Governor's Educator Excellence Grant (GEEG) Program:
Year Two Evaluation Report

Texas Education Agency
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Policy Evaluation Report
July 27, 2009

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EXECUTIVE SUMMARY

The Governor's Educator Excellence Grant (GEEG) program is part of a long history of performance pay programs and policies in Texas. The GEEG program was state-funded and provided grants to schools to implement three-year locally-designed performance pay plans. During the 2005-06, 2006-07, and 2007-08 school years, the GEEG program operated in 99 public schools in Texas.

Performance pay for teachers entered Texas state policy deliberations during the 1980s, a decade marked as one of the most active periods of school reform in Texas. As early as the Texas Teacher Career Ladder program in 1984, policymakers attempted to reform the single-salary schedule and introduce performance pay for educators. Several lessons emerged from those first generation programs and played a significant role in the design and implementation of GEEG. Lessons learned include that (1) adequate, sustainable funding is imperative; (2) teacher involvement in program design fosters school personnel buy-in; (3) performance pay should reward educators for their contribution to student achievement outcomes as well as teacher and staff collaboration; and (4) programs will benefit from comprehensive, independent program evaluation.

This report presents findings from the second year of a multi-year evaluation of the GEEG program. An overview of key evaluation findings is presented below.

Second-year findings from the GEEG evaluation include the following:

- GEEG plans relied heavily on measures of student achievement – especially performance levels – and teacher collaboration to determine teachers' eligibility for bonus awards. The use of these design features changed little over the first two program years.

- The distribution of GEEG bonus awards varied noticeably among schools, and the actual distribution typically exhibited greater inequality than the proposed distribution of bonus awards.

- School personnel continued to hold generally positive views about performance pay and the GEEG program, specifically.

- Teacher turnover was greatly influenced by GEEG program participation and the design features of GEEG plans, most noticeably the size of bonus awards distributed to teachers.

- The evidence regarding GEEG program impacts on student achievement is inconclusive. Depending on the specification, the analysis indicates that GEEG had a weakly positive, negative or negligible effect on student achievement gains. The instability in the estimates may be related to common measurement problems associated with standardized tests or the statistical methods used to control for selection bias.

- There is no evidence of a significant association between student achievement gains and GEEG plan design features in schools. However, the small number of GEEG schools adopting any given plan design necessarily makes these estimates imprecise, and could be masking significant effects.

- Intermediate outcomes such as teacher attitudes, teacher behavior, and institutional dynamics associated with GEEG program participation may offer more appropriate outcomes measure for evaluating the GEEG program. Furthermore, teacher turnover and mobility provides another important outcomes measure.

These findings suggest that school and personnel characteristics and GEEG plan design features influence program outcomes. The attitudes and behaviors of school personnel and teacher turnover are certainly influenced by these factors. There is limited evidence that participation in the GEEG program had an effect on student achievement gains, and no evidence that GEEG plan design features affect student achievement gains. However, examination of the program's impact on student achievement is limited by the process of schools' selection into the program and the likely volatility of student performance measures available to measure outcomes.

Given these findings, key decision-makers in Texas are advised to pay close attention to the manner in which schools are selected into performance pay programs and the design of their performance pay plans, particularly how they determine teachers' eligibility for bonus awards and the size of those awards.

Overall, the GEEG program provides a unique opportunity to learn about the differential effects performance pay plans have on the attitudes and experiences of school personnel, organizational dynamics within schools, teacher turnover, and student achievement gains. The GEEG program allows policymakers, practitioners, and researchers to learn about the impact of performance pay plans within high-poverty, high-performing schools. Future evaluation initiatives will continue to explore how the unique characteristics of this state-funded program – and the plans designed by participants – influence the quality of teaching and student learning within participating schools. This is increasingly important given the state's commitment to a much larger state-funded performance pay program – the District Awards for Teacher Excellence (DATE) program.

INTRODUCTION

This report presents findings from the second-year evaluation of the Governor's Educator Excellence Grant (GEEG) program. The GEEG program was federally- and state-funded and provided three-year grants to schools to design and implement performance pay plans from the 2005-06 to 2007-08 school years. GEEG was implemented in 99 high poverty, high performing Texas public schools.

Overall, the report discusses the implementation experiences of GEEG program participants, paying close attention to the manner in which participating schools designed their performance pay plans and the program outcomes from those plans. The contents of this report address each of the following questions.

- What is the national and state policy context – especially in regards to the use of performance pay programs – in which the GEEG program operates?

- What is the nature of performance pay plans developed by GEEG participants?

- What are the attitudes and behavior of school personnel in GEEG schools?

- How do GEEG participation and design features of GEEG plans influence teacher turnover and student achievement gains?

The report begins with Chapters 1 and 2, which describe the national and Texas-specific policy contexts in which the GEEG program operates, while Chapters 3 provides an overview of the guidelines governing the implementation of GEEG plans in participating schools.

The remaining chapters focus on findings pertaining to GEEG program outcomes, which were gathered systematically based upon a model of inquiry depicted in Figure 1 below. This model follows three lines of questioning: (1) How do schools get into the GEEG program? (2) What are the design features of participant schools' GEEG plans? and (3) What are the program outcomes? The first question allows evaluators to understand the nature of participant schools and determine appropriate sets of comparison schools for identifying program effects over time. Previous research on performance pay emphasizes that plan design features influence plan outcomes. Not all performance pay plans operate in a similar fashion, and understandably, plans with variable characteristics have variable outcomes. Evaluators identify GEEG plan design features used in schools and the bonus awards received by teachers to better understand educator attitudes and beliefs about performance pay, teacher turnover, and student achievement gains. Ultimately, this information informs policymakers as they refine and/or expand performance pay programs in Texas – and beyond – in the future.

Figure 1: Evaluating the GEEG Program, Model of Inquiry

Question: How do schools get into the GEEG program?

Analysis: Examination of program qualification and eligibility criteria. (Chap 3)

Question: How do GEEG participation and plan design features influence outcomes?

Analysis: Examination of educator attitudes and beliefs about performance pay (Chap 6), teacher turnover (Chap 7), and student achievement gains (Chap 8).

Question: What is the nature of performance pay plans developed and used by GEEG participant schools?

Analysis: Examination of plan design features and bonus award distribution models. (Chap 4 and 5)

Chapter 3 provides an overview of the GEEG program, including the criteria for eligible schools and characteristics of participant schools versus other public schools throughout Texas. Chapters 4 and 5 review the design features proposed by GEEG schools and the resulting bonus award distribution models. The attitudes of school personnel and their beliefs about performance pay are examined in Chapter 6, while findings pertaining to teacher turnover and student achievement gains are in Chapters 7 and 8, respectively. The report closes with a discussion of overall findings and their implications for policy and research in Chapter 9.

CHAPTER 1
Educator Performance Pay in U.S. Public Education

This chapter provides an overview of the current state of performance pay in the U.S. public education system and an analysis of national performance pay trends over the past decade. Using the Schools and Staffing Survey, conducted by the National Center for Education Statistics (NCES), this chapter begins with a discussion of performance pay used in U.S. public school districts since the 1999-00 school year. The chapter concludes with a review of some widely known performance pay programs currently operating at the local, state, and national level.

<div style="background:#9ec5e8;border:2px solid black;text-align:center;font-weight:bold">Key Policy Questions</div>

This chapter addresses the following questions.

- What types of performance pay have U.S. public school districts used to financially reward teachers over the past decade?

- What is the incidence of performance pay in U.S. public school districts over the past decade?

- How is the use of performance pay different in high- versus low-poverty public school districts or in traditional versus charter public schools throughout the U.S.?

- What are the features of some widely known performance pay programs operating in the U.S. public education system?

<div style="background:#9ec5e8;border:2px solid black;text-align:center;font-weight:bold">Key Policy Points</div>

This chapter highlights and expands upon the following key policy points based on a review of performance pay policies in the U.S. public education system.

- Rewards for professional development and National Board for Professional Teaching Standards (NBPTS) certification have been the most popular type of performance pay used by U.S. public school districts over the past several school years. Field-based pay for teachers also has grown in popularity.

- The share of U.S. public school districts not offering any performance pay to teachers has decreased, but more than half of public school districts report not using performance pay during the 2003-04 school year.

- High-poverty public school districts in the U.S. are more likely to use field-based pay for teachers than low-poverty public school districts. The share of high-poverty public school

- Charter schools report greater use of performance pay than traditional public schools in the U.S., but there is no difference in the incidence of performance pay reported by traditional public school and public charter school teachers.

National Landscape and Trends in Educator Performance Pay

Several issues simultaneously occurring in the U.S. public education system have stimulated interest in the design and implementation of performance pay policies for educators: state accountability systems, the poor relative performance of U.S. students particularly on international math and science tests, and the disproportionate distribution of inexperienced teachers in high-needs subject areas and schools. Many public school districts, and even entire states such as Florida, Minnesota, and Texas, are exploring performance pay as a means to improve administrator and teacher productivity and recruit more qualified teachers. Interest in such programs is growing, as is the number of programs under development and being implemented.

The primary data source used for analyzing the national landscape of performance pay is the Schools and Staffing Survey (SASS), conducted by the National Center for Education Statistics (NCES). SASS is a nationally representative sample of roughly 8,000 public schools and 43,000 public-school teachers.[1] There have been five waves of SASS, associated with five school years: 1987-88, 1990-91, 1993-94, 1999-00, and 2003-04. A sixth administration (2007-08) is currently in the field, but results of that survey will not be available until spring of 2009.

SASS has formed the basis for a number of studies of teacher pay in both public and private schools (e.g., Ballou, 1996; Ballou & Podgursky, 1997; Figlio, & Kenny, 2007; Podgursky et al, 2007). Given that SASS has spanned nearly two decades and each wave includes questions on teacher pay, it is possible to examine SASS to track trends in the incidence and character of pay systems nationwide. Unfortunately, the more specific questions about teacher pay in recent administrations (1999-00 and 2003-04) are not compatible with pay questions in earlier survey years. Thus, an examination of trends is restricted to the most compatible items across various waves of SASS.

This chapter begins with a study of district-level survey questions concerning reasons for which performance pay awards were given to teachers.[2] Summary statistics are listed in Table 1.1.

The incidence of each type of award was computed in two ways. In the first panel, responses are reported at the district level; in the second panel, responses are computed accounting for the number of full-time equivalent teachers in each district. The teacher-weighted responses indicate the extent to which teachers were exposed to the award in question. In every case, these teacher-weighted percentages are larger than the district-level percentages, indicating that larger districts (i.e., those employing a larger teacher workforce) are more likely to use the performance pay awards identified in Table 1.1.

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[1] SASS includes private schools and teachers as well; however, the focus of this study is on trends in public schools.
[2] "Does the district currently use any pay incentives such as cash bonuses, salary increase, or different steps on a salary schedule to reward …"

Table 1.1: Reasons for Providing Performance Incentive Awards to Teachers in U.S. Public School Districts

Type of performance award	District Responses (%)			Teacher-Weighted Responses (%)		
	1999-00	2003-04	Change	1999-00	2003-04	Change
National Board for Professional Teaching Standards (NBPTS) certification	8.3%	18.4%	10.1%	22.9%	39.8%	17.0%
Excellence in teaching	5.5%	8.0%	2.4%	13.6%	14.0%	0.3%
In-service professional development	26.4%	24.2%	-2.2%	38.8%	35.9%	-3.0%
Teach in less desirable location	3.6%	4.6%	1.0%	11.2%	13.1%	1.9%

Source: National Center for Education Statistics. U.S. Department of Education Schools and Staffing Surveys, various years. School District Survey.

Table 1.1 reveals that the most common reason for making a performance pay award was for professional development. In the 2003-04 school year, 24 percent of public school districts employing 36 percent of teachers offered a performance pay award to teachers for participating in in-service professional development. The next most common reason was for National Board for Professional Teaching Standards (NBPTS) certification. NBPTS certification was also the most rapidly growing reason for making a performance pay award, with the number of public school districts using it growing by 10 percentage points between the 1999-00 and 2003-04 school years.

Table 1.1 shows that eight percent of public school districts, employing 14 percent of teachers, reported the use of performance pay awards for excellence in teaching. Five percent of public school districts, with 13 percent of teachers, provided awards for teaching in less desirable locations. Interestingly, the popularity of performance pay awards as reported by public school districts is nearly the opposite of teacher preferences, as reported in a recent study of Washington teachers (Goldhaber, DeArmond, and De Burgomaster, 2007). Teaching in a less desirable location was the most popular reason for receiving an award among Washington teachers (63%), followed by NBPTS certification (20%), shortage fields (12%), and performance pay (6%).

The incidence of performance pay used by public school districts was also tabulated, as displayed in Table 1.2. Fifty-five percent of public school districts employing 31 percent of teachers reported no incentives in the 2003-04 school year, down from 60 percent and 39 percent respectively in the 1999-00 school year. Two-thirds of teachers were employed in public school districts that provided one or more incentives, and 15 percent of teachers were in public school districts providing three or more such incentives.

Table 1.2: Number of Performance Incentive Awards
in U.S. Public School Districts

Number of incentives	District Responses (%)			Teacher-Weighted Responses (%)		
	1999-00	2003-04	Change	1999-00	2003-04	Change
No incentives	60.6%	55.5%	-5.1%	39.2%	31.1%	-8.0%
1 incentive	28.1%	29.8%	1.7%	33.1%	35.5%	2.5%
2 incentives	8.3%	9.7%	1.3%	16.0%	21.0%	5.0%
3 incentives	2.4%	3.9%	1.5%	5.9%	10.2%	4.2%
4 incentives	0.4%	1.0%	0.6%	2.0%	4.5%	2.5%
5 incentives	0.1%	0.2%	0.1%	3.9%	0.7%	-3.2%

Source: National Center for Education Statistics. U.S. Department of Education Schools and Staffing Surveys, various years. School District Survey.

Table 1.3 identifies whether public school districts awarded schools for their students' achievement with monetary or non-monetary resources for school-wide activities, monetary or non-monetary resources for teachers, or non-monetary forms of school recognition. The most popular school-wide award was non-monetary forms of recognition, reported by 16 percent of public school districts, employing 30 percent of teachers, on the 2003-04 survey. Not as many public school districts (6.8% employing 19.6% of teachers) used cash awards or additional resources for school-wide activities, while even fewer (4.7% of public school districts employing 15.4% of teachers) reported cash awards or additional resources for teachers.

Table 1.3: School Performance Awards for Student Achievement
in U.S. Public School Districts

Based on student achievement, were any schools in the district awarded in any of the following ways?	2003-04	
	District Responses (%)	Teacher-Weighted Responses (%)
Cash awards/additional resources for school-wide activity	6.8%	19.6%
Cash awards/additional resources for teachers	4.7%	15.4%
Schools given non-monetary forms of recognition	15.8%	30.4%

Note: Responses not available for 1999-00 school year because survey item not included in 1999-00 survey
Source: National Center for Education Statistics. U.S. Department of Education Schools and Staffing Surveys, various years. School District Survey.

In all five waves of SASS, a question inquires about recruitment incentives for teachers, which asks district administrators whether they offer additional awards for teachers working in shortage fields, and in which fields they are used. Table 1.4 provides summary statistics of district and teacher-weighted responses.

Table 1.4: Recruitment Incentives by Type of Shortage Field
in U.S. Public School Districts

District Responses	1987-88 (%)	1990-91 (%)	1993-94 (%)	1999-00 (%)	2003-04 (%)	Change
District provides incentive	7.5%	8.7%	10.2%	10.4%	11.9%	4.4%
General elementary	---	---	---	2.6%	2.2%	---
Special education	2.2%	4.7%	6.2%	5.7%	7.3%	5.1%
English/language arts	---	---	---	1.0%	2.0%	---
Social studies	---	---	---	0.7%	1.5%	---
Computer science	1.2%	1.1%	1.7%	2.1%	2.1%	0.8%
Mathematics	2.7%	2.3%	3.2%	3.8%	5.9%	3.3%
Physical sciences	1.7%	2.1%	2.7%	3.6%	4.6%	3.0%
Biology or life sciences	1.3%	1.9%	2.8%	3.5%	4.5%	3.2%
English as Second Language	0.8%	1.5%	3.2%	3.3%	4.3%	3.4%
Foreign language	1.0%	0.9%	2.0%	2.4%	3.8%	2.8%
Music or art	---	---	---	2.5%	2.5%	---
Vocational or technical education	---	1.5%	2.5%	3.5%	2.6%	---
Other fields	1.9%	2.9%	1.1%	---	---	---
Teacher-Weighted Responses	**1987-88 (%)**	**1990-91 (%)**	**1993-94 (%)**	**1999-00 (%)**	**2003-04 (%)**	**Change**
District provides incentive	11.3%	16.6%	18.7%	23.6%	25.3%	14.0%
General elementary	---	---	---	2.4%	2.6%	---
Special education	6.7%	11.8%	13.4%	14.3%	20.6%	13.9%
English/language arts	---	---	---	5.3%	4.2%	---
Social studies	---	---	---	1.6%	2.4%	---
Computer science	1.4%	2.9%	1.3%	3.4%	3.4%	2.0%
Mathematics	5.2%	5.8%	3.9%	8.9%	15.7%	10.5%
Physical sciences	3.6%	5.0%	3.9%	8.4%	13.4%	9.8%
Biology or life sciences	3.8%	4.3%	3.7%	8.4%	12.8%	8.9%
English as Second Language	3.3%	7.6%	8.1%	11.1%	15.5%	12.2%
Foreign language	2.4%	3.1%	2.4%	5.3%	9.4%	7.0%
Music or art	---	---	---	4.9%	6.4%	---
Vocational or technical education	---	4.7%	3.2%	8.0%	7.3%	---
Other fields	4.2%	4.2%	1.6%	---	---	---

Source: National Center for Education Statistics. U.S. Department of Education Schools and Staffing Surveys, various years. School District Survey.

Table 1.4 shows a sharp increase over the 16-year interval in the incidence of field-based incentives. In the first administration of SASS during the 1987-88 school year, just over seven percent of public school districts, with 11 percent of teachers, provided such incentives. Recruitment incentives took the form of cash bonuses or higher pay, or higher initial placement on the salary schedule. That share climbed to 12 percent of public school districts and 25 percent of teachers by the 2003-04 school year. These incentives were most commonly used in the teaching fields of special education, math, science, and English as a second language (ESL).

Table 1.5 splits the sample into high (above median) and low (below median) poverty public school districts, where the median value is roughly 40 percent of students being free and reduced-price lunch eligible. These tabulations suggest that higher poverty districts were somewhat more likely to implement most types of performance pay.

