indicated a potential relationship between teachers' level of experience with standards-based grading and their ability to implement this grading practice. Teachers' participation was elicited through

coordinated with the principal or school level contact. Table 3.1 depicts the sampling model

that was used to select teachers for focus group participation.

Table 3.1

Elementary Teachers Sampling Model

Population	Sampling Criteria	School Sample	Focus Group Participants
WCPSS 101 elementary schools (with available grade data)	Weakest correlation between grades and EOG scores	School 1	4 teachers and 1 Instructional Research Teacher (IRT)
		School 2	4 teachers
		School 3	6 teachers
	Strongest correlation between grades and EOG scores	School 4	N/A
		School 5	7 teachers, 1 IRT, and 1 principal
		School 6	12 teachers and 1 IRT

Instruments. Two qualitative methods were employed: school level focus groups

with teachers (see Appendixes B and C for the demographic questionnaire and interview

script) and document analysis of WCPSS' policies and procedures (see Appendixes H, I, J,

and K for sample documents). An interview schedule featuring, a probe question and open-

ended questions designed to generate discussion were used (Bogdan & Biklen, 2003). All

focus groups were video and audio taped and transcribed by a paid transcriptionist. The study

utilized document analysis to examine WCPSS' policies and procedures on the standards-based grading practice and the resulting report card.

Procedures. Based on correlation results four schools with the strongest correlation between grades and EOG scores and four schools with the weakest correlation were selected utilizing intensity sampling. Per WCPSS' requirements for external research, each school's principal was contacted and permission to conduct research on their campus was requested. The sampling goal was to conduct six focus groups three at schools with the strongest correlations between grades and EOG scores and three at schools with the weakest correlations. Principals at six of the eight schools contacted approved the research and recommend teachers to participant in the study. The researcher worked directly with the principal at two of the six schools and with a contact person at the remaining four schools. Five focus groups were arranged and took place between March 28, 2010 and April 14, 2010. Due to the death of a family member of one of the school contacts, the sixth focus group could not be arranged prior to the closing of WCPSS' research window in mid-April. WCPSS requires all research conducted on school campuses to be discontinued between April 15 and September 1 due to end-of-year testing and the closing and opening of schools.

Thirty-three teachers, three IRTs, and one principal participated in the five focus groups conducted. Teachers were asked to sign an informed consent form prior to participation in the focus group (see Appendix D). The length of the focus groups ranged from 32 to 53 minutes. Each focus group was video and audio recorded with the participants' permission using two digital voice recorders and a video recorder, and later transcribed by a paid transcriptionist. To protect participant confidentiality school names were not used rather

each focus group was assigned a number. The audio tracks were saved by number on an USB

drive and each video tape was labeled with the assigned number. Moreover, to secure the

data the transcriptionist picked up the USB drive rather than using an electronic transfer that

may have been violated.

Focus group participants completed a demographic questionnaire prior to the

beginning of each focus group session. Participants were then asked a series of prompt

questions and responded via Turning Point data collection devices (see Appendix C).

Turning Point data collection software and clicker hardware provide each respondent an

electronic response device that enables instant data collection which can be shared

immediately with participants. Participant responses to prompt questions along with follow

up questions were used to generate discussion among focus group participants. Each

participant entered his or her answer to the prompt questions via the Turning Point response

devise and these responses were captured utilizing the Turning Point electronic software. The

software captures and displays the group's data in a simple bar chart. This figure was

projected onto a white screen to provide immediate feedback to the focus group and generate

a discussion.

The focus groups with teachers using standards-based grading were conducted at their

school at a time convenient to the teachers. Given that teachers have a fixed schedule and

limited time without students, it was critical that the researcher remained flexible and

conducted the focus groups based on the teachers' availability. The researcher provided

participants contact information. Furthermore, participants were asked via the demographic

questionnaire to provide their contact information if they were willing to be contacted via

email regarding follow-up questions or to assist with member checks. Participants who

provided contact information addressed follow-up questions and provided a member check

by reviewing focus group notes for accuracy.

WCPSS' grading policy, procedures, and practices were coded for themes. While

there is not an exhaustive list of documents, some documents are included in the Appendixes:

1. Appendix G – Sample EOG Questions.

2. Appendix H – Sample Report Card

3. Appendixes I and J – K-5 Standards-Based Grading and Reporting: Involves the

   implementation of a new report card based on the student's performance of the

   Standard Course of Study (NC curriculum). (2003) Principals Edition: Wake County

   Public School System (portions of this manual included as attachments to this report.

   a. Appendix I - Guide to Reporting Progress (kindergarten)

   b. Appendix J - Fact Sheet

4. Appendix K – 5th Grade Social Studies and Science Report Card (expanded)

Data Analysis

Focus group transcripts and document analysis of WCPSS' policies and procedures

were analyzed and coded based on emerging patterns and themes. The coding process

required the researcher review each of the WCPSS documents and the transcribed focus

groups scripts and code them in terms of common constructs identified within these

qualitative documents. Concepts were color coded and grouped into common categories

(e.g., any focus group discussion or WCPSS documentation regarding training was color

coded light yellow to reflect training). The codes generated from the current study were:

1. Explanation of WCPSS' Standards-Based Grading

    a. Mastery

    b. Separation of homework and performance

2. Training on Standards-Based Grading

    a. Training offered by WCPSS

    b. Training received by participants

3. Initial reaction to Standards-Based Grading

4. Implementation of Standards-Based Grading

    a. Compiling a student's grade

    b. Multiple observations

    c. Objectivities

    d. Determination of student scores 1-4

    e. Providing opportunities for level 4 work

5. Comparing Standards-Based Grading to A-F grading scale

6. Standards-Based Grading representative of students' ability

7. Challenges with implementing Standards-Based Grading

    a. Opportunities to observe student performance

    b. Progress not graded – Doesn't capture growth

    c. Communication with parents

    d. Range within levels

    e. Inconsistency across classrooms

    f. Different expectations across grade levels or quarters

8. Improvements to Standards-Based Grading

    a. Provide rubrics & models

    b. Capture growth

    c. Include information on profile card

While initial codes based on a 2006 pilot study conducted by the researcher served as a

guide, these codes were only a starting point and did not restrict the creation or elimination of

defunct codes within the current study. The use of initial coding can assist with early

organization of qualitative data. Mile and Huberman (1994) suggested that a "start list" of

codes created prior to research can be useful. This list should be based on the researcher's

conceptual framework. While beginning with initial codes could function to restrict the data

collection, given the initial codes were created based on a pilot study and represent only a

guide they are unlikely to bias the current data. Theoretical memos were written on each of

the coded themes. These memos were based on theorized ideas that resonated with the

researcher during the coding process. These memos were organized to create the sub-sections

of the report's findings section. Analytical memos were used to inform the conclusion

section. Analytical memos are memos which pull concepts together and are written during

and following the coding process as theoretical connections become apparent to the

researcher.

In addition to the researcher's hand coding, the focus group transcripts were also

coded by NVivo. NVivo is a qualitative research software package that is designed to

organize and analyze non-numerical or unstructured data. NVivo was used to help sort and

code focus group scripts and document data and was used as a reliability check of the data.

Finally, to ensure the confidentiality of the participants, the schools and teachers included in this study were assigned fictitious names and all data was stored at the researcher's home. The next section will briefly describe additional methods utilized to improve qualitative validity and reliability.

Validity and Reliability

Validity and reliability was addressed using several techniques—repeated coding of data, member checks, and triangulation. (DeCuir-Gunby, 2008). Validity refers to the degree to which the concept that the researcher is attempting to measure is actually being measured. Validity was checked by coding focus group data twice in order to improve the accuracy of the codes generated and the resulting findings and interpretations—hand coded by the researcher and electronically coded by NVivo. Reliability of qualitative data refers to the consistency between the recorded data and the actually occurrences within the environment being studied (Bogdan & Biklen, 2003). Member checks were conducted with the participants to verify the reliability of the data collected. Study participants were asked to review the focus group transcripts for accuracy to ensure the content of the transcript reflected information gained from the focus group. Finally, the researcher incorporated multiple data sources to improve the reliability of the findings. The used of multiple data sources within one study is referred to as triangulation and is used to verify the consistency of findings across data sources. The data collection methods that were employed included: focus groups, document analysis, and quantitative data collection. Moreover, since within qualitative research the researcher is an instrument of inquiry, the next section provides a

subjectivity statement to disclose any possible researcher biases (Piantanida & Garman, 2009).

Subjectivity Statement

This study utilized qualitative methods to assess the implementation of standards-based grading at the classroom level. Qualitative research requires the researcher to operate as the primary source of data collection. Within this role, the researcher's biases may affect the collection, analysis, and interpretation of the data. Since it is not possible to remove all biases, it is helpful to understand the researcher's perspective (Bogan and Biklen, 2003; Piantanida & Garman, 2009). The following is a brief description of this researcher's personal and professional experiences as they relate to the subject.

Standards-based grading represents a break from the traditional A-F grading system. As a student and later an adjunct instructor at North Carolina State University, I have gained familiarity and even extreme comfort with the A-F grading system. As a college instructor, I considered student participation a critical component of student learning; thus, developed a grading system that reflected the importance of student engagement. The grading system was developed based on my prior experiences as a student, my training to become an instructor, and my resulting teaching pedagogy.

WCPSS' adoption of the standard-based grading system challenges this comfort. However, I have also gained both personal and professional experience with WCPSS' standards-based grading—both as a parent of a WCPSS fifth and seventh grade student (both attended WCPSS elementary schools), and as a researcher employed by WCPSS. As a parent, I have personally experienced student assessment and teachers' varying descriptions

of standards-based grading. On one occasion, a teacher when questioned how my son received a report card grade of a level 2 on work habits despite the weekly work habit grades of level 3, explained that "this was standards-based grading." Thus, the grade was built on more information that the weekly feedback. This felt like an attempt to mystify a parent with an unfamiliar grading system rather than offering a more visible grading system as posited by grading researchers.

For the last ten years, I have worked as an Evaluation Specialist for WCPSS' Evaluation and Research Department. Working within WCPSS has the potential to be both a limitation and aid the presentation of the data. While prior experiences with the A-F grading system could negatively affect one's feelings toward the standards-based grading system, my position as an evaluator for WCPSS has served to mediate any biases against the standards-based grading practice. When a researcher studies a phenomenon from within, his/her position as an insider has the potential to favorably affect his/her opinion of the topic. However, since WCPSS is a large school district, Evaluation and Research is an independent department under the Instructional Services Division. By maintaining an independent department, the school district attempts to increase the objectivity of its evaluators. Each of WCPSS' major initiatives must be examined in terms of the implementation and success of its stated goals. The standards-based grading practice is no exception. The qualitative methods used in this study helped inform an evaluation of this policy.

My prior experiences as a student and teacher as well as current experiences as an employee and parent each have the potential to affect my feelings toward standards-based grading. However, the combination of these factors do not prejudice this research in any one

direction rather they provide conflicting influences which served to balance one another and strengthened my desire to examine standards-based grading in greater detail. Thus, the goal of this study was to examine the implementation of WCPSS' standards-based grading system at the classroom level and gain greater understanding of this grading practice and how it has been implemented in the classroom.

Limitations of the Study

One important limitation of this research is that the data was collected within one school district and all elementary schools within the study were utilizing standards-based grading; thus, there was no comparison group and therefore the results may be less generalizable to other school systems. There are also limitations associated with the qualitative methods employed within this study. One limitation is that one researcher conducted all focus groups and coded all data. This could have potentially bias the research in one direction. In order to minimize this limitation, the researcher coded the data twice (once by hand and once utilizing NVivo) and used member checks to verify notes. Another limitation is that the researcher works for the district where the study was conducted; in order to address this possible bias a subjectivity statement is included to inform readers of potential researcher bias.

In addition to the methodological limitations, there are also some potential risks related to the focus group participants. Qualitative research is time consuming and requires a loss of time during focus groups. In an attempt to minimize this risk, the researcher met with the participants at a time that was convenient to them. Moreover, participants shared information regarding how they do their job with the researcher, a central office employee,

and their school collegues this may have caused concern over the confidentiality of their

responses. The researcher included a confidentiality statement on the consent form presented

to each participant prior to their interview (see Appendix D). Names of participants were not

be stored with their responses. All data collected during study was kept at the researcher's

home. Each participant and school was given a fictitious name in the report to ensure

confidentiality.

Chapter Summary

Standards-based grading emerged from the standards movement. There has be a

renewed emphasis on ensuring all students receive a core set of knowledge and that students

comprehend this essential information. The standards movement addresses the concern that

students were only partially exposed to the state standard course of study. Districts across the

U.S. have been expanding and changing the traditional A-F letter grading system with more

detailed standards-based reporting. While school systems that have implemented a standards-

based report card detailing student progress have found mixed results, current research is

sparse.

This study offers invaluable information on the implementation of standards-based

grading by providing an implementation study of standards-based grading within a large

school district. Due to the difficulty of assessing implementation of the grading system

through quantitative methods alone, this mixed methods study provided greater

understanding of the implementation of the standards-based grading system within WCPSS.

Furthmore, the examination of student subgroups, adds to the literature a social

justice element which to date has been overlooked within standards-based grading research.

Given the focus on student accountability, and that the research on standards-based grading suggests that this grading system offers a more accurate measurement of student learning, it is esential that implmentation studies be conducted to detemine how this grading system has been put into practice. While there are many researchers discussing traditional grading versus standards-based grading, this study investigated how standards-based grading has moved from procedural guidelines to practice, addressed the gap in the social justice research, and the implications around moving toward a less subjective approach to grading.

Chapter 4 describes the study's findings and Chapter 5 outlines the study's discussion and conclusions. Chapter 4 is organized following the study's quant-Qual methodological sequence; thus, the quantitative findings are shared first followed by the qualitative research. Chapter 4 first outlines the sample schools generated from the correlations between students' reading and mathematics fourth-quarter classroom grades and EOG scores. WCPSS and sample school, teacher, and student demographics are shared to provide context for the sample. Next, student subgroup correlations between grades and EOG scores by student subgroup are shared. Finally, qualitative data generated from document analysis and focus group responses are shared to expand on the quantitative results.

CHAPTER 4

FINDINGS

WCPSS' implemented standards-based grading designed to reflect student mastery of state standards and provide an objective measure of student grade level performance. By focusing on students' mastery of content material and thereby reducing teacher subjectivity, standards-based grading is posited as a more equitable grading system than traditional A-F grading. The primary and secondary questions addressed by this study focused on the connection of grades to the NCSCS and the implementation of the standards-based grading system at the classroom level. This study examined the implementation of this grading practice utilizing a mixed methods study design. Quantitative methods were utilized in two ways: 1) to select a sample of teachers for participation in focus groups, and 2) to examine the distribution of students' grades by subgroup in order to analyze standards-based grading as a equitable grading practice. This data was examined to determine the level of grading equity across student subgroups, the distribution of students' reading and mathematics grades by demographic subgroup; and the grade distributed of reading and mathematics EOG scores by student subgroup for student with similar EOG achievement. Findings from teacher focus groups addressed this study's questions regarding teachers' understanding and implementation including: how has standard-based grading been implemented at the classroom level; how has teachers' understanding of and experience with standards-based grading impacted their application of this grading method; and to what degree has teachers' understanding of standards-based grading impacted students' opportunities *to engage in* and *to be graded for* level 4 learning.

This chapter will describe the study's findings beginning with the results of the quantitative methods followed by the qualitative results. The quantitative results include an outline of the sample schools generated from the correlations between students' reading and mathematics fourth-quarter classroom grades and End-of-Grade (EOG) scores, WCPSS and sample school student demographics, student subgroup correlations between grades and EOG scores, and the ability of grades to predict students EOG performance. The qualitative results include data generated from document analysis and focus group responses.

Quantitative Findings

The quantitative methods used in this study included correlations between students' fourth-quarter grades and EOG scores in order to identify schools from which to draw a purposeful sample of teachers; the distributions of fourth-quarter grades by subgroups to investigation of the level of equity within WCPSS' standards-based grading system; and the relationship between second-quarter grades and EOG scores to determine if mid-year grades can be used to predict EOG scores.

School Sample

Correlations between fourth-quarter grades and EOG scores revealed a strong relationship between these two variables (Cohen, 1988). However, the strength of this relationship varied by school with correlations ranging from 0.654 to 0.878. An intensity sample of eight schools (four with the lowest correlations and four with the highest correlations) were selected from the 101 WCPSS elementary schools (with available grade data). Of the eight schools contacted, six principals approved research on their school campus. Table 4.1 displays the six schools that elected to participate in the qualitative portion

of this study and their reading, mathematics, and composite (i.e., reading and mathematics)

correlations. Five of the six schools participated in the focus groups; the sixth school did not

participate in a focus group due to a death in the contact person's immediate family.

Table 4.1

Correlations between EOG and Fourth Quarter Grades by Sample School

School Sample	Correlation		
	Reading	Mathematics	Reading and Mathematics Composite
School 1	0.5931	0.7155	0.6543
School 2	0.6670	0.6783	0.6726
School 3	0.8408	0.8860	0.8634
School 4	0.6593	0.6862	0.6728
School 5	0.8207	0.8647	0.8427
School 6	0.8543	0.8400	0.8471

Note: Correlations displayed in table reflect the correlation between each school's average EOG relative
level and fourth quarter grade.

Teacher Sample

Thirty-six teachers at the five schools that participated in the study participated in the five separate focus groups conducted during the spring of 2010. During each focus group teachers were asked to complete a demographic form designed to capture teachers' characteristics such as the number of years teaching, experience with standards-based grading, and the training they received. Of the 36 teacher participants, 35 completed the demographic collection form and this data is reflected in Table 4.2.

Table 4.2

Teacher Focus Group Sample

Focus Group	Teacher	# of Years Teaching	WCPSS' SBG[1]	Prior Experience with SBG[1]	Training	Experience with other Grading Systems
1	1	1.5	1.5	Yes	1-day in prior system	A-F[6]
	2	7	6	No	IRT[2]	No
	3	30	6	No	District training (CIC[3])	S + NI[4]
	4	3	3	No	Mentor / Peers	S + NI[4]
2	1	8	1	No	Informal/Peers	A-F[6]
	2	6	6	No	School/ District level	A-F[6]
	3	5	5	No	Informal/Peers	No
	4	8	8	No	Prof/Staff Development	No
	5	4	4	No	Informal/Peers	No
	6	<1	<1	No	None	No
3	1	5	5	No	Online training	No
	2	4	4	No	School training	No
	3	4	4	No	None	No
	4	7	7	Yes	District training	No
	5	14	-	No	None	%[5]
	6	12	5	No	Informal/Peers	%[5]
	7	16	6	No	District training	A-F[6]
	8	9	4	No	None	%[5]
	9	20	7	No	Informal/Peers	A-F[6]
4	1	8	8	No	Prof/Staff Development	No
	2	26	7	No	Prof/Staff Development	A-F[6]/S + NI[4]
	3	15	7	No	Prof/Staff Development	%[5]
	4	34	7	No	Prof/Staff Development	%[5]
5	1	15	-	No	District training	A-F[6]/ S + NI[4]
	2	8	-	No	District training	A-F[6]
	3	29	8	No	District training	A-F[6]
	4	3	3	No	Mentor teacher	No
	5	18	9	No	District/Peers	A-F[6]
	6	22	10	No	None	A-F[6]
	7	<1	<1	No	None	No
	8	10	8	No	School training	S + NI[4]
	9	36	8	No	IRT meeting	A-F[6/] S + NI[4]
	10	2	2	No	None	A-F[6]
	11	1	1	No	None	No
	12	13	8	No	School training	S + NI[4]

Note: Teacher numbers in table do not reflect the numbering of teacher responses within focus group notes.
SBG[1] = Standards-based grading   IRT[2] = Instructional Resource Teacher
CIC[3] = Continuous Improvement Conference   S, NI[4] = Satisfactory, Needs Improvement
% (-[5]) = Grading based on percentage   A-F[6] = Traditional A-F grading system
Dash (-) = Missing data

Teachers reported having one to 10 years of experience with standards-based grading. The average years of experience with standards-based grading ranged by school from four to seven years. The two schools with the strongest correlations between grades and EOG scores averaged five and six years of experience. While two of the three schools with the lowest correlations averaged four years, the third school averaged seven years.

Teachers reported the experience they had with alternative grading systems. Twenty-two teachers reported having some experience with another grading system: percentage grading, A-F system, or a satisfactory/needs improvement system (see Table 4.3). It should be noted that although teachers reported percentage and A-F grading separately there is likely an overlap between these grading systems. While the majority of teachers reported experience with another grading system, more than one-third of teachers only had experience with standards-based grading.

Table 4.3

Teacher Reported Experience with Prior Grading Systems

Prior Grading System	Number of Teachers
Percentage Grading	5
A-F	13
Satisfactory / Needs Improvement	7
None	13

Data Source: Teacher Focus Groups
Note: Teachers reported multiple types of grading systems thus teachers may appear in more than one category.

Teachers' training information was also summarized and is presented in the Training Received by Participants subsection within this qualitative results section.

Student Population Demographics

   The student population used for this study included elementary students enrolled in 2009-10 in a WCPSS elementary school with grades recorded in an electronic database (101 of the 102 elementary schools). Given the primary pupose of this study is to examine student grades, the population included only schools with grading data available centrally. Since this decision rule excluded only one school, the kindergarten through grade 5 (K-5) population at the 101 schools with available grading data were representative of the overall WCPSS K-5 population. Table 4.4 displays K-5 demographics by grade level for the WCPSS schools with available grading data.

Table 4.4

WCPSS Schools K-5 Demographics by Grade Level, 2009-10

	Kinder-garten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Total	Total Percent
American Indian	31	23	27	32	22	32	167	2.0%
Asian	725	754	771	738	726	636	4,350	6.5%
Black/African Am.	2,282	2,581	2,622	2,737	2,759	2,853	15,834	23.7%
Hispanic/Latino	1,513	1,736	1,677	1,552	1,387	1,299	9,164	13.7%
Multiracial	608	655	671	656	574	538	3,702	5.5%
White	5,357	5,928	5,649	5,729	5,571	5,444	33,678	50.3%
Total	10,516	11,677	11,417	11,444	11,039	10,802	66,895	100.0%
*FRL	3,404	4,024	4,004	4,035	3,794	3,718	22,979	34.4%
*SWD	736	1,009	1,220	1,349	1,428	1,439	7,181	10.7%
*LEP	1,329	1,657	1,994	1,711	953	782	8,426	12.6%

Data Source: WCPSS 2009-10 Elementary End-of-Year Student Roster
Note 1: LEP = Limited English Proficient; SWD = Student with Disabilities; and FRL = Free or Reduced-Priced Lunch
Note 2: Students may appear in more than one category: race and FRL, SWD, and/or LEP.
Note 3: Differences in totals reflect students with missing data for one or more variables.

In order to contextualize the qualitative data gathered from the five sample schools, student demographics for each of the schools participating in the focus groups is presented in Table 4.5.

Table 4.5

Sample Schools K-5 Demographics, 2009-10

	School 1		School 2		School 3		School 4		School 5	
	n	%	n	%	n	%	n	%	n	%
American Indian	5	0.7%	3	0.4%	1	0.2%	1	0.1%	1	0.2%
Asian	14	1.9%	57	8.1%	22	4.3%	284	29.5%	9	1.5%
Black/African Am.	259	35.6%	78	11.0%	98	19.4%	63	6.5%	89	14.7%
Hispanic/Latino	327	44.9%	111	15.7%	55	10.9%	94	9.8%	89	14.7%
Multiracial	39	5.4%	31	4.4%	29	5.7%	52	5.4%	34	5.6%
White	84	11.5%	426	60.3%	301	59.5%	470	48.8%	383	63.3%
Total	728	100%	706	100%	506	100%	964	100%	605	100%
*FRL	487	66.9%	197	27.9%	142	28.1%	164	17.0%	192	31.7%
*SWD	65	8.9%	70	9.9%	44	8.7%	81	8.4%	53	8.8%
*LEP	255	35.1%	103	14.6%	52	10.3%	167	17.3%	66	10.9%

Data Source: WCPSS 2009-10 Elementary End-of-Year Student Roster
Note 1: LEP = Limited English Proficient; SWD = Student with Disabilities; and FRL = Free or Reduced-Priced Lunch
Note 2: Students may appear in more than one category: race and FRL, SWD, and/or LEP.
Note 3: Differences in totals reflect students with missing data for one or more variables.

Distribution of Standards-Based Grades

Standards-Based Grades by Grade Level. Teachers are required to assign students

a quarterly grade (1, 2, 3, 3*, or 4) by subject. Table 4.6 displays the distribution of fourth-

quarter mathematics and reading grades (i.e., 1-4 performance level) by grade level in 2009-

10. The modal score for the 66,724 students with a valid reading score in 2009-10 and for the

66,717 students with a valid mathematics score was 3. Overall (i.e., K-5) in reading, the second most common performance level was a level 4 while for mathematics the second most common grade was level 3*. This pattern was also true for students in kindergarten and grade 1; thus, it appears grading standards were more difficult for mathematics than reading at the early grade levels. Among students in grades 2 and 3, level 3* was the second most common grade assigned for reading and mathematics. However, for students in grades 4 and 5 the second most common grade was level 3* for reading and a level 4 for mathematics indicating reading standards at the upper elementary grades may have been more difficult than for mathematics.

Table 4.6

Fourth-Quarter Reading and Mathematics Grades by Grade Level, 2009-10

Grade Level	Subject	2009-10 Fourth-Quarter Grade					Total
		1	2	3	3*	4	
Kindergarten	Reading	337	1,115	**4,170**	2,385	2,483	10,490
	Math	191	955	**6,012**	2,214	1,114	10,486
Grade 1	Reading	806	1,194	**3,998**	2,097	3,559	11,654
	Math	278	1,563	**5,800**	2,497	1,516	11,654
Grade 2	Reading	477	1,366	**4,965**	2,313	2,271	11,392
	Math	322	2,019	**5,149**	2,300	1,596	11,386
Grade 3	Reading	378	2,353	**4,810**	2,072	1,793	11,406
	Math	310	2,152	**4,964**	2,107	1,876	11,409
Grade 4	Reading	241	2,148	**4,993**	1,849	1,775	11,006
	Math	225	1,904	**5,068**	1,870	1,943	11,010
Grade 5	Reading	218	1,903	**4,985**	1,847	1,823	10,776
	Math	235	1,757	**4,844**	1,862	2,074	10,772
K-5 Total	Reading	2,457	10,079	**27,921**	12,563	13,704	66,724
	Math	1,561	10,350	**31,837**	12,850	10,119	66,717

Note: **Bold** *font indicates the most common performance level within a grade level.*
    The grades of students attending the school not utilizing the electronic grade book are not available at the
    district level and are thus not represented in this table.
Data Source: WCPSS 2009-10 grade files

Figures 4.1 and 4.2 depict the distribution of students by grade level and fourth-quarter

grade (i.e. 1-4 standards-based grading performance level) for reading and mathematics in

terms of percentage of students in 2009-10.

Reading. The percentage of students receiving reading grades reflecting mastery of grade level material (3, 3*, or 4) ranged from 76.1% to 86.2% across the elementary grades with students in grade spans K-2 more likely than 3-5 to receive a grade reflecting mastery (see Figure 4.1). Below are key items to note:

- Among students who received a level 1 (insufficient performance on standards) in reading the percentages varied by grade level from 2.0% of students in grade 5 to 6.9% of students in grade 1.

- The percentage of student who received a level 2 (inconsistent performance and required support to meet standard) in reading ranged from 10.2% of grade 1 students to 20.6% of grade 3 students.

- The most common reading grade received was a level 3 (demonstrates proficiency) ranging from 34.3% of grade 1 students to 46.3% of students in grade 5.

- The percentage of students who received a 3* (proficiency with evidence of application) in reading varied across grade levels from 16.8% of grade 4 students to 22.7% at kindergarten students.

- The percentage of students with a level 4 (extends targeted standards) in reading ranged from 15.7% of students in grade 3 to 30.5% of students in grade 1.

	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	K-5
☐ 4	23.7%	30.5%	19.9%	15.7%	16.1%	16.9%	20.5%
☐ 3*	22.7%	18.0%	20.3%	18.2%	16.8%	17.1%	18.8%
☐ 3	39.8%	34.3%	43.6%	42.2%	45.4%	46.3%	41.8%
☐ 2	10.6%	10.2%	12.0%	20.6%	19.5%	17.7%	15.1%
■ 1	3.2%	6.9%	4.2%	3.3%	2.2%	2.0%	3.7%
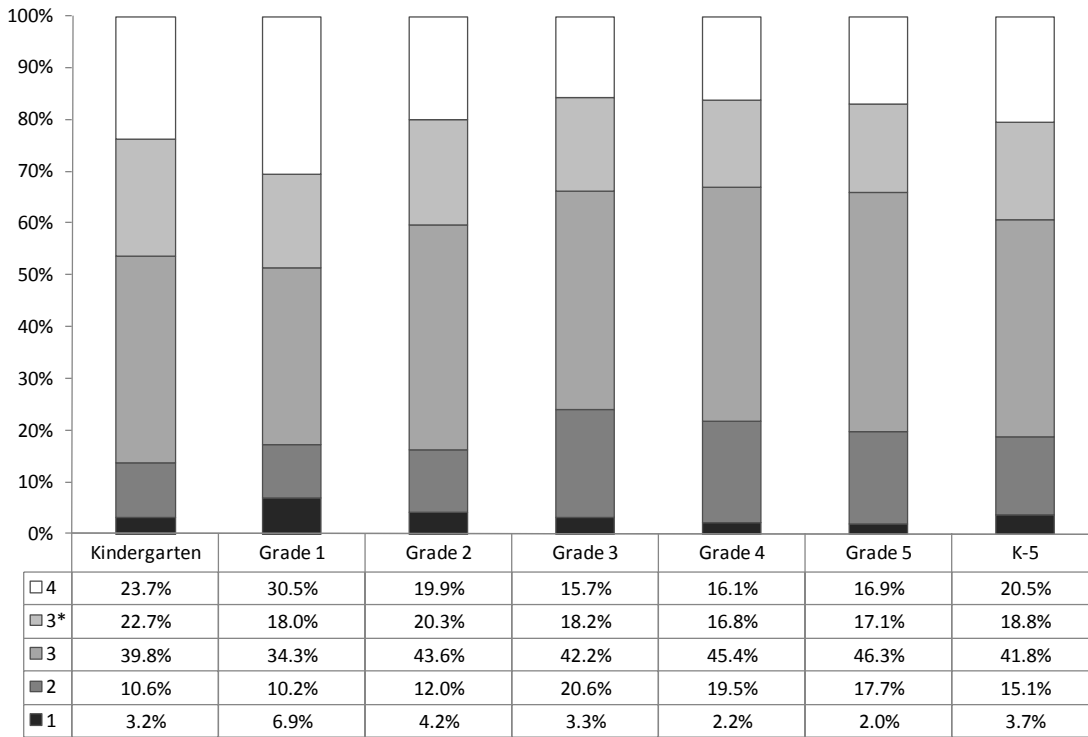
Data Source: 2009-10 WCPSS grade files
Interpretation Example: Among kindergarten students in 2009-10, 23.7% received a level 4, 22.7%
received a 3, and 39.8% received a level 3, thus, only 13.8% of kindergarten students were not*
proficient.

Figure 4.1. Percentage of Students by Grade Level and Grade Performance Level in Reading 2009-10

Mathematics. The fourth-quarter mathematics grades for K-5 students in 2009-10 is

presented in Figure 4.2. The percentage of students receiving a grade reflecting mastery (3,

3*, or 4) ranged from 78.4% to 89.0% across grade levels. Unlike for reading, K-2 students

were slightly less likely than students in grades 3-5 to receive a level 4 fourth-quarter

mathematics grade. Percentage of students by grade level and standards-based grade

revealed:

- The percentage of students with a level 1 (insufficient performance on standards) in mathematics was relatively consist by grade level from 1.8% of kindergarten students to 2.8% of students in grade 2.

