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Teacher Performance Incentives in North Carolina

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TEACHER PERFORMANCE INCENTIVES IN NORTH CAROLINA

Executive Summary

Purpose of this Report

North Carolina's Race to the Top program includes several initiatives that are designed to improve overall teacher effectiveness and student performance, particularly for the lowest-performing schools. The purpose of this report is to offer a preliminary evaluation of the performance incentive initiative, a \$1,500-per-teacher school-wide bonus designed to increase the efforts of teachers in North Carolina's lowest-performing schools.

Data, Sample, and Methods

This report draws from two sources of data. Using quantitative data from the North Carolina Department of Public Instruction, the report offers comparative descriptive analysis between bonus-eligible schools (lowest 5%, based on Performance Composite and graduation criteria, of elementary, middle, and high schools) and bonus-winning schools (those bonus-eligible schools making "high growth"). The report also uses qualitative data from 12 bonus-eligible schools (6 winners, 6 non-winners) to understand teachers' and administrators' perceptions of and responses to the performance initiative.

Key Findings

Several key findings arise from the analysis:

1. Bonus-eligible schools have disproportionately higher percentages of poor and minority students compared to North Carolina schools on average, and there is little difference in these characteristics between bonus winners and eligible but non-winning schools.
2. Educators in bonus-winning and non-winning schools alike had little awareness of the performance initiative; even among schools that received bonus pay, there was some confusion about eligibility in future years.
3. Not surprisingly, bonus-eligible schools, including bonus winners, have lower percentages of students at "grade level" than do North Carolina schools on average, but generally, bonus-eligible and bonus-winning schools have shown some improvement in student achievement from 2010 to 2012.
4. Almost none of the teachers interviewed said that performance pay would change their teaching behavior, because they see themselves as putting forth their best effort every day already. Teachers commonly reported being most incentivized by their desire to increase students' learning and growth, not by extra money.
5. There was greater support for a system of school-wide performance pay than for classroom-based performance pay; however, about 25% of respondents liked the idea of an individual, rather than a school, incentive.

Implications

There is little reason to believe that performance pay had a causal impact on either teacher effectiveness or student achievement for school years 2010-2011 or 2011-2012. First, most teachers were not aware their performance was being incentivized until after the first assessment year and half of the second assessment year had passed. Second, even if teachers were aware of the program, most teachers reported that a \$1,500 bonus would not change their teaching practices because they already believe that they are working as hard as they can.¹ This perception challenges the notion that teachers' attitudes toward and strategies for teaching can be swayed by monetary incentives.

Findings from this study also inform the policy debate about school- versus classroom-based incentives. While a small minority of respondents—particularly those who did not report having a team-oriented or collaborative school culture—preferred a classroom-based performance structure, the vast majority of teachers and administrators preferred a school-level bonus structure, citing concerns about collaboration and morale. Some administrators and teachers—even those in untested areas—recognized the extra pressure teachers in tested subject areas face and were therefore not opposed to those teachers receiving a larger percentage of the bonus money; however, many teachers recognized that it “takes a whole school” to educate a child and believed the bonus initiative should be structured accordingly.

¹ In the original scope of work, school-level bonuses were to be replaced by individual bonuses for the 2012-13 and 2013-14 school years for teachers whose students met or exceeded expected growth; North Carolina has since been granted permission to continue the school-level bonuses along with the addition of teacher-level bonuses. At the time data were gathered for this report, the possibility for larger bonuses (combinations of school-level and teacher-level) was not yet approved.

Introduction

Performance Pay

As Taylor et al. (1991) note, “the principle of merit pay is deeply rooted in the American way of differentiating compensation increments based on varying levels of output or productivity.” Merit pay philosophies assume that there is little incentive, besides compensation, to do good work. An idea originating from industry, merit pay programs have been applied to the education sector for several decades and continue to be incorporated into school accountability programs today (Podgursky and Springer 2007).

In 1996, North Carolina instituted an incentive program based on the ABCs accountability model (**A**ccountability, teaching the **B**asics, and local **C**ontrol). This accountability program set growth² and performance standards based primarily on End of Grade (EOG) and End of Course (EOC) test results for each public school in the state. If a school met “expected growth” based on what students in the school were predicted to score, all certified teachers, principals, and staff received a \$750 bonus. If the school met or exceeded “high growth,” all certified staff received an additional \$750 bonus, for a total of \$1,500.

Though monetary bonuses were discontinued in 2009 out of fiscal necessity, bonuses were reinstated as a part of the Race to the Top (RttT) program for the lowest-performing schools in the state. This incentive aims to increase the performance of North Carolina’s lowest-performing schools by encouraging teachers to increase their effort and/or change their teaching practices for maximal effectiveness.

Some studies have found positive effects of merit pay on student and teacher outcomes. Schools and districts that use performance pay tend to have higher student performance (Figlio and Kenny 2007; Woessmann 2011; Goldhaber and Walch 2012), pay teachers higher incomes than teachers who do not teach in pay-for-performance districts (Belfield and Heywood 2008; Goldhaber 2008), and elicit greater work effort from teachers (Ahn 2008). However, some of these studies are limited by data or methods that make causal claims untenable (Figlio and Kenny 2007; Belfield and Heywood 2008), and even among studies that take advantage of experimental designs, positive effects are inconsistent across subjects, time, and grades (Springer et al 2010; Goldhaber and Walch 2012).

The highest-quality studies conducted to date suggest that pay-for-performance systems do not affect either teacher practices or student outcomes (Springer et al. 2010; Fryer 2011; Gius 2012; Yuan et al. 2013). For example, a randomized experiment of a school-based pay-for-performance program in New York City elementary, middle, and high schools found no effect of incentives on students’ performance, attendance, high school graduation, or behavior, nor did it find evidence that incentives change teacher retention, absences, or reported behavior (Fryer 2011).

² “Growth” was calculated by standardizing students’ “academic change,” or changes in test scores (students’ normalized test score minus the average of scores from the two prior years, adjusted for the mean) on the mean and standard deviation from the first year the test was used. “Expected growth” is defined as having a collective change ratio of 0.0 or better based on results from all of the students who take the EOG or EOC tests, and “high growth” is defined as having a change ratio of 1.5 or better.

