



P O L I C Y   R E P O R T

## **Performance Pay for Teachers: Increasing Student Achievement in Schools with Critical Needs**

**TERRY STOOPS**  
SEPTEMBER 2008



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September, 2008

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## Executive Summary

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In 2006, in recognition of the need to attract and retain experienced administrators and teachers who teach subjects (Math and English/Language Arts) that are part of the state and federal accountability requirements, Guilford County Schools, the third largest school system in North Carolina, initiated Mission Possible. The program offers recruitment and performance incentives for teachers and administrators who teach in the county's low-performing and low-income schools.

The program awards one-time recruiting incentives from \$2,500 to \$10,000 and yearly performance incentives from \$2,500 to \$5,000 for teachers and administrators who work in the county's low-performing and low-income schools. Twenty-two low-performing and low-income schools participated in the Mission Possible program during the 2006–2007 school year, and an additional eight schools were included in the program during the 2007–2008 school year. For the 2006–2007 school year, the average performance award was \$3,400 per teacher.

The initial evaluation of the program by the University of North Carolina at Greensboro suggests that the recruitment and performance incentives are working. After the first year of implementation, the Mission Possible program demonstrated promising results: teacher and administrator turnover has decreased by 2.0 and 4.8 percent respectively; the percentage of schools that met performance standards under No Child Left Behind increased by 6.2 percent; and the percentage of students that met North Carolina testing standards increased by 2 percent from the year before. Graduation rates are on the rise, increasing by over 10 percent from the previous school year. Finally, the school climate, as measured by short-term suspensions and student attendance, improved considerably. Schools that began the program during the 2006–2007 school year had 84 fewer short-term suspensions that year, while their average attendance rate increased to 93.3 percent, a 0.4 percent increase.

Results from the 2008 North Carolina Working Conditions Survey showed that teachers at Mission Possible schools reported an improvement in work-

ing conditions in four of the five domains: *time* (teacher's time to plan and collaborate); *facilities and resources* (instructional materials, technology, office equipment, and a clean, safe environment);

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*leadership* (trusting, supportive, empowering environments and sustained efforts to address teacher concerns); and *professional development* (resources and opportunities available for teachers to participate in professional development). Both Mission Possible and non-Mission Possible schools had declines in the *decision-making* (role that teachers play in decision making about teaching, classroom, and school issues) domain.

Specifically, both the resources and time dedicated to professional development were among the top eight questions that had the largest percentage increases in positive responses. There were also notable increases in teachers' positive views of school leadership. Teachers were pleased that leadership shielded them from disruptions, addressed concerns about resources, supported their efforts to maintain discipline, and provided better decision-making related to educational issues. Finally, teachers at Mission Possible schools found that access to office equipment and supplies had improved. In sum, professional development, leadership, and access to resources showed the greatest percentage gains from the 2006 to the 2008 working conditions survey.

Mission Possible schools reported significant declines in questions related to teacher empowerment. Teachers reported a limited role in developing budgets, hiring personnel, formulating school improvement plans, determining professional development activities, devising teaching techniques, and selecting instruction materials. Teachers also

reported that there were fewer opportunities for community involvement and that they did not have sufficient non-instructional time.

Student performance outcomes yielded mixed results. Approximately half of the Mission Possible schools increased their scores on state standardized tests. Mission Possible schools had lower performance composite percentages, lower pass rates on state tests, and met fewer AYP goals than non Mission Possible schools in Guilford County. However, half of the Mission Possible schools had larger increases in test scores from the 2005–2006

to the 2006–2007 school years compared to non-Mission Possible schools.

The results of this study suggest that pay for performance initiatives should include policy elements aimed at improving teacher working conditions. These policy elements should focus on improving the decision-making process, maintaining a supportive teaching environment, and empowering teachers. It is also essential that researchers continue to evaluate the relationship between performance pay, working conditions, and student achievement.

## Introduction: An Assessment of Performance Pay in North Carolina

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In 1996, the North Carolina General Assembly approved a plan for a school-based management and accountability program called the ABCs of Public Education. Today, the state-run program includes end-of-grade reading and mathematics tests for grades 3–8 and a computer skills test for 8<sup>th</sup> grade students. The state also administers end-of-course mathematics, English, science, and social studies tests for grades 9–12. Taken together, North Carolina has one of the oldest and most comprehensive testing programs of any U.S. state.

A year after implementing the ABCs, the North Carolina Department of Public Instruction began awarding bonuses to instruction staff at schools that have met or exceeded growth expectations on state tests. The state awards teachers a bonus of \$750 and teacher assistants a bonus of \$350 if the school met growth expectations on state tests. Similarly, the state awards teachers a bonus of \$1,500 and teacher assistants a bonus of \$500 if the school exceeded growth expectations on state tests. Over the first ten years of the program, the state appropriated nearly \$1 billion for ABC bonuses.<sup>1</sup>

However, the ABC bonus program has been an entitlement program tied to a weak accountability system. Rather than rewarding individual teacher effort, the ABC bonus program offers the entire faculty and staff of a school a monetary incentive to improve student performance on state-administered end-of-grade and end-of-course tests. This means

that even low-performing faculty and staff members receive a bonus, as long as they worked in a school that met the requirements for a bonus. The state also denies bonuses to excellent teachers in low-performing schools that do not meet or exceed growth expectations.

Furthermore, the bonuses have been easy to earn. In 2003, for example, 94 percent of schools qualified for ABC bonuses. The state's low standards even allowed teachers at low-performing

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schools to obtain bonuses for marginal improvements in student performance. In 2005, every faculty and staff member at six Guilford County high schools received ABC bonuses for gains in test scores, even though the state listed all six as among the lowest-performing high schools in the state.<sup>2</sup> Despite the state's enormous \$1 billion investment in ABC bonuses, the North Carolina Department

of Public Instruction has not assessed the effectiveness of the program.

From 2001 to 2004, the North Carolina Department of Public Instruction implemented a performance pay pilot program, the North Carolina Bonus Program. The state awarded bonuses of up to \$1,800 to math, science, and special education teachers in low-income or low-performing middle and high schools. Independent research indicates that this program yielded positive results. According to the Duke University researchers who evaluated the program, “The fact that the [merit pay] program appears to have reduced departure rates of teachers from the schools serving disadvantaged and low-performing students means that the program could potentially have raised student achievement had it remained in operation for a longer period of time.”<sup>3</sup> The research also indicated that “responses to the program were concentrated among more experienced teachers, with a statistically significant 37 percent reduction in departure rates for teachers with 10 to 19 years of experience.”<sup>4</sup> Perhaps

encouraged by these findings, the 2007 session of the North Carolina General Assembly passed a pilot program for alternative teacher salary plans that will be implemented in 2009.<sup>5</sup>