Table 1.5: Performance Incentive Awards in High- and Low-Poverty Districts in U.S. Public School Districts

District Responses	High Poverty			Low Poverty*		
Type of Awards	1999-00 (%)	2003-04 (%)	Change (%)	1999-00 (%)	2003-04 (%)	Change (%)
NBPTS certification	9.0%	20.1%	11.1%	7.8%	16.9%	9.1%
Excellence in teaching	6.0%	9.6%	3.6%	5.2%	6.5%	1.3%
In-service professional development	22.9%	22.6%	-0.3%	28.8%	25.5%	-3.3%
Teach in less desirable location	4.7%	6.9%	2.2%	2.8%	2.8%	0.0%
Teach in fields of shortage	14.1%	14.3%	0.2%	7.8%	9.8%	1.9%
No incentives	59.5%	51.8%	-7.6%	61.4%	58.6%	-2.8%
1 incentive	28.5%	32.2%	3.8%	27.9%	27.8%	-0.1%
2 incentives	8.6%	10.3%	1.7%	8.2%	9.1%	1.0%
3 incentives	2.9%	4.4%	1.5%	2.1%	3.5%	1.4%
4 incentives	0.4%	1.0%	0.6%	0.4%	0.9%	0.5%
5 incentives	0.1%	0.3%	0.1%	0.1%	0.1%	0.1%
Teacher-Weighted Responses	High Poverty			Low Poverty		
Type of Awards	1999-00 (%)	2003-04 (%)	Change (%)	1999-00 (%)	2003-04 (%)	Change (%)
NBPTS certification	26.4%	40.5%	14.1%	20.0%	39.1%	19.1%
Excellence in teaching	18.8%	14.9%	-4.0%	9.4%	11.1%	1.7%
In-service professional development	39.3%	33.0%	-6.3%	38.4%	38.6%	0.1%
Teach in less desirable location	17.0%	15.7%	-1.4%	6.4%	10.6%	4.1%
Teach in fields of shortage	33.4%	33.4%	0.1%	15.6%	17.3%	1.7%
No incentives	33.9%	25.3%	-8.5%	43.5%	36.8%	-6.7%
1 incentive	32.6%	33.2%	0.6%	33.5%	31.9%	-1.6%
2 incentives	15.9%	25.7%	9.8%	16.0%	16.4%	0.4%
3 incentives	8.1%	11.5%	3.3%	4.1%	8.9%	4.8%
4 incentives	1.2%	3.6%	2.4%	2.6%	5.3%	2.7%
5 incentives	8.3%	0.7%	-7.6%	0.3%	0.7%	0.4%

*Low=below median percent for FRL, High=median or higher percent FRL.
Source: National Center for Education Statistics. U.S. Department of Education Schools and Staffing Surveys, various years. School District Survey.

By the 2003-04 school year, 52 percent of high-poverty public school districts, employing 25 percent of teachers, had no incentives in place compared to 59 percent of low-poverty public school districts employing 37 percent of teachers. The no-incentive share dropped more rapidly in the high poverty

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public school districts as well. Among particular types of incentives, the most notable difference is the higher incidence of field-based pay incentives in high-poverty public school districts.

Beginning with the 1993-94 SASS, the surveys include a series of questions for teachers concerning base pay and various supplements to base pay. Pay supplements include extra pay for activities such as teaching evening classes, after-school tutoring, participation in extracurricular activities, or sponsoring student activities. Teachers are also asked about merit pay awards and state supplements. An example of the latter would be career ladder awards funded in part by state legislatures. This category would also include NBPTS certification awards.

While more public school districts reported the use of performance pay awards over nearly a decade, the incidence of awards as reported by teachers did not increase over a similar time period. As seen in Table 1.6, roughly 13 percent of teachers reported receiving an award of some kind, amounting to roughly five percent of base annual salary for teachers who received such an award.

Although charter schools were much more likely to report use of performance awards than traditional public schools, charter school teachers were no more likely to report that they received an award than their counterparts in traditional public schools. The performance award as a percentage of base annual salary is roughly one percentage point higher for recipients in charter schools than for recipients in traditional public schools. It may be possible that charter school teachers perceived all or some portion of the performance awards as part of base pay, considering that only 62 percent of charter schools reported using a salary schedule. Thus, what charter school teachers reported as base pay may incorporate some award payments.

Table 1.6: Performance Incentive Awards for Teachers, Traditional Public Schools and Charter Schools in U.S.

Traditional Public Schools	**1993-94 (%)**	**1999-00 (%)**	**2003-04 (%)**
Yes	13.7%	12.9%	13.3%
Mean base annual salary	$33,655	$39,346	$43,778
Mean bonus	$1,653	$1,569	$2,005
Bonus as a percent of mean base annual salary	4.9%	3.9%	4.6%
Charter Schools	**1993-94 (%)**	**1999-00 (%)**	**2003-04 (%)**
Yes	---	14.9%	12.2%
Mean base annual salary	---	$31,789	$35,536
Mean bonus	---	$1,866	$2,024
Bonus as a percent of mean base annual salary	---	5.9%	5.7%

Source: National Center for Education Statistics. U.S. Department of Education Schools and Staffing Surveys, various years. School District Survey.

Overview of Local, State, and National Performance Pay Programs

Many public school district, state, and national performance pay programs have been enacted over the past decade. This second wave of performance pay programs follows an earlier wave of "merit pay" and "knowledge and skill-based pay" programs during the 1980s and 1990s, respectively.[3] This section provides a brief overview of some of the prominent performance pay programs, with details about Texas performance pay programs discussed in Chapter 2. Further information about other public school district-, state-, and national-level programs can be found on the State-by-State Resources page of the National Center on Performance Incentives' website.[4]

Public School District Performance Pay Programs

Denver Public Schools' ProComp

A well-known performance pay program is Denver Public Schools' (DPS) Professional Compensation System for Teachers (ProComp). In 1999, the Denver Classroom Teachers Association (DCTA) and DPS agreed on a pilot performance pay plan linking teacher pay to student achievement and professional evaluations. This pilot program operated in 16 DPS schools from 1999-2003. A multi-year, summative evaluation of the pilot program released by the Community Training and Assistance Center (CTAC) in 2004 revealed several promising findings related to ProComp.

- Students of teachers using high quality performance objectives were more likely to have higher average achievement scores than students instructed by teachers with performance objectives of lower quality.
- When a teacher met at least two performance objectives, his/her students were more likely to have higher mean achievement scores.
- The percent of teachers using quality performance objectives grew over the course of the four-year pilot program. Similarly, the longer an individual teacher participated in the pilot, the more the quality of his/her performance objectives improved.
- Teachers' ability to meet their performance objectives also increased over time.

Following refinement of the pilot model, ProComp was adopted in spring 2004 by the board of education and members of DCTA. ProComp's position in DPS was strengthened in November 2005 when Denver voters approved a ballot initiative to provide $25 million in taxes to scale up the program beginning in January 2006. Additionally, in 2006 DPS received a $22.67 million, five-year Teacher Incentive Fund (TIF) award from the U.S. Department of Education (USDE)[5] which will help expand ProComp to nearly 90 percent of Denver's 150 K-12 public schools.

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[3] "Merit pay" refers to a pay program in which teacher awards are tied directly to the performance of his/her students. "Knowledge and skill-based pay" refers to a pay program in which awards are tied to the knowledge and skills that a teacher acquires or displays.

[4] More details about performance-based incentive pay programs throughout the nation can be found at the following section of NCPI's website http://www.performanceincentives.org/statebystate_resources/index.asp. The Center for Educator Compensation Reform also provides related information on its website http://www.cecr.ed.gov/initiatives/maps/

[5] A more thorough discussion of the Teacher Incentive Fund can be found later in this section of the chapter.

ProComp, which provides all teachers with the opportunity to augment earnings, offers awards to individual teachers for meeting criteria such as improving student achievement, completing professional evaluations, advancing their knowledge and skills, working in a hard-to-staff school or subject area, or being employed in a state-designated "distinguished" school. New teachers to DPS starting in 2006 had to participate in ProComp, while previously employed teachers were given seven school years to opt into the program. The fourth round of teachers opting into ProComp began their first year of participation in the 2008-09 school year. However, recent disagreement between DPS and DCTA about the future of ProComp has begun to surface as the district entered the 2008-09 school year (Gonring, Teske, and Jupp, 2007; Koppich, 2008).

New York City's School-wide Performance Bonus Program

During the 2007-08 school year, New York City (NYC) Chancellor Joel Klein and the United Federation of Teachers (UFT) designed the city's first school-wide performance pay program. Approximately $20 million in private funds were raised to support the pilot initiative. In November 2007, 240 (15%) of NYC public schools were randomly selected for participation from a set of high-needs schools, defined by the average proficiency rating in core subject areas, poverty rates, student demographics, as well as the percent of English language learner and special education students. Of those, 205 (86%) agreed to participate. Beginning in the 2008-09 school year, the program became publicly funded and expanded to include more than 400 schools (30% of all NYC public schools).

Eligible schools opted into the program through a school compensation committee vote taken during the 2007-08 school year. Each school designed progress report targets to determine eligibility for school-wide performance awards, which are distributed at the end of the school year. Schools meeting all performance targets can earn enough funds for all full-time UFT-represented employees to receive $3,000. Schools meeting 75 percent of targets can earn enough funds for those employees to receive $1,500 each. Each school's compensation committee decides how performance awards will be distributed among employees.

State Performance Pay Programs

Minnesota's Quality Compensation for Teachers

In July 2005, the Minnesota State Legislature approved the Quality Compensation for Teachers program (Q-Comp), a performance pay program for teachers. Q-Comp is a voluntary program for public school districts and follows the Teacher Advancement Program model using five core components: career ladder for teachers, job-embedded professional development, instructional observations and standards-based assessments, measures to determine student growth, and performance pay. Participating districts must develop a new salary schedule for teachers with the collaboration of local public school district and teacher union officials. At least 60 percent of any pay increase for teachers must be based on locally-developed performance measures and evidence of a teacher's contribution to student achievement gains.

Q-Comp operates in 39 of the state's 230 public school districts and in 21 charter schools in Minnesota, with over 130 additional public school districts indicating their intent to participate in coming school years. Participating public school districts are eligible for approximately $260 per student to support implementation of their performance pay plan. State aid provides $190 of this per

student revenue, with the remaining funds coming from a partially equalized levy; public school districts are not required to levy the additional funds.

Florida's Merit Award Program

In March 2007, Florida legislators passed the Merit Award Program (MAP) to replace a year-old Special Teachers are Rewarded (STAR) program that had been widely unpopular with public school district officials and teachers. Beginning in the 2007-08 school year, districts were no longer legislatively required to implement a performance pay plan, but all districts became eligible to opt into MAP. Unlike the requirements of STAR, participation is now voluntary and subject to collective bargaining (Buddin, McCaffrey, Kirby, and Xia, 2007; Jacob and Springer, 2007). Currently, 10 of 67 public school districts in Florida are participating along with 186 charter schools in the state.

Under MAP, all instructional personnel (except paraprofessionals and substitute teachers) and school administrators are eligible to receive performance awards if employed in a participating public school district. Public school districts have some flexibility in determining how many teachers will be awarded and how large a share of teacher raises will be determined by student achievement outcomes. Measures of student academic proficiency or gains must carry no less than 60 percent of the weight for employees' award determination. Student achievement can be measured at the individual classroom, instructional team, or school level (the latter only for school administrators) using state, national, or local assessments. At least 40 percent of an employee's award must be determined by professional practices. Each public school district determines an award amount equal to at least five percent but not more than 10 percent of that public school district's average teacher salary, which is to be distributed to all of its top performing instructional personnel.

National Performance Pay Programs

Teacher Incentive Fund

In 2006, the U.S. Congress appropriated $99 million per year for the Teacher Incentive Fund (TIF) program. TIF grants are distributed to public school districts, charter schools, and states on a competitive basis to fund the development and implementation of principal and teacher performance pay programs. Although the USDE estimated that TIF dollars would fund approximately ten to 12 performance pay programs with a per-program award size of $8 million annually, a total of 16 grants were distributed in fall 2006, expending less than half of the $99-million appropriation.[6] In October 2006, the USDE also funded the Center for Educator Compensation Reform as a national center to provide technical assistance and other support to TIF grantees. The USDE distributed the remaining $43 million of first-year appropriations during the summer 2007 following a second grant competition. Over $95 million was appropriated for TIF in fiscal year 2008.

The goals of TIF, as defined by the USDE, are as follows.

- Improving teacher and principal effectiveness in an effort to increase student achievement.
- Revamping teacher and principal compensation systems so pay is more closely aligned with student achievement outcomes.

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[6] As part of the USDE's Appropriations Act (P.L. 109-149), TIF is a direct discretionary federal grant program.

- Increasing the assignment of highly effective teachers in hard-to-staff schools and subject areas.
- Sustaining alternative performance pay systems for educators.

Grantees have a good deal of flexibility in the design and implementation of TIF-funded programs. However, educator pay must be tied in some way to student achievement gains and results of multiple classroom evaluations throughout a school year. TIF grantees must also provide educators with incentives to take on additional leadership roles or responsibilities.

Teacher Advancement Program

The Teacher Advancement Program (TAP), a comprehensive school reform model providing teachers with an opportunity to earn performance pay, has gained considerable attention in the recent years. Developed in 1999 by Lowell Milken and other individuals at the Milken Family Foundation (MFF) to attract highly-effective teachers, improve instructional effectiveness, and elevate student achievement, TAP operates in more than 180 schools in 15 states and the District of Columbia. In the aggregate, there are approximately 5,000 teachers and 60,000 students in TAP schools across the nation (MFF, 2007). TAP also figured prominently in the 2006 announcement of TIF grantees, with over one-third (36.8%) of funds going to public school districts and states that proposed to implement TAP.

TAP's design has four primary components: (1) multiple career paths, (2) ongoing applied professional growth, (3) instructionally-focused accountability, and (4) performance pay. Teacher knowledge, skills, and responsibilities comprise the first indicator in TAP's performance pay system. Fifty (50) percent of a teacher's performance award is contingent on classroom observations. Thirty (30) percent of a teacher's award is based on value-added measurement of gains the teacher produces in his/her classroom's achievement. School-wide achievement is the final determinant and contributes to 20 percent of a teacher's performance award. School-wide student performance is also evaluated as a measure of value added. This performance award structure enables teachers to earn anywhere from $0 to $12,000 per year, with much variation in awards across TAP sites.[7]

Chapter Summary

This chapter provides an overview of the trends and current landscape of performance pay policies in the U.S. public education system. The use of performance pay reported by public school districts over the past decade has grown, although a similar increase is not evident in the share of teachers reporting the receipt of such awards. This may stem from some of the more popular types of awards used by districts – NBPTS certification awards and field-based incentives – for which a more limited subset of teachers represents eligible recipients. The use of performance awards differs by public school district/school type: high-poverty public school districts were more likely to use field-based incentives than their low-poverty counterparts; charter schools were more likely to use performance pay than traditional public schools.

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[7] In recent years there have been a number of evaluations of TAP, many of which find generally positive findings. These evaluations include work by: Schacter et al (2002); Schacter, Thum, Reifsneider, and Schiff (2004); Solmon, White, Cohen, and Woo (2007); Springer, Ballou, and Peng (2008).

Many local-, state-, and national-level performance pay programs exist. Some of the more prominent programs share several features, including voluntary participation for schools or teachers and alignment between teacher pay and student achievement.

CHAPTER 2
Educator Performance Pay in Texas

This chapter discusses the history of teacher pay policy along with state- and local-level performance pay programs operating in Texas. Texas has the largest statewide performance pay system in U.S. public education, which began with the Governor's Educator Excellence Grant (GEEG) program and grew to include the Texas Educator Excellence Grant (TEEG) program and the District Awards for Teacher Excellence (DATE) program. These current initiatives are the result of decades of political debate.

Key Policy Questions

This chapter addresses the following questions.

- What is the history of performance pay reform and policies in Texas?

- How have past experiences with performance pay informed the state's design and implementation of GEEG?

- What is the current performance pay landscape in Texas and how does it compare to other policies throughout the U.S. K-12 public education system?

Key Policy Points

This chapter highlights and expands upon the following key policy points based on a review of performance pay policies in Texas.

- Texas operates the single largest performance pay system in U.S. K-12 public education.

- Current educator performance pay initiatives in Texas reflect the challenges and lessons learned from other statewide compensation and performance pay reforms.

- Many districts in Texas operate performance pay plans, including locally-funded programs as well as those funded by the state.

History of Educator Compensation Reform in Texas

The history of performance pay programs and policies in Texas provides a backdrop to the state's TEEG and DATE programs. Performance pay for teachers entered state policy deliberations during the 1980s, a decade marked as one of the most active periods of school reform in Texas.[8] This section provides an overview of these efforts, including a discussion of the Texas Teacher Career Ladder Program (1984-1993), the Texas Successful Schools Award Program (1992-2001), and other school finance reform leading up to the current incentive pay policy landscape.

Texas Teacher Career Ladder Program (1984-1993)

The Texas Teacher Career Ladder was first proposed by the Select Committee on Public Education, convened in 1984 by Governor Mark White and headed by H. Ross Perot. The Select Committee recommended that the legislature replace the existing state salary schedule, based on longevity and advanced education degrees, with a salary system determined by teacher performance and evaluation. A career ladder program, the committee reported, would establish a professional career development path for outstanding teachers, attract capable individuals to the teaching profession, provide incentives for the best teachers to remain in the classroom, and ensure that these high-performing teachers receive the financial rewards they deserve.

These salary supplements were directly linked to teacher performance, as opposed to student achievement, and encouraged teachers to exceed standards for classroom performance on the Texas Teacher Appraisal System. Teacher evaluations were conducted by a school-level team consisting of one administrator and one teacher colleague. Texas districts were responsible for evaluating teacher performance and determining step placements. Additionally, districts were allowed to reduce step supplements if state funding for the program did not cover full supplements for all eligible teachers. Finally, districts were authorized to demote teachers or decline to renew contracts when teachers failed to meet classroom performance standards (House Research Organization, 2004).