These findings are similar to those from Springer et al. (2010), who, from their analysis of Nashville's three-year, randomized experimental merit pay program, found that large teacher-specific incentives had virtually no effect on teachers' classroom practices or student achievement. The findings of Fryer (2011) and Springer et al. (2010) are particularly salient because the amount of money available to teachers was quite substantial—up to \$15,000 per individual teacher in Nashville and up to \$3,000 per unionized teacher for each school to distribute at its discretion in New York City.³

Though most studies find little to no effects for performance pay systems, those that examine teachers' work conditions tend to find negative effects. Despite the higher pay, Heywood and Belfield (2008) found that job satisfaction also was lower for teachers who receive merit pay. The authors posit that job satisfaction is lower because of income risk or the extra pressure or effort required to maintain earnings. Yuan et al. (2013) confirm these suspicions, finding from their survey of teachers in three randomized experiments that merit pay programs were not motivating, increased the number or hours teachers worked, increased reported stress, and damaged collegiality with coworkers. This last result is particularly interesting given that schools likely to use performance pay tend to be collaborative in nature (Belfield and Heywood 2008). What is perhaps not surprising, though, is that merit pay structures are more likely to exist in districts that have more information about individual teacher performance (high-accountability cultures), and less likely where teachers are unionized (Goldhaber 2008), two conditions that may produce more stress for teachers.

While research finds few links between performance pay and desired student and teacher output in the U.S., in other countries researchers have found much stronger links between performance pay and these outcomes. Lavy (2009), for example, found that in Israel, cash bonuses for student improvement led to increases in test-taking rates, conditional pass rates, and test scores—outcomes that he argues were mediated through changes in teaching methods and practices. Similarly, cross-national comparisons suggest that performance pay structures are significantly (.25 SD higher) related to math, science, and reading achievement (Woessmann 2011).

However, these studies operate under the assumption that monetary rewards operate the same way for teachers as do those in other professions. When teachers are civil servants intrinsically motivated to develop youth (as in the U.S.), Levačić (2009) argues that performance pay will have no impact; the teaching profession is seen as an altruistic endeavor. However, when teachers are opportunistic, using the post to advance their careers and political power (as in the case of India and many developing countries), performance pay will have a greater impact on student outcomes and teacher effort (Levačić 2009). In other words, the assumptions that guide the economic perspective of teaching, effort, and compensation do not adequately apply to cultures in which teaching is a form of altruism rather than opportunism (Levačić 2009).

Purpose of this Report

The purpose of this report is to provide a preliminary assessment of the effectiveness of North Carolina's RttT performance incentive initiative. The report provides descriptive analyses of bonus-eligible schools (lowest 5%, based on Performance Composite and graduation criteria, of

³ As Fryer notes, most schools adopted a school-wide bonus distribution structure.

elementary, middle, and high schools) and bonus-winning schools (those bonus-eligible schools making “high growth”),⁴ as well as qualitative analyses of teachers’ and principals’ perceptions of the performance incentive initiative. The following research questions guide this report:

1. *What are the characteristics of bonus-eligible and bonus-winning schools, and how do they compare to North Carolina schools on average?*
2. *Did bonus-eligible and bonus-winning schools’ academic performance improve over time?*
3. *How aware were teachers and principals in bonus-eligible and -winning schools of the program?*
4. *What effects did the incentive program have on teachers’ classroom and teaching practices?*
5. *How do teachers in bonus-eligible and bonus-winning schools perceive the program?*

Because teachers and principals appear to have been generally unaware of the performance incentive program, this report argues that the performance incentive program did not likely have any causal effect on teacher or student outcomes.

⁴ “Growth” is calculated in the same way it was calculated for the state’s original school-level bonus initiative under the ABCs accountability model; see fn 2 for an overview of the initiative’s growth calculation.

Background

Race to the Top Performance Incentive Initiative

The intent of North Carolina’s RttT-funded performance incentive program is to increase the performance of its lowest-performing schools and to provide opportunities for better education of at-risk youth in those schools by increasing teachers’ efforts to support test score growth. More specifically, the initiative’s theory of action assumes that if clear and reachable performance targets for teachers in the lowest-achieving schools are set (in this case, meeting or exceeding expected growth), and if these targets are effectively communicated to the teachers being incentivized, then teachers will change their teaching strategies to maximize their effectiveness, and they will be rewarded with monetary compensation accordingly. In December 2011 and 2012, \$1,500 bonuses were awarded to all certified staff in schools that during the previous academic year made “high growth” as defined by the state’s ABCs accountability growth target system.

In fall 2013, \$1,500 school-level bonuses will continue to be offered to all certified staff in schools that exceed “Expected Growth.” The initiative will offer an additional \$500 above and beyond the \$1,500 school-level bonus, for a total of \$2,000, to teachers in tested subject areas that exceed “Expected Growth” as determined by teachers’ individual value added composites. Even if teachers of tested subject areas teach in a school that does not make the \$1,500 school-level bonus, these teachers still may be awarded \$2,000 for exceeding individual-level “Expected Growth.”

Eligibility for Performance Incentive

Only the lowest-performing schools in North Carolina are eligible for the RttT performance incentive. Those eligible for the bonus include the lowest 5%, based on Performance Composite and graduation rates, of schools at each level: elementary, middle, and high. In other words, the percentage of elementary, middle, and high schools that are eligible for bonuses reflects the state distribution of elementary, middle and high schools (Table 1).⁵

Table 1. Bonus Status by School Type (Elementary, Middle, High)

	2011: School Performance Determines December 2011 Bonus Winners			2012: School Performance Determines December 2012 Bonus Winners		
	<i>All NC Schools</i> <i>n=2,555</i>	<i>Bonus- Eligible</i> <i>n=118</i>	<i>Bonus Winners</i> <i>n=23</i>	<i>All NC Schools</i> <i>n=2,580</i>	<i>Bonus- Eligible</i> <i>n=106</i>	<i>Bonus Winners</i> <i>n=35</i>
Elementary	51%	50%	61%	51%	54%	40%
Middle	19%	19%	9%	18%	18%	14%
High	20%	22%	22%	21%	18%	37%
Grades K-8	6%	7%	4%	6%	8%	9%
Grade 6-12	3%	2%	4%	3%	2%	0%
Non-Regular School	1%	1%	0%	2%	1%	0%

⁵ Performance incentive-eligible schools are not the same as federal Elementary and Secondary Education Act (ESEA) “priority” schools. ESEA priority schools comprise the lowest-performing 5% of Title I schools in the state (77 schools), whereas performance incentive-eligible schools comprise the lowest-performing 5% of elementary, the lowest 5% of middle, and the lowest 5% of high schools (118 schools).

Eligible schools were selected on the basis of performance and graduation criteria. First, schools with a Performance Composite in the lowest 5% of elementary, middle, or high schools were eligible for bonuses. Performance Composites are the percentage of End of Grade (elementary/middle school) or End of Course (high school) test scores in the school at or above “grade level.” The lowest 5% of elementary schools had a Performance Composite below 52.4%; for middle and high schools, the threshold was 53.0% and 58.1%, respectively. Second, high schools with four-year graduation rates under 60% also were eligible for the performance incentive. Based on these two criteria, which were calculated from 2009-2010 school-year data, 118 schools were selected for bonus eligibility. Since 2011, 12 of the lowest-performing schools have been closed or restructured, reducing the number of eligible schools to 106. For a complete list of eligible schools, see Appendix A.