Aside from statewide initiatives, North Carolina’s public school districts have been generally unwilling to adopt comprehensive performance pay programs for teachers and administrators, but a handful of school districts maintain limited performance pay programs. With the help of a federal Teacher Incentive Fund grant, the Charlotte-Mecklenburg school system has had a longstanding bonus program that awards teachers and administrators variable performance bonuses, signing bonuses, bonuses for teachers in critical need areas, and retention bonuses for master teachers and administrators. Currently, senior Charlotte-Mecklenburg administrators are in the midst of a major reevaluation of the bonus program, and changes may include a performance-pay pilot program to begin during the 2008–2009 school year.<sup>6</sup>

## Overview of the Mission Possible Program

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In 2006, in recognition of the need to attract and retain experienced administrators and teachers who teach subjects (Math and English/Language Arts) that are part of the state and federal accountability requirements, Guilford County Schools, the third largest school system in North Carolina, initiated a pay-for-performance program called Mission Possible. The program awards recruiting incentives from \$2,500 to \$10,000 and performance incentives from \$2,500 to \$5,000 for teachers and administrators who work in the county’s low-performing and low-income schools.<sup>7</sup>

Guilford County Schools is one of the first school systems in North Carolina to implement a comprehensive performance pay plan for teachers and administrators. The Mission Possible program offers the highest bonus potential of any performance pay initiative in North Carolina; a teacher may earn a combined \$15,000 in recruitment and performance incentives. It is also one of the first programs in the state to incorporate a value-added

component to evaluate the performance of teachers.<sup>8</sup> A value-added assessment is a methodologically sound way to determine the academic progress of a student and the effectiveness of a teacher, school, or school district. In sum, the future of recruitment and

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performance pay initiatives in North Carolina will be largely dependent on the success of the Guilford County pilot program.

Twenty-two low-performing and low-income schools in Guilford County participated in the

**Table 1. Schools Participating in the Mission Possible Program, 2006–2008**

Mission Possible schools typically have low student-teacher ratios and have a high percentage of low-income (or free or reduced-price lunch) students. Nineteen of the 22 schools in Cohort 1 received performance payments that averaged \$3,400 per teacher.

School Name	Enrollment	Teachers	Student-Teacher Ratio	Percentage of Free & Reduced Lunch Students	Performance Payments (Recipients)	Average Award Amount
<b>Cohort 1 (Began 2006–2007)</b>						
Andrews High	1,037	85	12.2	63.0	\$12,000 (3)	\$4,000
Dudley High	1,583	102	15.5	65.8	\$24,000 (6)	\$4,000
Eastern Guilford High	930	67	13.9	51.3	\$13,000 (4)	\$3,250
Fairview Elementary	551	43	12.8	100.0	\$10,500 (3)	\$3,500
Ferndale Middle	577	53	10.9	90.5	\$2,500 (1)	\$2,500
Foust Elementary	311	31	10.0	94.9	\$4,000 (1)	\$4,000
Gillespie Elementary	267	28	9.5	99.3	\$0	N/A
Hairston Middle	632	58	10.9	94.3	\$33,000 (9)	\$3,667
Hampton Elementary	292	32	9.1	100.0	\$7,500 (3)	\$2,500
High Point Central High	1,278	107	11.9	55.8	\$44,500 (12)	\$3,708
Jackson Middle	552	49	11.3	90.4	\$2,500 (1)	\$2,500
Kirkman Park Elementary	236	24	9.8	95.8	\$0	N/A
Middle College HS at Bennett	83	9	9.2	51.9	\$7,500 (2)	\$3,750
Middle College HS at NC A&T	101	10	10.1	44.6	\$7,500 (2)	\$3,750
Oak Hill Elementary	355	35	10.1	100.0	\$7,500 (2)	\$3,750
Parkview Elementary	421	38	11.1	92.9	\$2,500 (1)	\$2,500
Smith High	1,527	107	14.3	65.6	\$16,000 (4)	\$4,000
Academy at Smith High	N/A	N/A	N/A	N/A	\$11,500 (3)	\$3,833
Southern Guilford High	927	66	14.0	41.5	\$21,000 (6)	\$3,500
Washington Elementary	203	24	8.5	100.0	\$17,500 (6)	\$2,500
Welborn Middle	697	56	12.4	73.3	\$23,750 (7)	\$3,393
Wiley Elementary	186	26	7.2	100.0	\$0	N/A
Average	607	50	11.2	79.6	\$8,250	\$3,400
<b>Cohort 2 (Began 2007 – 2008)</b>						
Academy at Central High	N/A	N/A	N/A	N/A	N/A	N/A
Allen Middle	783	55	14.2	75.7	N/A	N/A
Aycock Middle	606	49	12.4	67.7	N/A	N/A
Bessemer Elementary	394	36	10.9	98.2	N/A	N/A
Cone Elementary	475	43	11.0	100.0	N/A	N/A
Falkener Elementary	571	51	11.2	94.6	N/A	N/A
Penn Griffin Middle	551	47	11.7	67.9	N/A	N/A
Union Hill Elementary	406	33	12.3	91.9	N/A	N/A
Average	541	45	12.0	85.1	N/A	N/A

Mission Possible program during the 2006–2007 school year (hereafter called Cohort 1), and an additional eight schools were included in the program during the 2007–2008 school year (hereafter called Cohort 2) (See Table 1). The Guilford County

School District offers recruitment and retention bonuses of between \$2,500 and \$10,000, depending on grade level and position. The school district awards performance bonuses of between \$2,500 and \$5,000 to teachers who are able to raise student

achievement one standard error above the mean on a value-added score. If a teacher earns value-added scores far below average (two standard errors) for two consecutive years, the school system may transfer the teacher out of the Mission Possible school. Administrators are awarded a performance bonus if all student subgroups in the school pass state math and reading end-of-grade and end-of-course tests, that is, if the school makes Adequate Yearly Progress (AYP) under the federal No Child Left Behind law.<sup>9</sup>

The initial evaluation of the program by the SERVE Center at the University of North Carolina at Greensboro suggests that the recruitment and performance incentives are working. After the first year of implementation, the Mission Possible program has already demonstrated promising results: teacher and administrator turnover has decreased by 2.0 and 4.8 percent respectively; the percentage of schools that met AYP standards increased by 6.2 percent, and the percentage of students that met North Carolina testing standards increased, albeit a slight 2.0 percent increase, from the year before. Graduation rates are on the rise, increasing by over 10 percent from the previous school year. Finally, the school climate, as measured by short-term suspensions and student attendance, improved considerably. During the 2006–2007 school year, Cohort 1 schools had 84 fewer short-term suspensions, while their average attendance rate increased to 93.3 percent, a 0.4 percent increase.<sup>10</sup>