The career ladder program provided opportunities for professional advancement along four steps. When introduced in 1984, new teachers and most teachers employed in Texas public schools were placed at the first step. To advance through the steps, teachers had to complete a specified number of years at each level, demonstrate instructional abilities, and satisfy professional development requirements. Those on the first step whose performance "exceeded expectations" were moved up to the second step, earning an additional $1,500 to $2,000 each year. Teachers advancing to the third step could earn an annual supplement of $4,000, while teachers who attained the final step could earn up to $6,000 annually for performing additional duties, such as supervising student teachers, serving as team leaders or mentors, conducting academic training, or appraising career ladder candidates.

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[8] The State Legislature introduced the first statewide curriculum at the beginning of 1981, and replaced the appointed State Board of Education with an elected board in 1989 (Texas Education Agency, 2004). During the intervening years, the Legislature established a new state assessment system, mandatory student testing, a required high-school graduation test, class-size limits, a no pass/no play rule, a dropout reduction program, a public education information system, annual district performance reports, competency testing for teacher recertification, an across-the-board pay raise for teachers, an overhaul of the state's school finance system, and the Teacher Career Ladder.

State funding was a significant challenge for the program (Texas Education Agency, 1998). The state allotment increased from $50 per student during the 1983-84 school year to $90 per student in the 1992-93 school year. By the time the program was repealed in 1993, there were 132,855 teachers on the second and third steps of the career ladder and state spending had reached $291 million annually, even without the state implementing the fourth step.

The program faced other challenges. The state's failure to involve teachers in the initial program design led to early, sharp criticism. Teachers were highly skeptical about the objectivity of performance appraisals, the emphasis on student testing, and the adequacy of state funding to put all deserving teachers on appropriate steps. In addition, some felt the program created a negative culture of competition in schools (House Research Organization, 2004).

Texas Successful Schools Awards Program (1992-2001)

Long before the state legislature repealed the Texas Teacher Career Ladder in 1993, state policymakers considered ways to refine performance pay by rewarding performance outcomes instead of inputs, thereby aligning performance pay with state goals for student achievement gains. In 1990, Governor Ann Richards created the Governor's Educational Excellence Awards Committee. This committee provided monetary awards to schools that demonstrated the highest levels of sustained improvement or substantial gains in student academic achievement (Texas Education Agency, 1998).

In 1991, a special session of the legislature called for the Governor's Educational Excellence Awards Committee program to be replaced by the Texas Successful Schools Awards Program, a program that was designed to recognize and reward schools and districts demonstrating progress toward or success in meeting state education goals. In 1995, the legislature created the Texas Successful Schools Award System.

The Commissioner of Education was authorized to select criteria for annual awards and identify eligible schools and districts. Awards were determined by a complex set of criteria which included performance on the state's school accountability system, performance gains on state assessments, reduced dropout rates, and college admissions test scores. Schools and districts were required to use school-level committees to determine the distribution of awards which had to give priority to using funds for the improvement of academic instruction. Schools could use awards for: purchasing technology, instructional materials, school furniture or equipment; funding professional development; directing performance-based awards to students; providing performance-based teacher awards; or expanding school/community relations and reserve funds (Texas Education Agency, 1998).

The first awards under the Successful Schools Award System began in 1992 and concluded in 2001, with awards to schools and districts ranging from $250 to $175,000. Awards were generally used for the purchase of technology and instructional materials; however, a relatively small, but growing number of schools used the funds to distribute performance awards to teachers (Texas Education Agency, 1998).

The 77th Texas Legislature did not appropriate money for the Successful Schools Awards Program during the 2001-02 and 2002-03 school years. At this time state policymakers were fully occupied by

concerns about the state's public school finance system and the lawsuit filed against the system in 2001. In fact, during the last year of the program, $500,000 was provided by the Texas Education Agency (Texas Education Agency, 2007).

State policymakers recognized three fundamental problems with the Successful Schools Award Program. First, the criteria for awards were complicated and not understood by many teachers and school administrators. Second, the monetary awards were too small to stimulate change in the behavior of teachers, schools, and districts. Lastly, there was a significant delay between the performance of schools and districts and award distribution.

A formal evaluation of the Successful Schools Awards Program recognized these limitations and suggested ways to improve state performance pay programs (Texas Education Agency, 1998). The Texas Education Agency determined that awards from Successful Schools Awards should be in the form of salary supplements for all professional staff and sufficiently large to be meaningful to recipients. The evaluation recommended that eligibility criteria be transparent and fixed for awards to serve as incentives, and that performance awards be based on multiple indicators. A longitudinal measure of improvement in student achievement—a "value-added" measure—was suggested to better recognize the success of schools serving large populations of disadvantaged students.

The Texas Career Ladder Program and the Successful Schools Awards Program took fundamentally different approaches to performance incentives. The former distributed awards to individual teachers and the latter distributed awards primarily to schools. The career ladder based awards on the efforts of teachers, whereas Successful Schools based awards on the outcomes of teacher efforts (i.e., student achievement). A summary of lessons learned from the successes and obstacles of these early performance pay programs is described in Table 2.1.

<div align="center">

Table 2.1: Lessons Learned,
Texas Career Ladder and Successful Schools Awards Program

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Recommendations for Design and Implementation	Career Ladder	Successful Schools
Adequate funding	X	X
Commitment to stable funding over time	X	
State responsibility for program	X	
Local responsibility for plan design	X	
Teacher involvement in plan design	X	X
Simple and understandable plan criteria		X
Thorough communication about plan	X	
Alignment between incentives and state goals	X	X
Incentive awards as a part of teacher salary		X
Significantly large award amounts		X
Awards distributed evenly to all teachers		X
Awards based on multiple criteria		X
Awards based on objective performance evaluations	X	
Awards primarily based on student achievement	X	X
Longitudinal measures of achievement gains		X
Fixed and known criteria for incentive awards		X
Strategies to enhance teacher collaboration	X	X
Programs for schools with disadvantaged students		X
Independent, periodic program evaluations	X	X

Source: Synthesis of information presented in previous sections of this chapter, including multiple resources cited above.

School Finance Reform and Teacher Performance Pay

From 2003 to 2006, state policymakers turned their attention greatly toward school finance reform, as legislators debated new taxes for increasing state funding for public schools and new formulas for distributing these funds. Some Texans advocated more money for education while others advocated more education for the money. The largest school expenditure, teacher salaries, became a central focus of public discussions bringing performance pay proposals back to the debate. Performance pay re-entered the school finance debate in 2003 by the Koret Task Force on K-12 Education during hearings of the Joint Select Committee on Public School Finance of the 78th Texas Legislature.[9]

Governor Perry's proposal for teacher incentives (January 2004)

In January of 2004, Governor Rick Perry proposed a Teacher Excellence Incentive Plan to reward teachers for achieving a high level of excellence in the classroom and increase the pool of effective

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[9] The Koret Task Force on K-12 Education is a team of education experts brought together by the Hoover Institution, with the support of the Koret Foundation, to work on education reform. The primary objectives of the task force are to gather, evaluate, and disseminate existing evidence in an analytical context, and analyze reform measures that will enhance the quality and productivity of K-12 education (as stated at http://www.hoover.org/research/ktf).

teachers in the state's public schools, particularly those working with disadvantaged students. The key features of his plan follow.

- $200 million in state funding.
- Optional participation for districts and schools.
- Locally-designed district plans.
- State and district matching funds amounting to $2,500 per teacher.
- An additional $5,000 state award for teachers working in underperforming schools that serve large numbers of disadvantaged students.

The Koret Task Force's proposal for teacher incentives (February 2004)

A month later, the Koret Task Force presented the Joint Select Committee on Public School Finance with its formal recommendations, suggesting that Texas establish a state performance pay system including the following guiding principles.

- Incentives should be offered to both individuals and schools.
- Awards should be based on quantitative measures of student performance – both achievement levels and value-added gains – along with other measures of teacher performance.
- Districts should design their own performance pay plans following state guidelines.
- The state should provide a model performance pay plan for districts that do not want to design their own plan.

The Joint Select Committee's proposal for teacher incentives (March 2004)

In March 2004, the Joint Select Committee on Public School Finance released its findings, including key recommendations for performance pay for individual teachers, which follow.

- Voluntary participation.
- Locally-designed plans using objective measures of teacher performance tied to value-added gains and supplemented with input from principals and parents.
- Awards of $10,000 for the top five percent of district teachers, and $5,000 for the remaining teachers in the top 15 percent pool.

Their key recommendations for school-level performance pay include the following.

- Voluntary participation.
- Qualifying schools to be identified by the Texas Education Agency.
- Participant selection based on ranking of value-added performance.
- Largest bonuses awarded to highest-rated schools comprising 20 percent of state's students.
- Awards of $3,000 to $5,000 distributed to each teacher in qualifying schools.
- Awards of $10,000 for top 20 percent and $5,000 for next two percent of principals.
- Awards for other professional staff to be determined by principals and site-based decision-making committees.

These recommendations were incorporated into House Bill 2 during the fourth-called session of the 78th Texas Legislature, but this school finance bill failed to gain enough votes to pass.

House Bill 2 (January 2005)

In January 2005 during the 79th Texas Legislature, the House Education Chair filed a school finance bill again containing a proposal for the Educator Excellence Incentive Program. This program was very similar to that proposed by the same bill during the 78th Legislature, with a few exceptions.

- Districts would be required to allocate at least one percent of their expenditures to the allocation of performance pay awards.
- The design of local performance pay plans must include the input of classroom teachers.
- Performance pay awards must be based on objective measures of student achievement, including achievement levels and/or measures of growth.
- Performance pay plans could include additional indicators of teacher performance for the determination of award eligibility.

This bill passed the Texas House but did not fare well in the Texas Senate. The Senate Committee on Education produced a substitute school finance bill that included a very simple proposal for a statewide performance pay program that would (1) reward schools with at least 65 percent of economically disadvantaged students that demonstrate the most annual improvement, (2) allow districts to develop local performance pay plans, and (3) provide stipends to teachers in shortage areas or hard-to-staff schools. Like its predecessors, this substitute for House Bill 2 failed to pass, as did subsequent proposals including teacher performance pay programs filed during the next two special sessions of the 79th Legislature.

While legislators failed attempts to produce a performance pay program during the 2004 and 2005 sessions, Governor Perry issued an executive order to establish a state performance pay program in November 2005.[10]

Statewide Framework for Performance Pay in Texas

The current educator performance pay system originally consisted of three distinct, state-funded grant programs: the Governor's Educator Excellence Grant (GEEG), the Texas Educator Excellence Grant (TEEG), and the District Awards for Teacher Excellence (DATE). The first program, GEEG, was funded with state and federal dollars and completed its operation at the close of the 2007-08 school year. The 2008-09 school year is the third year in which TEEG has been in operation and the first school year that DATE programs are being implemented within participating districts. By 2009, it is estimated that the state will provide approximately $247 million for the development of performance pay plans in Texas public schools, making it the largest statewide performance pay system in U.S. K-12 public education.

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[10] Authorizing legislation (House Bill 1, General Appropriations Act, Subchapter N and Subchapter O), 3rd Called Session, 79th Texas Legislature, 2006

Governor's Educator Excellence Grant (GEEG) Program

The GEEG program was first realized in November 2005, when Governor Perry issued Executive Order RP 51 to create a $10-million, three-year noncompetitive grant program. GEEG grants were to be used for the provision of performance pay to teachers employed in schools with records of high or improved student achievement serving high percentages of economically disadvantaged (%ED) students.

The executive order outlined the basic design of the GEEG program and authorized the Texas Commissioner of Education to further develop program criteria, which had to adhere to the following stipulations.

- Use federal funds, as authorized by Title II of the No Child Left Behind Act.
- Set aside no less than $10 million annually for the program.
- Award grants of no less than $100,000 to schools with high %ED students.
- Require schools to dedicate at least 75 percent of grant funds for classroom teacher performance awards.

In the fall of 2006, the state made available three-year grant awards ranging from $60,000 to $220,000 per year to 99 public schools meeting eligibility criteria. Funds were distributed to schools that were in the top third of Texas schools in terms of %ED students and either carried a performance rating of Exemplary or Recognized on the state accountability system, or were in the top quartile on TEA's Comparable Improvement measure (in the 2004-05 school year).[11]

The GEEG program operated in these 99 schools during the 2006-07 and 2007-08 school years, with bonus awards distributed to teachers during the fall 2006, fall 2007, and fall 2008 semesters.

Texas Educator Excellence Grant (TEEG) Program

State funds provided $100 million to TEEG-eligible schools during the 2006-07 school year, and $97 million for each of the 2007-08 and 2008-09 school years. Grant awards were made available to schools for one-year cycles. During Cycle 1 (2006-07 school year), 1,148 schools participated in the TEEG program, followed by 1,026 schools during the subsequent school year. Approximately 1,067 schools are eligible for Cycle 3 this 2008-09 school year. Eligibility criteria and requirements are nearly identical to those of the GEEG program. However, schools must be in the top half of Texas schools in terms of %ED students, and schools are only eligible for grants one year at a time.

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[11] A Recognized rating means that for every tested subject at least 75 percent of the tested students pass the Texas Assessment of Knowledge and Skills (TAKS), while an Exemplary rating elevates the standard so that for every subject at least 90 percent of the tested students pass TAKS. Comparable Improvement (CI) is a measure that calculates how student performance on the TAKS mathematics and reading/English language arts tests has changed (or grown) from one year to the next, and compares the change to that of the 40 schools that are demographically most similar to the target school. Student demographics used to construct groups include percent of African American, Hispanic and white students, percent of economically disadvantaged students, percent of limited English proficient students, and percent of mobile students. CI is calculated separately for reading/English language arts and mathematics, based on individual student *Texas Growth Index* (TGI) values. The student-level TGI values are aggregated to the campus level to create an average TGI for each campus.

Program eligibility is determined on an annual basis, with grant amounts ranging from $40,000 to $295,000 per year.

Both the GEEG and TEEG programs specify that school grants should be divided into Part 1 and Part 2 funds. Part 1 funds represent 75 percent of a school's total grant and are earmarked for teacher bonus awards. Part 2, representing the other 25 percent of a school's grant, can be used for bonus awards to other school personnel or to implement professional growth activities.

District Awards for Teacher Excellence (DATE) Program

The district-level program, DATE, is funded at approximately $150 million annually with state funds provided through the Texas Educator Excellence Fund. All districts in the state became eligible to participate beginning with the 2008-09 school year. Districts may apply for DATE funds for all schools or simply for high-needs schools, or to implement components of TAP.[12] Grant amounts are based on student enrollment in each district.

Districts are required to use at least 60 percent of funds to directly reward classroom teachers based on measures of student achievement. Remaining funds may be used as stipends for mentors, teacher coaches, teachers certified in hard-to-staff subjects, or teachers who hold post-baccalaureate degrees; or as awards to principals and other staff members.

The 203 districts electing to participate in DATE during the 2008-09 school year must:

- Have submitted a Notice of Intent to Apply in October 2007.
- Participate in an unfunded planning phase during the 2007-08 school year to develop performance pay plans.
- Participate in technical assistance activities during the 2007-08 school year.
- Begin program implementation in the 2008-09 school year.
- Participate in DATE for at least two consecutive grant cycles (2008-09 and 2009-10 school years).
- Decide to implement a district-wide program or target funds to the district's highest-need schools.
- Provide a 15 percent match in funds (or in kind) during the 2007-08 school year and during the subsequent two years of the grant.

Other allowable uses of funds include increasing data capacity, providing professional development, and implementing TAP.

Goals for the Texas Performance Pay System

To better understand the short- and long-term goals guiding development and implementation of the state's current performance pay system, the evaluation team interviewed 16 individuals who currently serve or formally served in state executive, legislative, or regulatory capacities, and were primarily responsible for conceiving and drafting legislation or regulations associated with GEEG,

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[12] See Chapter 1 for an overview of the TAP program.

TEEG, and/or DATE. All 16 agreed to be interviewed; their names and titles, at the time interviews were conducted, are listed in Appendix A.[13]

Short-term goals

A number of short-term goals emerged from interviews with key stakeholders. Short-term goals are defined as those milestones to be realized within the next decade. The following list identifies the 10 most frequently referenced objectives.

- Schools with high %ED students will voluntarily apply for state performance pay grants to establish locally-developed performance pay plans.
- Teachers, staff, administrators, and school trustees will collaborate on the design and implementation of school performance pay plans.
- School and district performance pay plans will be informed by research-based best practices and principles, and will use program evaluation findings to adapt over time.
- Grant requirements and local performance pay plans will be transparent, reasonable to implement, and stable over time.
- The size of bonus awards will be sufficiently large to drive instructional changes, and recruit and retain high quality teachers.
- School performance pay plans will improve the quality of teaching and learning at schools by rewarding highly effective teachers and those working in hard-to-staff fields.
- Performance pay will improve the working environment in schools by inciting greater collaboration among school personnel and encouraging principals to be instructional leaders.
- School performance pay plans will encourage principals to:
  - Use student achievement data to make decisions about teacher compensation and bonus awards, teacher placement, teacher evaluations, professional development, instructional practices, and curriculum.
  - Identify and reward high-performing teachers, and place them in the neediest classrooms.
  - Identify under-performing teachers, provide instructional assistance, and assign teachers where they can deliver quality instruction, otherwise teaching contracts will not be renewed.
- State policymakers will fund local performance pay plans to make teacher salaries more competitive and attractive to high-ability individuals.
- The program will stimulate much needed change in education support systems including student achievement-based teacher appraisal system, state databases that connect individual

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[13] It should be carefully noted that responses represent the personal views of individual senior staff and should not be interpreted as the positions on policy associated with any office or agency. There is noteworthy agreement on short- and long-term goals for state performance incentives among those individuals interviewed, although individuals with regulatory responsibility generally articulated more attention to detail for design and implementation and fewer goals that would radically change policy. It is worth noting that many of the goals listed below are not directly stated in law, regulation, or program guidelines.

student performance with individual teachers, and a state assessment system that identifies longitudinal value-added and grade-level progress toward postsecondary readiness.

Long-term goals

A number of long-term goals emerged from interviews with key stakeholders, as well. Long-term goals are defined as those milestones to be realized beyond the first ten years of TEEG and DATE's existence. The following list identifies the five most frequently referenced objectives.

- Performance pay plans will be used in all the state's K-12 public schools.
- Teachers and other school personnel in the state's public schools will be paid competitive salaries primarily based on measures of performance.
- The Texas Legislature will minimize reliance on the state salary schedule and give local school boards authority for school personnel pay policies.
- All students will be taught by highly effective teachers and prepared for success in postsecondary schooling.
- The state will maintain policy systems to support continuous improvement of student achievement, including student achievement-based teacher appraisal system, state databases that connect individual student performance with individual teachers, and a state assessment system that identifies longitudinal value-added and grade-level progress toward postsecondary readiness.