Bonus-Winning Schools

In December of 2011, 23 schools earned school-wide bonuses based on growth attained during the 2010-2011 school year. In December of 2012, 35 earned school-wide bonuses for growth during the 2011-2012 school year. There was not a high degree of overlap among winners between 2011 and 2012. Only 8 of the 23 winners from 2011 earned a bonus again in 2012. Fifteen schools earned a bonus in 2011 but failed to earn the bonus again in 2012, and 27 schools earned a bonus in 2012 but did not earn one in 2011. Table 2 (following page) provides a complete list of winning schools.

Table 1 shows that in 2011, a disproportionate share of bonus winners were elementary schools. Though elementary schools made up 50% of eligible schools, 61% of bonus winners were elementary schools. The percentage of high school bonus winners (22%) reflected the proportion of eligible schools that were high schools (22%), as well as the statewide distribution of high schools (20%), but middle schools were underrepresented among bonus winners (9%, versus a 19% statewide distribution of middle schools).

In 2012, the distribution of bonus winners changed. In 2011, elementary schools were overrepresented among bonus winners (61%), but in 2012, elementary schools were underrepresented (40%). High schools, which were equally represented among bonus winners in 2011 (22%) were, in 2012, overrepresented among bonus winners (37%).⁶

⁶ It is unclear why such a large jump in high school bonus winners occurred in 2012, though it is possible that it could be due to changes in the expected-growth and high-growth formulas used to rate high schools. While in 2011 high school growth was a function of academic change, along with change in percent of graduates in college prep/college tech courses (CPCTP) and change in dropout rates, in 2012 high school growth was a function of academic change, changes in CPCTP, and changes in five-year cohort graduation rates instead of dropout rates. A greater number of bonus-winning schools had higher graduation rates in 2012 than they did in 2011, which may explain their high growth.

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Table 2. Bonus Winners by Year

2011		2012	
<i>District</i>	<i>School</i>	<i>District</i>	<i>School</i>
Hickory City Schools	Hickory Career & Arts Magnet High	Anson County Schools	Anson High
Durham Public Schools	Spring Valley Elementary	Anson County Schools	Morven Elementary
Durham Public Schools	WG Pearson Elementary	Durham Public Schools	Hillside High
Durham Public Schools	YE Smith Elementary*	Durham Public Schools	Fayetteville Street Elementary
Forsyth County Schools	Philo Middle	Durham Public Schools	Southern High
Gaston County Schools	Pleasant Ridge Elementary*	Durham Public Schools	YE Smith Elementary*
Guilford County Schools	T Wingate Andrews High*	W-S/Forsyth County Schools	Forest Park Elementary
Guilford County Schools	Fairview Elementary	Gaston County Schools	Pleasant Ridge Elementary*
Guilford County Schools	Julius I Foust Elementary	Gaston County Schools	Woodhill Elementary
Guilford County Schools	Oak Hill Elementary	Greene County Schools	Greene Central High
Guilford County Schools	Union Hill Elementary*	Greene County Schools	Greene County Middle
Hertford County Schools	Student Development Center	Guilford County Schools	T Wingate Andrews High*
Charlotte-Mecklenburg	Billingsville Elementary*	Guilford County Schools	Ben L Smith High
Charlotte-Mecklenburg	Martin Luther King Jr Middle School*	Guilford County Schools	Union Hill Elementary*
Charlotte-Mecklenburg	Pawtucket Elementary	Halifax County Schools	Northwest High
Pasquotank County Schools	PW Moore Elementary	Halifax County Schools	Southeast Halifax High
Pitt County Schools	Pactolus Elementary*	Halifax County Schools	William R Davie Middle
Pitt County Schools	North Pitt High	Hertford Count Schools	Riverview Elementary
Asheboro City Schools	Charles W McCrary Elementary	Charlotte-Mecklenburg	Billingsville Elementary*
Richmond County Schools	Mineral Springs Elementary	Charlotte-Mecklenburg	Martin Luther King Jr. Middle*
Scotland County Schools	SHS-Visual & Performing Arts	Charlotte-Mecklenburg	Sedgefield Elementary
Wilson County Schools	Vick Elementary	Charlotte-Mecklenburg	Thomasboro Elementary
Wilson County Schools	Beddingfield High*	Charlotte-Mecklenburg	West Mecklenburg High
		Pitt County Schools	Northwest Elementary
		Pitt County Schools	Pactolus Elementary*
		Pitt County Schools	Wellcome Middle
		Pitt County Schools	Fairgrove Middle
		Robeson County Schools	Townsend Middle
		Rockingham County Schools	Lawsonville Ave Elementary
		Rowan-Salisbury Schools	North Rowan High
		Tyrrell County Schools	Columbia High
		Union County Schools	Rock Rest Elementary
		Washington County Schools	Pines Elementary
		Wayne County Public Schools	Goldsboro High
		Wilson County Schools	Beddingfield High*

Note: *Received bonuses in both 2011 and 2012

Data and Methods

Data and Sample

Quantitative data come from the North Carolina Department of Public Instruction (NCDPI) and contain information on each elementary, middle, high, combination, or alternative school in the state. Of particular interest for this descriptive analysis is school-level information about characteristics such as performance, growth, teacher characteristics, and student demographic information, including percent of students eligible for free or reduced-priced lunch.

A subsample of schools was selected to participate in interviews about their perceptions of the bonus initiative. Six schools in each of the following four groups were randomly selected: bonus-winning elementary schools, bonus-winning middle or high schools, eligible non-winning elementary schools, and eligible non-winning middle or high schools. Of the 24 schools selected, 12 agreed to participate in interviews (six winners, six non-winners). Of those 12, seven were elementary schools (four winners, three non-winners), and five were middle or high schools (two winners, three non-winners).

Methods

A mix of individual and group semi-structured interviews were conducted with teachers in tested and non-tested grades and subjects, lead teachers, and administrators at each of the 12 participating schools. Approximately 130 respondents participated in focus groups and interviews. As opposed to structured interviews, which follow a strict interview protocol, the semi-structured interviews allowed for flexibility to explore more deeply participants' comments and to allow for follow-up on relevant and important themes not anticipated by researchers ahead of time. Lead researchers developed an interview protocol that centered on the following themes: awareness and perception of the bonus program, changes in professional practice, feelings about receiving the bonus, and opinions about the policy in general. Interviewers also asked administrators and some teachers to describe the context of their schools, including information about teacher turnover, student mobility, student background, collegiality, and teacher morale. As noted above, due to the semi-structured nature of the interviews, teachers and administrators also offered opinions about unanticipated themes, including school culture and collaboration.