Despite these gains, Mission Possible schools still lag behind district averages in a number of outcome measures, which is not surprising for schools that have participated in the program for only two school years. For example, Cohort 1 schools had an average teacher turnover rate (35.9 percent) that was significantly higher than the Guilford County Schools average (28 percent), although Cohort 2 schools had an average teacher turnover rate that was nearly equal to the district average (28.4 percent). Most Mission Possible schools did not meet or exceed district pass rates on state tests and met fewer AYP goals than other district schools. On the other hand, Mission Possible schools excelled in a number of areas. The 80.1 percent four-year (cohort) graduation rate for Mission Possible high schools was higher than the 79.7 percent rate for the

district. Furthermore, attendance rates at Mission Possible schools were comparable to the district average of 95 percent, and the Mission Possible schools generated only 6 percent of the district's short-term suspensions.<sup>11</sup>

Using a process called propensity score matching, researchers at the University of North Carolina at Greensboro also paired Mission Possible Schools with schools outside of Guilford County that had similar demographics.<sup>12</sup> As a group, Mission Possible elementary schools had significantly higher average teacher turnover rates than comparison schools, 33.6 percent and 28.0 percent, respectively. In addition, an average of 67.0 percent of students at Mission Possible schools had a passing score on state reading and math exams, compared to an average of 68.7 percent among the comparison schools. Similarly, Mission Possible middle schools had higher average teacher turnover rates (37.4 percent) than comparison schools (30.3 percent), as well as lower average pass rates on state reading and math exams, that is, 70.8 percent for Mission Possible schools compared to 72.3 percent for comparison schools.<sup>13</sup>

Mission Possible high schools also lagged behind similar North Carolina high schools. Teacher turnover at Mission Possible high schools averaged 36.8 percent, compared to an average 28.4 percent among comparison high schools. Moreover, 45.3 percent of Mission Possible high school students passed state end-of-course math and English exams. Among comparison schools, 50.1 percent passed state math and English tests. The 94.9 percent graduation rate at Mission Possible schools trailed the comparison school rate of 97.9 percent.<sup>14</sup>

In sum, Mission Possible schools had relatively high teacher turnover rates and had lower than average pass rates on state tests, but they are making progress. Over the last two years, Mission Possible schools decreased their teacher turnover rates and increased their pass rates on state tests. Moreover, Mission Possible schools had comparable attendance rates and short-term suspension rates, suggesting that the program has continued to improve the school climate. Finally, Mission Possible schools have significantly increased their graduation rate, which strongly suggests that the Mission Possible program is having a positive effect on student achievement.

## Overview of Literature

Change in teacher and administrative working conditions in Mission Possible schools is an area that the SERVE evaluation report was unable to address.<sup>15</sup> Detractors of teacher and administrator incentive plans claim that such plans lead to a decline in staff morale and collegiality. The most common complaint is that performance pay initiatives produce unbearable stress for school personnel, which has the potential to hamper teacher recruitment and retention efforts and lower student performance. While teachers report that performance pay programs produce stress, it does not appear to correlate with worsening working conditions, declining student and teacher performance, or extraordinary teacher attrition.<sup>16</sup>

Indeed, opponents of incentive pay programs are largely responsible for perpetuating the unfounded fear that these programs will lead to a decline in teacher working conditions.<sup>17</sup> Although some groups have retreated from their earlier opposition to incentive pay, they still suspect that performance pay programs will create poor working conditions for teachers.<sup>18</sup>

Few studies have looked beyond the phenomenon of teacher stress to examine the full scope of teacher working conditions. Studies of performance pay initiatives that have focused on working conditions found that incentive programs do not create negative working conditions for teachers. Researchers at the University of Arkansas, for

**Table 2. Average Response Rate and Likert Scores, 2006 and 2008**

According to survey results, teachers at Mission Possible (MP) schools typically enjoyed better working conditions than teachers at non-Mission Possible schools did.

	Non MP	Cohort 1	Equal/ Higher Than Non MP	Cohort 2	Equal/ Higher Than Non MP	Equal/ Higher Than Cohort 1
2006 Response Rate	77.60	70.73		74.41		✓
2008 Response Rate	84.64	82.02		68.38		
Change (2006 to 2008)	7.04	11.28	✓	-6.03		
2006 Time	2.92	3.10	✓	2.81		
2008 Time	3.10	3.18		2.92		
Change (2006 to 2008)	0.18	0.09		0.11		✓
2006 Facilities	3.66	3.41		3.66	✓	
2008 Facilities	3.90	3.76		3.79		✓
Change (2006 to 2008)	0.24	0.35		0.13		
2006 Decision-Making	3.36	3.14		3.11		
2008 Decision-Making	2.79	2.67		2.57		
Change (2006 to 2008)	-0.57	-0.47		-0.54		
2006 Leadership	3.54	3.31		3.19		
2008 Leadership	3.74	3.63		3.30		
Change (2006 to 2008)	0.20	0.32	✓	0.11		
2006 Professional Development	3.33	3.21		3.36	✓	✓
2008 Professional Development	3.56	3.56	✓	3.44		
Change (2006 to 2008)	0.23	0.35	✓	0.08		

Note: All averages above are on a 1 to 5 scale with 1 being the lowest and 5 being the highest for each of the factors described.

**Table 3. Average Elementary School Response Rate and Likert Scores, 2006 and 2008**

According to survey results, teachers at Mission Possible (MP) elementary schools typically enjoyed better working conditions and/or larger increases in average score than teachers at non Mission Possible elementary schools did.

	Non MP	Cohort 1	Equal/Higher Than Non MP	Co- hort 2	Equal/ Higher Than Non MP	Equal/ Higher Than Cohort 1
2006 Response Rate	81.94	78.25		77.25		
2008 Response Rate	86.49	79.50		62.00		
Change (2006 to 2008)	4.55	1.25		-15.25		
2006 Time	2.88	3.15	✓	2.75		
2008 Time	3.04	3.10	✓	2.99		
Change (2006 to 2008)	0.16	-0.05		0.25	✓	✓
2006 Facilities	3.66	3.55		3.60		✓
2008 Facilities	3.93	3.80		3.92		✓
Change (2006 to 2008)	0.27	0.25		0.32	✓	✓
2006 Decision-Making	3.34	3.45	✓	3.03		
2008 Decision-Making	2.75	2.68		2.59		
Change (2006 to 2008)	-0.59	-0.77	✓	-0.44		
2006 Leadership	3.54	3.54	✓	3.15		
2008 Leadership	3.78	3.65		3.48		
Change (2006 to 2008)	0.24	0.12		0.33	✓	✓
2006 Professional Development	3.33	3.45	✓	3.30		
2008 Professional Development	3.59	3.61	✓	3.63	✓	✓
Change (2006 to 2008)	0.26	0.16		0.33	✓	✓

Note: All averages above are on a 1 to 5 scale with 1 being the lowest and 5 being the highest for each of the factors described.

example, found that a merit pay program in the Little Rock Public School District actually produced a more positive work environment for teachers.<sup>19</sup> We anticipate the same will be true for Mission Possible schools in Guilford County. In addition, the fact that teacher and administrator turnover decreased would suggest that working conditions have already improved.<sup>20</sup>

If financial incentives improve both school work-

ing conditions *and* student achievement, then school systems may more easily recruit and retain high quality teachers and administrators at low-performing and low-income schools, increasing student achievement. In this way, the value of incentive programs is not limited to the student-teacher relationship but enhances teacher-teacher and teacher-administrator relationships, as well.