- Among students who received a level 2 (inconsistent and required support to meet standard) in mathematics the range was slightly larger than for those receiving a level 1, ranging from 9.1% of kindergarten students to 18.9% of grade 3 students.

- Across all grade levels the most common mathematics grade was level 3 (demonstrates proficiency), ranging from 43.5% of grade 3 students to 57.3% of kindergarten students.

- The percentage of students who received a 3* (proficiency with evidence of application) in mathematics ranged from 17.0% at grade 4 to 21.4% at grade 1.

- The percentage of students with a level 4 (extends targeted standards) in mathematics ranged from 10.6% of kindergarten students to 19.3% of students in grade 5.

	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	K-5
□4	10.6%	13.0%	14.0%	16.4%	17.6%	19.3%	15.2%
▨3*	21.1%	21.4%	20.2%	18.5%	17.0%	17.3%	19.3%
▨3	57.3%	49.8%	45.2%	43.5%	46.0%	45.0%	47.7%
▨2	9.1%	13.4%	17.7%	18.9%	17.3%	16.3%	15.5%
■1	1.8%	2.4%	2.8%	2.7%	2.0%	2.2%	2.3%
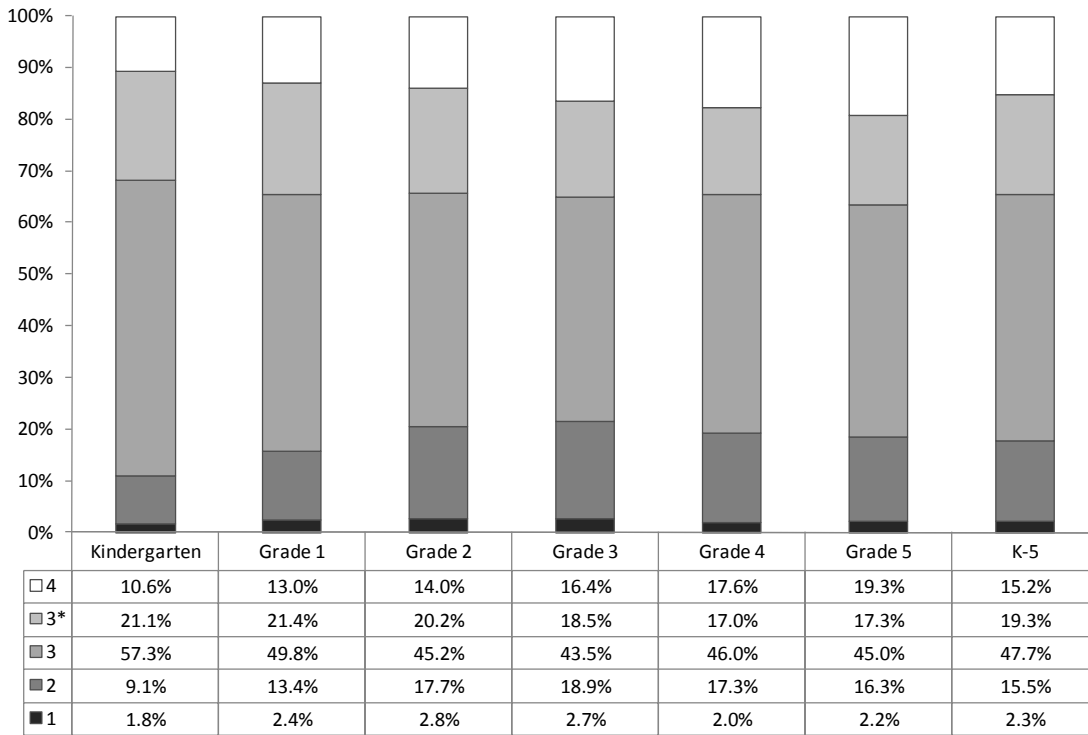
Data Source: 2009-10 WCPSS grade files
Interpretation Example: Among K-5 students in 2009-10, 15.2% received a level 4, 19.3% received a 3*, and 47.7% received a level 3, thus, only 17.8% of K-5 students were not proficient.

Figure 4.2. Percentage of Students by Grade Level and Grade Performance Level in Mathematics 2009-10.

Standards-Based Grades by School. In 2009-10, the percentage of WCPSS' K-5 students with a 1, 2, 3, 3* or 4 in reading and mathematics fourth-quarter grade varied by school. The percentage of students receiving each reading grade (i.e., 1-4 standards-based grading performance level) varied by school ranging from:

- Less than 1% to 14% of students at level 1,

- 7% to 31% for level 2,

- 24% to 58% of students at level 3,

- 7% to 31% for level 3*, and

- 6% to 45% of students at level 4.

The percentage of students at each mathematics grade or 1-4 standards-based grading performance level also varied by school ranging from:

- Less than 1% to 7% of students at level 1,

- 6% to 28% for level 2,

- 28% to 70% of students at level 3,

- 3% to 28% for level 3*, and

- 2% to 36% of students at level 4.

The variations in grades assigned across schools may represent differences in student academic performances or differences in applying grading standards. Similar to findings of prior research (Paeplow, 2008a) there was a notable difference in the percentage of students who received a level 4 across schools with a 39 percentage point range in reading and a 34 percentage point range in mathematics. By school differences of 30% or more seem larger than expected thus deserved further study.

Although the quantitative analysis of students' grades by school were based on the population of WCPSS' 101 elementary schools with available grade data, Table 4.7 displays the Fourth-Quarter Reading and Mathematics Grades by Sample School, 2009-10 to contextualize the qualitative findings. Sample school grade data were consistent with patterns found across WCPSS elementary schools.

Table 4.7

Fourth-Quarter Reading and Mathematics Grades by Sample School, 2009-10

Sample Schools	Subject	2009-10 Fourth-Quarter Grade					Total
		1	2	3	3*	4	
School 1	Reading	18	129	**179**	16	6	348
	Math	13	125	**155**	43	12	348
School 2	Reading	<5	62	**178**	80	25	349
	Math	<5	53	**176**	79	39	349
School 3*	Reading	11	48	**80**	54	67	260
	Math	9	37	**100**	42	72	260
School 4	Reading	6	51	**260**	111	83	511
	Math	8	30	**230**	130	112	510
School 5*	Reading	13	55	**120**	66	48	302
	Math	10	45	**112**	58	77	302

*Note: **Bold** font indicates the most common performance level within a grade level.*
  Indicates schools selected with highest grade / EOG correlations
Data Source: WCPSS 2009-10 grade files

The next section provides an examination of the distribution of grades by student subgroup.

Standards-Based Grades by Student Subgroup. Grades varied considerably by

ethnicity. Similar to school level variation, this could be related to differences in academic

performance and student ability. It is important to remember, reading and mathematics

grades reflected teacher assigned assessments of students' mastery of content area objectives;

behavior, homework, expectations, and other factors were not captured within content

grades. The percentage of students receiving grades of 4, 3*, or 3 in reading and mathematics

varied greatly by ethnicity and slightly by academic risk factors (LEP, FRL, or SWD). Findings indicated:

- While more than 90% of Asian students received a level 4, 3*, or 3 (i.e. a grade reflecting mastery) in reading and mathematics, approximately two-thirds of Hispanic/Latino and Black/African American students did so. In fact, more than a third of Asian students received a level 4, while only a small fraction (less than 10%) of Hispanic/Latino and Black/African American students received a level 4 in reading and mathematics.

- In 2009-10, among students with academic risk factors, the percentage of student who received a level 4, 3*, or 3 in reading and mathematics ranged from 64% to 41% (6% or less received a level 4). While the variation across risk groups was smaller than for ethnicity, all percentages are lower than the approximately 80% of all WCPSS students (i.e., K-5) who received a level 4, 3*, or 3 in reading and mathematics and (see Figure 4.1 and 4.2 respectively).

    Reading. The distribution of 2009-10 reading grades varied more by ethnicity than academic risk factor (see Figure 4.3). Level 3 was the modal (most common) grade by ethnicity and academic risk factor with two exceptions: among Asian students level 4 was the modal grade in 2009-10 and for SWD students the mode was level 2. An examination of standards-based grades by ethnicity and academic risk factor revealed:

- The percentage of students with a level 4 in reading varied greatly by ethnicity, from 5% of Hispanic/Latino students to 37% of Asian students. For students with an academic risk factor, the percentage of students with a level 4 was low and varied only slightly, from 3% of SWD students to 6% of FRL students.

- The percentage of students who received a level 3* in reading also varied by ethnicity (although less so than among students receiving a level 4), from 24% of Asian and White students to 9% of Hispanic/Latino students. While for students with an academic risk factor the range was narrow, the percentage of students with a level 3* varied from 5% of SWD students to 10% of FRL students.

- In reading, students who received a level 3, ranged by ethnicity from 31% of Asian students to 47% of Black/African American students. Among students with an academic risk factor, the percentage of student who received a level 3 ranged from 33% of SWD students to 46% of FRL students.

- Students who received a level 2 ranged from only 7% of Asian and White students to 31% of Hispanic/Latino students and from 30% of FRL students to 42% of SWD students.

- The percentage of students with a level 1 ranged from 1% of White students to 10% of Hispanic/Latino students and from 8% of FRL students to 17% of SWD students.
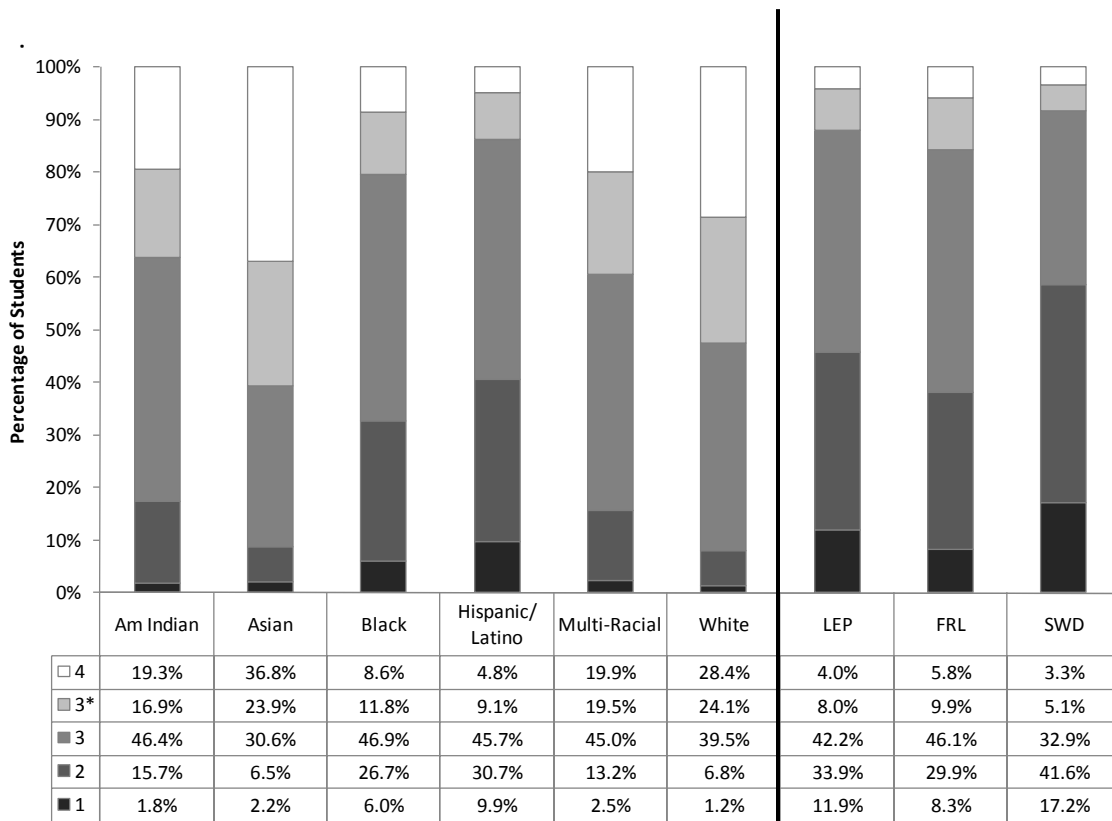
	Am Indian	Asian	Black	Hispanic/ Latino	Multi-Racial	White	LEP	FRL	SWD
☐ 4	19.3%	36.8%	8.6%	4.8%	19.9%	28.4%	4.0%	5.8%	3.3%
▨ 3*	16.9%	23.9%	11.8%	9.1%	19.5%	24.1%	8.0%	9.9%	5.1%
▪ 3	46.4%	30.6%	46.9%	45.7%	45.0%	39.5%	42.2%	46.1%	32.9%
▪ 2	15.7%	6.5%	26.7%	30.7%	13.2%	6.8%	33.9%	29.9%	41.6%
▪ 1	1.8%	2.2%	6.0%	9.9%	2.5%	1.2%	11.9%	8.3%	17.2%

Data Source: 2009-10 WCPSS grade files and WCPSS 2009-10 Elementary End-of-Year Student Roster
Interpretation Example: In 2009-10, 36.8% of Asian students received a level 4 in reading, compared to 4.8% of Hispanic/Latino students.

Figure 4.3. Percentage of Students Enrolled in 2009-10 by Subgroup and 4th Quarter Reading Grade

Mathematics. The distribution of mathematics grades in 2009-10 also varied by ethnicity and less so by academic risk factor (see Figure 4.4). Patterns in mathematics were similar to reading. Level 3 was the modal (most common) grade among the ethnicity and academic risk factor student subgroups considered with exception of SWD students who had a mode of level 2. Findings indicated:

- The percentage of students who received a level 4 in mathematics varied by ethnicity from 33% of Asian students to 3% of Hispanic/Latino students and by academic risk factor from approximately 4% of FRL to 2% of SWD students.

- Among students who received a level 3* the percentage varied by ethnicity from 26% of Asian students to 9% of Hispanic/Latino students. For students with an academic risk factor the range was from 9% FRL to 5% of SWD students.

- Students who received a level 3, ranged by ethnicity from 54% of Hispanic/Latino students to 35% of Asian students and by academic risk factor from 52% of FRL and LEP students to 39% of SWD students.

- Students who received a level 2 ranged by ethnicity from 30% of Black/African American students to only 5% of Asian students and by academic risk factor from 41% of SWD students to 31% of FRL students.

- The percentage of students receiving a level 1 had the least amount of variation by ethnicity and academic risk factors. By ethnicity, the percentage of students with a level 1 ranged from 5% of Black/African American students to less than 1% of White students. The percentage of students with an academic risk factor ranged from 13% of SWD students to 5% of FRL students.

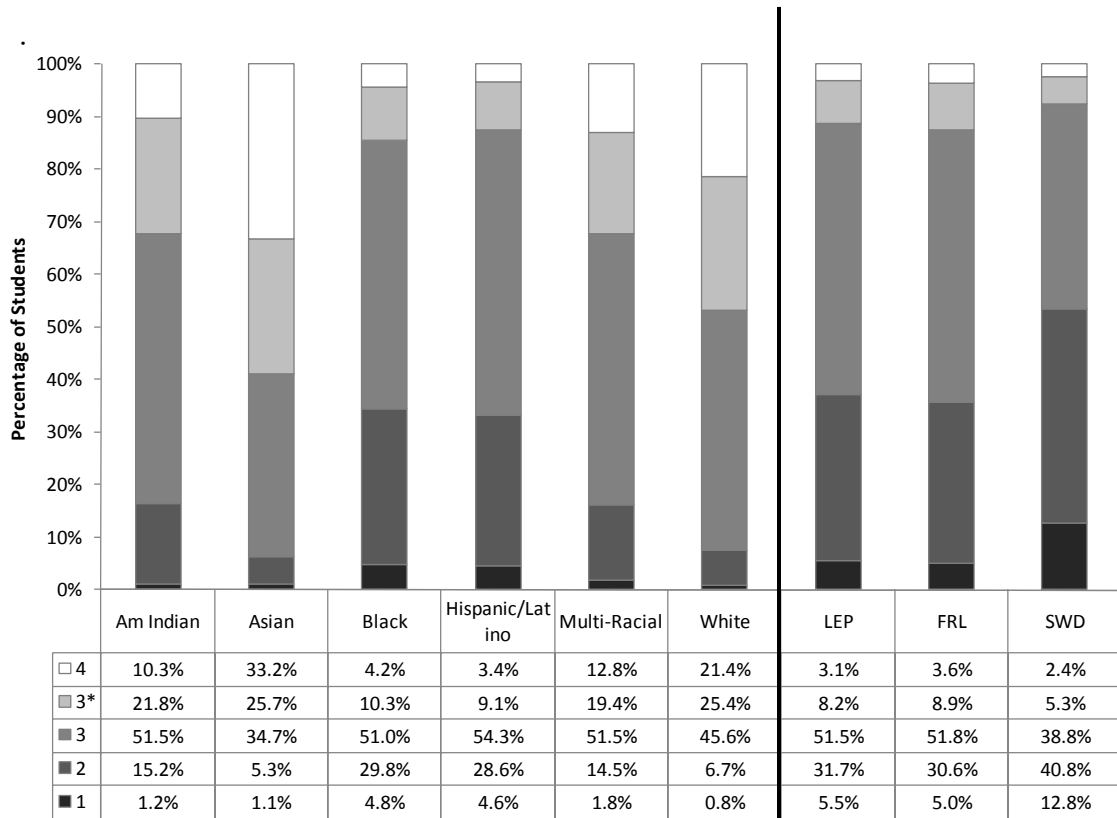|	Am Indian	Asian	Black	Hispanic/Latino	Multi-Racial	White	LEP	FRL	SWD
☐ 4	10.3%	33.2%	4.2%	3.4%	12.8%	21.4%	3.1%	3.6%	2.4%
▨ 3*	21.8%	25.7%	10.3%	9.1%	19.4%	25.4%	8.2%	8.9%	5.3%
▦ 3	51.5%	34.7%	51.0%	54.3%	51.5%	45.6%	51.5%	51.8%	38.8%
▩ 2	15.2%	5.3%	29.8%	28.6%	14.5%	6.7%	31.7%	30.6%	40.8%
■ 1	1.2%	1.1%	4.8%	4.6%	1.8%	0.8%	5.5%	5.0%	12.8%

Data Source: 2009-10 WCPSS grade files and WCPSS 2009-10 Elementary End-of-Year Student Roster
Interpretation Example: In 2009-10, 33.2% of Asian students received a level 4 in mathematics, compared to 3.4% of Hispanic/Latino students.

Figure 4.4. Percentage of Students Enrolled in 2009-10 by Subgroup and 4th Quarter Mathematics Grade

EOG Level by Sample School. Students in kindergarten through grade 2 are not assessed by an EOG. Thus, this section will focus on students in grades 3, 4, and 5 in 2009-10. Table 4.8 displays the percentage of students at each of the five sample schools by EOG level for reading and mathematics. Although the quantitative analysis of students' EOG levels were examined along with students' grades and based on the population of WCPSS' 101 elementary schools with available grade data, EOG data from the five sample schools were included to contextualize qualitative findings.

Table 4.8

EOG Reading and Mathematics Levels by Sample School, 2009-10

Sample Schools	Subject	2009-10 EOG Levels				Total
		1	2	3	4	
School 1	Reading	80	78	170	20	348
	Math	19	43	221	67	350
School 2	Reading	19	28	152	149	348
	Math	<5	13	132	201	349
School 3*	Reading	37	32	90	101	260
	Math	15	26	128	91	260
School 4	Reading	10	24	185	279	498
	Math	2	9	127	375	513
School 5*	Reading	36	37	165	64	302
	Math	11	37	147	107	302

*Note: **Bold** font indicates the most common EOG level within subject.*
 **Indicates schools selected with highest grade / EOG correlations*
Data Source: WCPSS 2009-10 Elementary End-of-Year Student Roster

Standards-Based Grades by EOG Levels. Table 4.9 displays the percentage of

students at each standards-based grading performance grade level by EOG level for reading

and mathematics. For reading and mathematics the vast majority of students who are on

grade level based on their performance level within the classroom are also at or above grade

level on their EOG (>83% and >94% respectively). While the performance level within the

classroom and EOG levels were not intended to have a one-to-one correspondence, the fact

that in reading approximately half (49%) of students and in mathematics more than two-

thirds (69.7%) of students who scored a level 3* also scored a level IV on their EOG, may

indicate that classroom teachers grading practices are more stringent than the EOG standards.

Table 4.9

Fourth-Quarter Reading and Mathematics Grades by 2009-10 EOG Level, Grades 3-5

Fourth-Quarter Grade	Subject	2009-10 EOG Level			
		Level I	Level II	Level III	Level IV
4	Reading	0.0%	0.1%	20.4%	**79.5%**
	Math	0.0%	0.0%	5.5%	**94.5%**
3*	Reading	0.2%	1.0%	**49.9%**	49.0%
	Math	0.0%	0.1%	30.1%	**69.7%**
3	Reading	4.7%	11.9%	**69.6%**	13.7%
	Math	0.5%	5.2%	**74.1%**	20.2%
2	Reading	**44.5%**	33.9%	20.7%	0.9%
	Math	16.7%	40.7%	**41.6%**	1.1%
1	Reading	**76.5%**	18.8%	4.2%	0.5%
	Math	**61.3%**	28.1%	10.5%	0.1%
Total	Reading	12.6%	12.5%	**47.2%**	27.8%
	Math	4.6%	10.2%	**47.0%**	38.3%

Data Source: 2009-10 WCPSS grade files and WCPSS 2009-10 Elementary End-of-Year Student Roster

Figure 4.5 provides an illustration of the relationship between student grade and EOG

score by displaying the percentage of students at each standards-based grading performance

grade level by EOG level for reading and mathematics.

	Read	Math	Read	Math	Read	Math	Read	Math	Read	Math
	4		3*		3		2		1	
Level IV	79.5%	94.5%	49.0%	69.7%	13.7%	20.2%	0.9%	1.1%	0.5%	0.1%
Level III	20.4%	5.5%	49.9%	30.1%	69.6%	74.1%	20.7%	41.6%	4.2%	10.5%
Level II	0.1%	0.0%	1.0%	0.1%	11.9%	5.2%	33.9%	40.7%	18.8%	28.1%
Level I	0.0%	0.0%	0.2%	0.0%	4.7%	0.5%	44.5%	16.7%	76.5%	61.3%
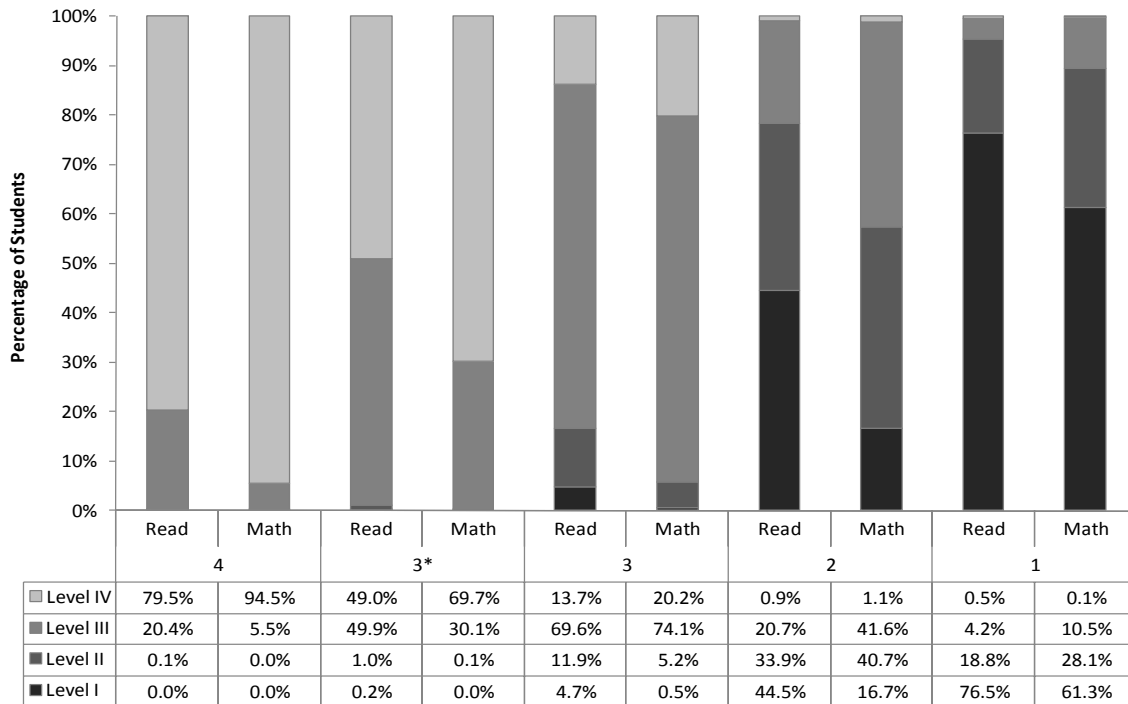
Data Source: 2009-10 WCPSS grade files and WCPSS 2009-10 Elementary End-of-Year Student Roster Interpretation Example: Among students who had a fourth-quarter reading grade of 3*, 49.0% scored a level IV and 49.9% scored a level III on the reading EOG.

Figure 4.5. Percentage of Students by Grade Performance Level in Reading and Mathematics by 2009-10 EOG Level

Standards-Based Grading by EOG Levels and Grade Level. The percentage of students by standards-based grading performance level and EOG level were similar across grade levels for reading and mathematics.

Reading. Across grade levels, approximately one-fifth of students who were below grade level based on classroom grades were proficient on their EOGs—ranging by grade level from 15% to 23%. Among students who were proficient within the classroom (i.e., level 3, 3*, or 4), 80% or more also scored proficient (i.e., level III or IV) on their EOG. Thus, a student performing on grade level within the classroom was highly likely to be successful on

the EOG while for students performing below grade level within the classroom were unlikely to be successful on the EOG. Findings by EOG level indicated:

- Of students with a reading grade of level 1, the vast majority of students in grades 3 and 4 (81% and 78% respectively) and greater than two-thirds or 67% of grade 5 students scored a level I on their reading EOG.

- Among students with a level 2 on their fourth-quarter reading grade, less than 25% scored on grade level on their reading EOG.

- Of students with a level 3 reading grade the vast majority (>80%) were on grade level scoring a level III or IV on their reading EOG.

- The vast majority (>98%) of students with a 3* scored a level III or IV on their EOG; and more than half of students in grades 3 and 4 and more than one-third of students in grade 5 scored a level IV on their EOG.

- Almost all students (>99%) with a 4 on their fourth-quarter grade scored a level III or IV on their EOG in grades 3-5. The vast majority (>82%) of students in grades 3 and 4 and more than 71% of students in grade 5 with a 4 on their fourth-quarter grade scored a level IV on their EOG.

	1	2	3	3*	4	1	2	3	3*	4	1	2	3	3*	4
			Grade 3					Grade 4					Grade 5		
Level IV	0.6%	0.6%	14.2%	52.5%	82.0%	0.0%	0.8%	17.3%	57.3%	85.3%	1.0%	1.4%	9.6%	36.6%	71.5%
Level III	2.2%	16.5%	66.2%	46.1%	17.8%	4.4%	23.0%	68.9%	41.6%	14.6%	7.4%	23.3%	73.6%	62.4%	28.5%
Level II	16.4%	25.8%	12.2%	1.2%	0.2%	17.5%	38.9%	10.9%	0.9%	0.1%	24.6%	38.4%	12.7%	0.9%	0.0%
Level I	80.8%	57.1%	7.3%	0.2%	0.0%	78.1%	37.3%	2.8%	0.1%	0.0%	67.0%	37.0%	4.2%	0.2%	0.0%

Data Source: 2009-10 WCPSS grade files and WCPSS 2009-10 Elementary End-of-Year Student Roster Interpretation Example: Among grade 3 students who had a fourth-quarter reading grade of 3*, 52.5% scored a level IV and 46.1% scored a level III on the reading EOG.
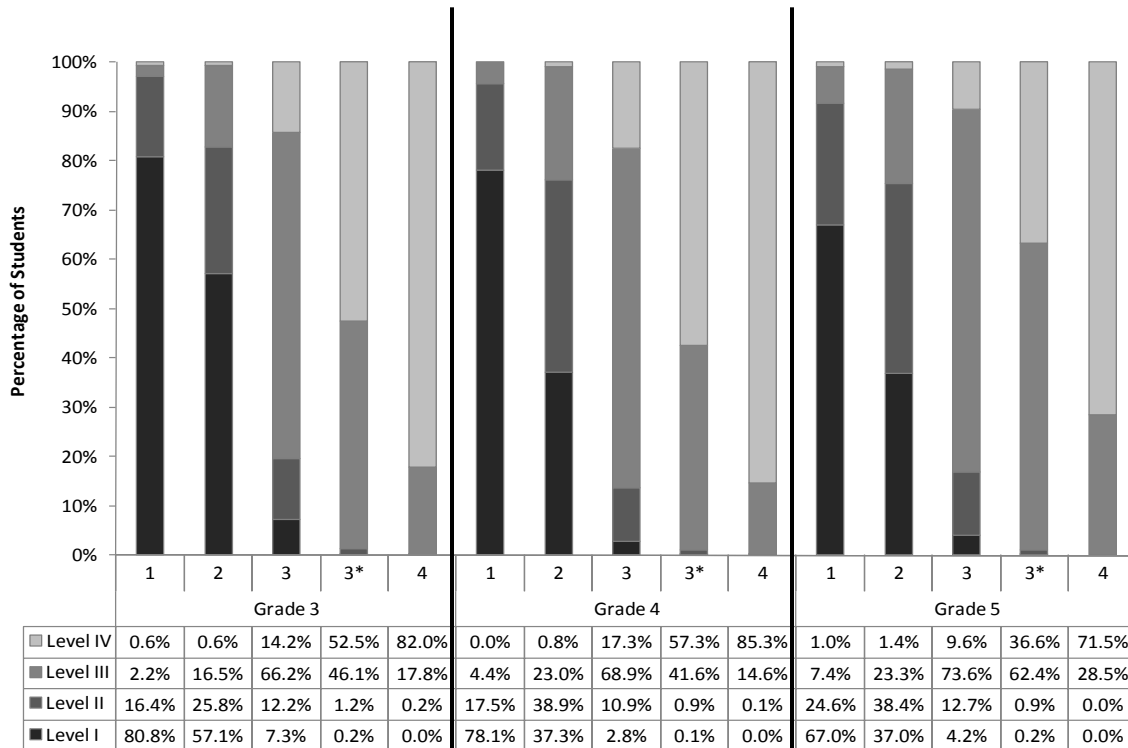
Figure 4.6. Percentage of Students in 2009-10 by Grade Performance Level in Reading and Reading EOG Level and Grade Level, Grades 3-5

Mathematics. The relationship between student mathematics grade and mathematics EOG score was comparable across grade levels. While similar to reading, the vast majority (>92%) of students receiving a grade reflecting mastery (3, 3*, or 4) within the classroom were at or above grade level based on their EOG score, a greater percentage of students performing below grade level within the classroom were at or above grade level on their EOG (37% to 40%). Students scoring below grade level on their fourth-quarter grade were more likely to be on grade level based on the EOG (>37%) as compared to the smaller percentage (<5%) of students on grade level within the classroom who are unsuccessful on

the EOG. Again, this indicates that classroom teachers may be tougher graders or that standards-based grading are more difficult standards than on the EOG exam. Findings by grade performance level and EOG level revealed:

- The vast majority (>83%) of students with a level 1 mathematics grade scored below grade level on their mathematics EOG, with the majority scoring a level I.

- Among students with a level 2 on their fourth-quarter mathematics grade, more than 55% scored below grade level on their EOG; approximately 40% scored a level II on their mathematics EOG.