Findings

Characteristics of Bonus-Eligible and Winning Schools

1. What are the characteristics of bonus-eligible and bonus-winning schools, and how to they compare to North Carolina schools on average?

Demographic Characteristics

Table 3 shows that bonus-eligible and winning schools had disproportionately higher average school poverty levels (as measured by free or reduced-price lunch) and average percent minority composition (black and Hispanic students) than did non-eligible schools. In 2010, the average North Carolina school had a student population in which 58% of students were in poverty, but bonus-eligible and winning schools' average percent in poverty were 88% and 87%, respectively. The average percentages of minority students in bonus-winning (84%) and eligible schools (81%) were nearly twice as high as the average North Carolina school's 43% minority composition. Additionally, bonus-eligible and winning schools had a slightly higher average percentage of novice (zero to three years' experience) teachers (25% and 26%) than did North Carolina schools in general (20%). This pattern remained consistent through 2011 and 2012.

While bonus-eligible and -winning schools have more disadvantaged school populations than schools in the state on average, there are few demographic differences between bonus winners and eligible schools (1-3% difference, depending on the indicator). These findings suggest that bonus winning schools are not necessarily the most advantaged of the eligible schools.

Table 3. Demographic Characteristics of Total NC, Bonus-Eligible, and Bonus-Winning Schools

	2010 (Baseline Year, School Performance Determines Bonus Eligibility)			2011 (School Performance Determines December 2011 Bonus Winners)			2012 (School Performance Determines December 2012 Bonus Winners)		
	All NC Schools n=2609*	Bonus-Eligible n=118	2011 Bonus Winners n=23	All NC Schools n=2609*	Bonus-Eligible n=118	2011 Bonus Winners n=23	All NC Schools n=2622*	Bonus-Eligible n=106	2012 Bonus Winners n=35
Average School Percent Poverty	58%	88%	87%	59%	88%	88%	60%	91%	89%
Average School Percent Minority[^]	43%	84%	81%	40%	81%	78%	40%*	81%*	79%*
Average School Percent Novice Teachers	20%	25%	26%	19%	25%	25%	18%	27%	25%

Note: Percentages in this table are presented for descriptive and contextual purposes only; the lack of independence among the three categories (e.g., bonus-eligible schools are a sub-set of all schools, and bonus-winning schools are a sub-set of bonus-eligible schools) prevented calculation of simple statistical significance for reported differences.

*Percentages may vary slightly due to missing data on some indicators.

[^]Percent minority in 2012 is based on 2011 data.

Academic Performance Trends of Bonus-Eligible and Winning Schools

2. Did bonus-eligible and bonus-winning schools' academic performance improve over time?

Not surprisingly, bonus-eligible and -winning schools had disproportionately lower average student achievement measures than did schools statewide at baseline in 2010, but generally, bonus-eligible and bonus-winning schools' student achievement has improved over time (Figures 1 through 4, below and following pages).

Elementary and Middle Schools

As demonstrated in Figures 1 (below) and 2 (following page), in 2011, bonus-eligible elementary and middle schools had a higher average percent of students at "grade level" (those whose scores demonstrate sufficient mastery of the EOG-tested material) in both mathematics and reading compared to their 2010 baseline estimate (up to 62% from 57% in math; up to 43% from 40% in reading). This trajectory remained consistent for bonus-eligible schools in 2012 as well, with 66% and 45% of students at grade level in mathematics and reading, respectively.

Bonus-winning elementary and middle schools had similar, but slightly higher, improvement rates from 2010 to 2012. Specifically, bonus-winning schools' percent of students at grade level in mathematics was 67% in 2011 (up from a 56% baseline) and grew to 72% in 2012. For reading, the percent of students at grade level grew from 39% at baseline to 46% and 48% in years 2011 and 2012, respectively.

Figure 1. Proportion of Elementary and Middle School Students at Grade Level in Mathematics, by Bonus Status and Year

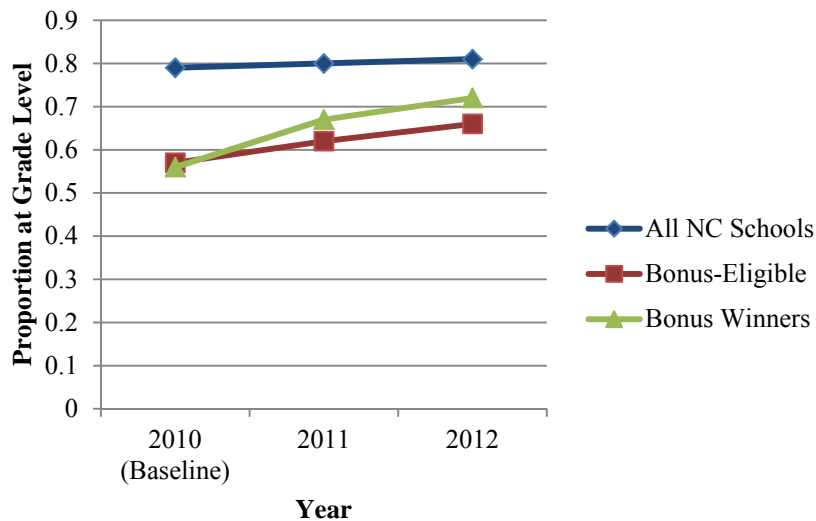
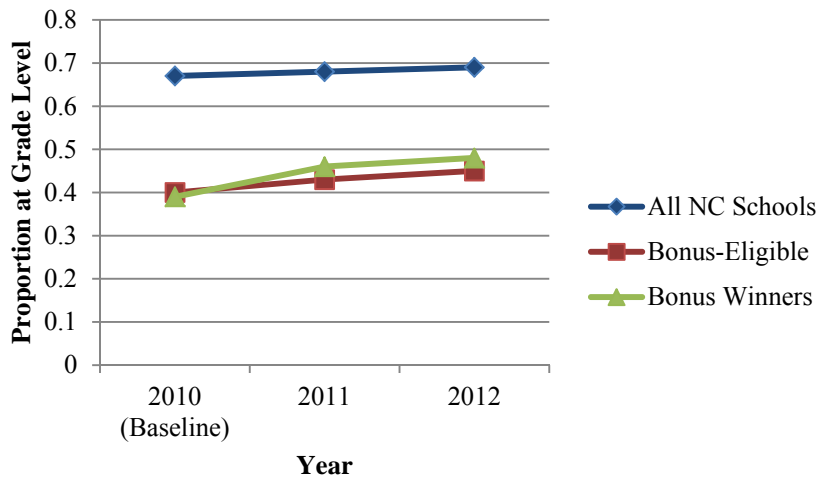