## Working Conditions at Mission Possible Schools

Governor Michael Easley initiated North Carolina’s Teacher Working Conditions Survey in 2002. The purpose of the biannual survey is to provide educators and administrators an empirical tool “to create the working conditions necessary for student and teacher success.”<sup>21</sup> In 2008, over 104,000 teachers and administrators completed the teacher working conditions survey, an impressive participation rate of 87 percent. Only schools that had a minimum participation rate of 40 percent have their responses included in the final Teacher Working Conditions report.<sup>22</sup>

The survey assessed teacher working conditions in five broad categories or domains: time, facilities and resources, decision-making, leadership, and professional development. The Teacher Working

Conditions survey defines the domains as follows:

- 1) Time (11 questions) - presence of impediments on teacher’s time to plan and collaborate;
- 2) Facilities and resources (8 questions) - presence of important resources such as instructional materials, communications technology, office equipment, and a clean, safe environment;
- 3) Decision-making (14 questions) - role that teachers play in decision-making about teaching, classroom and school issues;
- 4) Leadership (22 questions) - presence of leadership conditions that contribute to trusting, supportive, empowering environments and sustained efforts to address teacher concerns; and
- 5) Professional development (11 questions) - resources and opportunities available for teachers

**Table 4. Average Middle School Response Rate and Likert Scores, 2006 and 2008**

According to survey results, teachers at Mission Possible (MP) middle schools typically enjoyed better working conditions and/or larger increases in average scores than teachers at non-Mission Possible middle schools did.

	Non MP	Cohort 1	Equal/Higher Than Non MP	Cohort 2	Equal/Higher Than Non MP	Equal/Higher Than Cohort 1
2006 Response Rate	64.70	77.00	✓	69.67	✓	
2008 Response Rate	82.90	90.00	✓	79.00		
Change (2006 to 2008)	18.20	13.00		9.33		
2006 Time	2.80	3.01	✓	2.91	✓	
2008 Time	2.99	2.95		2.80		
Change (2006 to 2008)	0.19	-0.06		-0.11		
2006 Facilities	3.74	3.50		3.76	✓	✓
2008 Facilities	3.90	3.94	✓	3.57		
Change (2006 to 2008)	0.16	0.44	✓	-0.19		
2006 Decision-Making	3.36	2.67		3.23		✓
2008 Decision-Making	2.74	2.45		2.53		✓
Change (2006 to 2008)	-0.61	-0.23		-0.70	✓	✓
2006 Leadership	3.43	2.75		3.25		✓
2008 Leadership	3.65	3.47		3.01		
Change (2006 to 2008)	0.22	0.72	✓	0.24	✓	
2006 Professional Development	3.28	2.81		3.47	✓	✓
2008 Professional Development	3.40	3.48	✓	3.12		
Change (2006 to 2008)	0.11	0.67	✓	-0.35		

Note: All averages above are on a 1 to 5 scale with 1 being the lowest and 5 being the highest for each of the factors described.

to participate in professional development.<sup>23</sup>

The survey also included questions related to teaching experience, overall impression of working conditions, demographics, and mentoring. Teachers were able to complete the survey online (<http://ncte-achingconditions.org>) using an anonymous access

pared to the 2006 survey results.<sup>24</sup> Instead, Mission Possible schools posted average increases in satisfaction that often outpaced average increases among non-Mission Possible schools. Overall, teachers at Mission Possible schools reported an improvement in working conditions in four of the five domains:

**Table 5. Average High School Response Rate and Likert Scores, 2006 and 2008**

According to survey results, teachers at Mission Possible (MP) high schools typically enjoyed better working conditions and/or larger increases in average score than teachers at non Mission Possible high schools did.

	Non MP	Cohort 1	Equal/Higher Than Non MP
2006 Response Rate	73.92	60.71	
2008 Response Rate	79.08	82.86	
Change (2006 to 2008)	5.17	22.14	✓
2006 Time	3.18	3.06	
2008 Time	3.44	3.32	
Change (2006 to 2008)	0.26	0.27	
2006 Facilities	3.61	3.23	
2008 Facilities	3.81	3.68	
Change (2006 to 2008)	0.20	0.46	✓
2006 Decision-Making	3.41	2.90	
2008 Decision-Making	3.00	2.63	
Change (2006 to 2008)	-0.41	-0.27	
2006 Leadership	3.59	3.19	
2008 Leadership	3.68	3.61	
Change (2006 to 2008)	0.08	0.42	✓
2006 Professional Development	3.43	3.04	
2008 Professional Development	3.62	3.55	
Change (2006 to 2008)	0.19	0.51	✓

Note: All averages above are on a 1 to 5 scale with 1 being the lowest and 5 being the highest for each of the factors described.

code that allows researchers to identify only schools, not individual teachers. To increase the response rate, schools with a 100 percent response rate were eligible for prizes, including cash grants. Teachers at those schools were also eligible for cash prizes and the grand prize of a plasma television.

If the Mission Possible program worsened teacher working conditions, then we would expect the 2008 Teacher Working Conditions Survey to reflect a significant drop in average scores com-

time, facilities, leadership, and professional development. Both Mission Possible and non-Mission Possible schools had declines in the decision-making domain (See Table 2).<sup>25</sup>

In the facilities, leadership, and professional development domains, Likert score increases among Mission Possible, Cohort 1 schools exceeded their non-Mission Possible counterparts. In the time domain, non-Mission Possible schools had a slightly larger increase in score, but the first cohort of Mission Possible

**Table 6. Largest Percentage Increases in Teachers Responding Positively to Working Conditions Questions, 2006 and 2008.**

Teachers at Mission Possible (MP) schools found that professional development opportunities, support from school leadership, teacher involvement in decision-making, and availability of resources all improved.

Question Number	Question	Domain	MP Schools Percentage Change	District Percentage Change	State Percentage Change
Q6.1A	Sufficient funds and resources are available to allow teachers to take advantage of professional development activities.	Professional Development	14.3	14	8
Q5.1D	The school leadership shields teachers from disruptions, allowing teachers to focus on educating students.	Leadership	10.6	8	5
Q4.1A	Teachers are centrally involved in decision making about educational issues.	Decision-Making	8.3	9	8
Q3.1C	Teachers have sufficient access to communications technology, including phones, faxes, email and network drives.	Resources	7.8	6	5
Q5.3A	The school leadership makes a sustained effort to address teacher concerns about: Facilities and resources.	Leadership	7.8	5	2
Q3.1D	Teachers have sufficient access to office equipment and supplies such as copy machines, paper, pens, etc.	Resources	7.8	11	4
Q5.1F	The school leadership support teachers' efforts to maintain discipline in the classroom.	Leadership	7.4	3	2
Q6.1C	Adequate time is provided for professional development.	Professional Development	7.4	7	5

Note: A positive response is the sum of the percentages indicating "agreement" or "strong agreement" with the question. For example, in 2006, 30 percent of teachers at Andrews High School agreed or strongly agreed that resources for professional development were sufficient. In 2008, 56 percent of teachers at Andrews High School agreed or strongly agreed that resources for professional development were sufficient. The difference between these two percentages is 26 percent. The MP Average is the average difference for all Mission Possible schools.

schools had a higher average score. In the decision-making domain, both cohorts of Mission Possible schools had lower declines in average score than the average among non-Mission Possible schools.