Other Trends in Educator Performance Pay in Texas

This section describes the current context of performance pay policy in Texas in which TEEG and DATE operate. More specifically, it summarizes performance pay practices used by Texas districts, offers examples of notable district performance pay plans, and compares the performance pay policies of Texas districts to those of other districts throughout the U.S. K-12 public education system.

Analysis of Statewide Compensation Survey

An annual salary survey conducted by the Texas Association of School Boards (TASB) and the Texas Association of School Administrators (TASA) offers insight into the prevalence and types of performance pay programs operating throughout districts in Texas. Results from the 2007-08 school year are reported below, as are notable changes from the previous school year. Results from the 2007-08 survey represent responses from 72 percent of the districts in Texas (747 of the 1,031 public school districts asked to participate), employing 93 percent of public school teachers in the state.

Data from the 2007-08 survey indicate that the majority of districts compensated teachers above the state minimum salary schedule. Only nine percent of districts reported compensating teachers only on the state salary schedule.

Market-based stipends

Sixty (60) percent of districts paid hard-to-staff stipends in at least one of the shortage areas listed on the survey (i.e., math, science, bilingual education, foreign language, English as a second language, and special education). This percent is up from 53 percent in the 2006-07 school year. The most frequently reported shortage area in the 2007-08 school year is math, with 34 percent (256) of districts paying a stipend to teachers working in this teaching field. Bilingual education is the second most popular shortage area to receive a stipend, reported by 33 percent (243) of districts.

In contrast to the popularity of pay for teaching in a hard-to-staff area, only four percent of districts paid teachers for working in a hard-to-staff school.

Input-based stipends

The survey inquired about stipends paid by districts to teachers meeting several input-based criteria, such as achieving advanced education, serving as a mentor teacher, and earning NBPTS certification. Sixty-two (62) percent reported paying stipends to teachers holding master's degrees; up only one percent from the 2006-07 school year. Thirty-two (32) percent of districts paid stipends to mentor teachers in the 2007-08 school year; 28 percent reported doing so in the previous school year. Only two percent of districts paid stipends to teachers with NBPTS certification in the 2007-08 school year.

Hiring bonuses and longevity pay

During the 2007-08 school year, 13 percent of districts paid bonuses to newly hired educators; only a two percent increase from the previous school year. However, the majority of these districts (nearly 75%) limited hiring bonuses to teachers in hard-to-staff subject areas, primarily math and science.

Fourteen percent of districts paid bonuses for teacher longevity in a district, which is identical to the percent reporting similar stipends in the 2006-07 school year. On average, districts required that teachers be employed in a district for six years before becoming eligible for a longevity stipend.

Outcome-based stipends

The survey results also reveal that 27 percent of districts used performance pay during the 2007-08 school year. Of those, 72 percent were participants in the state-funded GEEG or TEEG programs, while the remainder used a locally-devised and -funded performance pay plan.

In most performance pay plans (88%), the criteria for earning an award included a measure of student performance, and many districts reported the use of additional award criteria, including staff attendance or participation in school-level teams. Additionally, in almost all of the plans (97%), teachers were the individuals eligible to receive an award, while paraprofessionals and school administrators were eligible candidates in 80 percent of the districts.

The popularity of using student achievement as a performance measure has grown over the past decade. In addition to those schools and districts currently participating in TEEG and DATE,

several other districts also use student achievement to determine teacher eligibility for performance awards, such as those described below.

- Dallas ISD established performance pay in 1990, awarding school bonuses on the basis of test score gains, student attendance, grade-to-grade promotion, dropout rates, enrollment in advanced courses, and scores on tests of postsecondary readiness. As a recipient of a five-year, $22.4 million TIF grant in 2006, Dallas laid out plans to expand principal and teacher bonuses as well as direct funds for recruitment and retention of high-quality teachers in high-need schools, professional development, and improving testing systems and student-teacher linked databases.
- Aldine ISD introduced performance pay in 1995 on the basis of the percentage of students passing state assessments, the percentage of students passing state assessments at specific achievement levels, and student attendance.
- In February 2006, Houston ISD became the nation's largest school district with a performance pay plan for teachers, offering teachers up to $3,000 additional pay for student achievement on state and national assessments. As a recipient of a five-year, $11.8 million TIF grant in 2006, this program will expand and focus on principals and teachers in the district's high-need schools.
- Austin ISD began its Strategic Compensation Initiative during the 2007-08 school year, providing performance awards to both principals and teachers in nine pilot schools, with plans to expand to 20 schools by 2009-10. Principals and teachers can earn awards for meeting student learning objectives, school-wide growth on the state-standardized assessment, and professional growth objectives. Additional funds are being allocated to highest need schools for mentoring, recruitment, and retention stipends.

Analysis of Schools and Staffing Survey: Texas versus National Trends

The SASS provides further information about performance pay in Texas and how it compares, on average, to K-12 public schools in the U.S. Analyses are based on data from the two most recent waves of SASS: the1999-00 and 2003-04 surveys.[14]

Figure 2.1 reports descriptive information on questions asked of teachers about supplemental pay. The percent of Texas teachers reporting such pay is significantly higher than the national average, and increased between the 1999-00 and 2003-04 school years by 17 percent. By the 2003-04 school year nearly one-quarter of Texas public school teachers reported performance pay and compensation from other state supplements. The percent of teachers in the U.S. reporting such supplements increased slightly between the 1999-00 and 2003-04 school years, but the difference is not statistically significant.

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[14] The 1999-00 and 2003-04 SASS survey included roughly 5,400 school districts, 10,000 public schools, and 53,000 public-school teachers. For details on the SASS programs see http://nces.ed.gov/surveys/sass/ .

Figure 2.1: Percent of Teachers Reporting Bonus Payments in Total Compensation
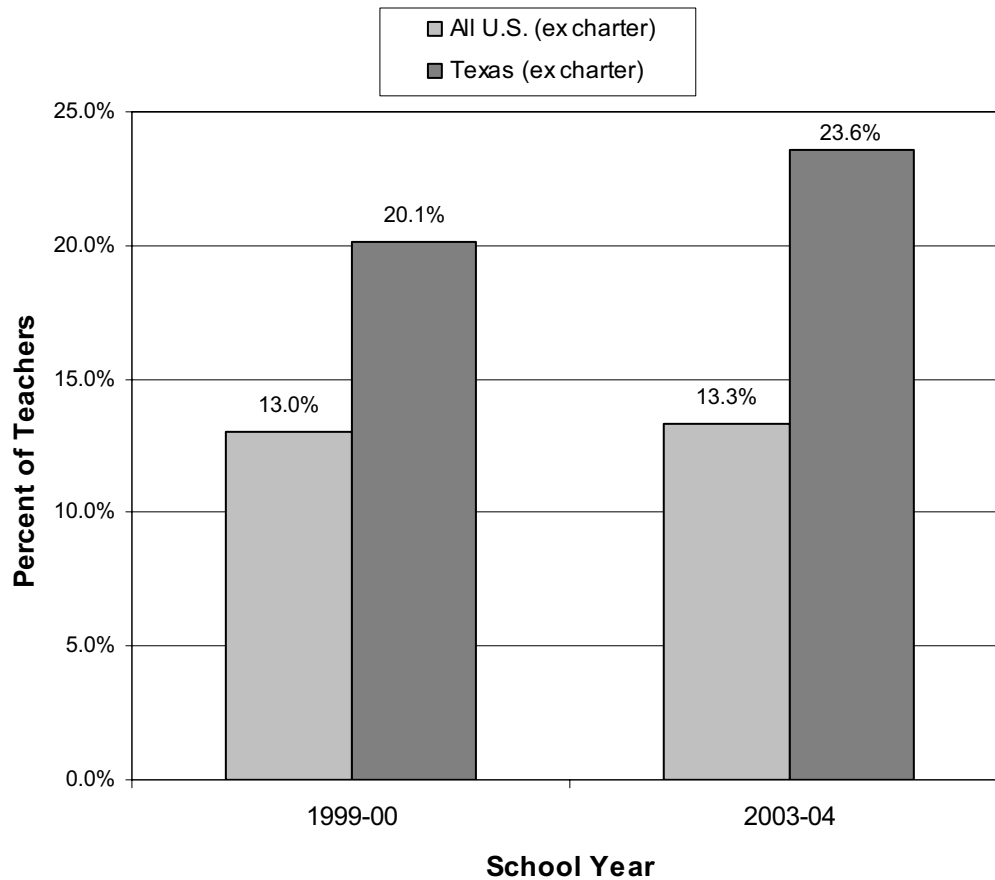
Note: Data reflect answers to the question, "During the current school year, have you earned income from other school sources, such as merit pay bonuses, state supplements, etc.?"
Note: Teachers in charter schools excluded.
Source: National Center for Education Statistics. Schools and Staffing Surveys.

Table 2.2 reports descriptive information on types of teacher performance pay used by districts. The SASS district survey includes several questions about the use of performance pay to reward NBPTS certification, excellence in teaching, completion of in-service professional development, teaching in a less desirable location, and teaching in a shortage field. Nationally, the percentage of districts reporting that they reward such activities increased for four of five categories between the 1999-00 and 2003-04 school years. The percentage of districts rewarding teachers for in-service professional development did not increase over that same time period.

Table 2.2: Percent of School Districts Using Types of Teacher Performance Pay

Types of Teacher Performance Pay	U.S. Public Schools		Texas Public Schools	
	1999-00	**2003-04**	**1999-00**	**2003-04**
NBPTS certification	8.3% (.47)	18.4% (.73)	1.8% (.9)	4.3% (2.5)
Excellence in teaching	5.5% (.41)	7.9% (.98)	7.3% (1.8)	9.9% (2.8)
Completion of in-service professional Development	26.4% (.91)	24.2% (.99)	5.9% (1.6)	12.1% (2.8)
Teaching in a less desirable Location	3.6% (.33)	4.6% (.38)	8.1% (1.8)	9.1% (2.4)
Teaching in a shortage field	10.4% (.54)	11.9% (.65)	30.7% (3.8)	37.7% (3.9)

Note: Standard errors are provided in parentheses.
Source: National Center for Education Statistics. Schools and Staffing Surveys.

Texas districts were consistently more likely to reward teaching in a hard-to-staff school and teaching in a shortage field.[15] However, the difference between Texas and U.S. districts for rewarding excellence in teaching is not statistically significant. Texas districts were considerably less likely to reward NBPTS certification and less likely to reward completion of in-service professional development.

There is a noticeable increase in the use of awards for professional development between the 1999-00 and 2003-04 school years in Texas (15.2 percentage points). This may be explained by the implementation of several statewide initiatives in Texas, including math and reading academies and the Professional Development and Appraisal System (PDAS), a state-approved appraisal system for teachers.

Chapter Summary

This chapter reviews the history of performance pay reform in Texas from the early 1980s to the present. Lessons learned from early experiences with performance pay programs informed the design of GEEG, TEEG, and DATE. Data further suggest that the majority of districts in Texas supplement teachers' salaries with performance pay or some other supplement. According to the SASS, a greater share of public school teachers in Texas report receiving performance awards of some kind than do public school teachers nationwide. And for the most part, Texas districts are more likely to reward teachers for their performance than the average district in the U.S K-12 public education system.

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[15] The right two columns of the table report results for a sample of Texas districts (282 districts in 1999-00 and 233 districts in 2003-04.

CHAPTER 3
Overview of the GEEG Program

This chapter provides detailed description of the GEEG program, including the state guidelines informing the design of schools' performance pay plans, the distribution of grant awards to schools, and the demographic characteristics of GEEG schools compared to other Texas public schools.

Key Policy Questions

This chapter addresses the following questions.

- How were schools selected to participate in the GEEG program?

- How were grants distributed to participating schools and how were schools to use GEEG funds?

- What process did schools use to develop their GEEG plan?

- How did GEEG schools compare to other public schools in Texas across student, teacher, and school characteristics?

Key Policy Points

This chapter highlights and expands upon the following key policy points based on a review of state guidelines pertaining to GEEG program implementation.

- Schools were eligible for the GEEG program based on their %ED students and their record of academic performance.

- Grant amounts were determined by the size of a school's student population, and at least 75 percent of GEEG funds had to be allocated as bonus awards to high-performing classroom teachers.

- Most GEEG schools followed state guidelines, which required schools to include multiple stakeholders in the design and approval of their GEEG plan.

- GEEG schools had greater %ED students and were more likely to have high accountability ratings compared to other schools throughout Texas.

GEEG Program Guidelines

The GEEG program was state funded at $10 million per year over three years, beginning in the 2006-07 school year. A total of 99 schools participated in the program. The purpose of this section is to provide an overview of how schools became eligible to participate in the GEEG program and the guidelines that informed local plan design and implementation.

GEEG School Eligibility Criteria

GEEG school eligibility was based on two criteria, the first of which was being in the top third of Texas public schools in terms of %ED students in the 2004-05 school year. The Texas Education Agency stratified the distribution of schools by type, so elementary schools had to be in the top third of the poverty distribution for elementary schools, and the same applied for middle schools and high schools. This identification strategy resulted in %ED student thresholds of 81 percent for elementary schools, 65 percent for middle schools, 56 percent for high schools, and 71 percent for schools serving mixed grade configurations.

GEEG schools were also identified as high performing or high improving in the 2004-05 school year. High performing schools attained one of the two highest ratings on the Texas Accountability System, either Recognized or Exemplary. A Recognized rating means that for every tested subject at least 75 percent of the tested students pass the Texas Assessment of Knowledge and Skills (TAKS), while an Exemplary rating elevates the standard so that for every subject at least 90 percent of the tested students pass TAKS. All public schools with an Exemplary rating in the 2004-05 school year and in the top third with respect to %ED students were eligible for GEEG, as were the Recognized schools with the highest %ED students in each grade type.

High improving schools were in the top quartile on either the Comparable Improvement math or reading/language arts rankings during the 2004-05 school year. To determine rankings, the Texas Education Agency matches each Texas public school annually to 40 other peer Texas public schools on the basis of student demographics. The Texas Education Agency then calculates the average change in student test scores from one year to the next. A school in the top quartile of Comparable Improvement has one of the 10-largest average gains in TAKS scores among the 40 schools in its reference group.

GEEG Participation Guidelines

Participation in GEEG was voluntary for eligible schools. GEEG plans were locally developed and supported by a school-based committee with significant teacher engagement. A school's GEEG plan was then approved by both the district and local school board.

GEEG program guidelines identified two funding components – Part 1 and Part 2 funds. Part 1 funding accounted for at least 75 percent of a school's total grant and was earmarked for classroom teacher bonus awards. Teacher bonus awards were determined by four criteria, two were required and two were optional. Schools had to use quantifiable, objective measures of student performance (Criterion 1) and teacher collaboration (Criterion 2). Schools could also determine teacher bonus

award eligibility using measures of teacher commitment and initiative (Criterion 3), as well as placement in hard-to-staff areas (Criterion 4).[16]

The first distribution of GEEG awards in the fall 2006 semester was based on teacher performance during the 2005-06 school year – a year in which GEEG plans were not yet in place. The second year awards were distributed at the conclusion of the fall 2007 semester and determined by teacher performance during the 2006-07 school year. Third year awards were distributed at the conclusion of the fall 2008 semester and based upon performance during the 2007-08 school year. Accordingly, first year awards were retroactive in nature, whereas second and third year awards acted more as incentives since GEEG performance criteria were already established prior to the teachers' performance years (i.e., 2006-07 and 2007-08 school years).

Part 2 funds were to be used as performance awards for other school personnel who were ineligible for Part 1 awards or for implementing professional growth activities at the school level, as explained below.

- **Additional incentives for school personnel** who were not eligible to receive awards created from Part 1 funds, including principals, assistant principals, teachers, counselors, speech therapists, instructional coaches, teacher aides, nurses, librarians, custodians, and other school personnel who contributed to increased student achievement;
- **Professional development** for classroom teachers who did not receive performance awards, or reimbursement/funding for professional development that directly contributes to improved teaching and student achievement;
- **Teacher mentoring programs** which adhere to specific components listed in grant guidelines, such as formative assessments to identify teachers' needs and assistance with lesson planning;
- **New teacher induction programs** which adhere to specific components listed in grant guidelines, such as common planning time and standards-based evaluation;
- **Common planning time and curriculum development** to create opportunities for teacher collaboration;
- **Recruitment and retention efforts** focused on highly qualified, effective teachers;
- **Activities to further the goals of performance pay plans** designed to improve student achievement, such as value-added assessment;
- **Signing bonuses** for full-time classroom teachers who were new to the school and/or were teaching in high-needs subject areas;
- **Stipends** for teachers to participate in after-school or Saturday programs that directly contribute to improved teaching and student achievement;
- **Other programs** that directly contribute to improved teaching.

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[16] Designated teacher shortage areas are identified using the Texas Education Agency's 2006-07 proposal for the state-developed alternate methodology as specified in 34 CFR §682.210(q)(7). This methodology is based on surveys of school personnel administrators and private non-profit school administrators. Using this methodology, shortage areas identified for the 2006-07 school year are mathematics, science, foreign language, special education, bilingual education, technology applications, and English as a Second Language.

GEEG schools were also permitted to share Part 2 funds with feeder schools that were not eligible for the GEEG program because they did not receive state accountability ratings (e.g., a kindergarten through third-grade campus).[17]

GEEG Grant Awards

Annual grants for the 99 GEEG schools ranged from $60,000 to $220,000. Grant amounts were based upon student enrollment at the school level, with most schools receiving between $150 and $200 per pupil. The average grant was equal to approximately five percent of instructional payroll at the recipient GEEG schools, ranging from roughly three percent of payroll in one school to more than 15 percent of instructional payroll in three small high schools.

Table 3.1 provides a breakdown of the total grant amounts distributed to the 99 schools participating in the GEEG program. Over half – 59 – of the schools received either $60,000 or $90,000 annually, with most of those receiving the former amount. Thirty-six schools received between $100,000 and $180,000 each year of the program. Only four schools receive over $180,000.

Table 3.1: Distribution of GEEG Grant Amounts to Participating Schools

School Size	School Award Amount	Number of School Recipients	Percent of School Recipients
1-499 students	$60,000	45	45.5%
450-599 students	$90,000	14	14.1%
600-699 students	$100,000	3	3.0%
700-999 students	$135,000	23	23.2%
1,000-1,399 students	$180,000	10	10.1%
1,400-1,799 students	$210,000	2	2.0%
1,800 or more students	$220,000	2	2.0%

N=99
Source: Information based upon analyses of 99 GEEG applications during the 2006-07 school year.