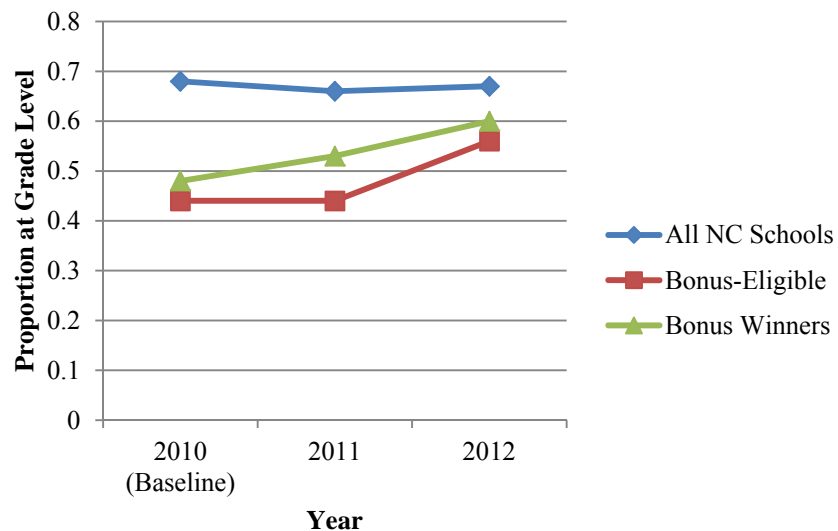
Figure 2. Proportion of Elementary and Middle School Students at Grade Level in Reading, by Bonus Status and Year



High Schools

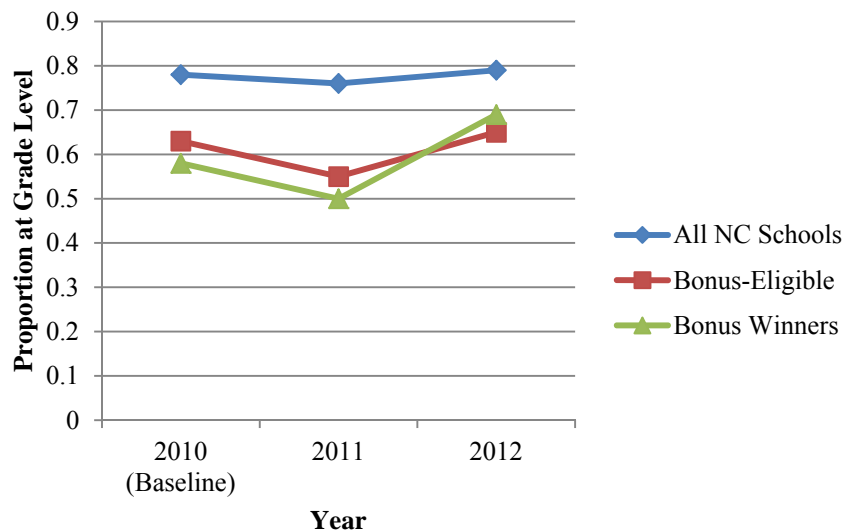
Bonus-eligible and bonus-winning high schools' improvement generally has been positive. In Algebra I (Figure 3), the percentage of students at grade level in bonus-eligible high schools was consistent from 2010 to 2011 (44%), followed by an increase of over 10 percentage points in 2012 (56%). The percentage of students at grade level in bonus-winning schools has steadily increased, starting with 48% in 2010 and increasing to 60% by 2012.

Figure 3. Proportion of Students at Grade Level in Algebra I, by Bonus Status and Year



Although it is unclear why, the percent of students at grade level for English I has been less consistent for both bonus-eligible and bonus-winning schools (Figure 4). The percent of students at grade level for both groups of schools dropped between 2010 and 2011 (63% to 55% for bonus-eligible schools, 58% to 50% for bonus-winners); however, their percent of students at grade level increased between 2011 and 2012, jumping 10 percentage points for bonus-eligible schools and nearly 20 percentage points for bonus-winners. For more detailed performance and growth comparisons between bonus-eligible, bonus-winning, and all North Carolina schools, see Appendix B.

Figure 4. Proportion of Students at Grade Level in English I, by Bonus Status and Year



While it may be tempting to attribute academic improvements to the incentives program, there are several reasons why this line of thought may be untenable. First, it is challenging to distinguish the effect of the incentive program from those of the many other concurrent interventions taking place in these low-performing schools. For example, several of these schools have undergone leadership changes, have adopted data-driven evaluation methods, or have applied for federal grants that incentivize other aspects of teaching and learning, such as attendance. These are only a few of the many examples of such interventions. More importantly, as is detailed further below, academic improvements are likely not driven by the performance incentive because teachers were generally unaware of the performance incentive program, and they report that performance incentives would not change their behavior or practices.

Teacher and Principal Understanding of the Program

3. How aware were teachers and principals in bonus-eligible and -winning schools of the program?

Awareness of the RttT Incentive Program

Because there was little awareness of the RttT incentive initiative in the 2010-11 school year, it is unlikely that the incentive program itself caused improvement in growth. Of the six non-

winning schools, teachers and administrators in four had no awareness of the bonus program at all. In one school, teachers were somewhat familiar with the program because their principal had heard about the program from a previous school and passed around a sheet of paper explaining the various incentives at a staff meeting. At one school, the teachers and principal were not familiar with the RttT bonus program specifically, but they were familiar with the idea of a bonus structure, and at another school, the teachers were not aware of the program, but the principal had some familiarity with it after hearing about the program at a NCDPI training session. However, the principal did not share the information with the staff because the principal did not feel like the information was clear or consistent. Rather, the principal describes the information on performance incentives as an “afterthought” in the training session.

Even among bonus winners, there was a mix of those who had no awareness and those with some, but confused, awareness of RttT’s incentive program. The teachers and principals at three schools had no awareness of the program until they had been informed in December 2011 that they would be receiving checks. As one teacher put it “We became aware once we got it.” Only one teacher at another school knew about the incentive bonuses because she had heard about it from Local Education Agency (LEA) staff when she taught in a previous school; however, no other teachers or administrators knew of the program or their future eligibility for it.

The other winning schools’ administrators and/or teachers had some familiarity with the program, but it was limited and confused with other initiatives. For example, one school’s teachers and administrators had some familiarity with the bonuses, but they did not realize it was part of RttT. Similarly, teachers and administrators at another school were very familiar with bonuses, as they were also participants in a federal School Improvement Grant (SIG) program that distributed bonuses to incentivize teacher attendance. While these teachers were vocal about their distaste for the SIG incentive, they appeared to confuse the two initiatives and could not talk in detail about what the RttT incentive, specifically, was supposed to reward. In fact, when the interviewer asked a focus group of teachers if they had all received the \$1,500 as the RttT incentive had specified, one teacher’s response was “I suppose. Truthfully, we don’t even know enough about that program to know for certain.”