As we would expect, the Cohort 2 schools, which became Mission Possible schools during the 2007–2008 school year, did not experience significant changes in teacher working conditions from 2006 to 2008. On the other hand, the Cohort 1 schools had positive changes in teacher working conditions. This preliminary data suggests that the longer the Mission Possible school remains in the program, the more significant the improvement in teacher working conditions. However, additional years of

empirical research are required to confirm this.

While useful, the above averages can also obscure important differences in working conditions that occur on different grade levels. For this reason, the average response rates and Likert Scores have been disaggregated by grade level.

The greatest gains in elementary school working conditions occurred in Mission Possible Cohort 2 schools (See Table 3).<sup>26</sup> From the 2006 to the 2008 survey, Cohort 2 schools had the largest average gains among four domains: time, facilities, leadership, and professional development. This group of schools also had the smallest decline in the decision-making domain.

**Table 7. Largest Percentage Decreases in Teacher Working Conditions Responses, 2006 and 2008.**

Teachers at Mission Possible (MP) schools found that they are less involved in school decision-making on a number of key organizational functions.

Question Number	Question	Domain	MP Schools Percentage Change	District Percentage Change	State Percentage Change
Q4.3G	Please indicate how large a role teachers have at your school in each of the following areas. Deciding how the school budget will be spent	Decision-Making	-5.5	-3	0
Q4.3E	Please indicate how large a role teachers have at your school in each of the following areas. Hiring new teachers	Decision-Making	-3.8	1	1
Q4.3H	Please indicate how large a role teachers have at your school in each of the following areas. School improvement planning	Decision-Making	-3.5	-3	0
Q5.1G	Opportunities are available for members of the community to actively contribute to this school's success.	Leadership	-2.8	-2	0
Q4.3D	Please indicate how large a role teachers have at your school in each of the following areas. Determining the content of in-service professional development programs	Decision-Making	-2.5	1	1
Q2.1E	The non-instructional time provided for teachers in my school is sufficient.	Time	-1.8	6	4
Q4.3B	Please indicate how large a role teachers have at your school in each of the following areas. Devising teaching techniques	Decision-Making	-0.9	5	0
Q4.3A	Please indicate how large a role teachers have at your school in each of the following areas. Selecting instructional materials and resources	Decision-Making	-0.6	4	0
<p>Note: A positive response is the sum of the percentages indicating "agreement" or "strong agreement" with the question. For example, in 2006, 30 percent of teachers at Andrews High School agreed or strongly agreed that resources for professional development were sufficient. In 2008, 56 percent of teachers at Andrews High School agreed or strongly agreed that resources for professional development were sufficient. The difference between these two percentages is 26 percent. The MP Average is the average difference for all Mission Possible schools.</p>					

Among middle schools, there were substantial gains in Cohort 1 Mission Possible schools (See Table 4). In fact, Likert scores in the facilities, leadership, and professional development domains far exceeded non-Mission Possible and Cohort 2 schools. Cohort 1 middle schools also had the smallest decline in their decision-making score. Clearly, Mission Possible middle schools in Cohort 2 schools struggled to improve working conditions, as the scores among these three middle schools declined on all five domains.

Among high schools in Guilford County, Mission Possible high schools showed dramatic improvement in four of the five domains compared to non-Mission Possible high schools (See Table 5).

The most significant gains occurred in the facilities, leadership, and professional development domains. The Mission Possible cohort also had a smaller decline in the decision-making domain than non-Mission Possible schools.

In sum, Mission Possible schools showed significant improvements in teacher working conditions that typically exceeded those in non-Mission Possible schools. The exception to this was the Cohort 2 middle schools. While the gains were not as large, the average scores among Cohort 1 elementary schools were generally comparable or higher than the scores among non-Mission Possible schools. Teacher working conditions have declined significantly at the three Cohort 2 middle schools.

**Table 8. Student Performance of Cohort 1 Mission Possible Schools**

The performance of Mission Possible (MP) schools in Cohort 1 was mixed, but average gains were greater for Mission Possible schools than the average for schools not participating in the program.

Name	Level	Performance Composite		Change	ABC Pass Rate		Change	AYP Goals		Change
		2005-06	2006-07		2005-06	2006-07		2005-06	2006-07	
Andrews	HS	42.1	47.4	5.3	40.9	45.9	5.0	50	84.6	34.6
Dudley	HS	51.7	44.5	-7.2	52.5	42.6	-9.9	70.6	88.2	17.6
Eastern Guilford	HS	62.3	54.9	-7.4	62	55.4	-6.6	100	100	0.0
Fairview	ES	56.2	54.2	-2.0	44.8	43.2	-1.6	80	52.9	-27.1
Ferndale	MS	46.5	56.2	9.7	30.1	38.4	8.3	63.6	90.9	27.3
Foust	ES	59.7	57.4	-2.3	45.5	45.5	0.0	100	66.7	-33.3
Gillespie Park	ES	56.9	53.6	-3.3	40.8	40.5	-0.3	100	61.5	-38.5
Hairston	MS	58.1	56.5	-1.6	42.7	42.1	-0.6	100	65.2	-34.8
High Point Central	HS	61.1	62.1	1.0	61.5	62.6	1.1	71.4	100	28.6
Jackson	MS	50.0	50.0	0.0	33.5	31.7	-1.8	72	60	-12.0
Kirkman Park	ES	44.2	50.0	5.8	30	33.8	3.8	92.3	53.8	-38.5
Middle College at Bennett	HS	18.7	40.7	22.0	17.4	38.2	20.8	50	100	50.0
Middle College at NC A&T	HS	17.6	34.5	16.9	15.9	32.5	16.6	50	100	50.0
Oak Hill	ES	53.3	58.4	5.1	42.7	43.1	0.4	76	100	24.0
Parkview Village	ES	54.8	51.2	-3.6	40	38.6	-1.4	100	53.8	-46.2
Smith High	HS	47.5	35.5	-12.0	47.2	35.4	-11.8	79.3	61.9	-17.4
Washington	ES	43.6	57.4	13.8	26.7	44.4	17.7	76.9	100	23.1
Wiley	ES	43.1	50.0	6.9	29.7	31.9	2.2	69.2	76.9	7.7
Cohort 1 Average		48.2	50.8	2.6	39.1	41.4	2.3	77.9	78.7	0.8
Non MP Average <sup>30</sup>		72.8	74.2	1.4	64.9	67.0	2.1	90.8	89.5	-1.3

Note: The performance composite is the percentage of state test scores in the school at or above “grade level” or “proficient” (also called Achievement Level III). The ABC pass rate is the percentage of students in the school that scored at or above “grade level” or “proficient” on state tests. According to the NC Department of Public Instruction, Adequate Yearly Progress (AYP) “measures the yearly progress of different groups of students at the school, district and state levels against yearly targets in reading and mathematics. Target goals are set for attendance and graduation rates as well.” AYP goals are measured and reported to comply with the provisions of the federal No Child Left Behind law.