- Of students with a level 3 mathematics grade, the vast majority (>92%) scored at or above grade level on their mathematics EOG, with approximately three-fourths scoring a Level III.

- Nearly all (>99%) of students with a 3* mathematics grade scored at or above grade level with more than two-thirds scoring level IV on their mathematics EOG.

- The vast majority (>93%) of students with a level 4 mathematics grade scored level IV on their mathematics EOG.
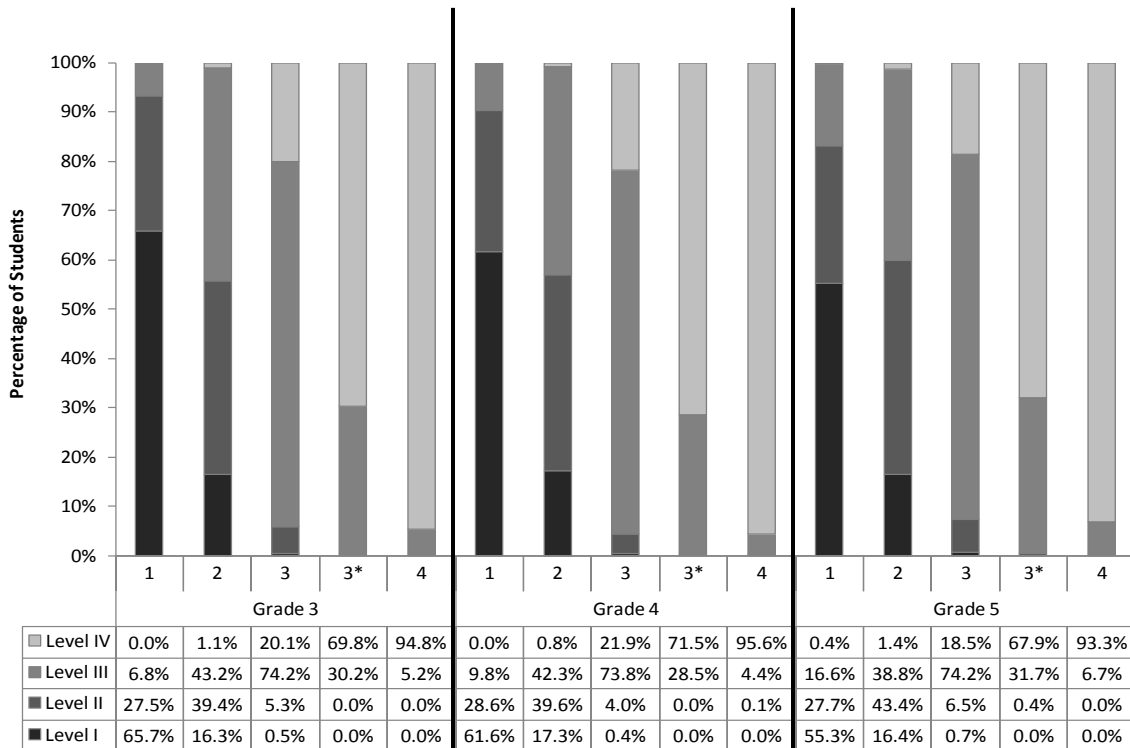
	1	**2**	**3**	**3***	**4**	**1**	**2**	**3**	**3***	**4**	**1**	**2**	**3**	**3***	**4**
			Grade 3					**Grade 4**					**Grade 5**		
▥ Level IV	0.0%	1.1%	20.1%	69.8%	94.8%	0.0%	0.8%	21.9%	71.5%	95.6%	0.4%	1.4%	18.5%	67.9%	93.3%
▦ Level III	6.8%	43.2%	74.2%	30.2%	5.2%	9.8%	42.3%	73.8%	28.5%	4.4%	16.6%	38.8%	74.2%	31.7%	6.7%
▪ Level II	27.5%	39.4%	5.3%	0.0%	0.0%	28.6%	39.6%	4.0%	0.0%	0.1%	27.7%	43.4%	6.5%	0.4%	0.0%
▪ Level I	65.7%	16.3%	0.5%	0.0%	0.0%	61.6%	17.3%	0.4%	0.0%	0.0%	55.3%	16.4%	0.7%	0.0%	0.0%

Data Source: 2009-10 WCPSS grade files and WCPSS 2009-10 Elementary End-of-Year Student Roster Interpretation Example: Among grade 3 students who had a fourth-quarter mathematics grade of 3*, 69.8% scored a level IV and 30.2% scored a level III on the mathematics EOG.

Figure 4.7. Percentage of Students in 2009-10 by Grade Performance Level in Mathematics and Mathematics EOG Level and Grade Level, Grades 3-5

Correlation of Standards-Based Grading and EOG Scores

EOG Relative Levels. A Spearman's rho was computed to evaluate the relationship between EOG relative level and fourth-quarter grade. A strong positive relationship exists between EOG relative level and fourth-quarter grade (see Table 4.10 for results of the correlation analysis). The correlation coefficient demonstrates how well the two variables are correlated: the closer to 1 denotes a more linear relationship while the closer to 0 denotes little or no relationship.

Although correlations for reading and mathematics were strong students' fourth-quarter mathematics grades had a slightly higher correlation to their mathematics EOG (>.78) than their reading grade did to the reading EOG (see Table 4.10). The correlations between a student's classroom grade and EOG relative level were similar across grade levels.

Table 4.10

Correlation of Fourth-Quarter Grade and EOG by Grade Level, 2009-10

	Grade Level	Number of students	EOG
Reading Grade (1-4)	3	n=11,028	.78
	4	n=10,598	.77
	5	n=10,357	.74
Math Grade (1-4)	3	n=11,097	.80
	4	n=10,684	.79
	5	n=10,419	.78

Data Source: 2009-10 WCPSS grade files and WCPSS 2009-10 Elementary End-of-Year Student Roster
Interpretation Example: Among students in grade 5 fourth-quarter mathematics grade had a higher
correlation to their mathematics EOG (0.78) than their reading grade did to the reading EOG (0.74).

Correlations by Student Subgroup. Given grades varied considerably by ethnicity further analysis was conducted to investigate correlations between standards-based grades (fourth-quarter grades) and EOG scores by student subgroup. Additional analysis revealed similar correlations between fourth-quarter grades and EOG scores across student subgroups. In fact, correlation scores varied less than 0.1 by ethnicity, and academic risk factor (i.e. FRL, LEP, and SWD) for reading and mathematics (see Table 4.11).

Table 4.11

Correlation of Fourth-Quarter Grade and EOG by Demographic Characteristics, 2009-10

Ethnicity	Reading		Mathematics	
	N	Correlation	N	Correlation
American Indian	81	.66	82	.69
Asian	2,033	.73	2,081	.76
Black/African American	7,746	.71	7,790	.74
Hispanic/Latino	3,963	.72	4,044	.75
Multi-Racial	1,716	.72	1,718	.75
White	16,444	.69	16,485	.73
FRL	10,683	.71	10,822	.74
LEP	3,040	.69	3,081	.73
SWD	3,124	.67	3,203	.71

Data Source: 2009-10 WCPSS grade files and WCPSS 2009-10 Elementary End-of-Year Student Roster
Interpretation Example: Among the 2,081 Asian students with testing and grade data the correlation between
fourth-quarter mathematics grade and mathematics EOG was 0.76.

Standards-Based Grading Utilized to Predict EOG Scores

Given the strength of the relationship between students' fourth-quarter grades and the

EOG scores and the need to determine whether students will be on grade level at the end of

the year, examining mid-year grades (i.e. second-quarter) may provide insight into the

likelihood students' will be on grade level at the end of the year. Thus, a logistic regression

analysis was conducted to estimate whether students' second-quarter grades could predict

students' EOG scores. This additional analysis was conducted in order to assess the

predictive ability of a student's mid-year classroom performance on their EOG score at the

end of the year. Reading and mathematics EOG scores in 2009-10 were dichotomized into

on-grade level and below grade level. The logistic regression model was used to estimate the

predictor variables (classroom grade, prior EOG score, FRL, LEP, and SWD status) effect on

the likelihood of scoring proficient on the EOG. As shown if Table 4.12 students meeting the

grade level standard (receiving a 3, 3*, or 4), were significantly more likely, to be on-grade

level on the reading and mathematics EOG. Additional regression analysis using the same

variables revealed student grades were a much stronger predictor than the demographic

variables and worked as well as prior EOG scores.

Table 4.12

Summary of Logistic Regression Analysis for Variables Predicting Reading and Mathematics

EOG Performance, 2009-10

Variable	B	SE B	Wald	Sig.	Odds Ratio	Direction of Odds (increase/ decrease)
Dependent Variable = Reading EOG Level						
Grade 4 (N=10,059)						
Reading EOG Level 2009-10	1.67	0.05	1281.56	<.0001	5.29	↑
Reading 2nd Quarter Grade	1.01	0.08	161.39	<.0001	2.74	↑
Free or Reduced-Price Lunch	-0.59	0.07	63.00	<.0001	0.55	↓
Limited English Proficiency	-0.49	0.11	19.88	<.0001	0.62	↓
Students with Disabilities	-0.49	0.09	29.61	<.0001	0.61	↓
Grade 5 (N=9,955)						
Reading EOG Level 2009-10	1.77	0.05	1241.22	<.0001	5.89	↑
Reading 2nd Quarter Grade	1.18	0.08	242.45	<.0001	3.26	↑
Free or Reduced-Price Lunch	-0.71	0.07	95.97	<.0001	0.49	↓
Limited English Proficiency	-0.33	0.12	7.69	.0056	0.72	↓
Dependent Variable = Mathematics EOG Level						
Grade 4 (N=10,090)						
Math EOG Level 2009-10	1.74	0.07	708.32	<.0001	5.70	↑
Math 2nd Quarter Grade	1.65	0.09	312.17	<.0001	5.22	↑
Free or Reduced-Price Lunch	-0.56	0.09	40.92	<.0001	0.57	↓
Students with Disabilities	-0.49	0.09	27.05	<.0001	0.61	↓
Grade 5 (N=9,988)						
Math EOG Level 2009-10	1.84	0.06	808.34	<.0001	6.31	↑
Math 2nd Quarter Grade	1.25	0.09	205.09	<.0001	3.49	↑
Free or Reduced-Price Lunch	-0.78	0.08	87.17	<.0001	0.46	↓
Students with Disabilities	-0.37	0.09	15.81	<.0001	0.69	↓

Data Source: 2009-10 WCPSS grade files and WCPSS 2009-10 Elementary End-of-Year Student Roster

Note 1: A Backwards Elimination Logistic Regression was run. Among grade 5 students in reading, SWD and among 4 and 5 in mathematics, LEP did not significantly contribute to the model and thus were dropped.

Note 2: Odds Ratio > 1 = increased odds of EOG being on grade level; odds ratio = 1 means odds were unchanged; and odds ratio < 1 = decreased odds of EOG being on grade level.

Interpretation Example: Grade 4 students who were on grade level in 2nd quarter mathematics had increased odds (odds ratio 5.22 > 1) of being on grade level on the EOG.

Standards-based grading has a strong relationship to EOG scores. This is important to note since both standards-based grading and EOGs are designed to measure students' knowledge of the NCSCS; thus, indicating this grading system accomplishes its intended purpose of assessing students' knowledge of North Carolina's curriculum. Furthermore, the ability to use second-quarter grades to predict students' success on EOG exams would provide educators with a valuable mid-year indicator to identify students who need additional support to be on grade level by the end of the year. In order to provide a more comprehensive picture of WCPSS' grading practice and to elicit greater understanding of the implementation of a standards-based grading system qualitative analysis was conducted utilizing data derived from focus groups and document analysis of WCPSS grading documentation. These qualitative findings, which enabled deeper understanding of the application of standards-based grading, are provided in the next section.

<div align="center">

Qualitative Findings

</div>

The responses from the 36 teachers who participated in the five focus groups and WCPSS documentation of standards-based grading and related grading and homework policies informed this section. The qualitative findings are organized such that teachers' responses to the prompt questions are considered first followed by the theoretical concepts which emerged from coding this data.

Responses to Prompt Questions

In order to invoke a discussion the researcher asked focus group participants to respond to prompt questions regarding their experiences with standards-based grading. Five prompt questions were used to generate discussion regarding teacher's understanding and

implementation of standards-based grading within their classrooms. The first prompt

question asked participants to rate their comfort level with standards-based grading. Six of

the 36 (17%) teachers who participated in a focus group reported they were very

comfortable; 28 of the 36 (78%) teachers reported they were moderately comfortable; and

two of the 36 (6%) teachers reported they were uncomfortable with standards-based grading.

Figure 4.8 displays the participants' responses to the remaining four prompt questions. As

depicted in Figure 4.8 the vast majority, 32 of the 36 (88.9%), focus group participants

responded that they found implementing some aspects of standards-based grading to be a

challenge. Responses were split on the second prompt question with 18 of the 36 (50%)

participants responding true to the statement "Homework impacts a student's grade" and 18

of the 36 (50%) responding false to this statement. When asked if standards-based grading

could be compared to the A-F grading scale, nine of the 36 (25%) teachers responded

positively; 24 of the 36 (66.7%) teachers responded negatively; and three of the 36 (8.3%)

teachers abstained. Finally, the fifth prompt question asked respondents if they agreed with

the statement, "Is the 1-4 scale a true representation of a student's abilities?" While 12 of the

36 (35.3%) participants agreed with this statement, 16 of the 36 (47.1%) did not agree, and
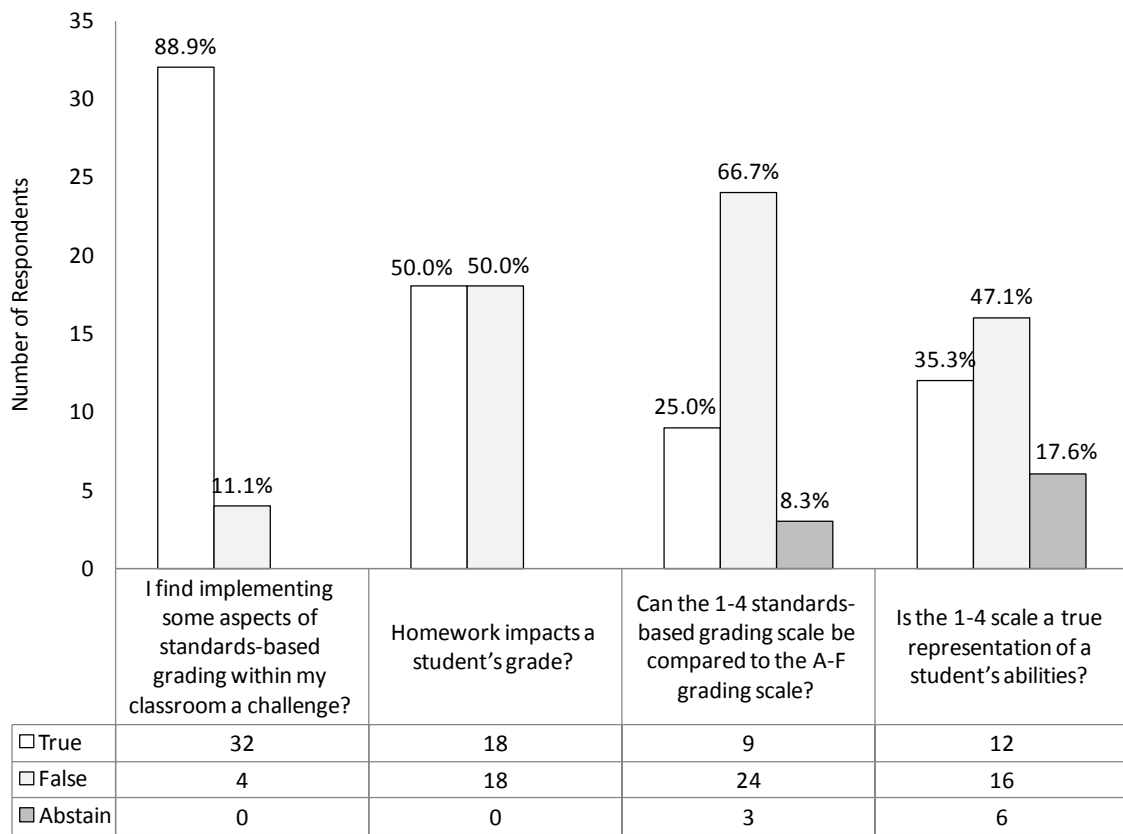
six of the 36 (17.6%) abstained.

Figure 4.8. Focus Group Responses to Prompt Questions

It should be noted that the responses presented in Figure 4.8 represented only a starting point

for further discussion. These discussions were recorded, transcribed, coded, analyzed, and

organized into theoretical concepts which are presented in the next section of this paper.

Explanation of WCPSS' Standards-Based Grading

Piloted in 2001 and adopted system-wide in 2004, standards-based grading was

implemented to measure students' knowledge of the NCSCS with improved grading

consistency across grade levels and schools; and to align grading practices to state

accountability standards and WCPSS' Promotion policy (Understanding the Elementary

School Report Card, 2010). WCPSS documentation provided a description of its standards-based grading practice and the intent behind this grading system and its associated report card; "the report card informs students and parents about a student's performance on the grade level standards. Grades are a summary of assessments and evidence that is collected throughout the grading period" (Understanding the Elementary School Report Card, 2010).

Furthermore, WCPSS documentation provided an explanation of what is indicated by standards-based grading performance levels "the student performance levels of 1, 2, 3, or 4 indicate the degree to which students have met the expectations set by the state in the Standard Course of Study and whether the student has the necessary skills and concepts to be successful in the next quarter or next grade" (Understanding the Elementary School Report Card, 2010). WCPSS also documented the intended improvement to WCPSS' grading practice "the report card has helped administrators and teachers at schools to improve assessment practices, guide instruction of the state standards, and provide more deliberate development of enrichment activities" (Understanding the Elementary School Report Card, 2010).

Students receive report cards quarterly. One teacher explained the reporting procedures as follows "they get four report cards a year, by quarter, and each quarter Wake County has set out our objectives" (Focus Group 2, teacher 3, April 1, 2011). The teacher also described how the state's Standard Course of Study is assessed using WCPSS' standards-based grading practice; "Wake County has set out what objectives a teacher has to cover in the profile card, and so they get an overall grade each quarter, and some objectives though, we teach many quarters" (Focus Group 2, teacher 3, April 1, 2011). WCPSS' profile

card provides a list of quarterly objectives students are expected to master based on NCSCS

(see Appendix K). In addition to considering the intent and logistics of this grading practice

to fully understand WCPSS' standards-based grading system it is also necessary to examine

its fundamental characteristics. The fundamentals of WCPSS' standards-based grading

system include grading students' mastery and the separation of work habits from a student's

content grade with the goal of achieving a more objective grading system. Table 4.13

displays these fundamental concepts in terms of the guidance provided by WCPSS

documentation and the teacher reported practice.

Table 4.13

WCPSS Documentation versus Teacher Reported Practice

	Policy or Procedures (WCPSS documentation)	Practices (teacher reported)
Mastery	"There is no single right way to do it; however whatever is done needs to reflect evidence of students' level of mastery of the targets of instruction (Regional Educational Laboratory 1998, Handout A46, p. 5)" (WCPSS Standards-Based Grading Blackboard, 2011).	• "Being able to consistently show that you're able to perform or complete the objective. So whether it's multiplication or measurement, you know, being able to perform." (Focus Group 3, teacher 5, April 1, 2011). • "You have to see it three times. We'd have to see it three times for it become mastery" (Focus Group 4, teacher 2, April 7, 2011).
Separation of Homework	"Reports on the student's conduct and work habits are also included. In reporting on conduct, the teacher can indicate whether the student meets expectations in cooperating with others, respecting others, and observing rules and procedures. In reporting on work habits, the teacher can indicate whether the student uses time wisely, listens carefully, completes assignments, writes legibly, works independently or seeks help when needed, and completes work. Students are rated with a 1, 2, or 3 scale for Conduct and Work Habits. 3 - meets expectations 2 - inconsistently meets expectations 1 - does not meet expectations" (Understanding the Elementary School Report Card, 2010)	• "It [homework] doesn't affect their reading, writing or math grade, but it is on their report card…as a behavior" (Focus Group 1, teacher 1, March 28, 2011). • Homework is for "practice and building the habit of the discipline of practicing at home…" (Focus Group 1, teacher 3, March 28, 2011). • …it's not part of…Wake County's policy is you can't use it as a grade. Like towards a reading grade. If you give them reading homework it can't go towards their reading grade…if they don't do their homework, it can only impact their work habits on their report cards" (Focus Group 2, teacher 3, April 1, 2011). • "I see homework more as a reinforcement to what we do in class" (Focus Group 3, teacher 2, April 4, 2011). • "The homework isn't factored into their grade…It's separated out. You have a work habit grade" (Focus Group 4, teacher 3, April 7, 2011). • "… it reinforces what they're doing in the classroom" (Focus Group 5, teacher 11, 2011).
Objective	"Some individuals, both in and outside the field of education, are suspicious of the role played by teacher judgment in this process because they assume that it incorporates a degree of subjectivity into grading. These skeptics fail to recognize that the traditional grading system grounded in the heuristic of adding up points is, by its very nature, subjective" (Marzano, 1998)	• The 1-4 scale was "clear-cut and objective" (Focus Group 1, teacher 3, March 28, 2011). • "It was less subjective" (Focus Group 2, Teacher 2, April 1, 2011).

Data Source: Understanding the Elementary School Report Card, 2010, WCPSS Standards-Based Grading Blackboard, and Teacher Focus Groups

Mastery. Standards-based grading is a mastery grading practice. One teacher described mastery grading as follows "being able to consistently show that you're able to perform or complete the objective. So whether it's multiplication or measurement…being able to perform" (Focus Group 2, teacher 5, April 1, 2011). Teachers described looking at the overall objectives to determine a student's report card grade. One teacher stated that grades are determined "based off the mastery of the objectives" (Focus Group 2, teacher 3, April 1, 2011). WCPSS' standard-based grading requires an objective be observed three times; this was confirmed by a teacher who reported "you have to see it [level 3 or 4 work] three times. We'd have to see it three times for it become mastery" (Focus Group 4, teacher 2, April 7, 2011). Within each subject area large content objectives are divided into small components on which teachers assess their students. One teacher described "if they [students] mastered most of them [the objectives], they are where they are, on the scale" (Focus Group 2, teacher 3, April 1, 2011).

Teachers described the process of determining that a student had mastered the subject based on multiple observations. Grades under a mastery grading system are not averaged rather one teacher described how she determined a student's report card grade "I have to look at what my students do at the end of the quarter. So, if they don't get it until the week before I make out report cards, they're still going to get a level 3 if they're there, even though they have struggled, struggled, struggled, struggled" (Focus Group 4, teacher 2, April 7, 2011). Indeed, two additional teachers agreed that once a student "finally made it," they were assessed at level 3 (Focus Group 4, teacher 2 and 3, April 7, 2011).

However, two teachers described their discomfort with assigning struggling students a level 3 when mastery was achieved late in the quarter. As reflected in teachers' comments "I still have a little bit of difficulty with that [assigning a level 3]" (Focus Group 4, teacher 2, April 1, 2011) "because of what it took to get them there" (Focus Group 4, teacher 3, April 1, 2011). One of the teachers explained her discomfort was due to what "it took to get them there, and are they going to keep it?" (Focus Group 4, teacher 2, April 7, 2011). Thus, she expressed concern that students would be able to retain recently grasped concepts "is that knowledge that they have finally retained and have been able to apply, and I have a little bit of problem with it if it's coming right there at the end before my assessments are going to be made, and put on the report card" (Focus Group 4, teacher 2, April 7, 2011). Another teacher expressed concern assessing mastery when the student has recently shown the capability to perform an objective. In fact she questioned:

> What if they're [the student] not working very hard. What if they're just barely
>
> meeting those benchmarks, and they're not putting forth very much effort over
>
> the next two or three weeks and they could drop back. You know, it could be. I
>
> mean, they're meeting them, but are they retaining it? Are they keeping them?
>
> (Focus Group 4, teacher 2, April 7, 2011).

However, her colleague addressed her concerns stating "you can't say barely meeting. They're either meeting them or they're not, so there's not a barely meeting them. That's like almost being pregnant. So, in other words, so if they meet it though, that's a [level] 3" (Focus Group 4, teacher 1, April 7, 2011). Regarding whether the student has only recently displayed competency on an objective she stated "well, it doesn't matter. That doesn't matter

what a [level] 3 is, to my mind. A [level] 3 to me is that they met it" (Focus Group 4, teacher 1, April 7, 2011).

An additional concern expressed with mastery grading was that student growth is not captured by this grading system. One teacher expressed mixed feelings stating "so, I don't know. I kind of see both sides of it…even though you made a lot of growth; you're not where you're supposed to be…but at the same time, if you don't have it, you don't" (Focus Group 1, teacher 4, March 28, 2011). In addition to commenting on student mastery, teachers also discussed the separation of homework from content grades. Thus, this fundamental characteristic of standards-based grading is the focus of the next section.

Separation of Homework and Performance. Standards-based grading separates students' work habits from the content area. Homework is not included in a student's grade, but is reflected in a separate work habits grade. The work habits grade indicates "whether the student uses time wisely, listens carefully, completes assignments, writes legibly, works independently or seeks help when needed, and completes work" (Understanding the Elementary School Report Card, 2010). Student conduct which reflects the degree to which the student met expectations in cooperating with others, respecting others, and observing classroom rules and procedures is also captured separately on the report card (Understanding the Elementary School Report Card, 2010). Student conduct and work habits are rated with a 1, 2, or 3 scale: 3 - meets expectations; 2 - inconsistently meets expectations; and 1 - does not meet expectations (Understanding the Elementary School Report Card, 2010). Thus, teachers reported that homework is not reflected in students' content grades. In fact, one teacher stated "the only thing I look for is if they are doing it [their homework] or not" (Focus Group 1,

teacher 3, March 28, 2011). Another teacher stated "it [homework] doesn't affect their

reading, writing, or math grade, but it is on their report card as a check or not, as a behavior"

(Focus Group 1, teacher 1, March 28, 2011). Furthermore, regarding homework as practice

teachers stated: "my whole thing is as long as they tried, I don't care. It may be wrong, as

long as they tried" (Focus Group 1, teacher 1, March 28, 2011); "as long as they try it"

(Focus Group 1, teacher 4, March, 28, 2011); and "I'd rather it be wrong because then it

gives me a truer picture of what else do I need to do with this child" (Focus Group 1, teacher

3, March 28, 2011).

Teachers reported homework served multiple purposes. Teachers shared using

homework to reinforce skills learned during class time; indeed, they saw homework and the

practice of skills at home as a mechanism for instilling the idea that learning should be a

continuous process and not limited to the school day. Since middle and high schools include

homework within a student's grade, elementary teachers reported homework prepares

students for secondary education expectations. Finally, teachers used homework and the

feedback it provides to drive their instruction.

Homework as Practice. Teachers reported the primary purpose of homework was to

allow students an opportunity to practice newly acquired skills. As reported by one teacher

"it's taking their short-term memory to long-term memory as well, it's what they've learned

in class and reinforcing" (Focus group 4, teacher 3, April 4, 2011). While another teacher

added "well, I also think we as a team do a very good job of aligning homework with what

we're teaching. And if you don't, it's just a waste of their time. But you've got to make sure

that whatever you're doing that day, they are getting reinforcement of that skill" (Focus

group 4, teacher 2, April 4, 2011). Homework, as one teacher stated, is for "practice and building the habit of the discipline of practicing at home…[and] trying to get them in the habit of continuous learning" (Focus Group 1, teacher 3, March 28, 2011). Moreover, another teacher shared that she felt homework reinforced "the expectation that school, even for us, school doesn't end when the day ends. We're always, and I try to get them to understand that we're always, I'm always learning" (Focus Group 1, teacher 1, March 28, 2011). The importance of homework was expressed by another teacher who shared "they're not doing their homework; they're not practicing the skill" (Focus Group 2, teacher 1, April 1, 2011). Homework as practice was reported by still another teacher in these terms:

Well, I think all together if a student's doing their homework, they will ultimately…be doing better because they understand the concepts, so that's how I think it impacts the student's grade. Not necessarily to bring an assignment in, but if they are going home and practicing that objective and coming back, it is going to impact their grade (Focus Group 3, Teacher 7, April 4, 2011).

Another teacher offered an example of a student whose grade had been positively impacted by homework and the practice that it provided:

I have a classic example in my classroom just this year. He has never done his homework…finally after Christmas and after numerous times of his dad having to get off his job and go to the bosses office to answer a telephone call from the school, I now have my little boy doing his homework. His grades are straight solid [level] 3s now. I mean, because he's now practicing it at home.

And if he doesn't do his homework at night, let's say he forgets, he knows he

must sit in his desk in the morning and not do anything else until that

homework is done. And I mean, it's just, it shows responsibility, too, I mean,

you know, but to me, it's practice (Focus Group 4, Teacher 1, April 7, 2011).

Homework as Preparation for Middle and High School. In addition to students

practicing skills, requiring homework prepares students for middle and high school

expectations. Teachers reported homework practice enabled students to be ready for

expectations in the upper grades when homework is more "intense" (First Grade Teacher,

March 28, 2011). Another teacher reiterated the idea that homework completion was utilized

as a preparation for the next school level "you have to prepare those fifth grade students to

some degree…keeping them kind of accountable but not making that [homework] in their

grade. It's really a fine line because if they're not preparing and they're never doing their

homework in middle school, they're going to bomb" (Focus Group 3, teacher 7, April 4,

2011).

Homework used to Drive Instruction. Teachers also reported using homework to

drive instruction, in terms providing enrichment and remediation. As one teacher reported "I

know that I keep track specifically on if they don't do a good job on their homework, then to

me that's a red flag either I didn't teach it well or they didn't understand it, [and] I need to go

back and re-teach it" (Focus Group 4, Teacher 2, April 7, 2011). The teacher further

explained using homework to identify students for intervention and enrichment; she shared

that she used "…that [protected] time to help get those kids up to speed to see what it is you

didn't understand about your homework, what are you having difficulty with" (Focus Group 4, Teacher 2, April 7, 2011).

    Concerns Regarding Homework. While overall teachers espoused the benefits of homework there was some concern expressed regarding its added value. Teachers expressed concerns regarding students who have already mastered the content, those who are practicing incorrect skills, and homework that reflects parents rather than student understanding. Indeed, many teachers reported that homework reinforced skills and enabled students to improve their understanding and in turn their content grade; however, one teacher stated he did not feel homework completion would improve a student's content grade since some students who already understand the material do not benefit from the additional practice. The example he provided was "if I know something and I've mastered it in my mind…why am I going to practice it" (Focus Group 2, teacher 6, April 1, 2011). Another concern expressed by a teacher was that homework may reinforce inaccurate understanding and/or poor skills if a student does not have a grasp of the concepts they are practicing as indicated by this teacher's comment:

    And I think that really kind of depends on whether or not you get the concept that you're practicing. Clearly if you get it all in practice, then that can't, it's probably not going to hurt you. If you don't get it, I mean, you're practicing something that you didn't really understand in the first place, you could be practicing it incorrectly, and then that could hurt you. I think it can negatively impact your grade as well (Teacher, April 4, 2011).

One reason teachers gave for not including homework was due to receiving homework which represented the parents' rather than students' work. Teachers' statements regarding homework representing parents' work included:

- "you have kids who have parents who do their homework for them" (Focus Group 2, teacher 2, April 1).

- "I don't compile it into a grade at all because so many times, I don't know how it was done. So it may have been someone else doing it for them so I can't count it as a grade, but I can look at it" (Focus Group 1, teacher 2, March 28, 2011).

- "you can tell the change of the handwriting where the parent literally did the homework" (Focus Group 1, teacher 4, March 28, 2011).