Generally, there was also considerable confusion among teachers in four bonus-winning schools about eligibility in future years, whether bonuses would be received in future years, and the basis of bonus awards. Participants in several of the schools asked the interviewer for more information on future eligibility. The following question posed by a teacher to an interviewer represents one of these examples: “If we get high growth again, do we get it again? We still don’t know.”

How They Learned About the Program

Though many teachers were not aware of the RttT performance incentive program, those who were tended to learn about it through their principals and school administration. Principals and administrators learned about the program in various ways. Two principals became informed of the bonuses at DPI meetings and training sessions, but both reported that the information was unclear and inconsistent, and one of the principals also was under the impression that the bonus program was not official yet, which prevented the principal from informing the staff about the program. One principal recalled having learned of the program through the media, and three

principals learned about the program when they were informed that they would be receiving the checks.

Do Performance Incentives Change Teacher Behavior?

4. What effects did the incentive program have on teachers' classroom and teaching practices?

Teacher Behavior and Classroom Practices

Though teachers in three focus groups and two principals thought performance incentives might change *others'* behavior, almost all teachers reported that performance incentives would not change their own teaching behavior or practices. Non-winners and winners alike suggested that teachers do not teach for the money and that they are already doing their best every day. For example, one teacher said that incentives were

not going to change anything about the way I teach . . . I may make better records if that's what's required, [but] it's not going to change what I do in the classroom, just that I'll be earning an incentive, which is nice, but it's not going to really change anything. We don't teach to get extra money. It's not why we do it.

Said a teacher from another school, "We all work really hard. We constantly look at our lesson plans and activities and see how we can change them for the students." Teachers from other schools also confirmed that they are working sometimes until 8 or 9 o'clock, from "sun up to sun down"—enough hours, they believed, that if they had been employed in the private sector, they "would be making six figures, easy." Only one of the 130 teachers and administrators interviewed suggested that teachers are competitive and results-oriented. Taken together, these reports appear to challenge the assumption that teachers can be incentivized to work harder on improving student performance via performance pay⁷.

Teachers and principals in bonus-winning and non-winning schools reported that other obstacles—particularly, "instability at the top" (i.e. superintendent and principal turnover), disconnect between home and school culture, a lack of student motivation, lack of parent involvement or ability to help, and the disadvantages of low socioeconomic status (e.g., students who come to school without having slept or eaten breakfast, violence associated with gang culture, etc.)—are the biggest determinants of student achievement. However, according to teachers, performance incentives do not address these issues. For example, one teacher said that an incentive program "is saying teachers aren't performing, so if we offer them this, maybe it'll be better, but when really it's not totally in our control. I mean it's just not." Another teacher vented frustration at having to spend time and energy trying to motivate students to "wake up to take the test . . . or come to school. . . ." This teacher lamented spending hours developing the best lessons and ideas possible, only to "have no control over what they [the students] do." Only one principal suggested that poor instructional quality in the school is a significant factor in student achievement at that school.

⁷ Since most teachers indicated that they were unaware of the initiative at the start of the school year, it is unclear whether teachers would feel the same way had they known about the program ahead of time. See **Conclusions**, below.

Teacher and Principal Perceptions of the Program

5. How do teachers in bonus-eligible and bonus-winning schools perceive the program?

Is there More Support for School-Wide or Classroom Bonuses?

Teachers and principals expressed both support for and concern with the performance incentive program. However, because of a sense that it takes a whole school to educate a child, more teachers and principals (respondents from 17 focus groups and interviews, in both winning and non-winning schools) thought school-level bonuses were better than classroom-level bonuses. As one principal noted, school-wide bonuses are “better because you have buy-in for everyone. K to 2, you’re the ones that built the foundation for 3, 4, and 5. So, if they’re a good student, hoorah. If they’re not, I’ve got to look back at K-2.”

One teacher at another school expressed this “buy-in” even further, saying, “really I’d like to see a whole school so that custodians, cafeteria workers, office staff, everybody, receives something” for their impact on student learning. While some of those who preferred school-level bonuses recognized the importance of bus drivers and cafeteria workers as instrumental to child growth, others preferred a system in which tested teachers and their Teaching Assistants receive a greater percentage of the bonus, citing the extra workload and stress that comes with teaching a tested grade or subject.

Additionally, some teachers seemed to find value in the way school-wide bonuses could encourage collaboration. One teacher shared a vision for an example of this kind of school-wide collaboration:

Well, I think that’s a lot of pressure, but I do think it would make the school a little bit more collaborative. We’re all working toward the same goal and so, oh, well, it’s an EOC class, so let’s not take them out to do field day during EOC, and let’s not do class pictures during EOC, and let’s make sure we’re working on reading and writing skills in science because they need to have it, and maybe let’s write an essay in English about their biology projects, and I think there could be some good that comes from that.

While some principals and teachers expressed greater support for school-wide bonuses on ideological grounds, others were supportive of school-wide bonuses on practical grounds. Specifically, teachers and principals who had past experience with other classroom-based incentive programs were particularly in favor of school bonuses. For example, one focus group respondent said that the SIG grant, which distributed bonuses to eligible EOG and EOC teachers only, was “the biggest camaraderie breaker we had [at our school].”

Despite the generally more overwhelming support for school-level bonuses, teachers and principals from four focus groups, particularly those who reported working in schools without collaborative or team-oriented school cultures, reported a preference for classroom-based incentives. Said one teacher, “I taught PE, and I taught math for the past 10 years. I think math teachers should make more. I think English teachers should make more.” For this teacher, and for the others in the focus group that agreed with this sentiment, physical education teachers

were not seen as shaping students' growth and development in as valuable a way as did core subject teachers.

What do Teachers Think of Performance Incentives Generally?

While most principals and teachers had some opinions about existing pay-for-performance models, others saw little value in performance incentives at all. Specifically, teachers from two focus groups adamantly opposed bonuses entirely. Others recommended directing performance incentive money to salary increases. As one teacher put it:

[Current teacher pay] is disrespectful. We're educators. We help to bring about every profession in the world. We teach. People have to come to school to learn the work they do in the board room, in the operating room, wherever they are. And the value is not given to what we do. We can work all year and make maybe a tenth of what the doctor makes, or less, in just one operation.

This was a sentiment shared across 11 focus groups and interviews, and there were no real differences between bonus winners and non-winners in these sentiments.

What do Teachers Think of the Measurements Used to Award Performance Incentives?