There is universal agreement among respondents that decision-making in both Mission Possible and non-Mission Possible schools is worse in 2008 than it was in 2006. This district wide problem was not as severe among Mission Possible schools, which generally had lower average decreases in their

decision-making score than non-Mission Possible schools. Nevertheless, it is clear that teachers in Guilford County, regardless of the kind of school they serve, are unhappy about their limited role in the decision-making process.

## Specific Working Conditions at Mission Possible Schools

On average, in what specific areas have teachers at Mission Possible schools reported significant improvement?<sup>27</sup> Teachers were obviously pleased that professional development has improved (See Table 6). Both the resources and time dedicated to professional development were among the top eight questions that had the largest percentage increases in positive responses. There were also notable increases in teachers' positive views of school leadership. Teachers were pleased that leadership shields them from disruptions, addressed concerns about resources, and supported their efforts to maintain discipline. Finally, teachers at Mission Possible schools found that decision-making about educational issues has improved, as well as their access to office equipment and supplies. In sum, professional development, leadership, and access to resources showed the greatest percentage gains from the 2006 to the 2008 survey.

With some exceptions, percentage increases among Mission Possible schools generally exceeded

state and district averages. There was a great deal of variability among schools and questions. In the case of Kirkman Park Elementary School, for example, there were large increases across the board. On the other hand, Foust Elementary School had declining percentages for nearly all questions. There was considerable variability across levels, as well.

In what specific areas did teachers at Mission Possible schools report significant declines?<sup>28</sup> The message could not have been clearer. Teachers have had a declining role in developing budgets, hiring personnel, formulating school improvement plans, determining professional development activities, devising teaching techniques, and selecting instruction materials (See Table 7). Teachers also reported that there were fewer opportunities for community involvement and that they did not have sufficient non-instructional time. Interestingly, these eight questions were the only ones that had percentage declines from the 2006 to the 2008 survey.

**Table 9. Student Performance of Cohort 2 Mission Possible Schools**

The performance of Mission Possible (MP) schools in Cohort 2 was mixed, but it should be noted that none of these schools participated in the Mission Possible program during the 2006–2007 school year.

Name	Level	Performance Composite		Change	ABC Pass Rate		Change	AYP Goals		Change
		2005-06	2006-07		2005-06	2006-07		2005-06	2006-07	
Allen	MS	60.8	60.3	-0.5	44.2	39.9	-4.3	96.6	72.4	-24.2
Aycock	MS	65.7	73.5	7.8	49.7	64.5	14.8	85.7	100	14.3
Bessemer	ES	50.0	52.0	2	34.8	35.7	0.9	80	52.9	-27.1
Cone	ES	50.2	50.5	0.3	30.5	38.1	7.6	100	64.7	-35.3
Falkener	ES	66.5	53.6	-12.9	55.8	42.3	-13.5	100	60	-40.0
Penn-Griffin	MS	59.4	70.8	11.4	46.8	56.4	9.6	95.2	90.5	-4.7
Union Hill	ES	51.3	53.4	2.1	35.9	37.9	2.0	76.9	69.2	-7.7
Cohort 2 Average		57.7	59.2	1.5	42.5	45.0	2.4	90.6	72.8	-17.8
Non MP Average <sup>31</sup>		72.8	74.2	1.4	64.9	67.0	2.1	90.8	89.5	-1.3

**Table 10. Average Likert Scores for Cohort 1 Schools That Had Increasing Test Scores**

For Mission Possible (MP) schools that increased their test scores, resources, professional development, and leadership were the areas that showed that most improvement.

Name	Level	Most improved domain, 2006 to 2008 (Standard Deviations)	2008 Time	2008 Resources	2008 Decision-Making	2008 Leadership	2008 Professional Development
Andrews	HS	Resources (.81)	2.88 (-.48)	3.64 (-.64)	2.32 (-1.46)	3.16 (-1.28)	3.36 (-.58)
Ferndale	MS	Professional Development (1.69)	3.13 (.06)	4.04 (.47)	2.87 (.38)	3.81 (.29)	3.78 (.70)
High Point Central	HS	Resources (1.19)	3.43 (.71)	3.76 (-.31)	2.63 (-.42)	3.67 (-.04)	3.57 (.06)
Kirkman Park	ES	Resources (2.57)	3.42 (.69)	3.77 (-.28)	2.67 (-.29)	3.70 (.03)	3.74 (.58)
Middle College at Bennett	HS	Professional Development (1.43)	4.05 (2.06)	4.03 (.44)	3.19 (1.46)	4.68 (2.40)	4.13 (1.77)
Middle College at NC A&T	HS	Professional Development (1.86)	4.06 (2.08)	3.34 (-1.47)	2.60 (-.52)	3.56 (-.31)	3.81 (.80)
Oak Hill	ES	Leadership (-.19)	3.02 (-.17)	3.62 (-.70)	2.99 (.79)	3.66 (-.07)	3.78 (.70)
Washington	ES	Leadership (.40)	3.60 (1.08)	4.04 (.47)	2.97 (.72)	4.69 (2.42)	3.67 (.37)
Wiley	ES	Leadership (1.94)	3.25 (.32)	3.69 (.50)	3.20 (1.49)	3.93 (.58)	3.26 (.88)
Cohort Average			3.43 (.77)	3.77 (-.28)	2.83 (.24)	3.87 (.45)	3.68 (.39)
Non MP Average			3.10 (.47)	3.90 (.36)	2.79 (.29)	3.74 (.37)	3.56 (.34)

### Working Conditions and Student Performance

From the above discussion, it is clear that the Mission Possible program did not have the deleterious effect on teacher working conditions that opponents of performance pay often claim it would. However, did student performance improve?

The results were mixed (See Table 8). Approximately half of the schools increased their test scores, while the other half of the cohort had declining test scores. Three schools saw double-digit increases in their performance composite and ABC growth percentages under North Carolina’s state testing program. Eight schools had double-digit increases in the number of AYP goals met under the federal No Child Left Behind program. On the other hand, a handful of schools had dramatic declines in their test scores, and three schools that had met AYP in 2005 – 2006 failed to do so in 2006–2007.<sup>29</sup> As we would expect, Mission Possible schools had lower performance composite percentages, lower pass rates on state tests, and met fewer AYP goals than non-Mission Possible schools in Guilford County.