- " I see a lot of parent handwriting, so I don't think there's, we're not grading the parents" (Focus Group 5, teacher 7, April 13, 2011).

Teachers expressed concern that by parents providing too much assistance on homework students were missing out on valuable practice. This was indicated by a teacher who held it is important for parents to allow students to use homework to practice the skills. She commented:

> I even wrote that in a comment to a parent. 'Please let your child come up with their own sentence' and the same thing with math. I mean, their big sisters do it, their parents write it for them, and as I tell them, you've not learned anything because somebody else did it for you. In practicing is how you learn something, but if you're not actually practicing it, you're not really learning it (Focus Group 1, teacher 2, March 28, 2011).

While another teacher explained her concern that parents were completing or partially completing their student's homework "I mean if homework is truly practice, parents doing it is not really practice for them. So it doesn't help their grade in any way. It actually hurts them when someone else is giving so much support to them at home" (Focus Group 1, teacher 3, March 28, 2011).

The reasons teachers gave for parents going to such lengths to ensure student's homework is completed correctly was due to parents' lack of understanding regarding the purpose of homework within standards-based grading. As described by one teacher "I think lots of parents don't realize that it's [homework] practice" (Focus Group 1, teacher 1, March 28, 2011). Another teacher stated "they think it's for a grade. Because [it is] when you get to the upper grades" (Focus Group 1, teacher 4, March 28, 2011). Still another teacher suggested "sometimes they [parents] think it's a reflection of themselves, so they want their child's to come in right" (Focus Group 1, teacher 3, March 28, 2011).

Although teachers expressed concerns regarding parents over supporting students on homework, there was also mention of the positive impact of parental support on students' homework, as shared by one teacher:

> I look at this a different way, too. If they're doing homework at home, the parents are spending time to work with them. So that tells me there's parent involvement, so they're also taking time out to work with them on other skills and other things to reinforce what we're doing in the classroom. So that is also impacting their grade in the classroom. Because they're getting extra help at

home as opposed to the kids not doing homework and not getting the extra

help from the parents at home (Focus Group 5, teacher 9, April 13, 2011).

Although the vast majority of teachers (21 out of 36) reported homework was not captured in

a student's content grade, one teacher did state that she saw, "…homework as one of the

evidences for the profile" (Focus Group 2, teacher 6, April 1, 2011). This statement was

quickly corrected by one of her colleagues who stated "that's wrong. It's against policy"

(Focus Group 2, teacher 4, April 1, 2011). While another teacher offered "Wake County's

policy is you can't use it as a grade…If you give them reading homework it can't go towards

their reading grade" (Focus Group 2, teacher 3, April 1, 2011). She further explained how

homework could be captured, stating "it's only your work habits; you could, if they don't do

their homework, it can only impact their work habits on their report cards" (Focus Group 2,

teacher 3, April 1, 2011). The fundamental elements of assessing mastery and separating

work habits (e.g., homework) from the content grade within standards-based grading are

intended to create a more objective system of grading than traditional A-F grading.

Objective. Standards-based grading is posited as a more objective grading system

than traditional grading practices based on cumulative work. This idea was capture by a

teacher who commented that the 1-4 scale was "clear-cut and objective" (Focus Group 1,

teacher 3, March 28, 2011). Another teacher shared how she saw standards-based grading as

less subjective than traditional grading practices, stating:

> …if you think about the old system, it was totally based on what that teacher
>
> wanted the grade to be. Like it could be 60% homework, 40% tests, where this
>
> is strictly supposed to be measuring how that child is doing on the objectives.

It's not as subjective. It is subjective to some degree, but it's not as subjective

because you're supposed to be making sure your students are mastering those

objectives (Focus Group 3, teacher 5, April 4, 2011).

Two third grade teachers added they felt standards-based grading was "less subjective"

(Focus Group 2, teacher 2, April 1, 2011). Indeed, one elaborated stating "…it gives you

more information. We can look at it and know what kids need remediation or extension on

every single one of our objectives" (Focus Group 2, teacher 2, April 1, 2011). One of their

colleagues held that "A-F is still subjective"; however, she also added "grading is subjective"

(Focus Group 2, teacher 1, April 1, 2011). This group of third grade teachers shared that the

objectivity in grading relied on the strength of the rubrics used and that without a clear rubric

the grade becomes more subjective. This sentiment was reflected in one teacher's comment:

I mean, [be]cause a lot of times even with the things that we're grading, you

know, we have some things that have rubrics, and some things that don't. I

mean, and I think it's the same thing with the A-F scale…if you're writing an

essay, well, what is considered an A, what's considered a B, what's

considered a C? Just like with the [standards-based grading] objectives,

what's considered a [level] 4, what's considered a [level] 3, what's considered

a [level] 2 (Focus Group 2, teacher 5, April 1, 2011).

While teachers asserted standards-based grading was a more objective grading practice, one

teacher expressed concern regarding the inflexibility introduced by this more objective

grading system:

…grading in general is pretty merciless because you look at a standard by

definition, and by definition it is a rule to be measured by or to, or to live by.

So even the term standards-based grading is an implication of the designation

itself, which basically means that it's kind of inflexible, it needs certain rules

that a student must measure up to in order to be x, y, and z (Teacher, April 4,

2011).

While overall teachers commented that standards-based grading tended to be a more

objective grading system than traditionally used, they also saw greater subjectivity around

level 4 as indicated by a teacher's comment "well, and it still leaves subjectivity out there

because what I see as a [level] 4 somebody else might see as a [level] 3*" (Focus Group 5,

teacher 3, April 13, 2011). The definition of level 4 and the interpretation required will be

discussed in greater detail in the Interpretation of Standards-Based Grading section. In

addition to the insights teachers provided regarding their understanding of the fundamentals

of standards-based grading, an important consideration impacting teachers' understanding is

the level of training teachers reported receiving; this information is presented in the next

section.

Training on Standards-Based Grading

Teachers' comments generally reflected an understanding of the fundamental

characteristics of standards-based grading consistent with the guidance provided within

WCPSS' documentation. However, 11 years after piloting standards-based grading some

teachers reported they continued to struggle with implementing this mastery grading practice.

One teacher stated "I think this is good that you're [the researcher] seeing this within the

grade level. We are still having a struggle with this [standards-based grading] (Focus Group 4, teacher 2, April 7, 2011) while her colleague continued "and we've been doing it for seven years" (Focus Group 4, teacher 3, April 7, 2011).

Training Offered by WCPSS. WCPSS created a Blackboard site devoted to standards-based grading. This information repository houses information, templates, and samples pertinent to the development and implementation of standards-based grading. The documents available on the WCPSS' Standards-Based Grading Blackboard site include sample report cards (see Appendix H), interim reports, comment guidelines and samples, subject specific rubrics, pacing guidelines, and other information on implementing standards-based grading. While guidance and sample documents are available, the material appears to be dated (e.g., training PowerPoint dated 2002-03) and some information is missing (e.g., mathematics rubrics tab is empty).

Training Received by Participants. Teachers reported the training they received on

standards-based grading. Table 4.14 displays the type of training reported.

Table 4.14

Teacher Reported Type of Training Received

Type of Training	Number of Teachers
District Training	8
Staff or Professional Development	5
School Training	4
IRT Meeting	1
IRT	1
Mentor	2
Peers	7
Online Training	1
Prior System	1
None	8

Data Source: Teacher Focus Groups
Note: Teachers reported multiple types of training thus teachers may appear in more than one type of training.

To further explore the impact of training the level of training reported by focus group

participants was examined. Although two focus groups represented schools with the strongest

correlations no pattern of training, or lack thereof, was evident in the data. There was a clear

pattern, however, when number of years teaching standards-based grading was considered.

Teachers with seven to 10 years of experience with standards-based grading reported

receiving district training, staff or professional development, and school level training. This

reflects the initial implementation of standards-based grading in WCPSS. Teachers with five

or six years of experience reported training was received online, at the school level, and via

peers. Finally, teachers with one to four years of experience with standards-based grading

reported training from mentors, peers, or from a prior system.

Teachers reported receiving standards-based grading training at the school level.

While only four teachers mentioned school level training directly, seven teachers reported

receiving training from their peers, two from a mentor, and one from her school's IRT.

Indeed, one teacher stated that her IRT and teacher team members usually worked with new

WCPSS staff members to help them understand this grading process. Furthermore, she

reported they used professional learning teams to identify teachers in need of further

explanation regarding standards-based grading. To further explore teachers' understanding of

standards-based grading it was helpful to consider teachers' initial reactions to this grading

practice. In the next section teachers' comments regarding their first impressions of

standards-based grading are considered.

Initial Reaction to Standards-Based Grading

Teachers discussed their first impressions of standards-based grading. Since

standards-based grading represents a different way of grading from which teachers were

graded when they were in school, some teachers reported needing to adjust to this new

grading practice. This was evident in one teacher's comment "it's a hard adjustment for all of

us to get used to, the [levels] 1, 2, 3, 4; it takes a while" (Focus Group 5, teacher 2, April 13,

2011). One teacher described how she attempted to reconcile the difference between

standards-based grading and traditional A-F grading systems:

> When I first started teaching, I tried to relate everything, in my mind, my first
>
> year, trying to understand the 1-4 as A-F. And as I understood more of how

standard's based grading works, and really what I was looking at, then I got

away from that mindset completely because it doesn't actually correlate at all

when you look at it (Focus Group 2, teacher 4, April 1, 2011).

Transitioning from a percentage grading system to standards-based grading was a particular

area of adjustment reported by teachers. According to one teacher:

When I first came here it, it seemed to be very ambiguous, the whole [levels] 4,

3, 2, 1. I mean we used it in New York City only on the end of year tests, but in

terms of giving grades on their work in the middle school level, so we [used]

number grades, 100, 95, that kind of thing…so then coming here…there seems

to be this huge ambiguity surrounding [levels] 4, 3, 2, 1. And…I think

intuitively, there seems to be like they're subtly connected though I just feel

like it's not admitted publically. That's my take on it (Focus Group 3, teacher

7, April 4, 2011).

Still another teacher reported finding it a challenge to move away from averaging grades

stating "for me personally, it was getting away from the idea of averaging grades…that to me

was very challenging. You get that mindset you have to have a [percentage] score on a

paper…a number grade on a paper, and it was very difficult for me to let go of that…and

sometimes it still is" (Focus Group 4, teacher 2, April 7, 2011).

One group of teachers described how when they began using standards-based grading

they used the addition of arrows to further differentiate a student's grade. As reflected in this

teacher's statement "when we first started doing it [standards-based grading] here I was

teaching fourth grade, and we made a little bit of a difference between a [level] 3 and a

regular [level] 3 and we would put a little arrow going up" (Focus Group 4, teacher 2, April

4, 2011). She clarified that the [level] 3 arrow was not a [level] 3*, but meant to indicate to a

student that their grade was improving. Another teacher added "we also had a [level] 3 arrow

down" (Focus Group 4, teacher 3, April 4, 2011). However the teachers also reported they

were told to discontinue this addition to the standards-based grading practice. With a clearer

understanding WCPSS documentation and teachers' interpret and understanding of the

fundamental characteristics of standards-based grading, the next section will explore

teachers' implantation of this grading practice.

Implementation of Standards-Based Grading

As with any initiative the degree to which its goals are realized rely on its

implementation. Thus, this section will examine teacher reports on grading in terms how they

compile students grades, determine a students' proficiency scores, and provide opportunities

for level 4 work.

Compiling a Student's Grade. WCPSS' policy states "meaningful evaluation shall

include consideration of all activity that has occurred during the particular evaluation period"

(WCPSS Policy 5520.1). Although the policy also states "such activities should include (l)

homework, (2) projects, (3) reports, (4) class participation, and (5) tests which shall include

unit tests" (WCPSS Policy 5520.1), the homework Regulations and Procedures (R&P),

associated with WCPSS' Homework Policy 5510, clarifies how homework is to be used at

the elementary level. According to the homework R&P "Homework is considered practice in

grades K-5; therefore, it is reflected in the Work Habits grade. Homework should be

considered in reporting a student's progress to parents" (WCPSS Policy 5510 R&P).

Multiple Sources of Students' Performance. Teachers reported that students' grades

are compiled using a variety of examples of student performance including: anecdotal notes

(e.g., notes captured during small group work), observations, informal measures (e.g. digging

deeper data), quarterly running records, Dibels scores (an electronic data system which

measures phonemic awareness, alphabet principles, accuracy and fluency, vocabulary, and

comprehension; the five major areas in early literacy identified by the National Reading

Panel) formal assessments (e.g. common assessments and/or blue diamond scores), Study

Island (i.e., computer based instructional resource) and other differentiated work products.

These observations are captured on the student's profile card which is used to determine a

student's final grade. Profile cards are a tool used to capture the objectives students are

expected to master. Each objective is assessed at least three times to determine students'

understanding. One teacher described the assessment of students:

> I think one of the things we strive to do is before we assign that standards-
>
> based grade that we make sure [we] observed [the objectives] at least three
>
> times. And if we look at the big essentials, those are the things we are looking
>
> for that we definitely want to see, that we have observed three different times
>
> and different ways. We use the profile cards. We use that to guide all of what
>
> our essential learning outcomes (Focus Group 3, teacher 5, April 4, 2011).

Another teacher described the process of assessing students "during your lesson. I keep a

little checklist next to me, and…I write the objective at the top and as we're having this

conversation, if this kid is constantly showing me that he knows how to do it, then I check off

that objective. Yes, he's mastered that" (Focus Group 5, teacher 5, April 13, 2011). Another

teacher stated "you can kind of talk to them [students] or work with them in a small group, give them a small little assessment, work with whiteboards, whatever you want to do. If they've shown it [mastery] a third time, you would say 'yep, they've got it. They're on grade level'" (Focus Group 5, teacher 3, April, 14, 2011). One teacher spoke specifically about assessing students in science stating "in science, it's not just the written evaluation, it's their investigative responses, and the way we depict while they're doing experimentation" (Focus Group 5, teacher 6, April 13, 2011). The ability to observe each objective three times means teachers need to use multiple methods to assess student understanding. Thus, one teacher described the variety of methods of assessing student understanding:

> Well, formal and informal. It can be just walking around if…they're doing
>
> other work on their whiteboard, walking around, seeing who can do it, making
>
> a note on yes or no they can, or it could be a test, or it could be just a sheet we
>
> make up or it could be, I mean, it's everything and anything [be]cause finding
>
> three for every standard, you have to do it in every situation [be]cause
>
> otherwise you'll never have enough time (Focus Group 2, teacher 3, April 1,
>
> 2011).

To ensure the grade reflected an individual student's ability one teacher indicted she assessed understanding by observing student work done independent of other students, stating "usually it needs to be something though where they're doing it independently without having any sort of influence from the other students around them" (Focus Group 2, teacher 2, April 1, 2011). In addition discussing the variety of

sources considered when determining a student's grade, teachers also shared the

difficulties the faced when determining a student's grade.

  Difficulty Determining a Student's Grade. Teachers expressed some difficulty

determining a student's grade. One teacher explained the ambiguity in grading students'

writing. She stated "generally speaking we'd use a rubric…to assess writing samples, and or

you can kind of compare it to what they have on C-map [WCPSS' online curriculum

resource], and it's hard to lose all subjectivity when it comes to writing, even using that

rubric (Focus Group 5, teacher 5, April 14, 2011). Another teacher explained how even with

a rubric there is some difficulty determining a student's grade. She stated the student's work

sample may "fall right down the middle" (Focus Group 5, teacher 8, April 14, 2011).

Therefore, making it difficult to determine the student's grade:

> They [the student's work sample] don't fall in emergent, they don't fall in early
>
> emergent, emergent they fall somewhere right in between…I mean especially
>
> for kindergarten, it's so generic…it's so generic that it's hard to put because
>
> the kid may be doing this but they're not necessarily doing all of the things in
>
> that one box, so it's hard to say, 'well, yes, they're early emergent, but they're
>
> really not. They're kinda somewhere in between.' It's very subjective (Focus
>
> Group 5, teacher 8, April 14, 2011).

The difficulty in determining the final grade for the report card was also reflected by a

teacher who commented:

> And I don't know, for me, I have a hard time when I look at the profile card,
>
> and I see all of these objectives, balancing out the [level] 2s, the [level] 3s, the

things that might have shown [level] 4, and coming up with one grade to

represent all of that, that's not percentages, where we average it all out if

there's some things a kid is really good, but if there are things they really

struggle with, it's hard to know…which grade to put in the book (Focus

Group 3, teacher 5, 2011).

Multiple Observations. One of her colleague shared that through the use of multiple observations a teacher can be more certain of the student's grade. This is captured in her assertion:

And that's what's so important about having the multiple opportunities for a

kid to show either that they're meeting the standard or they're going above

standard. Because you would hate for them, you want the grade to be an

accurate assessment of their ability…with the curriculum and those concepts,

and if you're not giving them multiple opportunities to show them…it's not

giving as much of an accurate picture (Focus Group 3, teacher 5, April 4,

2011).

However, the opportunity for multiple observations to determine students' final grades was mentioned as a challenge by several teachers.

Objectivities. Additionally, teachers shared that timing and the weight given to objectives also contributed to the determination of a student's grade. Teachers explained while the objectives may repeat, grades given in quarter one do not impact students' grades in the remaining quarters. As one teacher described "so if the same objective comes up the next quarter…if fourth quarter has the same objective as one that was on third quarter, you

have to see [it] at least three [each quarter]" (Focus Group 2, teacher 1, April 1, 2011).

Indeed, teachers shared "so third quarter has no bearing on fourth quarter (Focus Group 2,

teacher 5 April 1, 2011) and "…there's no overlap…It's a new slate (Focus Group 2, teacher

3, April 1, 2011).

Another area in which teachers expressed ambiguity was the range of material

covered within an individual objective. One teacher reported "I feel like some of the

objectives that we have are also very broad. It's hard to pinpoint exactly what you're looking

for when an objective feels like it covers a lot of things" (Focus Group 5, teacher 3, April 14,

2011).

Another factor that contributes to the determination of a student's final grade is the

fact that not all objectives are weighted equally. This was captured by a teacher's comment

"…there are also 20 objectives that you're talking about for that quarter. Some are weighted

more heavily than others, and let's say they get a [level] 2 on one of the more heavily

weighted ones [objectives] compared to [level] 3s on the others, I mean, it's totally up in the

air" (Focus Group 3, teacher 1, April 4, 2011).

Following teachers' descriptions of the multiple observations and the plethora of

ways in which they assessed student understanding in order to compile a student's grade, it is

now necessary to consider the grades students are assigned. In each of these multiple

observations teachers must determine a grade. A proficiency level 1-4 must be assigned both

on the report card and on graded assignments and observations that are used to create that

final subject grade. The next area explored was standards-based grading in terms of

procedures (i.e., WCPSS' standards-based grading proficiency level guidelines) and the

application of this grading system within classrooms.

Determination of Student Scores 1-4. Under standards-based grading students are

assigned a level 1-4 based on multiple observations of objectives within the NCSCS.

WCPSS documentation states "The student performance level is determined by a variety of

assessment data for each objective that is addressed that grading period. Work habits and

conduct grades are separate from the student's content proficiency" (Understanding the

Elementary School Report Card, 2010).

WCPSS documentation provides teachers some guidance for determining what

constitutes a level 1-4. Table 4.15 displays the WCPSS' guidelines and teacher's

understanding by standards-based grading performance level.

Table 4.15

WCPSS' Guidelines and Teacher Reported Understanding by Standards-Based Grading Performance Level.

Level	WCPSS Documentation	Teacher Reported
1	Insufficient performance of targeted grade level standards with support: indicates that the student has not yet met grade level expectations set by the state and that a student does not have the necessary skills and concepts to be successful in the next grade or quarter. This should alert parents that close communication is needed for further student support (p. 1).	• "…[level] 1 means they can't do it complete, even with support" (Focus Group 1, teacher 2, March 28, 2011). • "they don't get it at all" (Focus Group 2, teacher 2 & 5, April 1, 2011). • "Even with your help…they just can't do it" (Focus Group 2, teacher 2, April 1, 2011).
2	Inconsistent and needs support to meet targeted grade level standards: indicates that the student has not yet met grade level expectations set by the state and that a student does not have the necessary skills and concepts to be successful in the next grade or quarter. The student still needs teacher support to be successful with the concept or skill; the student is not yet independent. This should alert parents that close communication is needed for further student support (p. 1)	• "[level] 2 with support, inconsistent" (Focus Group 1, teachers 1 and 2, March 28, 2011).
3	Demonstrates proficiency of targeted grade level standard: represents the student meeting the grade level expectations set by the state and indicates that a student has the necessary skills and concepts to be successful in the next grade or quarter (p. 1)	• "[level] 3 they can do it with some teacher support sometimes" (Focus Group 1, teacher 2, March 28, 2011). • "A [level] 3 is grade level" (Focus Group 5, teacher 11, April 13, 2011).
3*	Demonstrates proficiency of targeted grade level standards with evidence of application over time: represents the student meeting the grade level expectations set by the state with evidence of application and that a student has the necessary skills and concepts to be successful and confident in the next grade or quarter. Example: A third-grader clearly understands the concept of multiplication, can recall the facts quickly, and can use the multiplication to solve everyday problems. The teacher has collected evidence of this mastery and recorded it on the student's math profile (p. 1)	• "Well the [level] 3* is really, they have some 3s and some 4s. That's how you get the 3*. So it's not that they're trying to reach a 3* achievement level, like they're doing some [level] 4 work" (Focus Group 1, teacher 2, March 28, 2011). • A [level] 3* is…you're not necessarily giving me anything, like more than you could, but you clearly get this and can do every one with no problem (Focus Group 2, teacher 3, April 1, 2011).
4	Extends targeted grade level standards: represents the student exceeding grade level expectations set by the state and that a student will be successful in the next grade or quarter and whose curriculum may be enriched (p. 1)	• "Consistently going above and beyond" (Focus Group 4, teacher 1, April 7, 2011). • "[level] 4…says they extend and apply it in other [situations] ..That independently goes beyond and applies it and extends it (Focus Group 1, teacher 3, March 28, 2011). • "[level] 4 they take it and just explode with it" (Focus Group 1, teacher 2, March 28, 2011).

Data Source: WCPSS Documentation from Understanding the Elementary School Report Card, 2010 and Teacher's quotes from Teacher Focus Groups.

Level 1. Under WCPSS' standards-based grading level 1 indicates a student has "Insufficient performance of targeted grade level standards" (Understanding the Elementary School Report Card, 2010, p.1). Teachers reported that a level 1 meant students did not understand the material, as several teachers stated a level 1 means "they don't get it at all" (Focus Group 2, teacher 2 and teacher 5, April 1, 2011). Another teacher elaborated "even with your help…they just can't do it" (Focus Group 2, teacher 2, April 1, 2011). Still another teacher stated "I consider [level] 1 no evidence" (Focus Group 2, teacher 6, April 1, 2011). An English language learner who was unable to read any English was provided as an example of a student performing at a level 1.

One teacher stated that she felt there was an emotional element to her grading that often prevented her from assigning students a level 1. Indeed, she stated:

I think one thing that is difficult [is] separating the emotional aspect. So, if you have a...below grade level performer…I don't think we give out very many [level] 1s even if they deserve 1s just because of that emotional piece, and that is not sticking with the standard. But I think it's really difficult and defeating for the child to always receive 1s, so sometimes I think there's a little bit of inflation on the lower end because of that (Focus Group 3, teacher 5, April 4, 2011).

Level 2. Standards-based grading performance level 2 indicates students can demonstrate the objective; however, they require teacher support in order to do so. A teacher reported "a [level] 2 becomes that inconsistency where sometimes they show you they get it and then they show you other times that they don't understand it" (Focus Group 2, teacher 3,

April 1, 2011). Teachers also reported the meaning of level 2 is not always clear to parents

who may view a level 2 as failing. As described by one teacher:

It's hard for parents to accept it's okay for your child to get a [level] 2, it just

means they're just needing some kind of support. I think a lot of parents think-

'oh my gosh, my child has a [level] 2'…I mean, I had a parent say 'I make

him do his homework and I rip it up and make him do it again,' and like he

thinks that the [level] 2 is just, it's just awful to be a [level] 2 (Focus Group 1,

teacher 2, March 28, 2011).

Teachers reported the struggle deciding between a level 2 and 3 for students whose

performance was inconsistent. This struggle was described by one teacher "I battle with that

when I look at a kid and…they're a [level] 3 and a [level] 2; 50-50 and I have to think you

know, you use your best judgment" (Focus Group 2, teacher 4, April 1, 2011). While another

teacher described it in these terms "or, you [have] got two kids who have, who are on that

kind of borderline between a [level] 3 and a [level] 2, and you want to move [one student] up

and one down" (Focus Group 2, teacher 6, April 1, 2011). During this focus group another

colleague described her struggle stating "I sometimes I sit there like well why, and I have

to…think to myself, 'well, why this one [moved] to [level] 3, why this one to [level] 2'…if

this one [student] is in between, but they are working a lot more independently than this one,

then that one's going to be a [level] 2 and that one's going to be a [level] 3" (Focus Group 2,

teacher 3, April 1, 2011).

Level 3. One teacher defined level 3 in these terms "if they're meeting all those goals

[on the profile card], you know and they're meeting them, it's a [level] 3" (Focus Group 5,

teacher 11, April 13, 2011). However, some of her colleagues suggested students received

greater latitude in terms of the number of objectives students were able to master and still

receive a level 3. Some teachers described the requirement for students to receive a level 3

was "a [level] 3 means you can still be slightly inconsistent, but for the most part…They're

getting it" (Focus Group 2, teacher 2, April 1, 2011). The ability of a student to demonstrate

mastery through multiple observations was described by one teacher who shared her

definition of a level 3 in these terms:

> But at the same time, if I've got a kid who's struggling and getting a [level] 2,
>
> and then a 2, and then a 2, and at the end of the quarter, I see him stop and
>
> getting a [level] 3 and a 3, well, they're showing me they can do that. And
>
> regardless of what their previous skill level was, that's the snapshot right now,
>
> that they can do that, so I have to look in, I have to pull him aside and get
>
> some other data and see if, like even if they have more [level] 2s than 3s that
>
> at the end of the quarter, they can do an objective. Then I'd give him a [level]
>
> 3 absolutely (Focus Group 2, teacher 6, April 1, 2011).

She elaborated on this concept of determining a student's subject grade by providing an

example:

> Well, even…the multiplication fluency…let's say when we're doing that unit,
>
> the kid really, really struggles and gets [level] 2s and 3s and then, you know,
>
> the light bulb comes on and once we move on into fractions and then he's
>
> showing me, hey, I can, you know…kick it in the butt and around the world,
>
> and then he's showing me his evidence, even though it's informal, at the end

of the quarter, he's got that mastered, and I'm confident he knows all of his

facts (Focus Group 2, teacher 6, April 1, 2011).

However, this teacher's colleagues reported they would assign a student who took

multiple attempts to demonstrate mastery a level 2 due to the effort it took to get them to

grade level. As one teacher described "we've practiced it this many times and they had a

[level]2, a 2, a 2, and then two [level] 3s, I'd still mark him as [level] 2. I would still mark it

a [level] 2 because he struggled with it so much in the beginning" (Focus Group 2, teacher 3,

April 1, 2011). Another teacher confirmed "I'd mark him as a [level] 2" (Focus Group 2,

teacher 2, April 1, 2011). Still another stated "I'd mark him as [level] 2…They have to have

so many repetitions to get it. They have to have that extra practice. And you're sensing the

entire quarter" (Focus Group 2, teacher 4, April 1, 2011). Another teacher added:

> And, it also depends on how much you do it. Like if you do it, like you said, if
>
> you've grading his multiplication plus multiplication through fractions, and
>
> even if there are more [level] 2s…I mean it's not 50-50 then they have to get a
>
> [level] 2. But if it's pretty close to like 50-50, then I would be okay with
>
> giving a [level] 3…If you had a lot of evidence to support…they can do it
>
> (Focus Group 2, teacher 5, April 1, 2011).

However, her colleague reiterated "if I'm getting consistent evidence, even after he's gotten

all those [level] 2s, it's still going to be a [level] 3, absolutely" (Focus Group 2, teacher 6,

April 1, 2011). Still another teacher's comment captured how she used multiple observations

to determine a student's grade; she reported considering:

How many times you see them master it. I mean if you've covered that

objective and you've done four or five activities…[that] have to do with that

objective, if they got it four out of five times, then I would say they are a

[level] 3. If they only got it one or two, and I was helping them, then they're a

[level] 2, if they never got it at all, then, I mean, they're a [level] 1 [be]cause

they don't understand that objective (Focus Group 5, teacher 4, April 13,

2011).

In order to receive a level 3 students must meet the standard. As one teacher stated "you're

looking at did they master the standard? Did they, if they did, that is a [level] 3…can they

prove that they can, [that] they have mastered that standard" (Focus Group 5, teacher 4, April

13, 2011).

Level 3*. At the opposite end of the level 3 continuum teachers discussed level 3*.

One teacher explained "well, I like the three-plus [3*] because I have a lot of kids who can

get a [level] 3. Yeah, they can do it, they might have missed some, but a [level] 3* is…you're

not necessarily giving me anything…more than you could, but you clearly get this and can do

every one with no problem" (Focus Group 2, teacher 3, April 1, 2011). While another teacher

stated "[level] 3* means they're consistently…doing it well and then there's those times

when maybe they elaborate more; do something that really stands out" (Focus Group 2,

teacher 3, April 1, 2011). Level 3* was reportedly reserved for student report cards and not

used on daily grading, as indicated by a teacher's comment that 3* were used "only on the

report card; not on their daily work or tests" (Focus Group 4, teacher 4, April 4, 2011).

Level 4. Level 4 indicates a student "extends targeted grade level standards" (Understanding the Elementary School Report Card, 2010). Thus, teachers described how level 4 requires students not to simply prefect the objective, but to demonstrate a higher understanding of that objective. As one teacher shared "[level] 4…says they extend and apply it in other [situations]" (Focus Group 1, teacher 3, March 28, 2011). Moreover, she clarified that students who receive a level 4 can demonstrate a "deeper understanding"; this is evident in her assertion "I think of a [level] 4 as that deeper understanding that you really do…[understand]; in the reading, you really can answer those digging deeper questions of the author's and why do you feel that [way]" (Focus Group 1, teacher 3, March 28, 2011). As explained by another teacher the requirement that, as with other performance level grades, level 4 work needs to be observed more than once. This was reflected in her comment:

It's all about applying what you've learned. It's all the application, going above and beyond, and it has to be consistent to have a level 4. To be a level 4 it can't just be a one time, 'oh, I did a level 4 activity,' that means they're going to get a level 4 on their report card. It doesn't work that way. They have to continually be in every, or most objectives, above and beyond…what's expected of them for the curriculum for a level 3 (Focus Group 4, teacher 3, April 7, 2011).

Deeper Understanding. The idea that level 4 requires students to demonstrate a "deep understanding" of an objective by applying it across the curriculum was described by teacher participants. One teacher's comment captured this sentiment stating "…a [level] 4 is above that [the standard], if they're go over and beyond, if they're thinking deeper, if they're being

more creative; if they're being evaluative; if they're analyzing" (Focus Group 5, teacher 4,

April 13, 2011). Furthermore, teachers reported that students with additional background

information did not automatically mean the student was capable of level 4 work. An example

was provided by a teacher who stated:

> I have that example in my classroom where this one little boy who's had
>
> many, many, many experiences so he appears…to be above…When you
>
> really start asking those deeper questions, he can't answer those. So
>
> experience wise, he could be a [level] 4 but really understanding it and
>
> extending it, he doesn't (Focus Group 1, teacher 1, March 28, 2011).