GEEG Plan Design Process

As GEEG schools faced the new task of designing and implementing a locally-developed performance pay program, evaluators thought it pertinent to learn about the strategies used by schools to develop and implement their plans. During the fall 2006, evaluators conducted an online survey with principals and/or site coordinators at each of the 99 GEEG schools, asking respondents to report on schools' processes for developing their GEEG plans.

As reported on the fall 2006 survey, GEEG schools included a variety of school personnel and other community representatives in plan design and decision-making processes.

- Eight different personnel positions – principals, assistant principals, full-time teachers, instructional specialists, instructional support staff, librarians, campus health staff, and district officials – were involved in approximately 50 percent or more of GEEG schools.

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[17] Based upon progress report results, evaluators did not find that any GEEG schools were using Part 2 funds for feeder campuses.

- Principals and full-time teachers were the most popular participants in the development process, with 90 percent of schools including them in that process.

Respondents also reported that 78 GEEG schools used a formal vote to approve GEEG plan design before its first year of implementation. Of those schools, it was again principals and full-time teachers that were most frequently involved (i.e., over 75 percent of GEEG schools included them in that process). Additionally, approximately 50 percent of schools included a number of other representatives, such as instructional specialists, instructional support staff, and librarians.

GEEG School Characteristics

This section provides an overview of demographic characteristics of schools participating in the GEEG program and compares them to schools participating in the first cycle of the larger state-funded performance pay program, TEEG, as well as to all other public schools in Texas.

Student Characteristics

Student enrollment

GEEG, TEEG, and other public schools had similar percentages of schools by grade type. Table 3.2 provides an overview of the percent of each school type that falls within each grade category (i.e., elementary school, middle school, high school, and other grade configuration).[18] In each school category, roughly half of schools served elementary grades, with TEEG schools serving closer to 60 percent. Approximately 20 percent served middle and high school grades, respectively.

Table 3.2: Distribution of Grade Levels by School Type, 2004-05 School Year

Grade Level	GEEG Schools	TEEG Schools	Other Public Schools
Elementary school	52 (52.5%)	663 (57.8%)	3435 (53.3%)
Middle school	20 (20.2%)	211 (18.4%)	1268 (19.7%)
High school	21 (21.2%)	213 (18.6%)	1330 (20.6%)
Other grades	6 (6.1%)	60 (5.2%)	411 (6.4%)

GEEG schools (n=99), TEEG schools (n=1147), Other schools (n=6444)
Source: Data from the 2004-05 Public Education Information Management System (PEIMS), Texas Education Agency.

The average student enrollment size of each school type, again disaggregated by grade levels, indicates that GEEG schools served a higher average student enrollment in middle school grades and a smaller average enrollment at the high school level.

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[18] An other grade configuration includes schools that serve non-traditional grade configurations such as grades 5-11, K-8, or K-12.

- The average student enrollment in elementary schools was similar among GEEG, TEEG, and other public schools with 536 students, 551 students, and 517 students, respectively.
- GEEG schools had larger average student enrollment in middle school (843 students). TEEG and other Texas public schools shared similar enrollment sizes (601 students and 630 students, respectively).
- GEEG schools served smaller student bodies in high school (543 students) compared to TEEG and other Texas public schools, both of which served close to 760 students (759 students and 762 students, respectively).
- GEEG and TEEG schools with non-traditional grade configurations served similar number of students (319 students and 301 students, respectively), while the number of students served by other Texas public schools was much smaller.

Economically disadvantaged population

GEEG eligibility criteria required that participating schools be in the top third of Texas public schools in terms of their %ED students during the 2004-05 school year. Similarly, TEEG schools had to be in the top half of public schools in terms of their %ED students. Figure 3.1 displays the distribution of GEEG, TEEG, and other Texas public schools by their %ED students at a school (i.e., the percent of schools with 0 to 5 %ED students, the percent of schools with 6 to 10 %ED students, etc.). It is not surprising that GEEG schools had the highest percentage of schools with the highest %ED students, as seen by the heavy distribution of GEEG schools on the far-right side of the figure. Similarly, most TEEG schools fell within the higher %ED student categories, as well. The percentage of other Texas public schools across categories of %ED is much more evenly distributed.

Figure 3.1: Share of Economically Disadvantaged Students by School Type, 2004-05 School Year
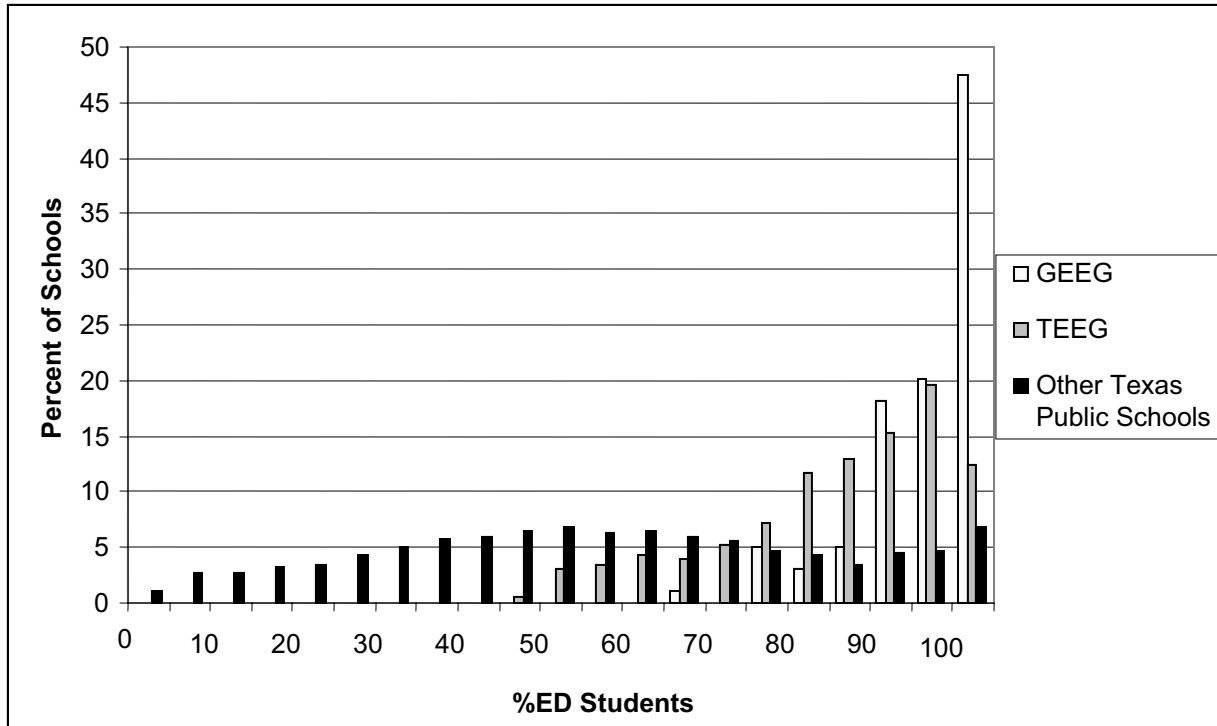
Source: Data from 2004-05, 2005-06, 2006-07 Academic Excellence Indicator System (AEIS), Texas Education Agency.

Teacher Characteristics

Table 3.3 compares classroom teachers in GEEG, TEEG, and other Texas public schools by gender, level of education, race/ethnicity, teaching experience, and average total teacher pay.

Table 3.3: Distribution of Teacher Characteristics by School Type, 2004-05 School Year

Teacher Characteristics	GEEG School Teachers	TEEG School Teachers	Other Texas Public School Teachers
Male	29.4%	24.5%	22.5%
Bachelor's degree	78.9%	77.6%	77.0%
Master's degree	19.6%	20.6%	21.6%
Doctorate (Ph.D.)	0.7%	0.5%	0.5%
Hispanic	57.1%	35.8%	15.8%
Black	13.5%	12.9%	8.0%
Asian	3.0%	1.5%	0.9%
American Indian	0.1%	0.2%	0.3%
Years of experience	11.0 years	11.0 years	11.6 years
New district hires	16.3%	17.5%	18.1%
Average teacher salary	$42,802.11	$42,379.45	$42,158.23

GEEG school teachers (n=3893), TEEG school teachers (n=46023), Other school teachers (n=246,248)
Source: Data from the 2004-05 Public Education Information Management System (PEIMS), Texas Education Agency.

Twenty-nine percent of GEEG teachers were male and nearly 80 percent held a bachelor's degree. An additional 20 percent held a master's degree, while less than one percent held a doctorate. Fifty-seven percent of teachers in GEEG schools were Hispanic, 14 percent were Black, and three percent were Asian.

The average years of teaching experience among GEEG teachers was 11 years, and 16 percent were newly hired by their respective districts. Average total teacher pay, including base salary and supplements reported in PEIMS, was $42,802.11 during the 2004-05 school year. This was the highest reported teacher pay among all three school types in Table 3.4.

Classroom teachers in TEEG Cycle 1 schools had, on average, a very similar profile to GEEG teachers in terms of gender, level of education, years of teaching experience, being a new district hire, and total teacher pay. The one exception being that a greater share of GEEG teachers was Hispanic. Specifically, only 36 percent of teachers in TEEG schools were Hispanic – noticeably lower than the nearly 60 percent in GEEG schools.

Teachers in other Texas public schools also mirrored the characteristics of GEEG and TEEG teachers, with the exception of race/ethnicity. Noticeably fewer teachers in other Texas public schools were Hispanic or Black. A larger share of GEEG and TEEG schools had a higher %ED students, meaning that they were more likely located in urban settings or in southern regions of Texas where the teacher workforce has greater shares of minority teachers.

School Characteristics

School geographic location

GEEG schools tended to be geographically concentrated. Only five GEEG schools were located in rural counties, even though 22 percent of schools in Texas are located in rural counties. Twenty-three GEEG schools were in the Houston metropolitan area, including all four charter schools that were in the GEEG program. Another 43 GEEG schools were located in the southern most parts of the state bordering Mexico. One quarter of GEEG schools were located in three school districts – Brownsville Independent School District, Dallas Independent School District, and Houston Independent School District – even though these three districts account for only seven percent of all Texas public schools.

School accountability ratings

Evaluators compared the accountability ratings of GEEG, TEEG, and other schools over a three-year period (2004-05, 2005-06, and 2006-07 school years). This provides information about the eligibility year for GEEG and TEEG schools, how they compared to the rest of public schools in the state, and how accountability ratings among those school types have been changing over time. Figure 3.2 shows the distribution of school types across five sets of accountability ratings for the three consecutive school years. The vertical axis shows the percentage of schools within one of the

five accountability ratings: Exemplary, Recognized, Acceptable, Academically Unacceptable, and Not Rated.[19] The sum of all the accountability ratings within each column totals 100 percent.

Figure 3.2: GEEG, TEEG, and Other School Accountability Ratings, 2004-05, 2005-06, 2006-07 School Years
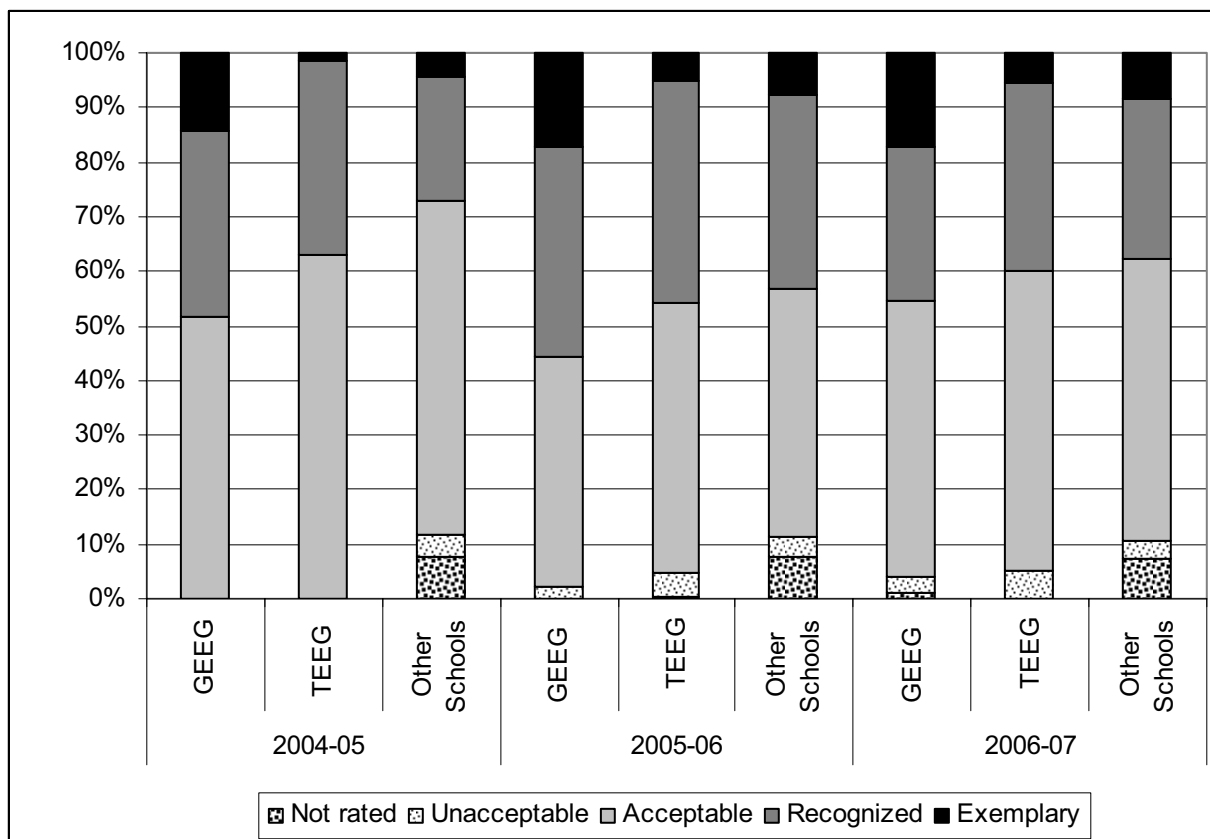
GEEG schools (n=99), TEEG schools (n=1147), Other schools (n=6444, 6495, and 6605 in 2004-05, 2005-06, and 2006-07)
Source: Data from the 2004-05, 2005-06, 2006-07 Academic Excellence Indicator System (AEIS), Texas Education Agency.

All of the schools participating in the GEEG program received an accountability rating of Acceptable or better in the 2004-05 school year, the academic year for which eligibility was determined. Fourteen of the 99 GEEG schools were deemed Exemplary. In the 2005-06 school year, most GEEG schools continued to be Acceptable or better. Two schools slipped into the Academically Unacceptable category, but the share of Recognized and Exemplary schools increased to 56 percent. In the 2006-07 school year, most GEEG schools remained Acceptable or better, although three schools were deemed Academically Unacceptable and one was Not Rated. The share of Exemplary and Recognized schools dropped to approximately 46 percent.

A similar pattern emerged among schools participating in the first cycle of the TEEG program. All of these schools received an accountability rating of Acceptable or better in the 2004-05 school year. Less than two percent of the TEEG schools were deemed Exemplary, while 63 percent of the

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[19] A common reason for a school to be not rated is when there is a question about the validity of their test scores or other data.

TEEG schools were deemed Acceptable. The most common state accountability rating during the 2005-06 school year was Acceptable, earned by 49 percent of schools. In the 2005-06 school year, the share of TEEG schools rated as Recognized and Exemplary increased but so did the share of Academically Unacceptable schools. In the 2006-07 school year, the share of Acceptable and Academically Unacceptable schools increased slightly, while the percent of those rated as Recognized or Exemplary decreased to nearly 40 percent.

As would be expected from the eligibility criteria used to select GEEG and TEEG schools into the state-funded programs, other public schools throughout Texas consistently had a greater share of Academically Unacceptable and Not Rated schools, and a smaller share of Recognized and Exemplary schools. However, all school types (GEEG, TEEG, and Other schools) typically shared the same percentage of schools rated as Academically Acceptable.

Chapter Summary

This chapter provides an overview of GEEG program guidelines and the characteristics of GEEG schools, teachers, and students. Overall, it sets the stage for subsequent chapters which discuss further details about the experiences of schools and teachers participating in GEEG, as well as the programs' outcomes for teacher turnover and student achievement gains.

CHAPTER 4
GEEG Plan Design and Implementation

This chapter presents the characteristics of GEEG plans developed by schools. Primary attention is given to explaining the Part 1 performance criteria used to determine teachers' eligibility for bonus awards along with schools' choices for using Part 2 funds. The chapter concludes with an examination of the relationship between GEEG school characteristics and their chosen GEEG plan design features.[20]

Key Policy Questions

This chapter addresses the following questions.

- What performance indicators did GEEG schools use to determine a teacher's eligibility for Part 1 bonus awards?

- Did GEEG schools modify Part 1 performance indicators from those identified in their GEEG plan applications?

- How did GEEG schools use Part 2 funds?

- How did GEEG schools modify their use of Part 2 funds from the approach identified in their GEEG plan applications?

- What characteristics of a school were related to GEEG pan design features adopted by a school?

Key Policy Points

This chapter highlights and expands upon the following key policy points based on a review of performance pay plans designed and implemented by GEEG schools.

- GEEG schools most frequently used measures of student performance and teacher collaboration to determine teachers' eligibility for Part 1 bonus awards. Some also used measures of teacher commitment and initiative.

- GEEG schools measured student performance using school-level ratings on the state accountability system and results from standardized student assessments, primarily state tests (e.g., TAKS). Most schools used achievement levels opposed to measures of growth when analyzing teachers' contribution to student performance.

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[20] Chapter 5 provides a more thorough analysis of GEEG schools' design and distribution of Part 1 bonus awards to teachers.

- Teachers' eligibility for Part 1 bonus awards was typically determined by an individual teacher's performance. School-level performance was also frequently used.

- GEEG schools used Part 2 funds for additional bonus awards to school personnel not eligible for Part 1 awards. Very few schools used Part 2 funds to implement professional development and growth activities.

- During the first two years of the GEEG program, principals reported little to no change in the design features used by their schools to determine Part 1 bonus awards or to allocate Part 2 funds.

- There is little evidence that observable characteristics of GEEG schools – other than some teacher characteristics – were significantly related to plan design features.