Bonus winners and non-winners from 15 focus groups and interviews expressed concern and confusion over the measurement to establish qualification for performance pay. While some teachers preferred a measurement based on growth, others were concerned that the growth formula was not clear or that growth standards were too high, did not capture the factors that affect students, would not be consistent for students with fluctuating challenges at home, and would not be fair to teachers who teach highly proficient students. As one teacher said,

I'm putting myself in someone else's shoes. As an English teacher, if I meet everything, I have the opportunity to make an extra \$11,000. But then there's another teacher who teaches an honors-level class that's at 100% proficiency. Qualifies for nothing. And the argument is it's easier to make growth with higher-level students, and that is absolutely wrong. It depends on the level course you take: For some students there is more room for growth.

While this teacher thought that honors teachers do not get the same opportunities to make supplemental performance pay, another teacher in the same focus group contended that proficiency standards are just as unfair:

Last year I had all EOC classes, but on top of that I had two classes that they came and threw at me—this language program that they trained me for in the middle of the Fall, so I knew nothing about it in college—and they come into the 9th grade with a third- to fifth-grade reading level, and that's where most of my frustration was, because they want to give you this incentive if you have a certain—I mean growth I don't have an issue as much—but when they tell [you we're going to] give you this incentive for having 100% proficiency. And that frustrates me to no end because you look at our EVAAS printouts of what their probability [is] of making a Level 3, which is proficient, and I've got kids,

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the majority of them are under 2%, some [have only a] .4% chance of making a 3. I'd push the growth thing more.

Some mentioned that the most complete student evaluations would include portfolios, observations of teachers, and pre- and post-tests, but others were against at least one or all of these as measured evidence of teacher effectiveness. For example, some teachers argued that pre- and post-tests would continue to overburden an already over-tested student population, and observations are not as objective as they should be because personal relationships or politics unfairly color evaluations.

Conclusions

This study offered a description of the characteristics of bonus-winning and eligible non-winning schools, as well as teacher perceptions of the RttT performance initiative.

Several key findings arise from this study. First, though bonus-eligible and bonus-winning schools have higher percentages of their student population composed of poor and minority students compared to North Carolina schools on average, there is very little difference among bonus winners from bonus-eligible schools in these characteristics. This suggests that bonus-winners were not necessarily more socioeconomically advantaged than eligible non-winners.

Second, educators in bonus-eligible and bonus-winning schools had little awareness of the performance initiative. Even among schools that received bonus pay, there was some confusion about eligibility in future years. It is therefore unlikely that the incentives themselves had any effect on increasing student growth in bonus-winning schools.

Third, on measures of academic achievement over time, both bonus-eligible and bonus-winning schools showed improvement. Due to the lack of awareness about the incentives program and the presence of many other concurrent interventions in these schools, however, one should not infer that performance incentives caused these improvements in test score results.

Fourth, almost none of the teachers interviewed said that performance pay would change their teaching behavior because they see themselves as putting forth their best effort every day already. Teachers commonly reported being most incentivized by their desire to increase students' learning and growth, not by extra money. Though it does not dispel the possibility entirely, this finding does challenge the assumption that poor student performance in low-achieving schools is a result of teachers who put little effort into their instruction.

Finally, though teachers were not uniformly supportive of incentive pay in general, the vast majority of teachers and administrators preferred a school-level bonus structure, citing concerns about collaboration and morale. This opinion was not shared by all however, as about 25% of respondents liked the idea of an individual, rather than a school, incentive. Some administrators and teachers, even those who teach in untested subjects, recognized the extra pressure teachers of tested subjects face and were therefore not opposed to those teachers getting a larger percentage of the bonus money; however, many teachers recognized that it "takes a whole school" to educate a child and felt the bonus initiative should be structured accordingly.

Overall, the findings from this study suggest that performance pay itself did not likely influence either teacher behavior or student growth for school years 2010-2011 or 2011-2012. However, effects of the performance incentive on teachers and schools cannot be clearly ascertained from these data, as very few respondents were aware of the program. However, with more frequent, clear, and complete information about the program to principals in eligible schools, as well as professional development resources for teachers, it may be possible to more clearly assess the impact of the performance incentive initiative.

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Appendix A. Bonus-Eligible Schools, 2011-2012

District	School Name
Alamance-Burlington Schools	Alamance-Burlington Middle
Alamance-Burlington Schools	Eastlawn Elementary
Alamance-Burlington Schools	Haw River Elementary
Anson County Schools	Anson High School
Anson County Schools	Anson Middle Schol
Anson County Schools	Morven Elementary
Anson County Schools	Wadesboro Elementary
Caldwell County Schools	Whitnel Elementary
Hickory City Schools	Hickory Career & Arts Magnet High School
Columbus County Schools	Boys and Girls Home
Thomasville City Schools	Thomasville Primary
Duplin County Schools	Warsaw Elementary
Durham Public Schools	Eastway Elementary
Durham Public Schools	Chewning Middle
Durham Public Schools	Glenn Elementary
Durham Public Schools	Hillside High
Durham Public Schools	Fayetteville Street Elementary
Durham Public Schools	Lowe's Grove Middle
Durham Public Schools	Neal Middle
Durham Public Schools	Southern High
Durham Public Schools	Spring Valley Elementary
Durham Public Schools	WG Pearson Elementary
Durham Public Schools	EW Smith Elementary
Edgecombe County Public Schools	Coker-Wimberly Elementary
Edgecombe County Public Schools	WA Patillio A+Elementary School
Edgecombe County Public Schools	Princeville Montessori
Forsyth County Schools	Carver High
Forsyth County Schools	Cook Elementary
Forsyth County Schools	Easton Elementary
Forsyth County Schools	Forest Park Elementary
Forsyth County Schools	*Hill Middle
Forsyth County Schools	Petree Elementary
Forsyth County Schools	Philo Middle
Forsyth County Schools	*School of Biotechnology Atkins High
Forsyth County Schools	*School of Pre-Engineering Atkins High
Forsyth County Schools	*School of Computer Technology Atkins High
Gaston County Schools	Pleasant Ridge Elementary
Gaston County Schools	Woodhill Elementary
Greene County Schools	Greene Central high