Some teachers interpreted "extends targeted grade level standards" to mean working above

their grade level (Understanding the Elementary School Report Card, 2010). This

interpretation was evident in one teacher's comment "I've had a few girls this quarter in

writing get a [level] 4 just because, I mean, their writing things that are well beyond third

grade" (Focus Group 2, teacher 2, April 1, 2011). While a third grade teacher reported "…if

we think about what we give our kids for [level] 4s, we think about those kids, we're putting

them in fifth grade reading books. You know, we're putting them over a grade ahead of

where they're supposed to be (Focus Group 2, teacher 4, April 1, 2011). Still another third

grade teacher shared "…I think a [level] 4 is where they're able to do the more challenging

work…not…necessarily the third grade level work (Focus Group 2, teacher 3, April 1, 2011).

This idea was reiterated by another teacher who stated "well, I think the standard is at first

grade, you're [book level] 15/16 at the end of the year, so if you're above that standard, then

you are performing above grade level expectations; you are above and beyond" (Focus

Group 3, teacher 8, April 4, 2011). However, a colleague also pointed out that using the next grade level to indicate level 4 was problematic since the objective was mostly not a current grade level expectation. This idea was captured when she questioned her colleague's assertion "but where does it say on that profile? This is where…[it] get[s] tricky. Where does it say…what standard, what objectives are they showing level 4 thinking on?" (Focus Group 3, teacher 5, April 4, 2011).

Difficulty Determining Level 4. Still other teachers responded that it was difficult to define a level 4. In fact, teachers reported that level 4s were "hard" to give. As described by one teacher "[level] 4 is very difficult to decide, too because…my idea of above and beyond is different than someone else's so that's, I think. I mean, [level] 4 I think is the hardest grade to give (Focus Group 2, teacher 2, April 1, 2011). She reported communicating this to parents "I start telling my parents when they come into third grade, it's very hard to get a [level] 4" (Focus Group 2, teacher 2, April 1, 2011). Another teacher shared "I don't know about for you, but defining a [level] 4 is a real big problem, or that's where we have a lot of differences I guess" (Focus Group 3, teacher 5, April 4, 2011). She elaborated why it was so difficult to determine a level 4 stating "I think it's hard because a [level] 4 implies higher level thinking skills, and it's hard to measure kids on that especially because…what is higher level, just because you can do more of something doesn't mean that you're a [level] 4" (Focus Group 3, teacher 5, April 4, 2011).

Scarcity of Level 4. Indeed, teachers reported that level 4s are given out sparingly. The lack of opportunity to demonstrate level 4 would help account for the scarcity of level 4s. Teachers also described the lack of opportunity to demonstrate level 4 work "it's always

hard to document it [be]cause a child may be able to do it, but they may not be able to have

the opportunity to show you, to do it…to say 'hey, I've got that [level] 4" (Focus Group 1,

teacher 1, March 28, 2011). Furthermore, teachers described how students must utilized

opportunities to demonstrate level 4 work in order to receive a level 4. As described by one

teacher:

> …you know, a super-bright kid who could not produce the work, that kid
>
> might be a [level] 4. If that child does not produce a [level] 4 work…we can't
>
> give them that [level 4]. But you know, they might even not try on certain
>
> assessments, but if they're, you know that they're a [level] 4, and you hear it
>
> from them…they get a chance at least to maybe show that. Whereas before,
>
> they might not. I don't know. I go back and forth on these. It's a hard question
>
> (Focus Group 5, teacher 5, April 13, 2011).

The inability to create opportunities for demonstrations of level 4 work was attributed to the

lack of materials provided by WCPSS and the lack of time to cover the entire curriculum. In

response to why opportunities were not allows provided one teacher expressed "we have to

create it all" (Focus Group 2, teacher 5, April 1, 2011), while her colleague responded it was

due to difficulty "fitting everything in" (Focus Group 2, teacher 3, April 1, 2011). The lack of

time was also reiterated by another teacher who shared "third grade has so many new

objectives, that trying to get in the extensions on top of teaching them all their new material

is really hard. There's just not enough time in the day" (Focus Group 2, teacher 5, April 1,

2011).

Another teacher reported students in the lower grades may have additional difficulty displaying level 4 due to their developmental level "I think in the lower grades it's a little harder to get that opportunity to go beyond because they're just…barely getting there to begin with. They're so literal. I just find it really hard [in] the lower grades, especially the K-1, to really offer that to them [level 4 opportunities]" (Focus Group 1, teacher 2, March 28, 2011).

The ability to explain a level 4 to parents was also discussed; as reported by one teacher "I see your child doing it independently, but I don't see them applying it across the curriculum" (Focus Group 1, teacher 3, March 28, 2011). The scarcity of level 4s in terms of teachers' ability to provide opportunities for level 4 work was discussed in greater detail and is the focus of the next section.

Providing Opportunities for Level 4 Work. Three teachers described the informal expectation that level 4s should be scarce. One teacher recounted "that was actually said to me one time, well, that very few children get [level] 4s" (Focus Group 1, teacher 2, April 1, 2011). While another stated they encountered "teachers that say 'you should never give a [level] 4' because, I mean, sometimes you hear that" (Focus Group 1, teacher 1, March 28, 2011). Still another teacher expressed "I was told that at one point, in Wake County, that you really shouldn't give [level] 4s" (Focus Group 1, teacher 3, April 1, 2011). However, her colleague was quick to point out this message was not sent through the instructional resource teacher at their school.

In addition to the expressed ideology regarding the scarcity of level 4s, several teachers also stated that in practice level 4 were uncommon. Indeed, one teacher stated "I'll

be honest, I haven't given very many [level] 4s in my life" (Focus Group 1, teacher 2, April 1, 2011). Furthermore, teachers discussed the difficulty in providing students opportunities for level 4 work. As reported by one teacher "I feel like with every objective you teach in all the different subject areas, do you always have that, I mean, not just a formal assessment, but to give that opportunity to every child and be able to see it with every child. I think that's where it becomes challenging" (Focus Group 1, teacher 1, April 1, 2011). Another teacher described her difficulty asking "the deeper questions" and thus providing and observing level 4 work for all the objectives (Focus Group 1, teacher 2, April 1, 2011). Still another teacher stated "I know that when I came…I took the class short session at that continuing thing [WCPSS' Continuous Improvement Conference], one of the things they said was that you should always offer questions that will allow for a [level] 4, but you can't always do that" (Focus Group 1, teacher 3, April 1, 2011). Although WCPSS training clearly indicated teachers were required to provide opportunities for level 4 work she found this difficult. This difficulty was shared by one teacher who stated "but you can always [provide a level 4 opportunity], I mean, I may not always be able to offer a question, but can I give every child a chance to answer? (Focus Group 1, teacher 2, April 1, 2011).

Reasons for the Lack of Level 4 Opportunities. Although time was given as the primary reason for the inability to offer students level 4 opportunities, a lack of materials and guidance from WCPSS was also given as a limitation. According to one teacher "there was nothing that the County gave us, [be]cause the County just looks at level 3, if they're on grade level…they stop there; it was up to us to come up with the above and beyond" (Focus Group 4, teacher 3, April 7, 2011). In fact, at one school the teachers created extensions for

students to demonstrate level 4 work through a collaborative process which included resource teachers (i.e., Academically Gifted and Coordinating teachers).

However, teachers also expressed some difficulty developing materials for all subject areas. Teachers within this focus group stated they had created "authentic assessments" for use in the classroom which provided level 4 opportunities (Focus Group 4, teacher 3, April 7, 2011). Teachers reported creating level 4 opportunities in reading, math, and writing; however creating opportunities in social studies and science where reportedly more difficult. Indeed, one teacher shared "it's harder in some areas than others. I might just be talking through my grade level, but material wise social studies and things like that. You just don't have any materials, but that's where the Internet…and things like that come in so, it's just not enough" (Focus Group 5, teacher 10, April 13, 2011).

Teachers also recounted that students did not always take advantage of the level 4 opportunities that were presented to them. One teacher described her challenge explaining to parents why the student did not receive a level 4 "their child is choosing…not to do the extensions. We can...encourage them, we can provide the materials, we can give them the opportunities; however, it is their choice" (Focus Group 4, teacher 2, April 7, 2011). Yet another teacher mentioned only having a few students willing to attempt the level 4 opportunities; she stated "I have my class of 21[students] and I only have three kids who really want to put the time into it, so those other kids are sitting there like I'm done [be]cause I don't really care about it. And those other three kids are working, working, working" (Focus Group 5, teacher 4, April 13, 2011). While another teacher mentioned…[that] having students not attempt the level 4 opportunity presented on the assessment enable[d] her to

explain to parents why their student did not receive a level 4 "having those challenging questions on assessments to be able to show parents well…if they weren't able to answer this question, correctly…it doesn't show application, so that is not a level 4" (Focus Group 4, teacher 3, April 7, 2011).

    Student Created Opportunities. Teachers also expressed the idea that students should be responsible for creating their own level 4 opportunities. One teacher inquired "should sometimes the child create their own opportunity? I mean should they take it and extend it on their own? I mean, I know you need to give opportunities sometimes, but that child that can take it and just go with it" (Focus Group 1, teacher 3, April 1, 2011). Another teacher provided an example of a student who created his own level 4 opportunity:

> Like I had a student once in science, we were doing balance and motion and
>
> there was an activity where you make the tops, and we did the activity, and
>
> then the next day he came in and he like went home and made three or four
>
> tops out of things he could find around his house…I didn't ask him to do that.
>
> It's just something he decided he wanted to do because he enjoyed it. Like he
>
> created that experience for himself (Focus Group 1, teacher 4, April 1, 2011).

Indeed, one teachers reported she was reluctant to give a student a level 4 for work that was assigned rather than a student created opportunity. She declared:

> Wow. I find it hard. Like if I send my higher readers that have the option to do
>
> a book report. Well I gave that to them…they didn't go home and write a
>
> report on a book that they read because they… It's a very hard thing to decide.
>
> Should I give him the [level] 4 because yes, they did it, I mean, I told him to?

Or are they going to do it on their own? I think that's truly a [level] 4 when

they do it on their own (Focus Group 1, teacher 2, April 1, 2011).

Examining WCPSS' definitions, teachers' understanding of those definitions, and

thereby the implementation of standards-based grading performance levels has provided a

greater understanding of WCPSS' standards-based grading system. Another way of

examining WCPSS' standards-based grading is in comparative terms; thus, the next section

examines how this standards-based grading differs from the traditional A-F grading system.

Comparing Standards-Based Grading to A-F Grading Scale

Examining the basic tenets of WCPSS' standards-based grading through a

comparative lens enables a deeper understanding of how this grading system is

fundamentally different from traditional A-F grading systems.

District Guidance. The district offered some guidance in terms of understanding the

difference between standards-based grading and traditional A-F grading. In *Packin' up: A*

Guide to Middle School Transition, WCPSS described the distinction between these grading

systems to ease the transition from standards-based grading to the A-F letter grading system

utilized at the middle and high school levels. As described within this resource "letter grades

are quite different from standards based grading" (Packin' up, 2010). Table 4.16 displays

WCPSS' guidance regarding the distinction between these grading systems.

Table 4.16

Comparison between WCPSS' Standards-Based Grading and A-F "Letter" Grading

Standards-Based Grading	A-F "Letter" Grading
Grades	
- students are assessed as being at, above, or below grade level using the 1, 2, 3, 3* or 4 number system. - Work habits and conduct grades are separate from the student's content proficiency. - Students are not given a letter grade for assignments or tests. - Rubrics are used to assess whether or not the student is performing at, above, or below grade level, and a level number is given.	- The letter grade system is used to measure how well a student has mastered a specific objective, rather than being assessed on broad concepts over time. - This is often shown in a percentage of the questions that the student got correct. - Most middle schools recognize students who have made the honor roll. An honor roll is a list of students who have made either all A's (the A honor roll) or have made a combination of all A's and B's (the AB honor roll) on their report card during a quarter marking period.
Homework	
- Homework at the elementary level is used for skills practice and is an indicator of understanding of concepts. - It [homework] is not supposed to be used to determine a student's level of proficiency.	- Homework at the middle school level most often is graded and averaged in as a portion of a student's grade. - This must be explained to rising 6th graders so they understand that they will be held accountable for correctly completing homework, and that their grades may drop if they consistently do not turn in completed homework in a timely fashion.

Packin' up: A guide to middle school transition (2010). *Educators Resource Guide* WCPSS Office of Counseling and Student Services. Wake County Public School System: Raleigh. Retrieved from www.wcpss.net/planning-guides/transition_guide_6_graders.doc

Teachers' Interpretation of the Grading System Comparison. In addition to the

district's guidance with distinguishing standards-based grading from the A-F grading system,

teachers within the five focus groups weighed in with their interpretation of this difference.

According to teachers' discussions regarding standards-based grading and its relation to the

traditional A-F grading scale most teachers felt these grading systems were not comparable; however, there were some teachers who saw a connection.

Making a Comparison. Some teachers reported seeing a connection between these grading systems. Indeed, one teacher stated "I believe that there's this…subtle or this great connection between the 1-4 standards and the A-F grading scale because sometimes, I'll be honest, I do use numbers…to help me figure out who's going to get a [level] 4 or a [level] 3" (Focus Group 3, teacher 7, April 4, 2011) while another teacher shared "it just feels like it does compare in a lot of ways, even though it's not supposed to" (Focus Group 1, teacher 1, March 28, 2011). Still another teacher offered this comparison "but I think that when you're a [level] 2 it's almost like being a B. It's not that you can't do it. It's just you need a little extra help" (Focus Group 1, teacher 2, March 28, 2011). Additional teachers shared "I think a [level] 3* is the closest to an A" (Focus Group 2, teacher 1, April 1, 2011), and "[level] 4 is the A" (Focus Group 5, teacher 9, April 13, 2011). Although some teachers offered comparisons between traditional A-F grading and standards-based grading, most teachers stated these grading systems were not comparable.

Apples and Oranges. While some teachers attempted to compare the two grading systems one teacher shared the difficulty of making a full comparison stating "…the [level] 3* would be compared to an A, but a [level] 4 would be what?" (Focus Group 2, teacher 3, April 1, 2011). Still other teachers asserted that a comparison could not be made. As captured by teachers' statements:

- "Well, I don't think they can [compare] because a [level] 4 is above and beyond" (Focus Group 2, teacher 3, April 1, 2011).

- "…it's like comparing apples and oranges" (Focus Group 4, teacher 2, April 7, 2011).

- "you can't do it, I mean, because I was taught…it's not the same " (Focus Group 4, teacher 1, April 7, 2011).

- "…it's not the same" (Focus Group 4, teacher 3, April 7, 2011).

- "I don't think it correlates at all" (Focus Group 5, teacher 1, April 13, 2011).

- "It doesn't [correlate]" (Focus Group 5, teacher 2, April 13, 2011).

- "I don't think it's comparable" (Focus Group 5, teacher 5, April 13, 2011).

- "…it's not the same thing" (Focus Group 5, teacher 7, April 13, 2011).

Teachers explained the inability to compare standards-based grading to an A-F grading system was due to standards-based grading being a mastery grading system based on the students' mastery of the objectives within the NCSCS while traditionally an A-F grading system was based on the percentage of the points a student received within the course (usually a combination of tests, assignments, homework, projects, etc). Indeed, a primary distinction between standards-based grading and A-F grading systems discussed was that the A-F grading practice relies on percentages while standards-based grading does not. This distinction was captured simply by one teacher's comment "[be]cause A-F is all percents. We don't do percents" (Focus Group 2, teacher 3, April 1, 2011). Her colleague elaborated "we don't average anything out. I mean, the most you average is…in your grade book, if you have like [levels] 3, 3, 3, 2, 2 you…decide 'okay, is that a [level] 3 or [level] 2?' But there's not a… score average, so [with] A-F…that's what that is made for" (Focus Group 2, teacher 3, April 1, 2011). Another teacher articulated her understanding of the distinction between these grading systems stating:

I've always understood it where standard's based grading is based on the

objectives. So you may miss four on a test, but it could be on all one

objective. So it's not like you did horrible on the whole thing, it's just. It

shows you more where you're struggling. Whereas the A-F, just the regular

straight percentage grade, doesn't really tell you what you're struggling with.

It's just, you missed four out of ten, that's all you get. And so, not saying that

teachers who do grade that way don't go back and look to see what [was

missed]" (Focus Group 2, teacher 5, April 1, 2011).

While most teachers expressed a clear distinction between standards-based grading and A-F

grading, their perceptions of parents' understanding was that parents often did not

comprehend the difference between these grading approaches.

    Teachers' Perceptions of Parents' Understanding of Comparison. Teachers

recounted how parents often viewed standards-based grading in comparison to an A-F

grading system. As one teacher stated "I think it's in a parent's mindset a [level] 2 is a C

instead of a D. There's not really a, I mean, they look at it as that's a C, or a [level] 3 [is a B],

and a [level] 4 is an A" (Focus Group 1, teacher 1, March 28, 2011). Another teacher

reiterated how parents view standards-based grading "they [parents] say, 'okay a [level] 3

that's an A or a B', so they want it to [compare]" (Focus Group 1, teacher 4, March 28,

2011). While another teacher shared "A [level] 3…they think it's a C" (Focus Group 5,

teacher 6, April 13, 2011).

    Teachers reported that parents make this comparison due to their familiarity with the

A-F grading system. As one teacher shared "that's what they're used to…they're used to it

being an A, B, C, D… a [level] 3 is passing, then a [level] 3 must be like an A or a B" (Focus

Group 1, teacher 4, March 28, 2011). While another teacher stated "…because, at least here,

when we were kids, it was A, B, C, D and F, it's very hard for a parent to see a [level] 3

sometimes, and you have to kind of explain to them that, I mean, I find myself explaining to

them that, that a [level] 3 is good" (Focus Group 5, teacher 1, April 13, 2011). Thus, parents

equate a "[level] 2 is kind of like a C, and if they have a [level] 1, then that's like a D" (Focus

Group 1, teacher 4, March 28, 2011). Still another teacher stated "well, I have parents

thinking a [level] 1 is an F" (Focus Group 1, teacher 2, March 28, 2011). In addition to

discussing how parents seek to understand standards-based grading in comparative terms,

teachers also shared that some parents did not fully comprehend why the district was utilizing

this grading method. This sentiment was capture in one teacher's comment:

> …parents have a hard time understanding it [standards-based grading], just in
>
> talking with parents in the community. Parents that have been getting, this is
>
> all they've known. You know, we have the parents who've started out with
>
> the A's and B's and then have had to transition over to this, and they still
>
> don't quite know why we're doing this. 'Why can't we have the A,B,C's that
>
> I've known all my life' (Focus Group 1, teacher 3, March 28, 2011).

Teachers also shared the most difficult concept for parents to understand was the distinction

between an A and a level 4. One teacher articulated the struggle parents experience "…they

do think, 'my child's not getting a [level] 4, they're not doing [their best]', because, you

know, parents like to talk about 'my child is a straight-A student.' They do, and this…pulls

the rug out from under them" (Focus Group 1, teacher 3, March 28, 2011). The reason given

for this lack of understanding is that parents fail to understand that a level 3 means mastery

and "that child has done exactly what they're supposed to do if they have [level] 3s" (Focus

Group 1, teacher 3, March 28, 2011). A third grade teacher attempted to explain that a level 3

means the student is reading a third grade reader and "they did great at it" (Focus Group 2,

teacher 4, April 1, 2011). Thus, a level 3 indicates a student has met the objectives within the

subject and as a result has met, not exceeded the expectations for that subject. The idea that a

student can meet the expectations and not receive the highest mark possible was described as

a point of confusion for many parents. This was reflected within a teacher's comment "I

think some parents on the level 3 and level 4 are the same way. No matter how often you

explain or you try to get them to understand, that [level] 4 is still [considered] an A in their

head, and they're going to push that little kid who is…perfectly fine into those [level] 4s…"

(Focus Group 3, teacher 6, April 4, 2011). As reiterated by another teacher:

> So a hundred should be a [level] 4 in their mind. Well, but, of course, as we
>
> well know, a hundred would be meeting their, the curriculum….skills or the
>
> objective. But that doesn't mean they're going above and beyond to make that
>
> [level] 4, so parents automatically say, well they don't get anything wrong,
>
> that's a [level] 4 (Focus Group 4, teacher 2, April 7, 2011).

The predominate response teachers gave when were asked how they would respond to

a parent's request to compare standards-based grading to an A-F grading scale, was that they

would explain that a comparison was not possible and refer to the profile card to review the

students' performance on the objectives within a subject. This is captured in teachers'

statements:

- " Well, I think we all say we don't…We don't compare it…Get it out of your brain. It doesn't compare (Focus Group 2, teacher 3, April 1, 2011).

- "Well, first I'd tell them you can't compare" (Focus Group 4, teacher 2, April 7, 2011).

- "You can't compare to an A and a B" (Focus Group 4, teacher 3, April 7, 2011).

- "I just tell them that if they're meeting the benchmark, and if I've seen them consistently meeting it, you know, at least three times, that's a [level] 3 [and] a [level] 4, of course, consistently and above and beyond" (Focus Group 4, teacher 1, April 7, 2011).

- "Pull out the profile card" (Focus Group 2, teacher 1, April 1, 2011).

- "This is the profile card" (Focus Group 2, teacher 2, April 1, 2011).

- "I go through and I show them [parents] all the objectives that they got grades on and we go through it… It shows them how we got that overall grade" (Focus Group 2, teacher 5, April 1, 2011).

   Comparing A to a Level 4. Teachers explained the inaccuracy of comparing an A with a level 4. When posed the question, *Can a 1-4 standards-based grading scale be compared with an A-F scale?* Teachers responded:

- "I don't think they can because a [level] 4 is above and beyond" (Focus Group 2, teacher 3, April 1, 2011).

- "No, I don't think an A equates to a [level] 4 at all" (Focus Group 2, teacher 3, April 1, 2011).

- "I don't think you can [compare], [level] 4 is not an A. I think there's nothing in the A-F scale that means what a [level] 4 means" (Focus Group 3, teacher 6, April 4, 2011).

Furthermore teachers explained that an A traditionally signified students' were meeting, not exceeding, all course expectations. As shared by one teacher "I mean, when I was in school, an A wasn't above and beyond" (Focus Group 2, teacher 3, April 1, 2011). While her colleagues added an A signified "you did really well at it" (Focus Group 2, teacher 1, April 1, 2011), "you can do [it]" (Focus Group 2, teacher 5, April 1, 2011). Still another teacher shared:

> …the 1-4 system is about…the kind of thinking that you are [doing] and your ability to perform…whether or not you can meet the standard and then as far as the level 4 goes…are you doing that level 4 thinking and are you showing that level 4 thinking, but I think you can easily make an A, if making an A means completing this assignment or I'm getting all these answers right, I don't think you can relate that to a [level] 4" (Focus group 3, teacher 5, April 4, 2011).

While an A indicates a student has met course expectations, a level 4 signifies the student is capable of demonstrating understanding "above and beyond" expectations. This concept was described by one teacher who shared "…we know what a [level] 4 is, and it goes extra and beyond" (Focus Group 4, teacher 1, April 7, 2011).

Teachers' Preference for Standards-Based Grading. One concept that teachers shared regarding standards-based grading was "it's harder, but it's better" (Focus Group 5, teacher 4, April 13, 2011). One of her colleagues articulated her preference stating "[A-F grading] is about more than just grades, because there's work habits involved. And there's a kid who can be super bright or grade[well] on a test through an A,B, C, D, F [scale]…they

get an A, but if they don't work in the classroom [they do not]" (Focus Group 5, teacher 5,

April 13, 2011).

Overall, teachers reported a preference for standards-based grading over traditional

grading; some of their comments alluded to the idea that standards-based grading is a better

reflection of a student's ability. Thus, to investigate this further the next section considers

teachers' assessment of the capability of standards-based grading to reflect students' abilities.

Standards-Based Grading Representative of Students' Ability

The separation of homework from the content grade is one of the key elements within

a standards-based grading system. This is done with the intention that the resulting content

grade will be a more accurate reflection of a student's ability within the content area. When

posed the question whether standards-based grading was a true representation of a student's

abilities one teacher responded "I think it's a pretty good representation. I mean, you can go

through all of the objectives and say which objectives they don't [know and] which they do

know. You know, I just think it's a pretty clear picture" (Focus Group 2, teacher 3, April 1,

2011). Some teachers responded they saw standards-based grading as a better representation

of a student's abilities than traditional A-F grading. This sentiment was captured in teacher

comments such as "I think standards-based would be better" (Focus Group 4, teacher 3, April

7, 2011) and "standard-based is better than that [A-F grading]" (Focus Group 4, teacher 1,

April 7, 2011). Still another teacher responded "…strictly saying based on third quarter, this

is what they should know, can they do it on their own, can they do it with help, can they not

do it, then I think it's a true representation" (Focus Group 1, teacher 4, March 28, 2011).

While another teacher shared that the multiple demonstrations of a student's performance

required with this grading practice resulted in a more accurate picture of the student's abilities:

> I think that it is a true representation because you're able to take everything into account. When you're looking at an A, B, C, and D, you're looking at grades on tests or grades on assignments. Whereas a [levels] 1, 2, 3, and 4, you're taking into consideration the conversation that they're having with you, and other kids in the classroom. You're taking into consideration the partial answers that yes, they got the first two steps of this right, but they just missed the third step. I feel like you can take more of everything that kid does into their grade than other [grading systems]… (Focus Group 5, teacher 3, April 13, 2011).

Another way in which this teacher reported standards-based grading was representative of a student's abilities was the fact that standards-based grading is a mastery grading system. This is captured by her statement:

> Well…everybody has kids who start out at the very first of the quarter, and they are making a [level] 1 or 2, and they really don't get it. But then, by the end of the quarter, they are getting it; they are a [level] 3. But if you were averaging that, like we did with percentages and A, B, C, D, E's, then they would probably end up, at the best a C. [If] they'd been getting zero's, [they would] end up with a D or maybe an E. Whereas now, they would get a [level] 3, they would be meeting the standards. They would be right, which that's fair (Focus Group 5, teacher 3, April 13, 2011).

Concerns Regarding Reflection of Students' Abilities. Although teachers reported positively regarding the capability of WCPSS' standards-based grading system to reflect students' abilities, there were some concerns regarding fidelity to implementation, the combining grades to create a final grade, and the fact that growth was not captured.

Fidelity of Implementation. In order to assess any initiative the level of implementation must be considered. An initiative must be implemented following its specifications (i.e., with fidelity) in order to assess whether the initiative has met its intended goals. Regarding fidelity of implementation, one teacher expressed concern with teachers properly implementing this grading system rather than with the model itself. This concern was evident in one teacher's comment:

> I feel like it kind of, it depends on how it's [standards-based grading] being used…If you're truly abiding by the standards-based part of it, and you as a tea-[teacher], you know, the person who is giving the grade based on what you observe. If you 're sticking to that, and I think, sure, it could be [a true reflection of a student's ability] because that's what it's supposed to be. It's supposed to be a representation of their abilities. But if you're not doing that, and you're not giving them multiple opportunities to show you in multiple different ways, then it's not necessarily going to be that. So I think…it's really grader dependent (Focus Group 3, teacher 5, April 4, 2011).

Creation of a Final Grade. While another teacher expressed her concern that the process of assigning one final grade that does not reflect overall mastery, may be misleading,

she stated "that's kind of hard to, you know, thinking about [how] they did get some [level] 3s but they…did get more [level] 2s, so that is an overall [level] 2, doesn't mean they don't know everything" (Focus Group 2, teacher 5, April 1, 2011).

Growth Not Reflected. Teachers questioned whether by not incorporating growth, standards-based grading did not truly reflect a student's ability. As one teacher remarked:

it does…not [show]…the growth that they're making. I feel like I have some

students that…every quarter are earning a [level] 1 but are growing leaps and

bounds, it's just they started out so far behind that they're not there, and it

doesn't show that part of it. Based on the standards and is it true, yes,

[be]cause they cannot do it, but it leaves out what they can do (Focus Group 1,

teacher 4, March 28, 2011).

Mismatched Reinforcement. There was also discussion regarding the mismatch between the reinforcement teachers provide students as their ability increases and the grade they received on their report card. This mismatch was articulated by one teacher who shared "that has to be confusing to be that student to go, 'oh, well, my teacher told me I'm making a lot of growth, that she's so proud of me, but then on my report card, I have a [level] 1; the two don't match up" (Focus Group 1, teacher 4, March 28, 2011). Moreover, teachers expressed their concern that this mismatch between the encouragement given to students regarding their growth and their grade, which reflects their mastery of content standards, would also confuse parents; as expressed by one teacher "I think the parent's look at it as 'oh, my child's failing.' Yes, they're not meeting those standards, but they are growing. And, and that's why I just don't think, yeah, you're right it is a true representation of this, but is it a

true representation of what the child is actually doing?" (Focus Group 1, teacher 1, March 28,

2011). Indeed, another teacher added:

> I think especially in lower grades you have such a wide range of development
>
> with our kids coming in and our population that's where I have a real problem
>
> where I see you know, they go home with a [level] 1 and yet you're telling
>
> them all the time 'wow, [you] did so good.' And you know parents are going,
>
> 'oh, why did you get a [level] 1?' (Focus Group 1, teacher 3, March 28, 2011).

Another concern expressed was whether standards-based grading accurately reflected the

ability of students with special needs. As indicated by one teacher who stated:

> I think we all have children that we can think of where their performance
>
> doesn't match their ability, for whatever reason. In some cases the kids have
>
> been diagnosed, you know, as being learning disabled. I mean they have an IQ
>
> at a certain level, and at this moment in time, they're not performing where
>
> their abilities says where they're supposed to be. So, I might have to give
>
> them a grade where they're performing below grade level, but that isn't the
>
> measure of their ability. It's just a measure of what they're…capable of doing
>
> right now in my classroom (Focus Group 3, teacher 8, April 4, 2011)

Teachers suggested report cards should reflect student's growth in order to more

accurately communicate a student's ability. One teacher described the report card system she

had utilized in another state; she reported "we had two grades. We had their, like their

standards-based grade, which was an outstanding, good, needs to improve, and satisfactory

and then we also had their effort grade, which then showed how much growth they were

making" (Focus Group 1, teacher 3, March 28, 2011). Teachers within this focus group also

pointed out capturing a student's "effort" would communicate if students were putting forth

only minimal effort. Teachers clarified that although work habits were captured separately

these only reflected factors such as: "are they using their time wisely? Are they completing

their homework? Are they on task?" (Focus Group 1, teacher 4, March 28, 2011). As pointed

out by one teacher the comment section does enable teachers to communicate a student's

growth and thus accurately reflect the student's ability; indeed she asserted, "I think those

numbers are nothing without those comments" (Focus Group 5, teacher 1, April 13, 2011).

Comparison to A-F Grading System. Although teachers expressed concerns

regarding the ability of standards-based grading to accurately reflect students' ability, some

teachers felt the alternative, i.e., traditional grading, was more problematic. This was

expressed by one teacher who held that the standards for which students were measure

against were less likely to introduce behavior factors that would result in a less accurate

grade; stating "I don't know [be]cause it's…either it's not standards-based and it's really just

what you think, and then you can run into getting into a lot of, 'oh, but they're just so sweet.'

Or it's the standards-based where…they might be the sweetest thing since pie but they don't

know it [the content]" (Focus Group 1, teacher 4, March 28, 2011). Indeed, teachers shared

that without standards-based grades, which requires teachers to grade students' mastery of

objectives, there is greater subjectivity. As articulated by one teacher's comment:

> Do you think it's more or less of a representation than it used to be where you
>
> just had…your standard course of study that sat in a notebook that you didn't
>
> look at but people could teach; 'oh, I want to teach a unit about dinosaurs,'

even though that's not in the [standard course of study], and they did all their

work, and they finished all their work, so 100, so they're an A student (Focus

Group 3, teacher 5, April 4, 2011).