Methodology

This chapter discusses findings from the review of GEEG plan applications and annual progress reports completed by principals during the first two years of the GEEG program. The subsequent sections of this chapter address the following topics:[21]

- Design of Part 1 performance criteria in schools' GEEG plans;
- Implementation of Part 1 performance criteria in schools' GEEG plans;
- Design of Part 2 activities in schools' GEEG plans;
- Implementation of Part 2 activities in schools' GEEG plans.
- Determinants of schools' GEEG plan design features.

Detailed analysis of the design and distribution of Part 1 teacher bonus award amounts follows in Chapter 5.

Methodology for Reviewing GEEG Plan Design and Implementation

Evaluators examined the plan design features described in all 99 GEEG applications submitted to the Texas Education Agency. Evaluators developed a detailed taxonomy to code key features of plans, with a focus on the use of Part 1 funds.[22] More specifically, the taxonomy identifies:

- Amount of total school grant.
- Proposed minimum and maximum award amounts for individual teacher awards.
- Indicators and other strategies used to evaluate teacher performance on the four Part 1 criteria.

During the 2006-07 school year, two evaluators coded GEEG plan components identified in each of the 99 applications. The two evaluators reviewed each other's findings to ensure inter-rater reliability and a third evaluators adjudicated any discrepancies.

It needs to be noted that information provided in GEEG applications may not include an exhaustive explanation of schools' actual GEEG plans. When applications were unclear, evaluators conducted follow-up telephone calls with school principals and/or site coordinators to seek clarification. Using the applications and follow-up calls as the primary sources of information, evaluators were able to code all taxonomy fields for 82 of 99 GEEG plan applications. Of the 17 remaining applications for which exhaustive information was not available, 12 applications were missing information for three or fewer taxonomy fields.

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[21] It should be noted that the Part 1 and Part 2 plan design features discussed in this chapter are a recap of information previously reported in the *Governor's Educator Excellence Grant (GEEG): Year One Evaluation Report* (2007). While the plan design information most accurately pertains to the way in which schools indicated they would implement their programs during the first year of GEEG, the vast majority of schools indicated in their applications that they would maintain the same plan over the three-year duration of GEEG. We have provided details about any program modifications where applicable.

[22] Appendix B provides a description of key taxonomy components.

Evaluators also used annual progress reports to monitor plan design modifications during the course of GEEG plan implementation. Principals and/or site coordinators at GEEG schools completed annual online progress reports to provide information about the use of Part 2 GEEG funds, GEEG plan implementation, and any plan modifications.

Progress reports were first administered on a phased-in basis during the first year of the program (2006-07 school year), as some schools received final state approval for GEEG implementation later than others. By the summer of 2007, evaluators collected responses from all 99 GEEG schools on the first annual progress report. The second annual progress report, completed during the fall 2007 semester, yielded an 87 percent response rate.

Design of Part 1 Performance Criteria

GEEG guidelines required schools to dedicate at least 75 percent of grant funds as Part 1 bonus awards to teachers using at least two of four pre-determined performance criteria. All participating schools were required to incorporate measures of student performance (Criterion 1) and teacher collaboration (Criterion 2) when determining teachers' bonus award eligibility. GEEG schools could also use measures of teacher commitment and initiative (Criterion 3) and/or rewarding teachers in hard-to-staff areas (Criterion 4).

The majority of GEEG schools (54.5%) designed plans that use exactly 75 percent of their total GEEG grant for Part 1 teacher awards. Another 39 school plans used less than 75 percent of their total grant, but none used any less than 71 percent for Part 1 awards. Six school plans used more than 75 percent for Part 1, but no more than 82 percent of their total grant for teacher bonus awards.

Teacher Performance Measures

Table 4.1 presents the overall performance criteria used by schools to distribute Part 1 bonus awards to teachers. Forty-five schools incorporated only the required criteria – Criterion 1 and Criterion 2. Another 39 schools used the optional Criterion 3 in addition to required criteria. The other fifteen schools used some other combination of the four possible Part 1 criteria.

Table 4.1: GEEG Criteria for Part 1 Teacher Awards

GEEG Criteria for Teacher Awards	Number of Schools	Percent of Schools
Criterion 1: Student Performance + Criterion 2: Teacher Collaboration	45	45.5%
Criterion 1: Student Performance + Criterion 2: Teacher Collaboration + Criterion 3: Teacher Commitment & Initiative	39	39.4%
Criterion 1: Student Performance + Criterion 2: Teacher Collaboration + Criterion 4: Hard-to-Staff Areas	1	1.0%
Criterion 1: Student Performance + Criterion 2: Teacher Collaboration + Criterion 3: Teacher Commitment & Initiative + Criterion 4: Hard-to-Staff Areas	14	14.1%

Source: Information based upon analyses of 99 GEEG applications during the 2006-07 school year.

Indicators of student performance

GEEG schools' plans included a number of indicators to measure student performance (Criterion 1), including school-wide performance measures, state and local assessments of students' academic achievement, and other academic and non-academic indicators of student performance (all of which are allowed under state program guidelines). Table 4.2 provides an overview of the primary indicators used to measure teachers' contribution to student performance, as indicated in program applications.

The most popular measures for determining teachers' eligibility for Criterion 1 awards were state standardized assessment results followed by various school-wide performance indicators, particularly the use of Texas Accountability System ratings (e.g., Exemplary, Recognized). Among state standardized assessments, common instruments included TAKS, used by 78 GEEG schools. Schools also used the State-Developed Alternative Assessment (SDAA) and Texas Primary Reading Inventory (TPRI), as noted in 37 and 16 plan applications, respectively.

Among the 52 schools using measures of school-wide performance, most used a state accountability rating of either Exemplary (21 schools) or Recognized (28 schools), while 23 schools required that a school earn a rating of Acceptable for teachers to be eligible for a Criterion 1 award.

Table 4.2: Types of Student Performance Indicators

Student Performance Indicators	Number of Schools	Percent of Schools
Campus-wide Performance	52	52.5%
High TEA rating	34	34.3%
Acceptable TEA rating	23	23.2%
Comparable Improvement, Quartile 1	5	5.1%
Adequate Yearly Progress	6	6.1%
Student Assessments	81	81.8%
State standardized assessments	81	81.8%
End-of-year assessments	3	3.0%
Local benchmark assessments	23	23.2%
Student portfolio assessment	2	2.0%
Other student assessment	37	37.4%
Non-Academic Indicators	20	20.2%
Student attendance	7	7.1%
Dropout rate	5	5.1%
Teacher attendance[†]	6	6.1%
Other non-academic indicator	16	16.2%
Not applicable	0	0.0%

[†] Teacher attendance, used by six (6.1%) of schools, is not an indicator of student performance.
Note: Percentages may not add up to 100% as numbers based upon duplicated counts (i.e., a school may use one or more of the program characteristics).
Source: Information based upon analyses of 99 GEEG applications during the 2006-07 school year.

Evaluators also identified whether a school used students' achievement levels and/or measures of how students' performance changed over time. Table 4.3 reveals that GEEG schools typically relied on achievement levels for measuring student performance, with approximately 87 percent of schools doing so, either exclusively or in combination with a measure of performance change.

Table 4.3: Performance Analysis Used by GEEG Schools

Type of Performance Analysis	Number of Schools	Percent of Schools
Achievement level	60	60.6%
Change over time (e.g., gains, growth, value-added measures)	12	12.1%
Achievement level + Change over time	26	26.3%
Missing	1	1%

Note: Percentages may not add up to 100% due to rounding. "Missing" means that information was indeterminable in a GEEG school application.
Source: Information based upon analyses of 99 GEEG applications during the 2006-07 school year.

Indicators of teacher collaboration

State guidelines for GEEG required measures of teacher collaboration to capture collaborative activities among faculty and staff that contribute to improving overall student performance. From GEEG applications, it is apparent that schools interpreted this Part 1 performance component with noticeable variation.

Table 4.4 reveals the frequency with which various indicators of teacher collaboration were used by GEEG schools, with the most popular indicator being instructional and curricular activities. This broad category, used by nearly 60 percent of schools, included activities such as grade and/or subject area collaborative lesson-planning as well as other instructional or curricular leadership activities at school. Over half (57%) of GEEG schools rewarded teachers for their participation in staff meetings, while a third (32.3%) provided Part 1 awards to teachers for participating in professional development.

Table 4.4: Types of Teacher Collaboration Indicators

Teacher Collaboration Indicators	Number of Schools	Percent of Schools
Instructional and curricular activities	59	59.6%
Staff meetings	56	56.6%
Professional development	32	32.3%
Sharing, analyzing student performance data	12	12.1%
Parent involvement activities	10	10.1%
Teacher attendance at school	8	8.1%
Teacher PDAS rating	8	8.1%
Mentoring teachers	5	5.1%
Team teaching	4	4.0%
Other indicators	36	36.4%
Not applicable	0	0.0%
Missing	1	1.0%

Note: Percentages may not add up to 100% as numbers based upon duplicated counts (i.e., a school may use one or more of the program characteristics).

Source: Information based upon analyses of 99 GEEG applications during the 2006-07 school year.

Indicators of teacher commitment and initiative

Criterion 3 evaluates teacher initiative and commitment and is one of two criteria that were not required measures under GEEG guidelines for determining teachers' eligibility for a Part 1 bonus award. State guidelines described Criterion 3 as "a teacher's demonstration of on-going initiative, commitment, personalization, professionalism, and involvement in other activities that directly result in improved student performance." Examples of such activities include working with students outside of assigned class hours, creating programs to engage parents, and taking initiative to personalize the learning environment for every student.

Fifty-three GEEG schools used Criterion 3 as part of their Part 1 bonus award requirements. Among those, the most popular indicators used included tutoring students outside of regular class hours, participation in professional development, and teachers' rate of attendance during the school year (see Table 4.5).

Table 4.5: Types of Teacher Commitment and Initiative Indicators

Teacher Commitment and Initiative Indicators	Number of Schools	Percent of Schools
Tutoring	27	27.3%
Professional development	19	19.2%
Teacher attendance at school	15	15.2%
Parent involvement activities	9	9.1%
Teacher PDAS rating	8	8.1%
District leadership activities	1	1.0%
Other	28	28.3%
Not applicable	46	46.5%
Missing	0	0.0%

Note: Percentages may not add up to 100% as numbers based upon duplicated counts (i.e., a school may use one or more of the program characteristics).
Source: Information based upon analyses of 99 GEEG applications during the 2006-07 school year.

Indicators of hard-to-staff area

Criterion 4 is the other optional criterion for determining teachers' eligibility for Part 1 bonus awards. It rewarded teachers working in hard-to-staff areas. Only 15 of the 99 GEEG schools used this criterion in their plans. The Texas Education Agency designated state-shortage areas, and schools could also include locally-determined shortage areas. Table 4.6 provides an overview of hard-to-staff areas used by the 15 GEEG schools. They most often used a locally-determined shortage area or rewarded teachers assigned to a foreign language class. Less commonly used assignments were special education, mathematics, bilingual education, science, English as a second language, and technology. Based on TASB survey results (see Chapter 2), it is possible that many districts already rewarded a number of these shortage areas (especially math and bilingual education), and thereby deemed them not an focus for GEEG funds.

Table 4.6: Indicators of Teaching in a Hard-to-Staff Area

Hard-to-Staff Areas	Number of Schools	Percent of Schools
Locally-determined shortage area	11	11.1%
Foreign language	11	11.1%
Special education	7	7.1%
Mathematics	5	5.1%
Bilingual education	5	5.1%
Science	3	3.0%
English as Second Language	1	1.0%
Technology	1	1.0%
Not applicable	84	84.8%
Missing	0	0.0%

Note: Percentages may not add up to 100% as numbers based upon duplicated counts (i.e., a school may use one or more of the program characteristics).
Source: Information based upon analyses of 99 GEEG applications during the 2006-07 school year.

Unit(s) of Accountability

Another design feature of interest was the unit of accountability employed by GEEG schools when evaluating teacher performance; that is, the entity whose performance determined bonus award eligibility. While research does not provide definitive guidance as to the preferable unit(s) of accountability, it does highlight the importance that this plan feature has for the quality and impact of a performance pay program.

Evaluators identified several units of accountability used by GEEG schools, namely an entire school, a team of teachers (e.g., grade-level, subject area, interdisciplinary team), or an individual teacher. The school was considered the unit of accountability when school-wide performance was used to decide bonus award eligibility. A team unit of accountability results from awards being determined by the collective performance of a group of teachers, while an award based on an individual teacher's performance was associated with a teacher unit of accountability.

Overall, teachers were the most popular unit of accountability for all Part 1 performance criteria.

- Sixty-five of 99 GEEG schools used teacher accountability to measure student performance (Criterion 1).
- Ninety-four of 99 GEEG schools used teacher accountability to measure teacher collaboration (Criterion 2).
- All 53 schools including measures of teacher commitment and initiative (Criterion 3) in their plans used teacher accountability.
- All 15 schools including hard-to-staff areas (Criterion 4) used teacher accountability.

The only Part 1 component for which schools used some variation in units of accountability was for measuring teachers' contribution to student performance (Criterion 1). Table 4.7 provides an overview of these plan design choices, indicating that the most frequently employed unit of accountability was individual teacher alone (46.5% of schools). Nearly a third (32.3%) used school accountability alone and 15 percent used school and teacher accountability in combination.

Table 4.7: Unit(s) of Accountability to Measure Student Performance

Unit of Accountability	Number of Schools	Percent of Schools
School only	32	32.3%
Team only	2	2.0%
Teacher only	47	47.5%
School + Team	0	0.0%
School + Teacher	15	15.2%
School + Team + Teacher	2	2.0%
Missing	1	1.0%

Note: Percentages may not add up to 100% due to rounding.
Source: Information based upon analyses of 99 GEEG applications during the 2006-07 school year.

Implementation of Part 1 Performance Criteria

Schools were given the option by the state to create performance plans that could change from the first year to the subsequent two years of the GEEG program. Schools were given this option since first-year teacher bonus awards were retroactive in nature. Evaluators' early review of GEEG applications revealed that 64 schools – nearly two-thirds – planned to use the same plan over all three program years. The other 35 schools stated in their applications the intent to make modifications to their GEEG plan following the first distribution of bonus awards in fall 2006.

From the review of plan applications, evaluators were able to identify some of the ways in which GEEG schools planned to modify their plan design over time. Twenty schools (57.1% of the 35 schools) intended to use the same Part 1 performance indicators to determine teacher eligibility for Part 1. The remaining fifteen GEEG schools (42.9% of the 35 schools) planned to use different Part 1 performance indicators, the most common adaptation – proposed by nine of these schools – being a transition from using only the required performance criteria to including measures of teacher commitment and initiative as well.

In an effort to confirm these Part 1 design modifications and learn about other modifications over time, evaluators administered annual progress reports completed by principals and/or site coordinators. As of the close of the 2007-08 school year, two progress reports had been completed; the first administered mid-way through the 2006-07 school year and the second in the fall 2007 semester.

Part 1 Modifications as of Fall 2006

GEEG schools distributed the first round of Part 1 teacher bonus awards during the fall 2006 semester. Therefore, by the time of the first progress report, evaluators were able to ask principals how the Part 1 components differed in practice from the plans laid out in applications submitted to the Texas Education Agency. For each of the Part 1 plan components, respondents indicated whether their Part 1 plan design (1) had no change, (2) used different award amounts, (3) employed higher or lower performance thresholds for teachers, or (4) used different indicators of teacher performance.[23] Table 4.8 provides principals' responses.

- For each Part 1 component, the most frequent response by GEEG principals was no change between what was described in the application and how the program was implemented leading up to the first teacher award distribution in fall 2006.[24]
- Approximately 10 percent of respondents indicated the use of different award amounts associated with each Part 1 performance component.

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[23] Note that Chapter 5 provides a much more detailed analysis of Part 1 award design and implementation.
[24] It should be noted that it is likely that some responses of "no change" actually refer to a school not including a particular Part 1 component in either the application or in practice. While we provided a separate response category of "not applicable" for schools not using a particular Part 1 component, it appears that some schools used the "no change" response to capture such a situation. It is also suspicious that two and three schools reported not including Criterion 1 or Criterion 2 in their Part 1 GEEG plan, respectively, considering that no schools indicated this in program applications and that these are mandatory program components according to state guidelines.

<p style="text-align:center">Table 4.8: Part 1 Program Modification
from Program Plan to Program Implementation</p>

Design Modifications	Measures of Student Performance (Criterion 1)	Measures of Teacher Collaboration (Criterion 2)	Measures of Teacher Commitment (Criterion 3)	Teaching in Hard-to-Staff Area (Criterion 4)
No change	79 (79.8%)	80 (80.8%)	71 (71.7%)	58 (58.6%)
Different award amounts	11 (11.1%)	9 (9.1%)	11 (11.1%)	8 (8.1%)
Higher performance thresholds	2 (2.0%)	2 (2.0%)	2 (2.0%)	0 (0.0%)
Lower performance thresholds	0 (0.0%)	0 (0.0%)	1 (1.0%)	0 (0.0%)
Different performance indicators	1 (1.0%)	1 (1.0%)	1 (1.0%)	0 (0.0%)
Not applicable	2 (2.0%)	3 (3.0%)	9 (9.1%)	29 (29.3%)
Missing	4 (4.0%)	4 (4.0%)	4 (4.0%)	4 (4.0%)

N=99
Source: Data results come from the first annual online progress report administered to GEEG school principals/site coordinators during the 2006-07 school year.

Part 1 Modifications as of Fall 2007

Evaluators again asked principals a similar question in the second annual progress report as schools approached the second distribution of Part 1 teacher bonus awards. This time, principals were asked to report any changes in Part 1 plan design between the first and second year of Part 1 award distribution. They reported if their GEEG plan (1) had no change, (2) added the use of any Part 1 performance component in the second year, (3) employed higher or lower performance thresholds for teachers, or (4) used different indicators of teacher performance. Table 4.9 provides principals' responses.

- Again, for each Part 1 component, the most frequent response by GEEG principals was no change between the first and second program year.[25]
- The second most common response for each Part 1 component was setting higher performance thresholds between the first and second year. That is, schools raised performance expectations for teachers to qualify for a Part 1 bonus award.

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[25] It should be noted that it is likely that some responses of "no change" actually refer to a school not including a particular Part 1 component in either year one or year two award distribution. While we provided a separate response category of "not applicable" for schools not using a particular Part 1 component at all, it appears that some schools used the "no change" response to capture such a situation. It is also suspicious that one and two schools reported not including Criterion 1 or Criterion 2, respectively, in their Part 1 GEEG plan, considering that no schools indicated this in program applications and that these are mandatory program components according to state guidelines.