However, Cohort 1 Mission Possible schools had larger increases in test scores from the 2005–2006 to the 2006–2007 school years than non-Mission Possible schools.

Although the Cohort 2 schools did not participate in the Mission Possible program at the time the state released the 2006–2007 accountability results, the statistics are provided here for general reference purposes (See Table 9).

A growing body of research has found a significant relationship between teacher working conditions and student achievement.<sup>32</sup> Similarly, better working conditions in Mission Possible schools appear to correlate with higher student achievement. Among the nine Cohort 1 schools that had increasing percentages in at least two of the three assessment areas, Likert score averages were higher than district averages in four of the five domains on the 2008 Teacher Working Conditions Survey (See Table 10). The two schools with the largest increases from the 2006 to the 2008 survey, the middle colleges at

**Table 11. Average Likert Scores for Cohort 1 Schools That Had Decreasing Test Scores**

For Mission Possible (MP) schools that decreased their test scores, there was no consistent improvement in any domain.

Name	Level	Most improved domain, 2006 to 2008 (Standard Deviations)	2008 Time	2008 Resources	2008 Decision-Making	2008 Leadership	2008 Professional Development
Dudley	HS	Time (.50)	3.10 (.00)	3.65 (-.61)	2.46 (-.99)	3.29 (-.96)	3.21 (-1.04)
Eastern Guilford	HS	Leadership (.55)	2.80 (.65)	3.74 (-.36)	2.69 (-.22)	3.56 (-.31)	3.29 (-.79)
Fairview	ES	Time (.15)	3.33 (.50)	4.11 (.66)	2.62 (-.45)	3.71 (.05)	3.54 (-.03)
Foust	ES	N/A	2.60 (-1.08)	3.12 (-2.05)	2.16 (-2.00)	2.56 (-2.73)	3.43 (-.36)
Gillespie Park	ES	Professional Development (.84)	2.91 (-.41)	4.48 (1.69)	2.99 (.79)	3.88 (.46)	3.83 (.86)
Hairston	MS	Resources (-.19)	2.84 (-.56)	3.96 (.25)	2.36 (-1.33)	3.25 (-1.06)	3.56 (.03)
Jackson	MS	Leadership (3.47)	3.05 (-.11)	3.91 (.11)	2.53 (-.76)	3.68 (-.02)	3.39 (-.49)
Parkview Village	ES	Resources (-.57)	2.78 (-.69)	3.49 (-1.06)	2.44 (-1.06)	3.36 (-.79)	3.42 (-.40)
Smith High	HS	Professional Development (.96)	2.95 (-.32)	3.62 (-.70)	2.51 (-.82)	3.36 (-.79)	3.48 (-.21)
Cohort Average			2.93 (-.37)	3.79 (-.23)	2.53 (-.76)	3.41 (-.68)	3.46 (-.27)
Non MP Average			3.10 (.47)	3.90 (.36)	2.79 (.29)	3.74 (.37)	3.56 (.34)

Bennett and NC A&T, dramatically improved their professional development for teachers by well over one standard deviation.

Among the nine schools with declines in test scores, Likert scores on all five domains of the 2008 survey were lower than district averages (See Table 11). The school with the largest drop in performance composite, Smith High School, had an

impressive increase (nearly one standard deviation above the mean) in the professional development domain, but the school struggled in the resources, decision-making, and leadership domains. In fact, the decision-making and leadership domains were significantly lower than the non-Mission Possible average.

## Conclusion and Recommendations

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Although the Mission Possible program has been in existence for only two school years, participating schools have been making positive gains in improving teacher working conditions and raising student achievement. Of course, it will take several years to determine adequately the impact of the Mission Possible program on teacher working conditions and student achievement, but the initial evaluations of the program suggest a promising future.

The findings in this study suggest a number of important policy recommendations. These include the following:

- 1) *Pay for performance initiatives should include policy elements aimed at improving teacher working conditions.* These policy elements should focus on improving the decision-making process and maintaining a supportive teaching environment. In addition, pay-

for-performance programs should be accompanied by efforts to give teachers a greater role in developing budgets, hiring personnel, determining professional development activities, and selecting instruction materials and teaching techniques.

- 2) *Further evaluation of the relationship between performance pay, working conditions, and student achievement is essential.* The relationship between performance pay, working conditions, and student achievement is complex. Yet, a greater understanding of how these variables interact will lead to more productive teachers and administrators, proficient and prepared students, and a more supportive public.

## Notes

<sup>1</sup>Data provided by Adam Levinson, Fiscal Research Division, North Carolina General Assembly, October 30, 2006. If a school meets a state-established growth standard on its ABC tests, each certified teacher and administrator receives a bonus up to \$750. If a school exceeds that standard, certified staff receive a bonus up to \$1,500. Teacher assistants receive up to \$375 and \$500 respectively. Due to budget considerations, the North Carolina State Board of Education reduced these amounts for the 2007–2008 ABC bonuses.

<sup>2</sup>Bruce Buchanan, “Low-testing schools still get bonuses in ABCs,” *Greensboro News & Record*, September 24, 2005.

<sup>3</sup>Charles Clotfelter, Elizabeth Glennie, Helen Ladd, and Jacob Vigdor, “Would Higher Salaries Keep Teachers in High-Poverty Schools? Evidence from a Policy Intervention in North Carolina,” National Bureau of Economic Research, Working Paper 12285 (June 2006), 20.

<sup>4</sup>*Ibid.*, 16.

<sup>5</sup>North Carolina General Assembly, Session Law 2007-453, HB 966: An act directing the state board of education to establish a pilot program authorizing the implementation of alternative teacher salary plans. See also, Dorothy Hines and Kayla Mathis, “Regional Specific Incentives for Teacher Recruitment and Retention,” North Carolina Department of Public Instruction (July 2007), 1–8.

<sup>6</sup>Jane Wurm, “Legislative Liaison Report,” Charlotte-Mecklenburg Schools Web site ([pages.cms.k12.nc.us/gems/robinsonpta/LegislativeLiaisonReportFebr.pdf](http://pages.cms.k12.nc.us/gems/robinsonpta/LegislativeLiaisonReportFebr.pdf)), (February 2, 2008), 1–2.

<sup>7</sup>Guilford County Schools, “Mission Possible,” Web site ([http://www.gcsnc.com/depts/mission\\_possible/index.htm](http://www.gcsnc.com/depts/mission_possible/index.htm)).

<sup>8</sup>Holli Gottschall Bayonas, et al. “Guilford County Schools Mission Possible Program, Year 1 (2006-07) External Evaluation Report,” SERVE Center, University of North Carolina at Greensboro (April 2, 2008), 1–70. According to the evaluation, “Value-Added scores are the most unbiased way to measure gains in achievement, as opposed to just examining the percentage of students who pass the North Carolina End of Course or End of Grade tests. GCS contracts with SAS® EVAAS® to provide the Value-Added scores.” (p. 1)

<sup>9</sup>*Ibid.*, i.