The lack of subjectivity within traditional A-F percentage based grading was reiterated by

her colleague:

If you think about the old system, it was totally based on what that teacher

wanted the grade to be. Like it could be 60% homework, 40% tests, where this

is strictly supposed to be measuring how that child is doing on the objectives.

It's [standards-based grading] not as subjective. It is subjective to some

degree, but it's not as subjective because you're supposed to be making sure

your students are mastering those objectives (Focus Group 3, teacher 5, April

4, 2011).

While many teachers expressed a preference for standards-based grading over the A-

F grading scale, specifically in terms of its capacity to reflect students' ability, they did report

experiencing challenges when implementing this grading practice. Thus, the next section will

further examine these challenges.

Challenges with Implementing Standards-Based Grading

The challenges teachers reported to implementing standards-based grading included:

finding opportunities to observe student performance, not capturing progress in the students'

grade, communicating this grading practice to parent, interpreting the range within each

performance level, and creating consistent grades across classrooms and grade levels.

Opportunities to Observe Student Performance. Teachers discussed the challenge they faced keeping track of student performance. One teacher reported "I'm not always able to see that, or take a note on it, or make a formal assessment to say 'yes, this child can apply it in many different areas and not just on this one specific task in this one simple way'" (Focus Group 1, teacher 1, March 28, 2011). While another teacher stated:

> I think the thing that for me is the most challenging is keeping track of when I
> see them do something, like the right way to keep notes on it all. Like a check
> list or is it just, we're a lot of anecdotal notes, I'd like to have back up or the
> proof that…when I give them this number grade, you know that this supports
> it (Focus Group 1, teacher 4, March 28, 2011).

The large number of objectives teacher are required to observe provided another challenge to observing student performance. As shared by one teacher, who stated "I think the amount of objectives that we have to cover each quarter and the expectation that you're seeing it three times is really, really challenging to do" (Focus Group 2, teacher 3, April 1, 2011). Moreover, she reported that not all objectives were able to be observed the required three times "and there are some objectives that I just don't see three times. And there's just no way because of the County [WCPSS' pacing guidelines], you only spend so many days on them, and you have to cram everything in" (Focus Group 2, teacher 3, April 1, 2011). This difficulty fitting in three observations for each objective was repeated by other teachers. One teacher stated "the amount of work they give us versus the amount of time we have is near impossible" (Focus Group 2, teacher 1, April 1, 2011). Still another teacher affirmed "you know when I first started doing it this year, it was like my first quarter. I freaked out because

I was like, I don't have three evidences for everything. And I was trying. It's not realistic to do that" (Focus Group 2, teacher 6, April 1, 2011).

In order to manage the large number of objectives and keep up with WCPSS' pacing guidelines teachers emphasized some objectives above others. One teacher described this process and its impact on consistent grading stating:

…so you get into the conversation of, which ones [objectives] are the most important. You know, which ones need to be focused on more, but also, unless, it's…a straight multiple choice where…you can graph that data, it's making sure that you're all grading at the same level. Like your expectations are all the same for what does a [level] 1, 2, 3, or 4 look like. And I think that's the big thing (Focus Group 2, teacher 3, April 1, 2011).

Progress Not Graded – Doesn't Capture Growth. One concern teachers expressed regarding standards-based grading was that it does not capture students' progress. This concern was articulated by one teacher who shared:

I think it would be more helpful as a teacher to be able to say to a parent, well they're not here yet, but…look at how much growth they've made, especially with our population. I think that's something that is always hard for me. Well, he's gone from here to here this grading period but I can only give him a [level] 1 or a 2 because that's…the standard. And so I just…feel like that bothers me because they're not, you know, they've been working really, really hard and they're still getting a [level] 1. So they're not getting a reward or something for the fact that they've really gone so far this time.

In fact, she elaborated on her point by providing an example student to clarify her assertion:

> …and I understand being below…but if you have a child that comes to you reading at a pc [print concepts], that still has print concepts in just a few of them, and yet now they are reading at a five six [booklevel 5-6], they've already made more than a year's growth but there's no way to show that (Focus Group 1, teacher 1, March 28, 2011).

Another teacher expressed the conflict she felt between understanding the need for students to meet the standard while recognizing the growth the student has experienced; she stated "I can see; I can see both sides of that. Like I feel the same way because I have some students that have made a lot of growth, but they're not at the standards" (Focus Group 1, teacher 4, 2011).

Teachers recommended growth be incorporated into the reporting process. One teacher suggested "I would like to see that measurement somewhere in the grading. That it's not just so cut and dry, but that okay, we're really moving along" (Focus Group 1, teacher 1, March 28, 2011). Although another teacher expressed her concern that incorporating growth would introduce inconsistency while another one of her colleagues suggested growth be captured separately.

Communication with Parents. Another area in which teachers express concern was the ability to communicate this grading system to parents. Grades are the primary method of communicating student achievement to parents. According to WCPSS' grading policy:

The formal issuance of grades through symbols on a regular basis is authorized by the board in order to promote a process of continuous evaluation of student performance, to inform the student, her/his parents, and counselor of the student's progress, and to provide a basis for bringing about improvement in student performance, where such change seems necessary (WCPSS Policy 5520)

Another way in which parent communication is dictated by WCPSS policy is the reference to parent conferences. The policy states "parental conferences are a valuable method of reporting to parents. Conferences regarding a student's progress in a particular class shall include the teacher of that class" (WCPSS Policy 5520.2). Further the policy requires notification of parents " by the midpoint of each grading period if a student is failing a course or if his course grade has declined by a letter grade" (WCPSS Policy 5520.3).

Improving communication with parents is one of the key elements of standards-based grading. In fact, WCPSS' documentation asserts "the elementary report card provides one way for the teacher to communicate with the student and parent about the student's success in meeting the state standards for that grade and reporting on the student's classroom behavior and work habits" (Understanding the Elementary School Report Card, 2010). WCPSS' standards-based grading report card includes a comments section designed to communicate to parents additional information regarding their students achievement "a reader should be able to predict the report card grade based on the comments (Understanding the Elementary School Report Card, 2010). The comments are also designed to communicate the students' interventions:

The report card provides space for teachers to list the individual interventions

such as a volunteer tutor, mentoring program, or Accelerated Learning

Program instruction in which some students participate. The comments should

be specific enough for a tutor or student helper to know the focus of the

intervention (Understanding the Elementary School Report Card, 2010).

One limitation of the comments section teachers discussed was the fact that comments are

available in English and thus do not communicate to non-English speaking parents. Teachers

reported "…so many of them [parents] can't read it in our [non-English speaking]

population…how do they know? All they look at is the number in our population, and their

main question is, 'is my child going to the next grade?'" (Focus Group 1, teacher 2, March

28, 2011). The teachers recognized this as a limitation, however, they also recognized the

logistical difficulty in providing translations stating "there needs to be some way of letting

them [parents] know if they can't speak English…and not translating because we don't have

time to translate all the report cards or get them translated" (Focus Group 1, teacher 2, March

28, 2011). They mentioned this limitation was amplified due to the multitude of languages

spoken by WCPSS parents "you don't have someone to translate every language" (Focus

Group 1, teacher 1, March 28, 2011). This statement was verified by demographic data which

indicated that there were 199 languages spoken by WCPSS families, as of October 2010

(A.S. McCauley, personal communication, September 30, 2011).

Range within Levels. Another area in which teachers expressed concern with

standards-based grading was the range of student achievement captured within each of the 1-

4 performance levels. One teacher reported her challenge with implementing standards-based

grading was due to the vagueness introduced by the range within each performance level; she

declared "I think overall the vagueness of the [levels] 1, 2, 3, 4 is what the issue is" (Focus

Group 1, teacher 3, March 28, 2011). She elaborated stating:

> …the vagueness of what a [level] 1 really is. What a [level] 2 really is, what a
>
> [level] 3 really is. Because I was having a conversation with some parents last
>
> weekend or this past weekend and their kids are in fourth and fifth grade and
>
> they're like, 'well, is it a low [level] 3? Are they a high [level] 3?' It's a very
>
> vague, and they were trying to ask me to explain the [levels] 1, 2, 3, 4 and I
>
> mean, I could explain it, but there's still that vagueness there of well, how do
>
> you know? (Focus Group 1, teacher 3, March 28, 2011).

The challenges associated with implementing standards-based grading were

articulated by one teacher "the wide range that [level] 3 encompasses, and the difficulty of

proving level 4. It's easier to prove level 2" (Focus Group 3, teacher 6, April 4, 2011). Still

other teachers reported "because again I could tell a parent 'yeah their child is a [level] 3,

they're on grade level,' but what does that mean in terms of numbers, what does it mean in

terms of work. It just seems to be, it's too wide, it's not narrow enough. It's just too wide"

(Focus Group 3, teacher 7, April 4, 2011) while another teacher stated "I have another

problem, too, with the range of a [level] 3" (Focus Group 4, teacher 2, April 7, 2011).

Another teacher articulated this difficulty stating "I think, it's like, it's been said before,

there's really strong [level] 3s, and then there are kids that just barely made it. So, it's kind of

hard to say they're a [level] 3 when there's so much of a gray area" (Focus Group 5, teacher

5, April 13, 2011).

Teachers also discussed the difficulty in communicating student achievement to parents given the range within performance levels "you've got such a broad range…yes, they've made a [level] 3, but this [level] 3 means they are barely meeting the benchmark. Or this [level] 3 means that with just a little…more work, we can have a [level] 4 here. And there's such a broad range" (Focus Group 4, teacher 2, April 7, 2011). The fact that 3* are only used on report cards was also reported to be a limitation "The [level] 3* absolutely does not help in terms of…[communicating] to the parent's on a weekly basis" (Focus Group 4, teacher 2, April 7, 2011).

Inconsistency Across Classrooms within Grade Level. Although mastery grading systems, such as WCPSS' standards-based grading, are posited as a more objective grading practice teachers interviewed reported some concerns regarding the inconsistent application of grades across classrooms. Teachers recognized consistency was the goal, however, they reported difficulty consistently meeting this goal. This concern was indicated by one teacher's assertion "consistency is something you're definitely always something you're working towards, but it's like an unattainable goal" (Focus Group 2, teacher 4, April 1, 2011). The possible grading inconsistencies across classrooms were expressed by one teacher in these terms "well, it's subjective also, from classroom to classroom, from grade to grade, from school to school, teacher to teacher" (Focus Group 3, teacher 1, April 4).

The concerns over grading inconsistencies were especially pronounced in determining a level 4. One teacher inquired "so what determines someone to be a level 4? Okay, this is so subjective by teacher" (Focus Group 3, teacher 6, April 4, 2011). Still another teacher reiterated:

Because our…difficulty is that we want to try to be as consistent as possible

because we don't want a child in my room to get a level 4, but if that same

child was in Dawn's room, she doesn't see it as a level 4. So then we're back

to it's very, it's supposed [to be] standardized was supposed to be not based

on a teacher's opinion, but we're back to it being more of an opinion thing

because well Dawn would say well that's not a level 4 and I say, but that

looks great so yes, it's a level 4 (Focus Group 4, teacher 3, April 7, 2011).

Teachers also mentioned inconsistencies were introduced since teachers applied grading

differentially based on the student composition within their classrooms. One teacher stated

"you definitely find yourself judging, comparing a kid to their, that class, and that's hard,

too" (Focus Group 2, teacher 2, April 1, 2011). While another teacher reported "if I had a

really low class, I mean, I kinda want to, I feel like I should be giving out at least one or two

[level] 4s" (Focus Group 2, teacher 6, April 1, 2011). Still another teacher stated:

I think the hard thing, too, as far as giving opportunities is that, depending on

the class make-up…what I consider [level] 4 for one class may not be for

another. Like I got a group of kids who are consistently giving me…amazing

work, I'm going to have a harder time of picking out…I feel like if I give any

more than three or four kids a [level] 4, something's wrong (Focus Group 2,

teacher 6, April 1, 2011).

One of the reasons teachers gave for the inconsistent grading across classrooms was due to

the lack of common planning time. One teacher described the lack of collaboration in these

terms "…they give us one day a week for one hour, and that's all you've got; and, we have

so many meetings on top of that, that there's just never enough time to meet" (Focus Group

2, teacher 4, April 1, 2011). Another teacher described how this lack of collaboration

contributed to inconsistencies stating "what you think is your high kids in your class might

be average kids in another class" (Focus Group 2, teacher 4, 2011). Another teacher

affirmed:

> …you always try to get better, but you'll never completely reach
>
> [consistency]. I mean, there are times that we, as a team have sat down and
>
> graded performance assessments and reading, and things like that to try to be
>
> consistent with what we're giving, [levels] 3s, 2s, 4s, 1s. But, to do that on a
>
> regular basis with the amount of quizzes and everything that the County puts
>
> out is impossible (Focus Group 2, teacher 4, April 1, 2011).

In addition to discussing inconsistencies across classrooms within a grade level,

teachers also weighed in on the impact differing expectations across grade level and

quarters had on students' grades.

  Different Expectations Across Grade Levels or Quarters. One teacher described

the pressure she felt to have consistent grading across grade levels stating "there's nothing

worse than sending your kid to the next grade and having their teacher being like, 'what are

you talking about, they're not a [level] 4'" (Focus Group 2, teacher 4, April 1, 2011).

  Additionally, teachers mentioned the challenge of communicating to parents the

increased grade level expectations. They explained that parents have a difficult time

understanding just because a student received a level 4 in the previous grade level does not

mean they will reach level 4 with the new standards. One teacher remarked "I think

sometimes parents…build up their expectations, and you know, this is a [level] 4 this year, they're going to be [level] 4 all through. They haven't seen any real decrease in their school…in their papers coming home are still, they're getting them right, but because of that wide range of subjectivity of it [standards-based grades]" (Focus Group 5, teacher 10, April 13, 2011). This was also captured by another teachers comment "… if they're getting [level] 4s in kindergarten, which is an easier task, and they're not getting [level] 4s in second and third grade, then it becomes this, 'what happened?' (Focus Group 3, teacher 6, April 4, 2011).

While teachers discussed the subjectivity across classrooms and grade levels; they attributed the different grades a student may receive as the grade level increases to the increased standards for which students are held accountable. Indeed, one teacher ascribed the change in students' grades to the new expectations of the next grade level stating "I think, too, sometimes vertically, going from one grade to another may be hard when parents say, 'well, my child is a [level] 4 in…kindergarten math, and what do you mean they're only a [level] 3 this year?' And again, it's just so subjective…with the new skills [and] the benchmark increases" (Focus Group 5, teacher 10, April 13, 2011). Another teacher reiterated "it's the same objective, but it's harder. They might have mastered it in [the] first quarter. Then in fourth quarter, the same objective, but they may get a [level] 2, if they haven't advanced to that level, if you haven't observed them at that higher level" (Focus Group 5, teacher 5, April 13, 2011).

Teachers also discussed the changing expectations from elementary to middle school. One teacher described her student's experience:

If you look at the different levels, going from elementary to middle. I have a

son in sixth grade, and when he was here, he got straight [level] 3s, which

was…good. He went to middle school and is in advanced classes and he's

getting A's. You know, so I was pleasantly surprised because I thought, well,

he didn't get [level] 4s. You know, if you want to equate the [level] 4 to the

A's, then he should have been getting [level] 4s…all along. But he wasn't.

(Focus Group 5, teacher 12, April 13, 2011).

However, during further discussion with her colleagues teachers reaffirmed the

understanding that standards-based grading cannot be equated to the A-F grading

scale. In addition to the challenges faced by teachers with the implementation of

standards-based grading, teachers also offered suggestions for improving WCPSS'

standards-based grading system which are presented in the next section.

Improvements to Standards-Based Grading

Teachers offered suggestions for improving WCPSS' standards-based grading

practice including: providing rubrics and models, capturing growth, including information on

the profile card, and providing consistent grading practices across school levels.

Provide Rubrics & Models. Although teachers discussed the practice of verbally

laying out expectations, one teacher stated "I do say 'I am looking to make sure,' or 'you

need to go back and check, because by now you should be using this and this and this,' so

that they know what the expectations are and can go back and edit" (Focus Group 1, teacher

2, March 28, 2011), they also expressed the benefits of providing students rubrics and

models. The conversation captured the advantage of providing students a visual example

rather than relying on verbal guidance. Indeed, teachers within focus group one discussed the

benefits of providing students rubrics and/or models to follow. Despite this recognition the

teachers reported this did not always occur. As one teacher explained:

> I can't think of many times where I've said to them to get a [level] 3, you have
>
> to do this…When…you're in college they lay it out for you to get this grade
>
> this is what it should look like, but I don't think we do that a lot in the lower
>
> grades really show them like okay if this is what you want to get a [level] 3 in
>
> your writing this is what a level 3 writing looks like…I've never said, 'okay if
>
> you want to earn a [level] 3 on your report card' or 'to earn a [level] 3, your
>
> writing should look like this. It has to have all of these things' (Focus Group
>
> 1, teacher 4, March 28, 2011).

Another teacher added "[I] have said that but not shown a sample" (Focus Group 1, teacher

2, March 28, 2011). Still another teacher reported "in math word problems I do a lot. Maybe

I explain…showing an equation with your problem and showing a picture and being able to

describe it, like. But…showing an example; I think that's a place that I don't always do. I

verbally said it" (Focus Group 1, teacher 3, March 28, 2011). While another teacher stated

"I'll say, 'oh make sure you have this and this and this and this' without showing them this is

a shining star example of what this should look like" (Focus Group 1, teacher 4, March 28,

2011).

In addition to the recognition that providing students models would be beneficial,

teachers also expressed the desire to use rubrics, one teacher simply stated "I wish there was

a rubrics for us" (Focus Group 1, teacher 3, March 28, 2011). Teachers from focus group five

also expressed how providing students a rubric would improve their instruction:

>A fairly easy way is to, this works a lot in the science and social studies, is to
>
>give them a rubric, give them a rubric and they have it, and they, you'll say
>
>I'm looking for a [level] 1, a [level] 2 would look like this, a [level] 3 would
>
>look like this, and a [level] 4 would look like this. And which students choose
>
>to go above and beyond and shoot for that [level] 4, and then, that would be a
>
>good way (Focus Group, teacher 7, April 13, 2011).

Capture Growth. Teachers saw the fact that standards-based grading does not

capture growth as a major limitation of this grading system. One example shared by a second

grade teacher regarded a student whom had made tremendous growth but had not reached

mastery:

>But then again, you've got your ESL student… Now they're new to you, and
>
>at the very beginning, they can't do anything. I've got one [student] in my
>
>classroom right now that has thirty points AR [Accelerated Reading] who
>
>could not even read or comprehend anything when he first came to me. He is
>
>now just great. So now, [he] is not on [grade level], he's still reading at a
>
>[book level] 15-16 / 17-18, which is just starting second grade (Focus Group
>
>4, teacher 1, April 7, 2011).

While they struggled with the recognition that students need to meet a standard, they also

saw the necessity to capture students' improvement. One teacher expressed this struggle

stating "I don't know. I kinda see both side of it. Like, even though you made a lot of growth,

you're not where you're supposed to be" (Focus Group 1, teacher 4, March 28, 2011). Still another shared "but no matter how much growth a kid makes; if they're a [level] 2, they're [level] 2. And I know how this happens" (Focus Group 3, teacher 9, April 4, 2011).

Within one focus group's discussion the struggle teachers encountered was evident. As reported by one teacher "but when he came to me a negative number, and now [he's] there…[does] he have ability, 'heck yes.' But can I give him a [level] 3? I can't. So see, that's what kills me (Focus Group 4, teacher 1, April 7, 2011). While another teacher reiterated "that's my problem; growth, they're showing growth. You have to put a [level] 1. I mean, that's my problem with the report card" (Focus Group 4, teacher 3, April 7, 2011). Still another teacher added "because we have these kids making so much progress. The growth is tremendous. Our hands are tied as to what we can put on the report card (Focus Group 4, teacher 2, April 7, 2011).

The benefit of incorporating growth was expressed by one teacher who stated "I think it would be more helpful as a teacher to be able to say to a parent, 'well they're not here yet, but this is, look at how much growth they've made,' especially with our population. I think that's something that is always hard for me" (Focus Group 1, teacher 1, March 28, 2011). In order to incorporate growth into standards-based grading one teacher suggested a method of capturing growth be developed. She expressed concern that the current method of reporting students' progress in the comments section of the report card was insufficient with parents who could not read English. Although she did not indicate how growth should be captured she stated "on the grade…not even a number or a letter or something, but some way to indicate besides the comments, which so many of our parents can't read" (Focus Group 1,

teacher 2, March 28, 2011). In addition to the recommendation that growth be captured,

teachers also expressed the desire to share more information from students' profile cards with

parents.

       Include Information on Profile Card. Due to the concern that WCPSS' standards-

based report card requires teachers to use the students' grades on multiple objectives to

assign a final grade for their report card; teachers expressed the desire to share information

from the students' profile card with parents. In fact, one teacher spoke of the advantage of

sharing more information with parents stating:

> [it] would be nice for the parents to see not just the one grade but to see the
>
> whole profile card with the objectives. Then they could physically see…where
>
> the child is really accelerating and where they could be helping. Right now it's
>
> kind of this obscure. Oh, I've got a [level] 2, but I don't know what to
>
> do…it's not as clear (Focus Group 3, teacher 7, April 4, 2011).

The necessity to reflect more information than what is currently possible with WCPSS'

standards-based grading report card was further explained by another teacher who shared:

> The only way that I could see they [standards-based grades] would be a true
>
> representation is if our report card was our profile card and had every single
>
> objective for the quarter listed, and all those objectives had [levels] 1, 2, 3, 4
>
> on them. I think that's the only way it could be a true representation (Focus
>
> Group 5, teacher 1, April 13, 2011).

However, another teacher reported sharing the information on the profile card did not clarify

the students' grade. She stated "…a parent has asked me… 'What are you using to determine

whether or not my daughter is a level 3 or a level 2?' And then I presented…their profile card

to her, and…[there] was kind of an ambiguity…trying to explain it and then getting her to

understand it" (Focus Group 3, teacher 7, April 4, 2011).

Teachers within focus group two reported a new report card which included the

profile card was in the process of being approved by WCPSS for use by a few schools. This

school initiated the pilot report card includes the multiple objectives students are required to

master. As described by one teacher "I mean no matter what, grading in general is a very

abstract idea. You know, if you're going to narrow it down, like if it's a number or a letter

grade, that still needs to be explained, which is why I think the newer report cards work

better" (Focus Group 2, teacher 6, April 1, 2011). The piloted report card was described by

her colleague who shared:

> A few new schools in the area have gotten approved [from WCPSS]. And so
>
> we're [her school] looking at doing it, too. It's pretty much, they have taken
>
> the profile card and put it into an excel document so you can just do it right
>
> there on the computer. So you get the front page of the report card that
>
> has…the overall standard's score with their behavior and things like that. And
>
> then the backside is just pretty much the profile card [a list of objectives
>
> students are expected to master throughout the year] (Focus Group 2, teacher
>
> 1, April 1, 2011).

Another teacher elaborated "right, you don't do profile cards and report cards, the report card

is both (Focus Group 2, teacher 4, April 1, 2011). The other members of the focus group

were in agreement; indeed another teacher added "I mean, that only makes sense. I don't

understand why they do it separately anyway" (Focus Group 2, teacher 1, April 1, 2011).

Consistent Grading Practices Across School Levels. Teachers within focus group

four shared the desire for a flow across school levels. As one teacher stated "there needs to be

a flow…through all levels" (Focus group 4, teacher 2, April 7, 2011). Questions regarding

grading consistency between elementary and middle schools has been reflected in district

lead discussions for grading at the middle school level. Grading conversations have been

occurring at the middle school level as capture during the May 12, 2009 school board

meeting:

> At the May 12 [2009] meeting of the school board's Student Achievement
>
> Committee, board members heard from school administrators Ruth Steidinger
>
> and Ken Branch about discussions of grading practices underway in WCPSS
>
> schools. They described conversations WCPSS educators have been involved
>
> in during the school year on grading practices. They noted students could
>
> receive very different grades in the same course based on grading decisions
>
> made by teachers. The discussion with educators have helped to stimulate
>
> teachers to examine the practices at their schools and exchange views on a
>
> number of grading issues: dropping lowest scores, awarding zeroes for work
>
> not done, or offering re tests. There were debates over whether grades should
>
> measure what students know, or should grades also take into consideration
>
> attitudes and timeliness…The school administrators said the discussion will

widen in the coming year to include more stakeholders such as students,

parents and the business community (School Community News, 2009).

In light of the teacher reported challenges to implementing standards-based

grading, teachers' feedback and recommendations for improvement are helpful

considerations for improving this grading system.

Chapter Summary

This analysis of WCPSS' standards-based grading revealed a strong relationship

between students' classroom grades and EOG scores. Given both standards-based grades and

EOG scores measure students' knowledge of the NCSCS, a strong correlation with EOGs (a

previously validated measure of student knowledge of state standards) indicates this grading

system accomplishes its intended purpose of assessing students' knowledge of North

Carolina's curriculum. Although grades varied considerably by ethnicity, additional analysis

revealed similar correlations between fourth-quarter grades and EOG scores across ethnic

groups and academic risk factor (ranging <0.1 by subgroup for reading and mathematics).

Furthermore, the ability to use second-quarter grades to predict students' success on EOG

exams would provide educators with a valuable mid-year indicator used to identify students

who with additional support could be on grade level by the end of the year.

In order to fully understand how this grading practice has been implemented within

WCPSS, five focus groups with a total of 36 teachers and documentation analysis of

WCPSS' standards-based grading was conducted. The analysis of focus group discussions

and WCPSS documentation revealed theoretical concepts related to the explanation, training,

and implementation of WCPSS' standards-based grading system. The theoretical concepts

which emerged included an explanation of WCPSS' standards-based grading, training and resources related to standards-based grading, initial reactions to and the implementation of this grading practice, the comparison to traditional grading, the degree to which standards-based grading represents a student's ability, challenges with implementation, and improvements to WCPSS' standards-based grading system.

The fundamental characteristics of standards-based grading—mastery and the separation of homework from content grades—were described in WCPSS' documentation and clearly articulated by teachers. Additionally, most teachers reported the goal of increased objectivity was realized. While teachers indicated an overall understanding of this grading system, discussions revealed points of inconsistent understanding both between teachers and between WCPSS' documentation and some teachers' interpretations of this grading system. WCPSS' documentation analysis revealed guidance and training documents are available via Blackboard; however, the information has not been updated since shortly after the adoption of standards-based grading in 2001. Furthermore, no district-wide training was offered in 2009-10.

The implementation of standards-based grading was described in great detail and teachers were able to share numerous examples of the multiple ways in which they assess students' work. Indeed, teachers shared the variety of way they observed students in order to ensure they were able to assess students multiple times on each objective. WCPSS' documentation and teachers' articulation of standards-based grading proficiency levels were consistent. In fact, overall teachers' comments and examples reflected the WCPSS' grading guidelines. However, there were points of confusion such as teachers who reported finding it

difficult to assign level 3 if the student displays mastery late in the quarter, the difficulty in determining level 4 work and the resulting scarcity of level 4s, and the belief that level 4s should be student created. Additional implementation challenges reported by teachers included: finding opportunities to observe student performance, not capturing progress in the students' grade, communicating this grading practice to parents, interpreting the range within each performance level, and creating consistent grades across classrooms and grade levels. The ability to observe each objective three times and by extension the ability to observe level 4 work were discussed in terms of time constraints. Teachers reported difficulty finding enough time given WCPSS' pacing guidelines, to observe all objectives the required three times. Time was also mentioned as a restrictor to consistent grading given the limited amount of common planning time in which teachers participated. In light of the challenges reported by teachers, teachers offered recommendations for improving WCPSS' standards-based grading system. Teachers shared that standards-based grading could be improved by providing rubrics and models, capturing growth, including information from the profile card on the report card, and providing consistent grading practices across school levels (i.e., incorporating standards-based grading tenets into middle school grading).

Chapter 5 outlines the study's discussion and conclusions and is organized around concepts rather than methodology. This was done to allow for connections across data sources given the purpose of the qualitative data analysis was to offered explanations of quantitative findings. Concepts which emerged from both the quantitative and qualitative data analysis are considered and connections and explanations are offered.

CHAPTER 5

CONCLUSIONS

Educators are charged with the important task of providing students a high quality education. Students are responsible for learning a vast amount of material as part of the state's standard course of study. Exactly how students are assessed on this information has been a point of debate for educators. WCPSS implemented standards-based grading aligned with North Carolina's Student Accountability Standards (NCSCS) and the WCPSS Promotion/Intervention policy. WCPSS' standards-based grading practice and the associated report cards were designed to reflect student mastery of state standards and provide an objective measure of student grade level performance.

This study examined the implementation of WCPSS' standards-based grading system. Utilizing a mixed methods study design, teachers' understanding and implementation of standards-based grading and the equity of the resulting grades were examined. Standards-based grading is focused on student mastery of content material and is intended to reduce teacher subjectivity which may bias a student's grade. By reducing teacher subjectivity it is posited that standards-based grading is a more equitable grading system which results in a more meaningful grade than generated by traditional A-F grading.

Examination of quantitative and qualitative data associated with WCPSS' standards-based grading system revealed several noteworthy findings which are presented in this chapter followed by teacher and researcher recommendations for improvements to WCPSS' current grading practice. While Chapter 4 presented the entirety of this study's quantitative and qualitative findings, this chapter highlights and offers connections and explanations

regarding several noteworthy findings. This chapter utilizes the results from prior WCPSS'

studies to contextualize grade/EOG correlations; describes the utility of second-quarter

grades to predict student success on the EOG; considers the implications of consistent

grade/EOG correlations by ethnicity and academic risk factor; highlights teachers'

understandings and misconceptions regarding WCPSS' documented standards-based grading

practice; examines the process of creating report card grades in light of research

recommendations and this study's findings; provides teacher and researcher

recommendations for improving WCPSS' standards-based grading system; and finally offers

a discussion of the implications of this study's finding and possible directions for future

research.

Contextualization of Grade/EOG Correlations

WCPSS conducted two studies in 2008 focused on grading, one study at the

elementary school level and one examining middle school grading. These prior studies

enable contextualization of this study's findings. Indeed, comparisons to the correlations

between grades and EOG scores reported in the prior studies demonstrated the strength of the

correlations found within this study.

Comparison to Prior Elementary Study. In 2008, WCPSS' Evaluation and

Research Department examined correlations between standards-based grading and EOG

scores. According to WCPSS' *Standards-based grading: 2005-06 and 2006-07,* correlations

ranged by subject and grade level from .61 to .72 (Paeplow, 2008a). The current study found

correlations ranged by subject and grade level from .74 to .80. Thus, a comparison to the

previous study showed correlations have increased over the three years indicating a stronger

alignment between classroom grades and standardized achievement measures. WCPSS did

not investigate teachers' understanding qualitatively in the 2008 elementary school grading

study.

      Comparison to A-F Grading. Considering the A-F grading system's correlation to

EOG scores provided insight into whether the traditional grading system correlates with, and

adequately reflects students' knowledge of the NCSCS. WCPSS utilizes A-F grading at the

middle and high school levels; therefore, correlations between middle school grades and

EOG scores were used to contextualize elementary results by providing a comparison. In

2008, WCPSS' Evaluation and Research Department evaluated the correlation of traditional

A-F grades and EOG scores at the middle school level. WCPSS' report, *Middle School*

Grading: Wake County Public School System (WCPSS) 2006-07 and 2007-08, examined the

correlation of students' classroom grades and EOG scores in 2006-07 and found correlations

ranged by subject and grade level from .54 to .61 (Paeplow, 2008b). Although the

correlations between grades and EOG scores at the middle school level were moderately

positive, they were considerably weaker than the correlations at the elementary school level

found within this study (.74 to .80 by grade level and subject). Thus, similar to WCPSS'

findings in 2008 middle school grades of A-F had a weaker correlation to EOG scores than

that found for standards-based grading and EOG scores at the elementary school level

(Paeplow, 2008b). The comparison of grade/EOG correlations at the middle school level to

those at the elementary level, especially in light of the stronger correlations revealed within

this study, clearly indicate a stronger relationship between standards-based grades and EOG

scores (used as a measure of the NCSCS) than middle school grades and EOG scores. While

middle school grade/EOG correlations for 2009-10 were not available and may have also strengthen since the 2006-07 results, given there has been no fundamental change in WCPSS grading practices at the middle school level there is no reason to believe the pattern found in 2008 (i.e. stronger correlations at the elementary level) would have changed. Another notable finding was the predictive ability of mid-year grades. The ability to utilize second-quarter grades to identify struggling students is discussed in the next section.