<p style="text-align:center">51</p>

Table 4.9: Part 1 Program Modification from Fall 2006 to Fall 2007

Design Modifications	Measures of Student Performance (Criterion 1)	Measures of Teacher Collaboration (Criterion 2)	Measures of Teacher Commitment (Criterion 3)	Teaching in Hard-to-Staff Area (Criterion 4)
No change	57 (66.3%)	64 (74.4%)	62 (72.1%)	57 (66.3%)
Not in year one, added in year two	0 (0.0%)	1 (1.2%)	2 (2.3%)	1 (1.2%)
Higher performance thresholds	20 (23.3%)	14 (16.3%)	15 (17.4%)	6 (7.0%)
Lower performance thresholds	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Different performance indicators	8 (9.3%)	5 (5.8%)	4 (4.7%)	3 (3.5%)
Not applicable	1 (1.2%)	2 (2.3%)	3 (3.5%)	19 (22.1%)
Missing	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)

N=86

Source: Data results come from the second annual online progress report administered to GEEG school principals/site coordinators during the fall 2007 semester.

In the second progress report, evaluators asked principals a separate question inquiring how their schools modified the nature of Part 1 award amounts distributed to teachers between fall 2006 and fall 2007.[26] Specifically, they were asked if the distribution of award amounts between the two years changed in any one of the following ways: (1) <u>maximum</u> possible award increased, (2) <u>maximum</u> possible award decreased, (3) <u>minimum</u> possible award increased, (4) <u>minimum</u> possible award decreased, (5) a <u>greater</u> percentage of eligible teachers received an award, and (6) a <u>smaller</u> percentage of eligible teachers received an award.

Table 4.10 reveals that, overall, relatively little changed in the nature of Part 1 award distribution, at least according to principal survey responses. Over one-third (38.4%) of principals indicated that a greater percentage of eligible teachers received a Part 1 award, and 21 percent said that the maximum award that a teacher could receive was higher in the second year of award distribution. Any other modifications were reported by fewer than 15 percent of GEEG principals. This is not too surprising given the earlier findings from Table 4.9 that most principals reported no change to the Part 1 plan design features.

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[26] This was a new question in the second annual progress report which was not asked in the first progress report. Therefore, it is not possible to compare responses between the two principal surveys.

Table 4.10: Changes to Part 1 Award Distribution between Fall 2006 and Fall 2007

Change in Award Distribution	Yes	No	Missing
Maximum award increased	18 (20.9%)	67 (77.9%)	1 (1.2%)
Maximum award decreased	9 (10.5%)	76 (88.4%)	1 (1.2%)
Minimum award increased	11 (12.8%)	73 (84.9%)	2 (2.3%)
Minimum award decreased	8 (9.3%)	76 (88.4%)	2 (2.3%)
Greater percentage of eligible teachers awarded	33 (38.4%)	50 (58.1%)	2 (2.3%)
Smaller percentage of eligible teachers awarded	12 (14.0%)	71 (82.6%)	3 (3.5%)

N=86
Source: Data results come from the second annual online progress report administered to GEEG school principals/site coordinators during the fall 2007 semester.

Design of Part 2 Activities

GEEG schools could use Part 2 funds in a variety of ways, such as bonus awards for additional school personnel or for the implementation of activities to improve teaching. Table 4.11 describes the percentage of GEEG schools that used Part 2 funds for each of the possible options, according to principal responses on the first annual progress report. Overall, 84 GEEG schools used Part 2 funds to allocate additional personnel awards, while much smaller percentages of schools implemented other strategies such as professional development and mentoring programs. These findings suggest that most GEEG schools chose to use the additional GEEG funds to distribute monetary awards to a broader spectrum of school staff and faculty, rather than using additional funds to implement professional growth activities. In practice, 57 schools used some or all of their Part 2 funds to provide performance awards to teachers eligible for Part 1, making available an even larger pot of money for teacher bonus awards.[27]

Table 4.11: Overview of Schools' Use of Part 2 Funding

Reason for Using Part 2 Funds	Number of Schools	Percent of Schools
Additional personnel awards	84	84.8%
Bonuses or stipends for teachers	32	32.3%
Professional development	16	16.2%
Mentoring teachers	5	5.1%
Teacher induction	1	1.0%
†Other programs and activities	25	25.3%

N=99
† Of the 25 schools reporting other programs and activities, most (19 schools) were actually referring to the use of Part 2 funds for additional personnel incentives. Only four of the schools actually described activities/programs that were distinct from the other options coded above (e.g., attendance rate), and two schools described activities/programs that partly reflected the use of funds for additional personnel incentives.
Note: Percentages may not add up to 100% because numbers are based upon duplicated counts (i.e., a school program may be described by more than one response category).
Source: Data results come from the first annual online progress report administered to GEEG school principals/site coordinators during the 2006-07 school year.

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[27] This information was collected from findings of the first data upload gathered in fall 2006 detailing how schools actually distributed their GEEG funds (see Chapter 5 for more findings from this data collection).

Additional Personnel Awards

Providing additional personnel awards was the most favored way for schools to invest Part 2 funds, as seen in Table 4.11 above. Table 4.12 provides a breakdown of the type of personnel that were most frequently eligible to receive Part 2 awards along with the amounts for which they were eligible, according to principal responses on the first annual progress report.[28]

These 84 GEEG schools planned to use additional Part 2 awards for a variety of school personnel. Table 4.12 lists personnel types in rank order of how frequently they were eligible Part 2 award recipients in GEEG schools. The most frequent recipients were principals, instructional support staff, health support staff, and campus support staff. Additional awards for part-time teachers were reported by the fewest GEEG principals.

Principals reported maximum award amounts ranging from $50 to $10,000 annually for these Part 2 recipients. Overall, principals were eligible to receive the highest average award amount ($2,429.09), while the average award amount for assistant principals was not far behind ($2,032.58). The rank ordering of award amounts by personnel type does not align with the rank ordering of how frequently those same personnel types were eligible for a Part 2 award.

While principals were the most frequently reported eligible recipients with the highest average award, this alignment does not follow for the remaining personnel. For example, after principals, the personnel to receive the next highest award amounts were assistant principals, part-time teachers, and full-time teachers. These same three personnel types were the three lowest-ranked personnel when considering the percent of GEEG schools providing Part 2 awards to them at all.

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[28] School respondents reported the maximum award amount for which a given personnel type is eligible. Based upon these reported amounts, evaluators were able to compute the following for each personnel type: (1) lowest reported maximum amount; (2) highest reported maximum amount, and (3) average of all reported maximum amounts.

Table 4.12: Breakdown of Additional Personnel Incentives

Schools Distributing Incentives to Additional Personnel		Range of Reported Maximum Award Amounts		
School Personnel	Number (%) of Schools	Lowest Maximum Award	Highest Maximum Award	Average Maximum Award
Principal	59 (59.6%)	$511.00	$10,000.00	$2,429.09
Instructional support staff	59 (59.6%)	$100.00	$4,850.00	$818.34
Health support staff	56 (56.6%)	$150.00	$10,000.00	$1,465.45
Campus support staff	56 (56.6%)	$50.00	$5,000.00	$597.89
Librarian	54 (54.5%)	$206.25	$10,000.00	$1,365.90
Instructional specialists	46 (46.5%)	$150.00	$10,000.00	$1,772.74
Assistant principal	44 (44.4%)	$300.00	$10,000.00	$2,032.58
Full-time teachers	39 (39.4%)	$281.25	$10,000.00	$1,815.70
Part-time teachers	28 (28.3%)	$456.00	$10,000.00	$1,882.73
Other[29]	44 (44.4%)	$50.00	$10,050.00	$1,257.58

N=84
Note: Percentages may not add up to 100% because numbers are based upon duplicated counts (i.e., a school program may be described by more than one response category).
Note: Instructional support staff refers primarily to teachers' aides. Health support staff includes nurses, counselors, and therapists. Campus support staff includes custodians and cafeteria workers. Instructional specialists refers to instructional coaches or reading and math specialists.
Source: Data results come from the fall 2006/summer 2007 online progress report administered to GEEG school principals/site coordinators.

GEEG principals also reported the criteria used to determine personnel eligibility for Part 2 awards, as seen in Table 4.13.

- The most commonly reported criterion was professional collaboration, cited by 61 GEEG principals.
- The demonstration of ongoing initiative and the use of student achievement measures were also common among schools, with over 50 percent of principals indicating the use of each.
- Fewer GEEG schools (25.3%) used placement in hard-to-staff and/or high turnover areas as a criterion for incentives.

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[29] In the classification identified as "Other," campuses reported incentives for a variety of personnel, including diagnosticians, facilitators, registrars, data clerks, computer analysts, secretaries, grant coordinators, instructional deans, physical education coaches, community aides, parent educators, assessment specialists, music teachers, oral language teachers, clinical assistants, head custodians, crossing guards, technology directors, PEIMS coordinators, and special education teachers.

Table 4.13: Criteria for Determining Distribution of Additional Part 2 Incentives

Criteria for Part 2 Incentives	Number (%) of Schools
Success in improving student achievement	53 (53.5%)
Collaboration that contributes to improving overall student achievement	61 (61.6%)
Demonstration of ongoing initiative, commitment, personalization, professionalism, and involvement that directly result in improved student achievement	55 (55.6%)
Assignment in an area that is hard to staff or has had high turnover	25 (25.3%)

N=84

Note: Percentages may not add up to 100% because numbers are based upon duplicated counts (i.e., a school program may be described by more than one response category).

Source: Data results come from the fall 2006/summer 2007 online Progress Report administered to GEEG school principals/site coordinators.

Professional Growth Activities

GEEG schools were less inclined to use Part 2 funds to implement professional growth activities for faculty and staff (see Table 4.11). Less than 20 percent of schools – and sometimes much fewer – used these funds to initiate professional development, mentoring, or induction programs. The more popular activities (i.e., providing bonuses or stipends to teachers, other programs and activities) were still only implemented by less than half of GEEG schools. Notably, these latter activities resemble opportunities for schools to distribute additional money directly to teachers, faculty, and staff rather than truly implement professional growth activities.

Additional teacher bonuses or stipends

Thirty-two GEEG principals reported the use of Part 2 funds to provide bonuses or stipends to teachers. Nineteen of the 32 principals reported the use of bonuses or stipends for teachers who participate in after-school or Saturday programs. Eight of the 32 principals reported the use of bonuses or stipends for new teachers assigned to high-needs subject areas.

Professional development

Sixteen GEEG principals reported the use of Part 2 funds for professional development activities in their schools. When asked about the nature of these professional development activities, five of these 16 principals reported the provision of professional development for teachers who were eligible for – but did not earn – a Part 1 award. Fifteen of them indicated that they were using funds to reimburse or fund professional development activities to improve teaching and student performance.

Teacher mentoring

Only five GEEG principals reported the use of Part 2 funds to provide mentoring for teachers. In fact, other than teacher induction programs – used by only one school – teacher mentoring was the least preferred alternative for schools' use of Part 2 funds.

New teacher induction

One GEEG school invested Part 2 funds in teacher induction programs. Teacher induction was the least favored option for using these GEEG funds. This GEEG school implemented a new teacher induction program that included mentoring for new teachers, common planning time among teacher colleagues, professional development, and standards-based evaluation.

Other programs and activities

Of the 25 principals reporting other programs and activities, it is evident that most were actually reporting the use of Part 2 funds for additional personnel bonus awards. In fact, 19 of these principals – over three-quarters – described these other programs and activities as performance awards for non-teaching personnel (e.g., cafeteria workers, custodians, administrators, counselors, instructional assistants, etc.).

Implementation of Part 2 Activities

According to state guidelines, Part 2 funds for the first year of GEEG did not have to be completely disseminated until the fall 2007 semester. Therefore, it was not practical to ask principals about modifications to Part 2 plan components until the second annual progress report (administered during the fall 2007 semester).

As is seen in Table 4.14, GEEG schools made little change to their use of Part 2 funds.[30] Approximately 10 percent of respondents indicated using fewer funds for non-teacher bonus awards, while 13 percent used more Part 2 funds for that purpose. Additionally, 11 percent used more funds for additional teacher awards.

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[30] It should be noted that it is likely that some responses of "no change" actually refer to a school not including a Part 2 activity in their GEEG plan at all in either years. While we provided a separate response category of "not applicable" for schools not using Part 2 funds for a particular activity, it appears that some schools used the "no change" response to capture such a situation.

Table 4.14: Change in Part 2 Program Components between Program Plan and Program Implementation

Change in Part 2 Funds	Professional Development	Mentoring Programs	New Teacher Induction	Bonuses/ Stipends for Teachers	Incentives for Non-teachers	Additional Incentives for Teachers
Fewer Part 2 Funds Used for Activity	5 (5.8%)	1 (1.2%)	0 (0.0%)	1 (1.2%)	8 (9.3%)	3 (3.5%)
No Change in Part 2 Funds Used for Activity	37 (43.0%)	34 (39.5%)	32 (37.2%)	31 (36.0%)	45 (52.3%)	38 (44.2%)
More Part 2 Funds Used for Activity	3 (3.5%)	1 (1.2%)	1 (1.2%)	5 (5.8%)	11 (12.8%)	9 (10.5%)
Not Applicable	41 (47.7%)	50 (58.1%)	53 (61.6%)	49 (57.0%)	22 (25.6%)	36 (41.9%)

N=86

Source: Data results come from the second annual online progress report administered to GEEG school principals/site coordinators during the fall 2007 semester.

Determinants of GEEG Plan Design

To investigate determinants of GEEG plan design features, evaluators used teacher, school, and GEEG plan characteristics to explain the variation in two key aspects of each GEEG plan: (1) unit of accountability for evaluating student performance (see Table 4.7) and (2) the measure of student performance used by schools (see Table 4.3). Evaluators' review of GEEG plans reveals unique variation among schools' choices for unit accountability and student performance measures. Additionally, these are oft-debated design features for performance pay plans in broader policy debates of how to most effectively reward teachers for their performance, and particularly for their students' performance.

Evaluators also tried to predict which characteristics are associated with the unit of accountability and student performance measure used in each school's GEEG plan.[31] Tables 4.15 and 4.16 present findings from two models: determinants of unit of accountability and determinants of performance analysis, respectively.

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[31] Evaluators incorporated several school, teacher, and GEEG plan characteristics into a multinomial logit model to predict the characteristics associated with the unit of accountability and student performance measure used in a school's GEEG plan. The teacher determinants include average years of teacher experience, the share of teachers who are male, the share of teachers who are new to the building, and a Gini coefficient for teacher salaries. The salary Gini summarizes the distribution of teacher base pay and indicates the homogeneity of the teacher corps with respect to the determinants of base pay—experience and educational attainment. When all of the teachers share the same step on the salary scale, the salary Gini equals zero. As teacher characteristics become more dispersed, the salary Gini increases toward the value of one. School determinants include the %ED students, student enrollment, and grade level. Finally, the GEEG plan determinants include GEEG funding per pupil, and GEEG selection criteria (i.e., is school eligible for GEEG based on high accountability rating or Comparable Improvement).

Table 4.15 presents the results when unit of accountability is the dependent variable. In this model, evaluators categorize GEEG schools into three groups: those who use school-level performance only to determine award eligibility (32 schools), those who use teacher-level performance only (47 schools), and those who use some combination of the two (15 schools). Schools using teams as a unit of accountability are categorized in the latter category.

Table 4.15: Determinants of Unit of Accountability

Determinant	Teacher and School	Teacher Only
%ED students	0.069	0.003
	(0.053)	(0.038)
Average teacher experience	-0.116	-0.070
	(0.104)	(0.095)
Teacher salary Gini[+]	27.006*	31.390**
	(14.859)	(14.314)
School size	-0.117	0.968*
	(0.924)	(0.548)
GEEG funding per pupil	-2.397	2.541
	(3.791)	(2.003)
Share of teachers new to campus	0.504	0.485
	(3.654)	(2.468)
Share male teachers	3.309	2.002
	(2.286)	(2.654)
Elementary school	-0.279	0.854
	(0.926)	(0.734)
Secondary school	0.908	0.182
	(1.186)	(1.142)
High improving school	-0.942	0.052
	(0.730)	(0.561)
Constant	-7.315	-9.588*
	(7.820)	(4.961)
Observations	97	
Wald Chi² (20)	48.46	
Probability of a Greater Chi²	0.0004	
Pseudo R²	0.1002	

Clustered, robust standard errors in parentheses
* p<.10, ** p<.05, *** p<.01
[+] Gini coefficient, which is a common ratio measure of financial inequality, takes on values between zero and one. The Gini coefficient takes on the value of zero when the distribution of pay is perfectly equal (i.e., all teachers receive exactly the same amount), and takes the value of one when the distribution is perfectly unequal.
Source: Based on authors' calculations.

The analysis in Table 4.15 indicates that teacher characteristics had a statistically significant influence on GEEG plan design. Evidence suggests that as the teachers became more dissimilar (at least with respect to salary) there was an increasing probability that the school's plan would use individual teachers as the unit of accountability. The model predicts that schools where the teachers were

highly similar were more than three times as likely to rely exclusively on school-level accountability than were schools where the teachers were highly dissimilar.[32]

There are no systematic differences across the three unit of accountability categories with respect to the other determinants in the model. Given teacher homogeneity, there is no evidence of differences across school types (elementary, secondary and other) or school size with respect to the chosen units of accountability. High improving schools, schools with more experienced teachers and schools with a higher share of teachers who were new to the building were also no more likely than other schools to favor individual teachers as the unit of accountability.

As Table 4.16 illustrates, average teacher experience had a significant influence on the probability that a GEEG plan rewarded student growth rather than achievement levels. The evidence suggests that the lower the average teacher experience, the more likely that the school relied solely on measures of student growth, and the less likely the plan incorporated achievement level measures. For example, the model predicts that a school where the average teacher had five years experience was nearly seven times more likely to design a plan that rewarded only growth than a school where the average teachers had 15 years experience.[33]

There is no evidence that the other determinants in the model had a significant influence on the plan's measure of student performance. Given the high degree of similarity between %ED students and a school's grade level (i.e., elementary schools have higher %ED students), evaluators also evaluated both student socioeconomic status and grade level determinants jointly. There is no evidence of these indicators changing the probability that a school rewarded achievement levels rather than measures of growth. Similarly, there is no indication that school size or GEEG per-pupil funding had any influence on student performance measures used by schools.