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District	School Name
Greene County Schools	Green County Middle
Guilford County Schools	T Wingate Andrews High
Guilford County Schools	Dudley High
Guilford County Schools	Fairview Elementary
Guilford County Schools	Julius I Foust Elementary
Guilford County Schools	Oak Hill Elementary
Guilford County Schools	Parkview Village Elementary
Guilford County Schools	Ben L Smith
Guilford County Schools	Union Hill Elementary
Guilford County Schools	Wiley Elementary
Halifax County Schools	Aurelian Springs Elementary
Halifax County Schools	Dawson Elementary
Halifax County Schools	Enfield Middle
Halifax County Schools	Everetts Elementar
Halifax County Schools	Inborden Elementary
Halifax County Schools	Northwest high
Halifax County Schools	Pittman Elementary
Halifax County Schools	Scotland Neck Primary
Halifax County Schools	Southeast Halifax high
Halifax County Schools	William R David Middle
Weldon City Schools	Weldon Middle
Weldon City Schools	*Weldon STEM High School
Hertford County Schools	Hertford County Middle
Hertford County Schools	Riverview Elementary
Hertford County Schools	Student Development Center
Hoke County Schools	Hawk Eye Elementary
Hyde County Schools	*Mattamuskeet High
Lenoir County Public Schools	Northeast Elementary
Lenoir County Public Schools	Rochelle Middle
Lenoir County Public Schools	Southeast Elementary
Charlotte-Mecklenburg Schools	Billingsville Elementary
Charlotte-Mecklenburg Schools	Druid Hills Elementary
Charlotte-Mecklenburg Schools	Hawthorne High
Charlotte-Mecklenburg Schools	Martin Luther King Jr Middle
Charlotte-Mecklenburg Schools	Bruns Avenue Elementary
Charlotte-Mecklenburg Schools	Reid Park Elementary
Charlotte-Mecklenburg Schools	Sedgefield Elementary
Charlotte-Mecklenburg Schools	*Bishop Spaugh Community Middle
Charlotte-Mecklenburg Schools	Thomasboro Elementary
Charlotte-Mecklenburg Schools	Walter G Byers Elementary
Charlotte-Mecklenburg Schools	*JT Williams Middle
Charlotte-Mecklenburg Schools	*EE Waddell High

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District	School Name
Charlotte-Mecklenburg Schools	West Charlotte High
Charlotte-Mecklenburg Schools	West Mecklenburg High
Charlotte-Mecklenburg Schools	*Pawtucket Elementary
Nash-Rocky Mount Schools	DS Johnson Middle
Nash-Rocky Mount Schools	OR Pope Elementary
Nash-Rocky Mount Schools	Williford Elementary
New Hanover County Schools	AH Snipes Academy of Arts/Design
Pasquotank County Schools	PW Moore Elementary
Pitt County Schools	Belvoir Elementary
Pitt County Schools	Northwest Elementary
Pitt County Schools	Pactolus Elementary
Pitt County Schools	*Sadie Saulter Elementary
Pitt County Schools	Wellcome Middle
Pitt County Schools	North Pitt High
Asheboro City Schools	Charles W McCrary Elementary
Richmond County Schools	Mineral Springs Elementary
Robeson County Schools	Fairgrove Middle
Robeson County Schools	Lumberton Junior High
Robeson County Schools	Magnolia Elementary
Robeson County Schools	Red Springs Middle
Robeson County Schools	Southwide/Ashpole Elementary
Robeson County Schools	Townsend Middle
Rockingham County Schools	Draper Elementary
Rockingham County Schools	Lawsonville Ave Elementary
Rowan-Salisbury Schools	Knox Middle
Rowan-Salisbury Schools	North Rowan High
Scotland County Schools	*SHS-Visual and Performing Arts
Tyrrell County Schools	Columbia High
Union County Public Schools	Rock Rest Elementary
Vance County Schools	LB Yancey Elementary
Washington County Schools	Pines Elementary
Washington County Schools	Washington County Union
Wayne County Public Schools	Dillard Middle
Wayne County Public Schools	Goldsboro High
Wilson County Schools	Margaret Hearne Elementary
Wilson County Schools	Vick Elementary
Wilson County Schools	Beddingfield High

*Note: Eligible in 2011 only

Appendix B. Performance Characteristics of Total NC, Bonus-Eligible, and Bonus-Winning Schools

	2010 [^] (School Performance Determines Bonus Eligibility)			2011 (School Performance Determines December 2011 Bonus Winners)			2012 (School Performance Determines December 2012 Bonus Winners)		
	<i>All NC Schools</i>	<i>Bonus- Eligible</i>	<i>2011 Bonus Winners</i>	<i>All NC Schools</i>	<i>Bonus- Eligible</i>	<i>2011 Bonus Winners</i>	<i>All NC Schools</i>	<i>Bonus- Eligible</i>	<i>2012 Bonus Winners</i>
	<i>n=2609*</i>	<i>n=118</i>	<i>n=23</i>	<i>n=2609*</i>	<i>n=118</i>	<i>n=23</i>	<i>n=2622*</i>	<i>n=106</i>	<i>n=35</i>
Pct Students at Grade Level in Math	79%	57%	56%	80%	62%	67%	81%	66%	72%
Pct Students at Grade Level in Reading	67%	40%	39%	68%	43%	46%	69%	45%	48%
Pct Students at Grade Level in HS Algebra I	68%	44%	48%	66%	44%	53%	67%	56%	60%
Pct Students at Grade Level in HS English I	78%	63%	58%	76%	55%	50%	79%	65%	69%
Met AYP	56%	13%	9%	26%	13%	22%	52%	19%	29%
Did Not Meet AYP	41%	87%	91%	69%	87%	78%	45%	81%	71%
Made Expected Growth Only[#]	34%	42%	30%	38%	44%	0%	34%	32%	0%
Made High Growth[#]	50%	20%	26%	39%	20%	100%	42%	33%	100%
Honor School of Excellence: Made Expected Growth, 90+% students above grade level, made AYP	8%	0%	0%	8%	0%	0%	11%	0%	0%
School of Excellence: Made Expected Growth, 90+% students at grade level	1%	0%	0%	1%	0%	0%	1%	0%	0%
School of Distinction: Made Expected Growth, 80-89% students at grade level	27%	1%	0%	26%	2%	4%	27%	1%	3%
School of Progress: Made Expected Growth, 60-70% students at grade level	38%	4%	9%	34%	11%	30%	32%	33%	66%
No Recognition: Did not make Expected Growth, 60+% students at grade level	8%	2%	8%	14%	3%	0%	16%	0%	0%
Priority School: <60% students at grade level, irrespective of Expected Growth	10%	80%	83%	8%	72%	65%	6%	53%	31%
Low Performing: Did not make Expected Growth, <50% students at grade level	1%	15%	4%	0%	10%	0%	1%	8%	0%

Notes:

*Percentages may not equal 100 due to missing data on some indicators.

[^]2010 determines bonus eligibility. There were no bonus winners in 2010, but the 2010 column compares 2011 bonus-eligible and winning schools to all North Carolina schools in the base year determining bonus eligibility.

[#]By definition, all schools that make high growth also make expected growth; however, this table reports the percentage of schools that made expected growth only.

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