Predictive Ability of Second-Quarter Grades

Educators utilize a variety of formative and summative indicators to identify students who are struggling academically and who are in danger of falling below grade level. The ability to identify these students early enough in the year to provide intervention and improve their chances for academic success is imperative. While traditionally students are identified for academic intervention based on their prior EOG scores, this practice requires students to fall as much as a full year behind prior to identifying their need. The ability to use second-quarter grades to predict students' success on EOG exams would provide educators with a valuable mid-year indicator used to identify students who with additional support could be on grade level by the end of the current school year. Now that standards-based grading has been discussed comparatively and in terms of its predictive utility, the next section will address its equity potential.

Consistent Correlations by Student Subgroup

Standards-based grading is posited as a more equitable grading system due to its focus on student mastery of content material and the resulting reduction of teacher subjectivity which may bias a student's grade. However, although many researchers have

discussed traditional grading versus standards-based grading and the improved objectivity inherent within standards-based grading systems (Malouff, 2008; Perlstein, 2003), there has been little to no research examining the equity potential of moving toward an arguably less subjective approach to grading. The findings within this study inform on the equity potential within this grading system. Although this study found grades varied considerably by ethnicity and somewhat by academic risk factor—thereby reflecting existing achievement gaps between student subgroups—additional analysis revealed similar correlations between fourth-quarter grades and EOG scores across student subgroups (ranging <0.1 by ethnicity and academic risk factor for reading and mathematics). The fact that students' grades were equally related to students' EOG scores indicated teacher assigned grades did not reflect bias (any existing bias were at least consistent with EOG exams). Therefore, if we accept the assumption that EOG exams are objective and unbiased measures of student learning, then these finding provide evidence of an equitable grading system.

The qualitative analysis of teacher focus groups was used to inform on the quantitative results and provided exploration of the level of understanding and resulting implementation of standards-based grading within WCPSS. In order to comprehend the quantitative findings, teachers' understanding and implementation of standards-based grading were examined. The next section presented describes emergent concepts in terms of teachers' understandings and misconceptions of WCPSS' standards-based grading system.

Teachers' Understandings and Misconceptions

As with any initiative the degree to which its goals are realized rely on its implementation. For any initiative to achieve its goals, it must first be implemented with

fidelity. The ability of teachers to understand the fundamental characteristics associated with standards-based grading and be consistent in their practical application of grading is necessary in order to realize the equity potential within this grading practice. Correlations between students' grades and EOG scores were consistent across racial and academic risk groups indicating the equity potential in standards-based grading. This section offers a brief summary of key findings related the teachers' understanding and implementation of standards-based grading in order to gain deeper understanding of this grading practice and the quantitative findings presented in this study.

Teachers' Understanding and Implementation. WCPSS documentation regarding standards-based grading described the fundamental characteristics of standards-based grading—mastery and the separation of homework from content grades. The fact that WCPSS based their grading system on these fundamental characteristics of a standards-based grading system was consistent with research recommendations for implementing this grading practice (Cross & Frary, 1999; Guskey, 2001; O'Conner, 2007). However, clear documentation while necessary is not sufficient for the success of an initiative; implementation with fidelity is also paramount to success. The degree to which teachers implemented this grading practice with fidelity was reliant on their understanding of this initiative. Teachers participating in the focus groups were able to clearly articulate the basic tenets of standards-based grading as described in WCPSS documentation. Furthermore, most teachers reported the goal of increased objectivity was realized.

Mastery. Teachers' reported understanding and implementation of mastery grading reflected WCPSS documentation of standards-based grading. Indeed, teachers confirmed

WCPSS' requirement that each objective be observed three times; reported using multiple observations to determine student mastery of subject materials; and overall shared an understanding that under a mastery grading system grades are not averaged. Teachers did report however finding it difficult to consistently observe students the required three times due to time limitations resulting from a dense curriculum and fast-paced curriculum guide.

Homework. Teachers clearly expressed WCPSS' expectation that homework be considered separately from the content material. Indeed, teachers reported multiple purposes for homework. They shared using homework to reinforce skills learned during class time; indeed, teachers saw homework and the practice of skills at home as a mechanism for instilling the idea that learning should be a continuous process and not limited to the school day. Since middle and high schools include homework within a student's grade, elementary teachers reported homework prepares students for secondary education expectations. Finally, teachers used homework and the feedback it provided to drive their instruction. Not only did they have a clear understanding of the separation of homework from students' content grades, but they also shared reasons for not including homework.

In addition to WCPSS' Homework R&P which requires the separation of homework from students' content grade, teachers provided additional reasons for not including homework. They expressed concern that homework did not always reflect a student's work. Thus, teachers reported including homework into a student's grade may reflect the parent's rather than the student's understanding of a concept. The reasons teachers gave for parents going to such lengths to ensure their student's homework was completed correctly was due to parents' lack of understanding regarding the purpose of homework within standards-based

grading. In addition to their concern that homework, which represents parents' work, means the student has not had an opportunity to practice the skills, it also could introduce inequality into a student's grade since the amount of parental support varies considerably. Therefore, teachers' understanding and implementation of the separation of homework from students' content grades were consistent with WCPSS grading standards. While teachers indicated an overall understanding of this grading system, discussions revealed points of inconsistent understanding both between teachers and between WCPSS documentation and some teachers' interpretations of this grading system. These misconceptions are discussed in the next section.

Missconceptions. Although teachers demonstrated a clear understanding and described application of standards-based grading within their classrooms consistent with WCPSS' documented grading practice, there were some misconceptions reported. In order to refine this grading system and ensure equitable grading is available to all WCPSS students regardless of which classroom they find themselves, it is important to shed light on any existing misconceptions which may impact proper implementation. Some teachers held misconceptions related to comparative grading and providing students level 4 opportunities and assessing students at level 4.

Comparative Grading. Some teachers reported they applied grading differentially based on the student composition within their classrooms. Mastery grading is a key element within standards-based grading. In fact, this criterion-referenced grading system measures students' performance against established criteria with differentiated levels of quality. Given mastery is a primary element within standards-based grading this means assessment of

student performance should not be measured against the performance of other students, but against the set performance standards (Guskey, 2001; O'Conner 2007). Therefore, grading based on the composition within a classroom, while not widely expressed, was a particularly troubling misconception given it violated a major tenet lauded by grading researchers (Guskey, 2001; O'Conner 2007).

Limited Number of Level 4s. Some teachers reported that level 4s were given out sparingly. While a minority of teachers expressed the scarcity in terms of cultural norms, more often teachers reported logistical limitations created this dearth. Moreover, teachers accounted for the scarcity of level 4s in terms of time and resource restrictions which resulted in the lack of opportunity to demonstrate level 4 work. In addition to the limited availability of level 4 extensions on student assessments, the limited number of level 4s were attributed to the reluctance of some students to attempt extensions when available. The lack of opportunities to exhibit level 4 work does not map with WCPSS' requirement that teachers provide level 4 opportunities for each objective to ensure students are able to receive a level 4.

This misconception was particularly concerning given its implications for student learning. For a student to reach level 4, s/he must demonstrate understanding by applying and extending the material. Thus, a level 4 on a standards-based grading scale represents a move from assessing students simply based on their knowledge to assessing students on both their knowledge and understanding of the subject. This movement toward assessing student understanding provides educators, parents, and students invaluable feedback on students' learning. Table 5.1 models the basic premise of the argument that level 4, within the

standards-based grading system, represents a requirement for assessing student understanding

which is beyond what is required to be assessed within A-F grading systems.

Table 5.1

Model of the Value Added by Assessing Level 4

If A	→	And B	→	Then C
Demonstration of knowledge requires students reiterate the information taught	→	A-F scale does not require teachers assess more than knowledge	→	Students are only required to reach knowledge level
Understanding requires students have enough context to apply knowledge	→	Standards-based grading level 4 requires students apply knowledge	→	Level 4 requires students be assessed for understanding

Thus, the addition of level 4 which assesses students' understanding and application adds

value beyond traditional grading and it is therefore essential that teachers provide students

level 4 opportunities and assess students for level 4 performances.

Student Created Level 4 Opportunities. WCPSS' requirements regarding level 4 not

only require students demonstrate application of knowledge in order to receive a level 4

score, but teachers are required to provide level 4 opportunities to students to ensure they can

attain a level 4 score. Some teachers held the expectation that students should create their

own level 4 opportunities. They explained that since level 4 requires students to go "above

and beyond" grade level expectations students should create theses opportunities by

extending the material presented or by applying the concepts learned in one subject across the curriculum. However, this misconception does not align with the WCPSS' expectation that teachers provide students opportunities to demonstrate and be assessed at level 4. Not only is this inconsistent with WCPSS documented guidelines which suggests teachers who have no level 4 students consider whether they have provided level 4 opportunities (Report Card Comment Guidelines, 2011), but it has the potential to introduce unequal opportunities for learning. To ensure equal access to level 4 opportunities for learning and assessment teachers must provide those opportunities to students. By relying on student generated displays of level 4 learning, these teachers are leaving students' greater understanding to chance. It is imperative that the level 4 opportunities be offered within all WCPSS classrooms to ensure equal access to education for all students. The education of students relies on the ability of our teachers to provide opportunities for students to internalize and truly understand material presented. Consistent implementation of this grading practice within each and every classroom is essential to educating our students.

Now that teachers' understandings and misconceptions regarding standards-based grading have been considered in terms of the key concepts within this grading system, the next section addresses how teachers' understanding and implementation of grading coincided with grading researchers' recommendations.

Creating the Report Card Grade

Grades represent a communication tool which must reflect student knowledge of course material. Researchers (Brookhart, 1999; O'Conner, 2007; Winters, 2002) have asserted accurately reflecting student knowledge is more easily accomplished when grading

an individual assignment and only becomes difficult when creating a grade which

encompasses multiple assignments. Indeed, researchers (Brookhart, 1999; O'Conner, 2007)

hold that when multiple student grades are combined into a single grade, that grade no longer

communicates a student's knowledge of an individual standard and may render an invalid

grade. A single subject grade presented on the report card may not clearly communicate the

student's level of understanding of the subject matter. Thus, researchers (O'Conner, 2007)

suggest grades be organized around standard objectives and that student report cards reflect

the student's competency with these standards.

WCPSS requires teachers assign students a subject grade (e.g., reading) on their

report card based on the multiple observations of subject specific objectives. One area of

concern teachers reported was the fact that WCPSS' standards-based report card requires

teachers to use the students' grades on multiple objectives to assign a final grade for their

report card which is the only grade shared via the report card. This practice is inconsistent

with researchers' (Brookhart, 1999; O'Conner, 2007) recommendations since it provides

parents with less information and may render an incomplete picture of a student's abilities.

The desire to share information from the students' profile card with parents was discussed. In

fact, one teacher expressed her concern that the process of assigning one final grade that does

not reflect overall mastery, may be misleading. Additional teachers discussed the benefits of

including information from students' profile cards, which include student performance by

objective, on report cards.

Knowledge of teachers' understanding, or lack of understanding, combined with

reported implementation can inform the practical application of training and enlighten

current grading discussions within WCPSS regarding the possible expansion of standards-based grading into higher grade levels. In addition to teachers providing insight into the implementation of standards-based grading, teacher participants also provided recommendations for improving this grading practice. Thus, the next section presents teacher recommendations and provides additional researcher recommendations based on, and extrapolated from, teachers' feedback.

<div align="center">

Recommendations

</div>

Teacher Recommended Improvements. Overall teachers had a clear understanding of this grading system; however, the application of standards-based grading procedures did result in practical challenges. Indeed, teachers reported some challenges associated with the implementation and offered recommendations for improving this grading system. Teachers' recommendations included: providing additional rubrics and models, capturing and reporting student growth, including information from students' profile cards on their report card, and providing consistent grading practices across classrooms and school levels.

Provide Rubrics & Models. Teachers expressed the benefits of providing students rubrics and models. While teachers discussed the advantage of providing students a visual example rather than solely relying on verbal guidance, they recognized that this did not always occur. In addition to the recognition that providing students models would be beneficial, teachers also expressed the desire to utilize additional rubrics. While teachers regarded the use of models and rubrics as a best practice, they felt time constraints limited their ability to create these instruments at the school level and indicated a desire for

additional resource (i.e. models and rubrics for each subject) to be developed and shared
system wide.

     Capture Growth. Teachers expressed the fact that students' growth was not reflected
within standards-based grading as a major limitation of this grading system. While teachers
recognized students need to meet a standard, they also saw the necessity to capture students'
improvement. Although the current report card includes a comments section which could be
used to describe a student's progress this was considered less helpful than developing a more
concise method of sharing this information via a number or symbol. One reason for this was
shared by a teacher who expressed concern that the current method of reporting students'
progress in the comments section of the report card was insufficient with parents who could
not read English. This teacher recommendation was supported by measurement specialists'
recommendation that teachers embrace grading practices that reflect academic performance
and growth and remove behavior and conduct in order to create valid indicators of academic
achievement (Cross & Frary, 1999). In addition to the recommendation that growth be
captured and communicated via a number or symbol, teachers also expressed the desire to
share more information from students' profile cards with parents.

     Include Information from Profile Card on Report Card. WCPSS' standards-based
report card requires teachers to assign students a final grade on the report card based on their
grades on multiple objectives. Due to the concern that this process resulted in less
information to parents, teachers expressed their desire to share information from the students'
profile card with parents. This recommendation is consistent with grading research
(Brookhart, 1999; O'Conner, 2007; Winters, 2002) which suggests grades should

communicate more details regarding students' performance. An expanded report card, which

includes the multiple objectives students are required to master, has already begun to be

employed at some schools as the result of a school-initiated pilot report card. Indeed, teachers

within focus group two reported the development of a new report card which incorporated

the profile card was in the process of being approved by WCPSS for use within the piloted

group of schools.

Consistent Grading Practices Across School Levels. Teachers within focus group

four shared the desire for grading consistency across school levels. At the district level,

questions regarding grading consistency between elementary and middle schools have been

reflected in grading conversations occurring at the middle school level. Indeed, as recently as

the spring of 2011, WCPSS teachers attended a grading workshop with Tom Guskey. This

workshop, which was attended by WCPSS teachers from all grade levels, was focused on

understanding grading best practices and reinforced many of the grading tenets on which

standards-based grading is based.

Researcher Recommended Improvements. Based on grading research, grading

analysis, and teachers' feedback and recommendations there are additional recommendations

for improvement related to training and resources.

Update and Publicize Training Resources. While WCPSS provided guidance via its

Standards-Based Grading Blackboard site, the documents housed on this site need to be

updated and additional information added in order to provide teachers up-to-date guidance.

Indeed, teachers' reported initial struggles with standards-based grading may be alleviated by

updating this resource. Furthermore, teachers need to be made aware of the availability of this resource and be given opportunities to engage in professional development.

Create Level 4 Extensions. Given the value added by assessing student understanding via level 4, it is essential that teachers are able to provide students level 4 opportunities and assess students for level 4 performance. With the economic downturn and the resulting downsizing of central services in mind, this researcher recommends central services staff facilitates greater sharing of teacher and school created resources and develop resources where gaps exist. Both system and teacher developed extensions for all subject areas should be disseminated via IRTs and the Standards-Based Grading Blackboard site.

Increase Collaboration. One of the reasons teachers gave for the inconsistent grading across classrooms was due to the lack of common planning time and the resulting lack of collaboration; thus, grading consistency could be improved by increased planning time. In light of time constraints which plague our schools, another method of increasing collaboration would be to encourage sharing of teacher created resources via the Standards-Based Grading Blackboard site. It should be noted that although teachers expressed concern regarding grading inconsistency given the strength of the grade/EOG correlations this study's findings suggest that grading inconsistency may not have been a major problem within WCPSS. Furthermore, while efforts should be made to decrease subjectivity which may bias a student's grade, grading requires teachers' professional judgment. Therefore, while teachers would benefit from additional collaboration the expectation would be to improve teacher judgment (rather than eliminate it altogether) and thereby improve grading consistency.

Study Piloted Report Card. The piloted WCPSS' elementary report card which includes students' profile card information should be examined by WCPSS to determine if this report card should become the model for all elementary schools. According to grading research a basic premise behind standards-based grading is improved communication of student learning to parents (Carlson, 2003; Jung & Guskey, 2007; Marzano, 2000; O'Conner, 2002, 2007; Stiggins, 2005; Tomlinson, 2005); thus, it would seem likely that communicating additional information regarding student performance would further fulfill the promise of this grading system. Additionally, incorporating grades by objective is also consistent with the interpretation of standard-based grading by other districts throughout the U.S. which have employed report cards providing greater detail regarding student performance (Perlstein, 2003). These amplified report cards provide information on a student's proficiency on various standards and provide a more detailed grading system. In should be noted, that a common criticism of standards-based grading is that detailed grades and the increased level of information provided on standards-based grading report cards may be confusing to parents. This criticism has been supported by some limited findings indicating that school systems that have implemented standards-based report cards detailing student progress have found mixed results regarding parents' response. Thus, in light of mixed research regarding parents' view of the utility of more detailed information a study of parents' satisfaction with this piloted report card is recommended.

Discussion

The results of this study indicate standards-based grading may have value beyond traditional grading practices. The benefits of this grading practice include the equity potential

within this grading system, the provision of a predictive tool to identify struggling students, and the requirement that teachers offer and assess students' understanding. The equity potential, as posited by researchers, was reflected in this study's findings of consistent grade/EOG correlations across racial and academic risk groups. Furthermore, due to the strong correlations between grades and EOG scores, grades can be used to predict students' success on EOG exams. Finally, the addition of level 4 learning opportunities and assessment, which requires students' understanding beyond prefect reiteration of the knowledge presented, means students are given opportunities to demonstrate deeper understanding than required under traditional A-F grading systems. The scarcity of level 4 opportunities needs to be addressed given this level of teaching and learning allows students to demonstrate application and understanding beyond what is required to earn an A within a traditional A-F grading system.

In light of the equity potential, predict value, and expanded learning opportunities provided by this grading system, there needs to be additional training and resources provided to teachers as well as an evaluation of the piloted report card to ensure this grading system realizes its full potential. Furthermore, although overall teachers indicated an understanding of this grading system, discussions revealed certain misconceptions in teachers' understanding and teacher reported grading inconsistency which could be addressed by strengthening training.

WCPSS' standards-based grading system is consistent with research recommended practices (i.e., mastery and separation of homework from content grades); however, there was inconsistency between WCPSS' system and research in that WCPSS combined multiple

objective grades into one final subject grade which represents the only grade included on the report card. Given a major tenet of standards-based grading systems is improved communication to parents, providing parents information from students' profile cards would fulfill the intent of increased communication of student performance inherent within this grading system. Moreover, since a common criticism of standards-based grading is that the detailed report cards are too confusing for parents (Perlstein, 2003), it would be advantageous to evaluate the piloted report card and examine parent feedback to determine if a more detailed report card should be implemented district wide.

In order to further contextualize the findings within this study two important points bare consideration: 1) the recognition of the role of teachers' professional judgment, and 2) the existence of achievement gaps across student subgroups. Although standards-based grading is intended to reduce teacher subjectivity; teachers' professional judgment is an essential part of grading. Thus, systems should seek to create a shared understanding of expectations across classrooms and thereby improve the reliability within grading and strengthen rather than eliminate teachers' professional judgment. Furthermore, it should be noted that although EOG/grade correlations were consistent across subgroups, this also indicates achievement gaps between student subgroups performance on EOG exams were also reflected within standards-based grading. Thus, conclusions drawn here may indicate additional biases were not introduced within students' grades; however, this study's findings reflect achievement gaps by ethnicity and academic risk factor. Indeed, achievement gaps within EOG performance and grades were consistent, but present, and need to be addressed in order to ensure an equitable educational experience.

With fidelity of implementation and positive student results WCPSS' elementary

school grading offers a model for other grade levels and potentially other districts. While

WCPSS standards-based grading was based on two of the major tenets and provided

evidence of the equity promised, improvements to this system would strength these results.

Teachers' insightful recommendations for improving WCPSS' current grading system by

providing additional rubrics and models, capturing and reporting student growth, including

information from students' profile cards on their report card, and providing consistent

grading practices across classrooms and school levels deserve to be considered by central

service staff.

The practical application of this study's findings should be further discussed at the

district and school levels in terms of appropriate grading practices and the possible

application of mastery and/or content only grades within middle and high schools. The

successful implementation of standards-based grading within WCPSS' elementary schools

has realized some of the benefits described by researchers. Considering the benefits realized

at the elementary level, WCPSS should consider incorporating some of the grading principals

from standards-based grading into the middle and high school levels. Although switching

from an alpha (i.e., A-F) grading system at the middle and high school levels would probably

meet with substantial resistance, maintaining the alpha symbols while incorporating the basic

tenets of standards-based grading—mastery learning and/or the separation of homework from

content grade—could provide more meaningful grades at the upper grade levels.

While this study was conducted within one North Carolina school district, WCPSS is

a large school district encompassing urban and rural areas. Moreover, WCPSS' student

population is diverse and representative of North Carolina's overall demographics (the only

notable difference being WCPSS' economically disadvantaged or FRL population was

approximately 15 percentage points lower than the state in 2009-10) (U.S. Department of

Education, 2011). Given this research was conducted within a large diverse school system,

this study's findings has the potential to inform state and national grading practices

especially in light of the scarcity of grading research regarding the implementation of

standards-based grading and the absence of research examining the equity potential inherit

within this grading practice. Furthermore, while there is some empirical evidence confirming

the relationship been student grades and standardized assessments (Haptonstall, 2010;

Paeplow, 2008b; U.S. Department of Education, 1994), this study's findings add to the

limited empirical evidence comparing the reliability of standards-based grading and

traditional grading practices.

Future Research

This study offered evidence of a strong correlation between standards-based grading

and EOGs (a standardized assessment) which were comparatively stronger than A-F

grading/EOG correlations reported within this district (Paeplow, 2008b). These results were

consistent with initial grading research conducted by Haptonstall (2010) which found a

greater correlation between standards-based grades and a standardized assessment, than

found between traditional grades and a standardized assessment. Greater confidence in the

conclusions offered by both this study and Haptonstall's study (2010) will be gained by

additional studies comparing the reliability of standards-based grading to that of traditional

grading. Indeed, further research on the implementation of standards-based grading systems,

the grade/standardized assessment correlations, and the resulting student achievement

outcomes would further enlighten this grading debate.

Chapter Summary

The analysis of WCPSS' standards-based grading practice has offered evidence of the

equity potential inherit within this mastery grading system. This study concludes this based

on correlations by student subgroup and the consistency of teachers' reported understanding

and implementation of standards-based grading within WCPSS' elementary schools. Indeed,

the fact that correlations across student ethnic and academic risk factor subgroups remained

consistent may established research-based evidence of increased equity. Furthermore, middle

school grades of A-F had a weaker correlation to EOG scores (Paeplow, 2008b) than that

found for standards-based grading and EOG scores at the elementary school level. Given

EOG scores represent a previously validated measure of student knowledge of state

standards, these finding provide evidence that standards-based grading may be a more

objective grading system. Furthermore, the finding that grade/EOG correlations at the

elementary level were considerably stronger than found at the middle school level should

provide insight into possible drawbacks of the traditional A-F grading system. Additionally,

the ability to use second-quarter grades to predict student success on EOG exams, provides a

valuable mid-year indicator for educators to identify and provide intervention to students

who are struggling and thereby improve their chances of being at or above grade level at the

end of the year.

Given the evidence of equity and the predict value of this grading system, there needs

to be additional training and resources provided to teachers as well as an evaluation of the

piloted report card to ensure this grading system realizes its full potential. Moreover, providing parents information from students' profile cards fulfills the intent of increased communication of student performance inherent within this grading system; and thusly it would be advantageous to evaluate the piloted report card and examine parent feedback. The scarcity of level 4 opportunities needs to be addressed given this level of teaching and learning allows students to demonstrate application and understanding beyond what is required to earn an A within a traditional A-F grading system. The practical application of this study's findings should be further discussed at the district and school levels in terms of appropriate grading practices and the possible application of mastery and/or content only grades within middle and high schools.

By presenting the implementation of standards-based grading within a large school district and an indication of the equity potential within this grading system, this study's findings enlighten grading research. Indeed, given the scarcity of grading research on the implementation of standards-based grading and the absence of prior research examining the equity potential inherit within standards-based grading, this study's findings both inform research and have the potential to inform state and national grading practices.

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APPENDIX

APPENDIX A - *Data Collection Timeline on the Standards-Based Grading Study*

Main tasks	Timeline
Expanded literature review	Summer 2010
Defend Proposal	December 2010
IRB approval for study	February 2011
WCPSS approval	March 2011
Expanded document collection and coding	March 2011
Collection and analysis of demographic, grade, and EOG data	March 2011
6 Focus groups of WCPSS teachers	March and April 2011
Complete coding of interviews notes	April – June 2011
Member checks of initial findings	July 2011
Theoretical memos from data collected	July 2011
Draft findings	July 2011
Finalize findings	August 2011
Draft conclusions	August 2011
Finalize conclusions	September 2011
Finalize Dissertation	September 2011
Defend Dissertation	October 2011
Graduation	December 2011

APPENDIX B - *Demographic Questionnaire*

Date: _____

Grade level currently teaching: _____

Number of students in class: _____

1. How many years have you been teaching?

2. How many years or months have you used Wake County Public Schools' standards-based grading system?

3. Did you have any prior experience with standards-based grading before coming to WCPSS?

4. How did you learn the standards-based grading system? Any training?

5. What type of grading methods did you use before standards-based grading?

6. Can I contact you with follow up questions? If so, please provide your email address and/or phone number.

    Email   _____

    Phone Number   _____

7. Would you be willing to review focus group notes to improve the accuracy of the data collected? If so, please provide your email address.

    Email   (if already provided above simply put Yes)

APPENDIX C - *Focus Group Script*

1. **Prompt Question:** Rate your comfort level with standards-based grading.
   a. Very comfortable, I could teach others.
   b. Moderately comfortable, I know what I am doing but I would not feel comfortable teaching others.
   c. Uncomfortable, I do not feel comfortable using this grading system.

   Discussion Question: Can you talk me through how you assess students?

2. **Prompt Question**: I find implementing some aspects of standards-based grading within my classroom to be a challenge.
   a. True
   b. False

   Discussion Question: Can you tell me about the most challenging aspect of standards-based grading?

3. **Prompt Question**: Homework impact on a student's grade.
   a. **True**
   b. **False**

   Discussion Question: Using standards-based grading how do you compile a student's grade? Can you tell me what makes up a student's grade?
   Discussion Question: How do you use homework?

4. **Prompt Question:** Can the 1-4 scale be compared to the A-F scale?
   a. **Yes**
   b. **No**

   Discussion Question: Can you tell me how the 1-4 scale compare to the A-F scale?

5. **Prompt Question**: Is the 1-4 scale a true representation of a student's abilities?
   a. **Yes**
   b. **No**

   Discussion Question: How well do you feel the 1-4 scale represents a student's abilities?
   Discussion Question: Can you tell me how you determine the 1-4? What determines if a student receives a 1, 2, 3, 3*, or 4?

Samples of student report cards (student name removed).

APPENDIX D - *Participant Consent Form*

Standards-Based Grading Study
Principal Investigator: Colleen Paeplow
Faculty Sponsor: Bonnie Fusarelli, Ph.D.

We are asking you to participate in a research study. The purpose of this study is to investigate the implementation of standards-based grading within Wake County Public School System's (WCPSS) elementary schools.

If you agree to participate in this study, you will be asked to participate in a 45-60 minute focus group discussion with other teachers at your school. The focus group will be audio and video recorded to ensure the accuracy of responses.

Since you will be asked to share information regarding your grading practices, your responses will be kept confidential. Direct quotes may be used in the final report, but the identity of respondents will be masked. The information reported from this study will inform central office staff of the implementation of standards-based grading, teachers understanding of standards-based grading, and if teacher experience influences this process.

The information in the study records will be kept confidential. Data will be stored securely in the researcher's home. No reference will be made in oral or written reports which could link you to the study. All schools and teacher participants will be assigned fictitious names and referred to only by these names in any oral or written reports.

If you have questions at any time about the study or the procedures, you may contact the researcher, Colleen Paeplow, at cpaeplow@wcpss.net or (919) 850-1876. If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Dr. Dr. Arnold Bell, Chair of the NCSU IRB for the Use of Human Subjects in Research Committee, Box 7514, NCSU Campus (919-515-4420) or Ms. Debra Paxton, IRB Administrator, Research Administration, Box 7514, NCSU Campus (919-515-4514).

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be returned to you or destroyed at your request.

"I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may withdraw at any time."

Subject's signature _____ Date _____

Investigator's signature _____ Date _____

APPENDIX E- *Wake County Public School Systems Research Study Application*

WAKE COUNTY
PUBLIC SCHOOL SYSTEM

| RESEARCH STUDY APPLICATION |

"Save As" in your hard drive. Use the Tab Key to move around

Date of Submission: June 2010

Proposal Number: _____ (E&R use only)

Title of Proposal: Standards-Based Grading 2005-06

Proposed Project Starting Date: July 2010

Ending Date: December 2011

Research Applicant's Name: Colleen Paeplow

Address: 116 Whiteoak Drive

City: Youngsville

State: NC

Zip: 27596

Home Telephone Number: Area Code/No. 919/ 562-7405

Work Telephone Number: Area Code/No. 919/ 850-1876   Ext:

E-mail Address: cpaeplow@wcpss.net

Fax: Area Code/No. 919/ 850-1861

Sponsor of Research Project

Facility, Staff or Agency: Bonnie Fusarelli, Ph.D., North Carolina State University

Address: Poe Building - Educational Research & Leadership & Counselor Education

City: Raleigh

State: NC

Zip: 27695

Home Telephone Number: Area Code/No.   /

Work Telephone Number: Area Code/No. 919/ 515-6359   Ext:

E-mail Address: bonnie_fusarelli@ncsu.edu

Fax: Area Code/No. 919/ 515-6359

RESEARCH OVERVIEW

Participants	Sample Size	Description (Schools, Grades, Demographics)	Time Required	Data Required (From Participants or WCPSS Records)
Students	Elementary school student data		No student time required	Student Demograhics, Grade, and EOG data
Staff @WCPSS	36-42	elementary school teachers	45-60 minutes	Focus Groups
Parents				
Others				

COMMENTS:

1.   Ultimate Purpose of Study (Thesis, Publication in Journal):

This study will investigate the implementation of standards-based grading within Wake
County Public School System's (WCPSS) elementary schools, teachers understanding of
the standards-based grading policy, and if teacher experience influences this process. The
study will provide data for my dissertati on. The data will inform my dissertation and
possibly be used in future publications in education journals.

2.   Describe how this study will contribute to the Wake County Public School System
The implementation of a policy needs to be ex amined to ensure the policy has been
understood by staff and implemented consistently. The information reported from this
study will inform central office staff of the implementation of standards -based grading,
teachers' understanding of standards -based grading, and if teacher experience influences
this process. This information can be useful in informing training requirments and further
grading discussions at middle and high school.