<sup>10</sup>*Ibid.*, 3–14.

<sup>11</sup>*Ibid.*, 22.

<sup>12</sup>*Ibid.*, 20–24, 58–66. “This model uses a matched

comparison group from the non-treated population to estimate the impact of the treatment on the target population. Specifically, comparison/control matches are constructed by generating a propensity score, which is the probability of being in the treatment group based on selected variables. Comparison/control subjects are then matched to treatment subjects based on their propensity score with the closest score (or another algorithm like nearest neighbor, etc.). This modeling approach produces accurate statistical matches based on the observed information provided and therefore “controls” for those variables included in the model...” (p. 61–62).

<sup>13</sup>*Ibid.*, 23.

<sup>14</sup>*Ibid.*, 24. This graduation rate uses a different formula than the four-year (cohort) graduation rate.

<sup>15</sup>*Ibid.* The SERVE report did include findings from a Fall 2007 climate survey distributed to Mission Possible staff, students, and parents. The timing of the survey – conducted early in the program’s existence and disseminated in late September – makes the findings of limited value.

<sup>16</sup>Herbert G. Heneman III, “Motivational Reactions of Teachers to a School-Based Performance Award Program,” *Journal of Personnel Evaluation in Education* 12:1 (1998), 43–59. Herbert G. Heneman III and Anthony T. Milanowski, “Teacher Attitudes about Teacher Bonuses Under School-Based Performance Award Programs,” *Journal of Personnel Evaluation in Education* 12:4 (1999), 327–341. Carolyn Kelley, “The Motivational Impact of School-Based Performance Awards,” *Journal of Personnel Evaluation in Education* 12:4 (1999), 309–326. Carolyn Kelley, Sharon Conley, and Steve Kimball, “Payment for Results: Effects of the Kentucky and Maryland Group-Based Performance Award Programs,” *Peabody Journal of Education* 75:4 (2000), 159–199. Carolyn Kelley, Allan Odden, Anthony Milanowski, and Herbert Heneman III, “The Motivational Effects of School-Based Performance Awards,” *Consortium for Policy Research in Education* (February 2000), 1–12. Carolyn Kelley, Herbert Heneman III, and Anthony Milanowski, “Teacher Motivation and School-Based Performance Awards,” *Educational Administration Quarterly* 38:3 (August 2002), 372–401. Herbert Heneman III, Anthony Milanowski, and Steven Kimball, “Teacher Performance Pay: Synthesis of Plans, Research, and Guidelines for Practice,” *Consortium for Policy Research in Education* (February 2007), 1–16.

<sup>17</sup>For studies that assess the effect of unions on the adop-

tion of performance pay programs, see the following: Dale Ballou, "Pay for performance in public and private schools," *Economics of Education Review* 20 (2001) 51–61. Dan Goldhaber, Michael DeArmond, Daniel Player, and Hyung-Jai Choi, "Why Do So Few Public School Districts Use Merit Pay?," *Journal of Education Finance*, 33:3 (2008), 262–289.

<sup>18</sup>Lewis C. Solomon, "What's Fair About Performance Pay?" *Phi Delta Kappan* 85:5 (January 2004), 407–408.

<sup>19</sup>Joshua H. Barnett, Gary W. Ritter, Marcus A. Winters, and Jay P. Greene, "Evaluation of Year One of the Achievement Challenge Pilot Project in the Little Rock Public School District," Department of Education, Reform University of Arkansas (January 16, 2007), 1–28. Gary W. Ritter, Marc J. Holley, Nathan C. Jensen, Brent E. Riffel, Marcus A. Winters, Joshua H. Barnett, and Jay P. Greene, "Year Two Evaluation of the Achievement Challenge Pilot Project in the Little Rock Public School District," Department of Education, Reform University of Arkansas (January 22, 2008), 1–A22.

<sup>20</sup>Bayonas, "External Evaluation Report," 3–7.

<sup>21</sup>Eric Hirsch and Scott Emerick, "Teacher Working Conditions Are Student Learning Conditions: A Report on the 2006 North Carolina Teacher Working Conditions Survey," Chapel Hill, N.C.: Southeast Center for Teaching Quality (2007), p. vii. See also, Hirsch, Eric. "Teacher Working Conditions Are Student Learning Conditions: A Report to Governor Mike Easley on the 2004 North Carolina Teacher Working Conditions Survey," Chapel Hill, N.C.: Southeast Center for Teaching Quality (2005).

<sup>22</sup>Five Mission Possible schools were not included in this analysis. Hampton Elementary, Southern Guilford High, and Welborn Middle schools did not meet the 40 percent requirement in 2006. Academy at Smith High and Academy at Central High did not exist in 2006.

<sup>23</sup>These definitions can be found in the "Working Conditions Survey Report" produced for each school by the Southeast Center for Teaching Quality.

<sup>24</sup>North Carolina Office of the Governor, "North Carolina Teacher Working Conditions Survey," Web site (<http://ncteachingconditions.org/>).

<sup>25</sup>Ibid.

<sup>26</sup>Ibid.

<sup>27</sup>Ibid.

<sup>28</sup>Ibid.

<sup>29</sup>Bayonas, "External Evaluation Report," 9–12.

<sup>30</sup>Does not include alternative schools in Guilford County, SCALE School, and SCALE School in High Point.

<sup>31</sup>Does not include alternative schools in Guilford County, SCALE School, and SCALE School in High Point.

<sup>32</sup>For example, see Susan J. Rosenholtz, *Teachers' Workplace: The Social Organization of Schools*, New York: Longman (1989). Joan Talbert, Milbrey Wallin McLaughlin, and Brian Rowan, "Understanding Context Effects on Secondary School Teaching," *Teachers College Record* 95:1 (1993), 45–68. Anthony S. Bryk and Barbara Schneider, *Trust in Schools: A Core Resource for Improvement*. New York: Russell Sage Foundation (2002). Richard M. Ingersoll, *Who Controls Teachers' Work?: Power and Accountability in America's Schools*. Cambridge: Harvard University Press (2003). Susanna Loeb and Linda Darling-Hammond, "How Teaching Conditions Predict Teacher Turnover in California Schools," *Peabody Journal of Education* 80:3 (2005), 44–70. Carrie R. Leana and Fritz K. Pil, "Social Capital and Organizational Performance: Evidence from Urban Public Schools," *Organization Science* 17:3 (May-June 2006), 353–366. Eric Hanushek, and Steven G. Rivkin, "Pay, Working Conditions and Teaching Quality." In *The Future of Children*, The Brookings Institution 17:1 (Spring 2007), 69–86.

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*“To prejudge other men’s notions  
before we have looked into them  
is not to show their darkness  
but to put out our own eyes.”*

JOHN LOCKE (1632–1704)

AUTHOR, TWO TREATISES OF GOVERNMENT AND  
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