3.   Description of anticipated contribution to theory or field:
Districts across the United States have been expanding and changing the traditional A -F
letter grading system with more detailed standards -based reporting. While school systems
that have implemented a standards -based report card detailing student p rogress have
found mixed results, current research is spar se. This study would offer invaluable
information on the implementation of standards -based grading. Due to the difficulty of
assessing a teacher's understanding of the grading system through quantit ative methods,
this qualitative study will provide greater understanding of the implementation of a
standards-based grading policy.

4.   Hypotheses of the study:

1)   What is the relationship between students' grades and their EOGs?

a.   How do students with similar EOG achievement levels perform in the classroom (as
measured by grades)?

b.   Within similar EOG achievement levels, how are grades distributed by student subgroup?

2)   How has standard-based grading been implemented at the classroom l evel?

a.   How does teacher understanding of standards -based grading impact the application of
this grading method?

b.   How does teacher experience effect the implementation of standards -based grading?

c.   How does teacher understanding of standards -based grading impact students'
opportunities to engage in level 4 learning?

d.   How does teacher understanding of standards -based grading impact students'
opportunities to be graded for level 4 learning?

Brief summary of research design including statistical analysis procedures:
This study will employ a mixed method design utilizing both quantitative and qualitative methods. Student level analysis of elementary school demographic, grade, and EOG data will be examined using discriptive statistics and correlations. The interviews will be semi-structure. Each interview will be taped, with the subject's permission. The interviews will be transcribed and coded. Notes from the focus groups will also be coded. Theoretical memos will be developed from the coded data and this information will serve as data for the formal report.

6. State whether this is a single study, or one of a series planned or contemplated.
    Yes

7. Describe how the equipment or procedures to be used might constitute a potential emotional or physical hazard to subjects.
    The potential risk includes loss of time during interview. In an attempt minimize this risk the researcher will meet with the subjects at a time that is convenient to the subjects. Subjects will be sharing information regarding how they do their job with the researcher a central office employee this may cause subjects concern over the confidentiality of their responses. The researcher will include a confidentiality statement on the consent form presented to each subject prior to their interview. Subject names will not be stored with their responses. All data collected during study will be kept at the researcher's home. Each subject will be given a fictitious name in the report to ensure confidentiality.

8. List at least three prominent research studies, articles, or books most pertinent to the field of this research:
    Manzo, K. M. (2001). Districts tinker with report cards to make better sense of standards. Education Week, 21(4), 1-3.

    Guskey, T. R. (2002). Perspectives on Grading and Reporting: Differences among Teachers, Students, and Parents. Paper presented at the Annual Meeting of the American Educational Research Association. ERIC Document Reproduction Services No. ED 464 113.

    Brookhart, S.M. (1999). The Art and Science of Classroom Assessment: The Missing Part of Pedagogy. ASHE-ERIC Higher Education Report (Vol. 27, No 1). Washington, DC: The George Washington University, Graduate School of Edcuation and Human Development.

9. List equipment and names of tests to be used. (Attach descriptions or copies of test instruments.)

List equipment and names of tests to be used. (Attach descriptions or copies of test instruments.)

        Focus group demographic questionnaire
        Focus group questions
        Turning point clicker response equipment
        Video camera
        Digital recorder
        Audio tape recorder

Facilities needed:
None

11. Source of research funds:

Unfunded Dissertation

APPENDIX F - *North Carolina State University Institutional Review Board*

North Carolina State University
Institutional Review Board for the Use of Human Subjects in Research
SUBMISSION FOR NEW STUDIES

GENERAL INFORMATION

1. **Date Submitted:** *12-13-10*
1a. **Revised Date:** _____
2. **Title of Project:** *Easy as 1, 2, 3: Exploring the Implementation of Standards-Based Grading in Wake County Elementary Schools*
3. **Principal Investigator:** *Colleen Graham Paeplow*
4. **Department:** *Educational Research and Policy Analysis*
5. **Campus Box Number:** *7801*
6. **Email:** *cpaeplow@embarqmail.com*
7. **Phone Number:** *919-562-7405*
8. **Fax Number:** *919-850-1861*
9. **Faculty Sponsor Name and Email Address if Student Submission:** *Dr. Bonnie Fusarelli*
10. **Source of Funding? (required information):** S*tudent funded; no additional funding.*
11. **Is this research receiving federal funding?:** *No*
12. **If Externally funded, include sponsor name and university account number:** *N/A*
13. **RANK:** ☐ Faculty ☒ Student: ☐Undergraduate; ☐ Masters; or ☒PhD ☐ Other (specify): _____

As the principal investigator, my signature testifies that I have read and understood the University Policy and Procedures for the Use of Human Subjects in Research. I assure the Committee that all procedures performed under this project will be conducted exactly as outlined in the Proposal Narrative and that any modification to this protocol will be submitted to the Committee in the form of an amendment for its approval prior to implementation.

Principal Investigator:

<u>*Colleen Graham Paeplow*</u>   *   <u>*12-13-10*</u>
(typed/printed name)   (signature)   (date)

*As the faculty sponsor, my signature testifies that I have reviewed this application thoroughly and will oversee the research in its entirety. I hereby acknowledge my role as the **principal investigator of record**.*

Faculty Sponsor:

<u>*Dr. Bonnie Fusarelli*</u>   *   <u>*12-13-10*</u>
(typed/printed name)   (signature)   (date)
*Electronic submissions to the IRB are considered signed via an electronic signature. For student submissions this means that the faculty sponsor has reviewed the proposal prior to it being submitted and is copied on the submission.

Please complete this application and email as an attachment to: <u>debra_paxton@ncsu.edu</u> or send by mail to: Institutional Review Board, Box 7514, NCSU Campus (Administrative Services III). **Please include consent forms and other study documents with your application and submit as one document.**
****

For SPARCS office use only
Reviewer Decision (Expedited or Exempt Review)
         ☐ Exempt   ☐ Approved   ☐ Approved pending modifications   ☐ Table

Expedited Review Category: ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6   ☐ 7   ☐ 8a   ☐ 8b   ☐ 8c   ☐ 9

Reviewer Name   Signature   Date

North Carolina State University
Institutional Review Board for the Use of Human Subjects in Research
GUIDELINES FOR A PROPOSAL NARRATIVE

In your narrative, address each of the topics outlined below. Every application for IRB review must contain a proposal narrative, and failure to follow these directions will result in delays in reviewing/processing the protocol.

A.   **INTRODUCTION**
    1.   Briefly describe <u>in lay language</u> the purpose of the proposed research and why it is important.

> This study's purpose is to investigate teachers' understanding of standards-based grading, to explore how standards-based grading has been implemented within Wake County Public School System's elementary schools, and to investigate the assumption that this method of grading is an equitable grading practice. Although numerous researchers discuss standards-based grading, there is limited research regarding the implementation and application of this grading practice. Both the potential for equity and the questions generated during the pilot study conducted in 2006 indicate the necessity for research examining the implementation and application of standards-based grading. The significance of this study will rest in enlightening the current grading discussion by providing data on teacher understanding and the implementation and application of standards-based grading within a large school district.

    2.   If student research, indicate whether for a course, thesis, dissertation, or independent research.

> A dissertation submitted to the Graduate Faculty of North Carolina State University in partial fulfillment of the requirements for the degree of Doctor of Education

B.   **SUBJECT POPULATION**
    1.   How many subjects will be involved in the research?

> 36-48 teachers will be asked to participate in focus groups.

    2.   Describe how subjects will be recruited. Please provide the IRB with any recruitment materials that will be used.

> A purposeful intensity sample of six of the 102 WCPSS elementary schools with the strongest and weakest correlations between student report card grades and reading and mathematics End-of-Grade (EOG) scores will be used to select 6 elementary schools within WCPSS, a large urban school system in North Carolina. The intensity sampling method will be employed to select six schools from which teachers will be solicited for participation in focus groups. An intensity sample refers to samples that include cases that strongly manifest the phenomenon of interest. These "information-rich cases" will be selected in order to explore possible differences in schools with strong and weak correlations between grades and EOG scores. Three schools with a strong correlation and three schools with weak correlation between grades and EOG scores will represent the intensity sample. From each of the six selected schools one focus group of 6 to 8 teachers will be conducted. The researcher will contact the principal and request permission to solicit teachers' participation in a 45-60 minute focus group. The researcher will request permission to introduce the study in a 5 minute presentation and/or hand out the participation flyer during a staff meeting.

    3.   List specific eligibility requirements for subjects (or describe screening procedures), including those criteria that would exclude otherwise acceptable subjects.

> Not Applicable: There will not be any screening criteria used to limit subject participation.

    4.   Explain any sampling procedure that might exclude specific populations.

> The use of a purposeful intensity sample will limit the selection of schools from 102 to 6. Participation of teachers in the focus groups will be limited to teachers within the 6 schools selected.

1. Disclose any relationship between researcher and subjects - such as, teacher/student; employer/employee.

Nor direct relationship, however, for the last ten years, I have worked as an Evaluation Specialist for Wake County Public School System's Evaluation and Research Department. I do not have any direct relationship with the anticipated subjects other than having the same employer (Wake County Public Schools).

2. Check any vulnerable populations included in study:

☐ minors (under age 18) - if so, have you included a line on the consent form for the parent/guardian signature
☐ fetuses
☐ pregnant women
☐ persons with mental, psychiatric or emotional disabilities
☐ persons with physical disabilities
☐ economically or educationally disadvantaged
☐ prisoners
☐ elderly
☐ students from a class taught by principal investigator
☐ other vulnerable population.

7. If any of the above are used, state the necessity for doing so. Please indicate the approximate age range of the minors to be involved.

C. PROCEDURES TO BE FOLLOWED

1. In lay language, describe completely all procedures to be followed during the course of the experimentation. Provide sufficient detail so that the Committee is able to assess potential risks to human subjects. In order for the IRB to completely understand the experience of the subjects in your project, please provide a detailed outline of everything subjects will experience as a result of participating in your project. Please be specific and include information on all aspects of the research, through subject recruitment and ending when the subject's role in the project is complete. All descriptions should include the informed consent process, interactions between the subjects and the researcher, and any tasks, tests, etc. that involve subjects. If the project involves more than one group of subjects (e.g. teachers and students, employees and supervisors), please make sure to provide descriptions for each subject group.

This sequential mixed method study will utilize quantitative and qualitative methods. The researcher will submit an external research request to Wake County Public School System to gain access to both the existing student data used for the quantitative portion of this study and in order to solicit teacher participation in the qualitative portion of this study.

The quantitative portion will include two elements: (1) an examination of the correlation between report card grades (reading and mathematics) and reading and mathematics EOG scores which will enable the selection of schools from which to elicit a sample of schools with the strongest and weakest correlations between grades and EOG scores; and (2) an examination of grading distribution by subgroups to investigate equity within this grading practice. Second hand data analysis of existing Wake County Public School System student data will be utilized to examine student level report card grades, reading and mathematics EOG scores, and demographic data; thus, students will not participate directly within the study. All student data will be reported in the aggregate (individual level student data will not be reported). All student identifiers (i.e. student names and state assigned identification numbers or NCwise Ids) will be removed from the data file prior to the researcher seeing the data provided by the district.

A qualitative exploration of the level of understanding and resulting implementation of standards-based grading within Wake County Public School System will be conducted via a focus group at each of the 6 schools selected. Once the schools are determined the principal will be contacted by the researcher to get permission to solicit teacher volunteers for participation in the focus groups. Once teachers agree to participate the focus group will be setup at a time that is convenient to the subjects. All teachers will receive and sign a consent form. The focus groups will be video and audio recorded. Teachers will be asked to complete a brief demographic questionnaire at the beginning of the session. Then as a group teachers will be asked prompt questions designed to generate discussion. Teachers will submit answers via a response receiver (Turning Point). The hand held devises are designed to provide an opportunity for subjects to respond anonymously and display group level responses. The researcher will then lead a

1. How much time will be required of each subject?

> 45-60 minutes for the focus group participation. Possibly 5-20 additional minutes if asked follow up questions or to review data for member checks.

D.   POTENTIAL RISKS
1. State the potential risks (physical, psychological, financial, social, legal or other) connected with the proposed procedures and explain the steps taken to minimize these risks.

> None anticipated

2. Will there be a request for information that subjects might consider to be personal or sensitive (e.g. private behavior, economic status, sexual issues, religious beliefs, or other matters that if made public might impair their self-esteem or reputation or could reasonably place the subjects at risk of criminal or civil liability)?

> Subjects will be sharing information regarding how they do their jobs. This may cause the subjects concern over the confidentiality of their responses.

a. If yes, please describe and explain the steps taken to minimize these risks.

> The researcher will include a confidentiality statement on the consent form presented to each subject prior to their participation in the focus group. Subject names will not be stored with their responses. All data collected during the study will be kept in a secured location at the researcher's home. Each subject will be given a pseudonym in the report to ensure confidentiality.

b. Could any of the study procedures produce stress or anxiety, or be considered offensive, threatening, or degrading? If yes, please describe why they are important and what arrangements have been made for handling an emotional reaction from the subject.

> No, the study does not include procedures that produce stress or anxiety

2. How will data be recorded and stored?

> Data will be stored electronically on the researcher's computer which is located at the researcher's home.
>
> Each focus group will be video and audio recorded. Audio tapes will be transcribed by a paid transcriptionist. The transcriptionist will be asked to sign a confidentiality agreement and return all files and the resulting scripts to the researcher. These files will be stored in a locked cabinet at the researcher's home.

a. How will identifiers be used in study notes and other materials?

> Student: Student identifies (i.e. name and NCwise ID) will be removed from the data file. Student data will be aggregated. No student names or identifiers will be used in study notes.
>
> Teacher: To ensure the confidentiality of the participants, the schools and teachers included in this study will be assigned pseudonyms. Pseudonyms will be assigned by the researcher; thus, only the researcher will have knowledge of this assignment and access to the code book.

a. How will reports will be written, in aggregate terms, or will individual responses be described?

> Student: Student demographic, report card grade, and reading and mathematics EOG data will be reported in the aggregate; no individual student level data will be shared.
>
> Teacher: Teacher responses will be included both in the aggregate and individually. Since teacher responses will be described individually, teachers and schools will be given pseudonyms to ensure the confidentiality of their responses.

1. If audio or videotaping is done how will the tapes be stored and how/when will the tapes be destroyed at the conclusion of the study.

> All data will be stored in a secure location at the researcher's home. All data will be kept by the researcher; data sent to the transcriptionist will be returned to the researcher and stored at the researcher's home. Video and audio tapes will be destroyed within one year after the completion of the dissertation.

2. Is there any deception of the human subjects involved in this study? If yes, please describe why it is necessary and describe the debriefing procedures that have been arranged.

> No.

E.   POTENTIAL BENEFITS
This does not include any form of compensation for participation.
1. What, if any, direct benefit is to be gained by the subject? If no direct benefit is expected, but indirect benefit may be expected (knowledge may be gained that could help others), please explain.

> There will be no direct benefit to the subject, however, the implementation of a policy needs to be examined to ensure the policy has been understood by staff and implemented consistently. The information reported from this study will inform central office staff of the implementation of standards-based grading teachers' understanding of standards-based grading, and if teacher experience influences this process. This information can be useful in informing training requirements and further grading discussions at middle and high school. Participation in a focus group of teachers discussing grading will provide potential insight to teacher participants.

F.   COMPENSATION
Please keep in mind that the logistics of providing compensation to your subjects (e.g., if your business office requires names of subjects who received compensation) may compromise anonymity or complicate confidentiality protections. If, while arranging for subject compensation, you must make changes to the anonymity or confidentiality provisions for your research, you must contact the IRB office prior to implementing those changes.

1. Describe compensation
> N/A

2. Explain compensation provisions if the subject withdraws prior to completion of the study.
> N/A

3. If class credit will be given, list the amount and alternative ways to earn the same amount of credit.
> N/A

COLLABORATORS

1. If you anticipate that additional investigators (other than those named on **Cover Page**) may be involved in this research, list them here indicating their institution, department and phone number.

   > The researcher may enlist the help a friend and colleague or hire a graduate student to assist with setting up and video taping the focus group sessions.
   >
   > Dina Bulgakov-Cooke – Evaluation Specialist Wake County Public School System 850-1605
   > Amy Lynn Hawkins – North Carolina State University graduate student

2. Will anyone besides the PI or the research team have access to the data (including completed surveys) from the moment they are collected until they are destroyed.

   > No

H.   CONFLICT OF INTEREST

1. Do you have a significant financial interest or other conflict of interest in the sponsor of this project? _No_

2. Does your current conflicts of interest management plan include this relationship and is it being properly followed? _N/A_

I.   ADDITIONAL INFORMATION

1. If a questionnaire, survey or interview instrument is to be used, attach a copy to this proposal.

2. Attach a copy of the informed consent form to this proposal.

3. Please provide any additional materials that may aid the IRB in making its decision.

J.   HUMAN SUBJECT ETHICS TRAINING

*Please consider taking the [Collaborative Institutional Training Initiative](#) (CITI), a free, comprehensive ethics training program for researchers conducting research with human subjects. Just click on the underlined link.

APPENDIX G - *End of Grade Mathematics Grade 4 Sample Items*

North Carolina Testing Program | EOG Mathematics Grade 4 Sample Items **Goal 1**

1. There are eighty-six thousand four hundred seconds in a day. How else could this number be written?

   A   80,064

   B   80,640

   C   86,400

   D   86,404

2. The area of North Carolina is fifty-two thousand, seven hundred twelve square miles. How would this number be written?

   A   520,702

   B   52,712

   C   52,702

   D   5,272

3. Crystal's mother was counting the money from her store. She counted $4,367. How would Crystal write this amount in words?

   A   four thousand three hundred sixty-seven dollars

   B   four thousand three hundred seventy-six dollars

   C   forty thousand three hundred sixty-seven dollars

   D   forty three thousand sixty-seven dollars

4. Jenny's vacation money consisted of a $100 bill, a $20 bill, and a $5 bill. How would she correctly write the amount of her vacation money in words?

   A   twenty-five dollars

   B   one hundred five dollars

   C   one hundred and twenty-five dollars

   D   one hundred twenty-five dollars

5. The numbers of lunches served in the school cafeteria for one week are listed in the chart.

Lunches Served

Day	Number
Mon.	267
Tues.	238
Wed.	315
Thurs.	359
Fri.	294

About how many lunches were served that week?

   A   1,200

   B   1,300

   C   1,500

   D   1,700

APPENDIX H - *Wake County Public School System Report Card Grades 2-5*

Wake County Public School System - Elementary Report Card - Grades 2-5

The purpose of the student report card is to inform parents of their child's achievement on state standards for each reporting period. The student's achievement is determined by a variety of ongoing assessments. This report reflects the teacher's evaluation of student achievement in accordance with the expectations stated in the NC Standard Course of Study. The goal is for every student to meet or exceed grade level expectations.

Student	
Teacher	
School	
Grade	

School Year	
Conference Dates	

Rating Scale for *Standard Course of Study*	
4	Extends targeted grade level standards
3*	Demonstrates proficiency of targeted grade level standards with evidence of application over time
3	Demonstrates proficiency of targeted grade level standards
2	Needs support to meet targeted grade level standards
1	Insufficient performance of targeted grade level standards with support

Reporting Period	**1**	**2**	**3**	**4**
Reading				
Writing				
Mathematics				
Science/Health				
Social Studies				

Reporting Period	Semester 1		Semester 2	
	Content	Participation	Content	Participation
Music				
Art				
Physical Education				

Rating Scale for Conduct and Work Habits	
3	Meets expectations
2	Inconsistently meets expectations
1	Does not meet expectations

Reporting Period	**1**	**2**	**3**	**4**
Work Habits				
(If marked, your child has demonstrated the following work habits:)				
Uses time wisely				
Is attentive and listens				
Completes assignments				
Works independently/ seeks help when needed				
Follows directions				
Writes legibly				
Completes homework				

Reporting Period	**1**	**2**	**3**	**4**
Conduct				
(If marked, your child has demonstrated the following behaviors:)				
Is cooperative				
Shows respect for others				
Observes rules and procedures				

Grade Placement for Next Year	
	Promotion
	Promotion with intervention
	Retention pending Review Committee
	Retention with intervention

Attendance	**1**	**2**	**3**	**4**
Days Absent				
Days Tardy				

Wake County Public School System - Elementary Report Card - Grades 2-5
Teacher Comments

Name:

Quarter 1	Quarter 2
Strengths/Comments:	Strengths/Comments:
Areas for Improvement:	Areas for Improvement:
Interventions:	Interventions:

Quarter 3	Quarter 4
Strengths/Comments:	Strengths/Comments:
Areas for Improvement:	Areas for Improvement:
Interventions:	Interventions:

APPENDIX I - *Guide to Reporting Student Progress for Standards-Based Grading*

Guide to Reporting Student's Progress for Standards-Based Grading
for Specialists Grades K-5

BELIEFS:

Assessment   Assessment is continuous data collection of what students can do. Teachers use it to adjust instruction to accommodate what the student needs next. The evidence is collected in assessments by using:

- Informal Assessments
- Formal Assessments
- Rubrics

Evaluation   Evaluation is the professional judgement of the student's performance in relation to the North Carolina Standard Course of Study, the National Standards, and the Wake County Elementary Curriculum for Art, Dance, Drama, Second Languages, Music, and Physical Education. The purpose of the student progress report is to inform parents and students of progress at specific times. This is determined by a variety of ongoing assessments that could include teacher observations, checklists, anecdotal comments, portfolios, problem solving, and projects. It serves as a periodic indicator of "where the student is" and "how the student is doing" in accordance with the standards. Evaluations are formally recorded on the student's progress report.
A high attendance rate is necessary for maximum progress to occur.

Communication   The progress report is only one part of the total school-home communication process. Parents should be notified as soon as possible regarding areas of concern by issuing an interim report or by communicating with the parent(s) of the affected student.

FEEDBACK (formative assessment)

Teachers are judicious about assessing and evaluating student work. Specific feedback is provided on student work that represents initial learning and practice. However, letter grades and rubric scores are assigned to work that is evaluated. The elementary evaluation system is not based upon percentages. Therefore, **it is not appropriate to provide percentage scores on student work.**

INTERIM REPORTS

The audience and frequency of interim reports is a school-based decision. Schools may use their own interim form. Teachers use the performance codes that are on the progress report when using codes on the interim.

PROGRESS REPORTS (summative evaluation)

Teachers use concrete evidence to support the evaluation of student performance. Samples of classwork, homework, assessments, and/or anecdotal note are kept throughout the nine-week period. Students and parents are made aware of the goals and objectives targeted for each nine weeks.

When   Progress reports for Specialist Classes (Art, Dance, Drama, Second Languages, Music, and Physical Education) will coincide with the existing grading report policy established for each grade level at each school.

Instructional & *Performance Levels*	The teacher uses assessment data and evidence including documented observations of student performance in determining an instructional level. Grade level expectations and pacing guides also assist teachers in determining instruction and performance levels. The student's grade is placed in the box that corresponds to the appropriate special subject.
Performance Codes	A **Content Grade** is assigned to reflect student achievement of the *Standard Course of Study*. Pluses and/or minuses (+, -) are not attached to any performance code on the progress report.

The following performance codes are used for the **Content Grade** in Art, Dance, Drama, Second Languages, Music, and Physical Education:
4 - Extends targeted grade level standards
3 - Demonstrates proficiency of targeted grade level standards
2 - Needs support to meet targeted grade level standards
1 -Insufficient performance to targeted grade level standards with support

Note: **Although the 3* rating is listed on the report card, it is not appropriate for specialists to use it.** Due to the abbreviated and interrupted instructional time with students, 3* should be used only to indicate application over periods of time.

A **Participation Grade** is assigned to reflect student participation. Class participation and work habits are a vital part of the Art, Dance, Drama, Second Languages, Music, and Physical Education classroom experience. Procedures for socialization and appropriate conduct must be in place to insure maximum learning. An interim report or parent conference is necessary when the student's work habits or participation are interfering with successful performance in special subjects.

The following performance codes are used for the **Participation Grade** in Art, Dance, Drama, Second Languages, Music, and Physical Education:
3 – Meets expectations
2 – Inconsistently meets expectations
1 – Does not meet expectations

It is good practice to notify parents if a student does not exhibit sufficient progress of grade level goals and objectives. This notification should occur before the end of the grading period to allow the student adequate time to improve.

Directions for Completing	Art, Dance, Drama, Second Languages, Music, and Physical Education • The special teacher in these subjects provides the performance codes for the classroom teacher to record in the appropriate quarter column. (Unless school utilizes other reporting procedures) • Grades are assigned to reflect student achievement and performance of the Standard Course of Study.
Conduct and Work Habits	Conduct and work habits are a vital part of the Art, Dance, Drama, Second Languages, Music, and Physical Education classroom experience.

APPENDIX J - *Fact Sheet on new WCPSS Elementary Report Card*

Fact Sheet on new WCPSS Elementary Report Card

Pilot schools for first two years: Adams, Carver, Douglas, Morrisville and Olive Chapel elementary schools

2003-2004 schools joining pilot: Ballentine, Baucom, Conn, Hilburn Drive, Holly Ridge, Jeffreys Grove, Joyner, Knightdale, Lacy, Lincoln Heights, Olds, Poe, Powell, Reedy Creek, Smith, Underwood, Vandora Springs, Wake Forest, Weatherstone, Wendell, Wildwood Forest and Zebulon elementary schools

Report measures student mastery of state standards
For two years, five Wake County Public school Systems' administrators, teachers and parents have worked together to develop a new elementary school report card that provides consistency to the grading process and better informs parents as to their child's progress toward mastering the state's Standard Course of Study.

The new report card was developed to align with new laws and policies such as the NC Student Accountability Standards and the WCPSS Promotion policy.

The purpose for the new report card is to inform students and parents about a student's performance on the grade level standards. The new report card measures progress against a uniform standard, rather than other subjective assessments. Information related to growth and overall strengths and needs is captured in the teacher comment section.

The new report cards provide a consistent grading scale; work habits and conduct are separate; and teacher comments are specific. The new report card has helped administrators and teachers at schools piloting it to improve assessment practices, guide instruction of the state standards, and provide more deliberate development of enrichment activities.

The student performance levels of 1 to 4 indicate whether students have met the expectations set by the state in the Standard Course of Study and indicate whether the student has the necessary skills and concepts to be successful in the next quarter or next grade.

Student performance levels
The student performance level is determined with quarterly objectives and assessment data. Work habits and conduct grades are separate from the student's content proficiency.

Level 4 - Extends targeted grade level standards: represents the student exceeding grade level expectations set by the state and that a student will be successful in the next grade or quarter and whose curriculum may be enriched.

Level 3* - Demonstrates proficiency of targeted grade level standards with evidence of application: represents the student meeting the grade level expectations set by the state with evidence of application and that a student has the necessary skills and concepts to be successful

and confident in the next grade or quarter. Example: If a third-grader clearly understands the concept of multiplication, can recall the facts quickly, and can use the multiplication to solve everyday problems. The teacher has collected evidence of this mastery and recorded it on the student's math profile. The student's assessment may indicate Level 3* work.

Level 3 - Demonstrates proficiency of targeted grade level standard: represents the student meeting the grade level expectations set by the state and indicates that a student has the necessary skills and concepts to be successful in the next grade or quarter.

Level 2 - Inconsistent and needs support to meet targeted grade level standards: indicates that the student has not yet met grade level expectations set by the state and that a student does not have the necessary skills and concepts to be successful in the next grade or quarter. This should alert parents that close communication is needed for further student support. If the student seldom turns in math homework and does not cooperate in group problem solving in math, this student's work habits and conduct grade may indicate Level 2.

Level 1 - Insufficient performance of targeted grade level standards with support: indicates that the student has not yet met grade level expectations set by the state and that a student does not have the necessary skills and concepts to be successful in the next grade or quarter. This should alert parents that close communication is needed for further student support.

Grades are provided twice a year for weekly special classes such as art and music, instead of quarterly. This provides special teachers the time with students they need to assess each student's work.

The new report card provides space for teachers to list the individual interventions such as a volunteer tutor, mentoring program, or Accelerated Learning Program instruction in which each student participates.

Reporting on classroom behavior
The new report card includes reports on the student's conduct and work habits. In reporting on conduct, the teacher can indicate whether the student meets expectations in cooperating with others, respecting others, and observing rules and procedures. In reporting on work habits, the teacher can indicate whether the student uses time wisely, listens carefully, completes assignments, writes legibly, works independently or seeks help when needed, and completes work.

The Rating Scale for Conduct and Work Habits rates students with a 1 through 3, where students receive
3 - meets expectations
2 - inconsistently meets expectations
1 - does not meet expectations

The new report card increases a teacher's ability to communicate with the student and parent about the student's success in meeting the state standards for that grade, as well as reporting on the student's classroom behavior.

APPENDIX K - *5th Grade Social Studies and Science Report Card*

Goal 1 - The learner will conduct investigations to build an understanding of the interdependence of plants and animals

_____ 1.01 Describe and compare several common ecosystems (communities of organisms and their interaction with the environment).

_____ 1.02 Identify and analyze the functions of organisms within the population of the ecosystem: producers, consumers, decomposers.

_____ 1.03 Explain why an ecosystem can support a variety of organisms.

_____ 1.04 Discuss and determine the role of light, temperature, and soil composition in an ecosystem's capacity to support life.

_____ 1.05 Determine the interaction of organisms within an ecosystem.

_____ 1.06 Explain and evaluate some ways that humans affect ecosystems: habitat reduction due to development, pollutants, increased nutrients.

_____ 1.07 Determine how materials are recycled in nature.

Goal 2 – The learner will make observations and conduct investigations to build an understanding of landforms.

_____ 2.01 Identify and analyze forces that cause change in landforms over time including: water and Ice, wind, gravity.

_____ 2.02 Investigate and discuss the role of the water cycle and how movement of water over and through the landscape helps shape land forms.

_____ 2.03 Discuss and consider the wearing away and movement of rock and soil in erosion and its importance in forming: canyons, valleys, meanders, tributaries.

_____ 2.04 Describe the deposition of eroded material and its importance in establishing landforms including: deltas, flood plains.

_____ 2.05 Discuss how the flow of water and the slope of the land affect erosion.

_____ 2.06 Identify and use models, maps, and aerial photographs as ways of representing landforms.

_____ 2.07 Discuss and analyze how humans influence erosion and deposition in local communities, including school grounds, as a result of: clearing land, planting vegetation, building dams.

Goal 3 – The learner will conduct investigations and use appropriate technology to build an understanding of weather and climate.

_____ 3.01 Investigate the water cycle including the processes of: evaporation, condensation, precipitation, run-off.

_____ 3.02 Discuss and determine how the following are affected by predictable patterns of weather: temperature, wind direction and speed, precipitation, cloud cover, air pressure.

_____ 3.03 Describe and analyze the formation of various types of clouds and discuss their relation to weather systems.

_____ 3.04 Explain how global atmospheric movement patterns affect local weather.

_____ 3.05 Compile and use weather data to establish a climate record and reveal any trends.

_____ 3.06 Discuss and determine the influence of geography on weather and climate: mountains, sea breezes, water bodies.

Goal 4 – The learner will conduct investigations and use appropriate technologies to build an understanding of forces and motion in technological designs.

_____ 4.01 Determine the motion of an object by following and measuring its position over time.

_____ 4.02 Evaluate how pushing or pulling forces can change the position and motion of an object.

_____ 4.03 Explain how energy is needed to make machines move: moving air, gravity.

_____ 4.04 Determine that an unbalanced force is needed to move an object or change its direction.

_____ 4.05 Determine factors that affect motion including: force, friction, inertia, momentum.

_____ 4.06 Build and use a model to solve a mechanical design problem: devise a test for the model, evaluate the results of test.

_____ 4.07 Determine how people use simple machines to solve problems.   (5th Grade 2011-2012)