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[32] The predicted probabilities are 48.2 percent and 13.9 percent, respectively. The predicted probabilities are calculated using the method of recycled predictions, holding all other variables in the model constant at their means.
[33] The predicted probabilities are 28.3 percent and 4.1 percent, respectively.

Table 4.16: Determinants of Performance Analysis

Determinant	Measures of Growth Only	Achievement Levels Only
%ED students	-0.100	-0.015
	(0.067)	(0.033)
Average teacher experience	-0.311**	-0.065
	(0.142)	(0.076)
Teacher salary Gini[†]	-15.548	2.890
	(26.759)	(13.101)
School size	0.102	0.012
	(1.357)	(0.653)
GEEG funding per pupil	2.422	-0.266
	(5.797)	(3.432)
Share of teachers new to campus	-6.734	-2.273
	(4.340)	(2.274)
Share male teachers	3.610	-2.425
	(5.640)	(2.741)
Elementary school	2.020	-0.808
	(2.697)	(0.560)
Secondary school	-0.973	-1.032
	(1.418)	(0.951)
High improving school	1.659	-0.242
	(1.252)	(0.431)
Constant	9.679	4.463
	(13.247)	(6.862)
Observations	97	
Wald Chi² (20)	117.08	
Probability of a Greater Chi²	0.0000	
Pseudo R²	0.1593	

Clustered, robust standard errors in parentheses
* p<.10, ** p<.05, *** p<.01
[†] Gini coefficient, which is a common ratio measure of financial inequality, takes on values between zero and one. The Gini coefficient takes on the value of zero when the distribution of pay is perfectly equal (i.e., all teachers receive exactly the same amount), and takes the value of one when the distribution is perfectly unequal.
Source: Based on authors' calculations

Chapter Summary

This chapter provides a detailed overview of key design features of schools' GEEG plans, with a focus on how schools determined teachers' eligibility for bonus awards, how schools used additional Part 2 funds, and how plan design features were related to the characteristics of GEEG schools. Overall, it is evident that GEEG schools most frequently used measures of student performance and teacher collaboration to determine teachers' eligibility for Part 1 bonus awards. The majority of GEEG schools also favored the use of achievement levels – as opposed to measures of performance growth – when analyzing teachers' contribution to student performance. Additionally,

most GEEG schools considered teachers as the unit of accountability for the determination of Part 1 bonus eligibility.

The most popular use of Part 2 funds was for the distribution of bonus awards to additional personnel (i.e., those not eligible to receive awards from Part 1 funds). Very few schools used Part 2 funds to implement professional growth activities. During the course of the first two years of plan implementation, there is little evidence that schools modified their GEEG plans significantly.

Teacher characteristics had only modest influence on variations in GEEG plan characteristics, but the evidence does suggest that schools where the average teacher experience was relatively low were more likely to design plans that rewarded teachers for growth in student achievement. Additionally, schools where teachers were relatively similar to one another – with respect to base pay – were more likely than other schools to design plans that provide bonus awards based only upon group-level performance.

CHAPTER 5
GEEG Bonus Award Design and Distribution

This chapter reviews Part 1 bonus awards for teachers as defined in GEEG plan applications and as implemented during the first year of the program. The design and distribution of teacher bonus awards is operationalized in two ways: (1) the dispersion of minimum and maximum awards in a school and (2) the equality of bonus awards in a school. The chapter concludes with an examination of how characteristics of GEEG schools relate to the design and distribution of teacher awards.

Key Policy Questions

This chapter addresses the following questions.

- What Part 1 award models were submitted in GEEG plan applications to the Texas Education Agency?

- How did schools actually distribute Part 1 awards to teachers during the first year of GEEG (fall 2006)?

- How were characteristics of GEEG schools related to the nature of Part 1 award design and distribution?

Key Policy Points

This chapter highlights and expands upon the following key policy points based on a review of the bonus award models designed and implemented by GEEG schools.

- The dispersion of minimum versus maximum bonus awards in GEEG plans varied considerably within and between schools.

- Most schools proposed an award distribution model that did not align with the minimum and maximum dollar amounts recommended in state guidelines.

- The distribution of actual awards was less equitable than the award models proposed in GEEG plan applications.

- Some characteristics of GEEG schools were related to the nature of award models designed and implemented by schools, including student enrollment, equity of teacher base salaries, and teachers' years of experience.

- The probability of receiving a bonus award and the actual amount received was related to a teacher's subject-area assignment and whether or not a teacher was a new hire.

Methodology

This chapter discusses findings about Part 1 bonus award design and distribution, informed by evaluators' review of plan applications and information submitted to the Texas Education Agency following the schools' first distribution of awards to teachers in the fall 2006 semester. The subsequent sections of this chapter address the following topics:

- Design of GEEG Part 1 awards
- Distribution of GEEG Part 1 awards
- Determinants of GEEG Part 1 awards

Methodology for Reviewing GEEG Part 1 Awards

Data on the design and distribution of Part 1 teacher awards comes from two primary sources. First, as described in Chapter 4, evaluators coded key features of each school's GEEG plan application. One of those features is the proposed distribution of Part 1 awards to teachers, specifically the minimum and maximum possible award amounts a teacher could receive. For each of the three award distribution cycles of GEEG (i.e., fall 2006, fall 2007, fall 2008), data on the actual bonus awards given to teachers is collected using a secure, online data upload system. During the fall of 2006, GEEG schools recorded actual award amounts given to each individual teacher during the first award distribution of the GEEG program, along with the source of those amounts (i.e., Part 1 and/or Part 2 funds). The award data was extensively audited and cleaned by program staff at the Texas Education Agency and evaluators, and then match-merged with administrative personnel records in Texas' Public Education Information Management System (PEIMS).

Eighty-five (85) of the 99 GEEG schools provided information on the actual award amounts distributed to teachers in fall 2006. Five elementary schools, six middle schools, and three secondary schools did not submit data despite repeated reminders from both the Texas Education Agency and the evaluation team. Non-respondent schools are not systematically different from respondents with respect to student race/ethnicity or student socio-economic status; nor are there differences in response rates between schools eligible for GEEG on the basis of high accountability ratings as opposed to Comparable Improvement. Finally, respondent schools do not systematically differ from non-respondents with respect to two measures constructed to examine the equality of Part 1 award models submitted in GEEG plan applications: the range of proposed awards and the maximum potential Gini coefficient. Non-respondent schools do tend to have larger student populations than their counterparts.

Design of GEEG Part 1 Awards

Minimum versus Maximum Proposed Part 1 Awards

Figure 5.1 displays the range of award amounts identified in GEEG plan applications. Each vertical bar represents a single school. The lower end of each bar is the minimum proposed teacher award, while the upper end of the bar indicates the maximum possible award proposed for a school's

GEEG plan. The minimum award amount is defined as any value other than $0 that a teacher can earn; that is, the amount a teacher could earn if meeting only minimal Part 1 performance criteria. The maximum award amount represents the total award that a teacher could earn if meeting all Part 1 performance criteria. The figure represents 93 schools because six of the applications do not clearly specify both a maximum and a minimum proposed award for Part 1.

Figure 5.1: Distribution of Minimum and Maximum Proposed Awards
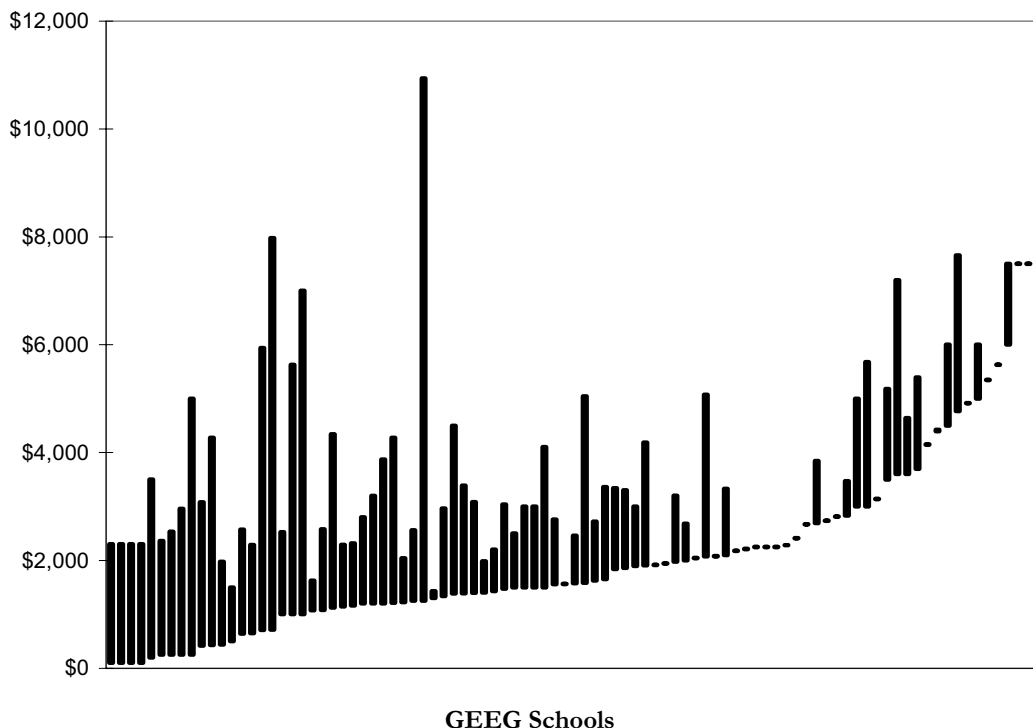
The distribution of proposed awards varies considerably within and between schools. Twenty-two schools proposed award distributions where the minimum possible award equals the maximum possible award, meaning that any teacher meeting minimal performance criteria receives an award amount and nothing above it for exceeding performance thresholds. Six schools proposed models in which minimum and maximum award amounts have a range of more than $4,000, one of which exceeded $9,000. The average difference between the proposed minimum and maximum awards in GEEG plans is $1,615.

Figure 5.1 also indicates most schools proposed award distribution models that do not align with the minimum and maximum dollar amounts recommended in state guidelines issued by the Texas Education Agency. Guidelines advise that Part 1 awards be no less than $3,000 and not to exceed $10,000 per teacher. Most schools proposed a minimum award less than $3,000, and almost half of all GEEG schools proposed a maximum award of less than $3,000.

Equality of Proposed Part 1 Awards

Evaluators calculated a second measure of proposed award dispersion. The range between minimum and maximum awards can be misleading if there are teachers who do not receive any award at all under a school's GEEG plan. The second indicator is based on the Gini coefficient, which is a common ratio measure of income inequality with values between zero and one. The Plan Gini coefficient refers to the equality of award models submitted in plan applications and takes on the value of zero when the proposed award distribution is perfectly equal (i.e., all teachers receive exactly the same award). The coefficient takes the value of one when the proposed distribution is perfectly unequal (i.e., only one teacher receives an award).[34]

The Plan Gini corresponds to the most unequal distribution of awards possible, given the award parameters identified in GEEG plan applications and the total amount of Part 1 funds for the school. The most unequal distribution that exhausts Part 1 funds is when some teachers receive the maximum award possible, and all other teachers receive nothing. When calculating the Plan Gini coefficient, evaluators assume that the total amount of Part 1 funds is distributed across teachers so that as many teachers as possible receive the maximum proposed award, one teacher receives any residual Part 1 funds (which would necessarily be less than the maximum proposed award), and the remaining teachers receive nothing.

Take, for example, a scenario where one school with 11 full-time-equivalent teachers and $45,000 in Part 1 funds designs a GEEG plan wherein the maximum proposed award is $6,000. If the school provides seven teachers with the maximum award, there are sufficient funds to give one teacher an award of $3,000 ($45,000 - [7*$6,000] = $3,000). The remaining three teachers receive nothing. The Plan Gini coefficient for this hypothetical school's award model is 0.3151.

Figure 5.2 displays the distribution of Plan Ginis for the 94 GEEG schools for which it was possible to determine a maximum proposed award for teachers. Five schools' applications do no clearly specify a maximum proposed award and these schools failed to respond to multiple attempts to collect this information. The x-axis denotes the Plan Gini coefficient and the y-axis indicates the number of schools with that particular value. The highest value on the Plan Ginis is 0.77, and the average coefficient for all 94 schools is 0.34. Three schools have Plan Ginis of 0.0 (i.e., perfect equality), meaning that every teacher receives the maximum proposed bonus award.

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[34] More specifically, the Gini coefficient for school k equals: $G = 1 + \dfrac{1}{N} - [\dfrac{2}{mN^2}]\sum_{i=1}^{i=n}(N-i+1)y_i$

where N is the number of teachers in school k, m is the average award per teacher in school k, y_1 is the individual award of teacher I in school k, and the teachers in school k have been sorted from the teacher with the lowest GEEG award or no GEEG award (y_1) to the teacher with the highest GEEG award (y_N).

Figure 5.2: Equality of Proposed Part 1 Awards
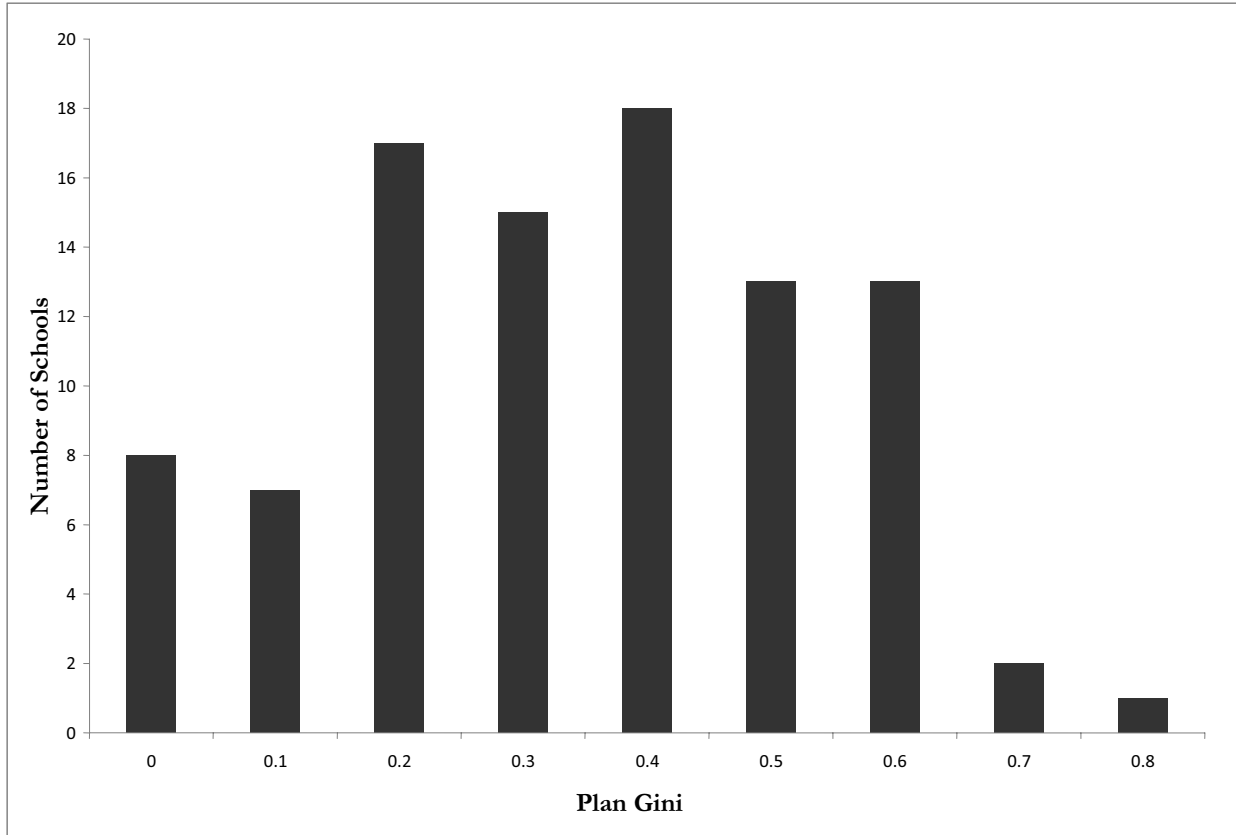
The distribution of Plan Ginis suggests that the maximum potential inequality of proposed Part 1 awards is generally less than the inequality of income distribution in the United States, but markedly greater than the inequality of teacher salaries within GEEG schools. The Gini coefficient for the distribution of disposable income in the United States is 0.42 for 2005 (U.S. Census Bureau, 2006). Gini coefficients for the distribution of teacher base pay in the 2005-06 school year in GEEG schools range from 0.04 to 0.16, with a mean coefficient of 0.09. Only nine GEEG schools (seven elementary and two high schools) have Plan Ginis lower than their coefficients for teacher pay, meaning the proposed award distribution model is more egalitarian than base teacher salaries within those nine schools.

The distribution of proposed GEEG awards further indicates that a handful of schools are unable to implement their GEEG plan as initially proposed. For example, none of the 22 GEEG schools with a proposed award range of zero (see Figure 5.1) have a Plan Gini of zero. That is, none of the schools where the minimum and maximum proposed awards are equal have sufficient funding to give all teachers an award of the same amount. Three schools with a zero award range have above-average Plan Ginis, indicating the proposed award distribution model is in fact less egalitarian than the average school in the sample.

Distribution of GEEG Part 1 Awards

Minimum versus Maximum Actual Part 1 Awards

The first distribution of GEEG Part 1 awards in fall 2006 was retroactive, based on teachers' performance in the 2005-06 school year; a year in which GEEG plans were not yet finalized by participating schools. Data collected on the actual distribution of GEEG awards indicates that 78 percent of full-time teachers in GEEG schools during the 2005-06 school year received a Part 1 award in fall 2006. Seventy of the 624 full-time teachers who were new to a GEEG school in the fall 2006 received GEEG awards, even though they were not employed at the school in the performance year (2005-06). Rewarding a new teacher at the school is permitted in GEEG guidelines, but it may be suggestive of a particularly egalitarian view toward performance pay policies at the 30 GEEG schools doing so.

Figure 5.3 displays the actual distribution of Part 1 awards pooled across all teachers and schools, including only those teachers receiving an award for their performance in fall 2006. Fourteen schools did not provide information on actual award amounts distributed to teachers, making Figure 5.3 representative of 85 percent of GEEG schools. Awards range from a low of $75 to a high of $15,000 with most teachers receiving between $1,000 and $3,000. Seventy-nine percent of the teachers who received an award from Part 1 funds earned less than $3,000.

Figure 5.3: Distribution of Actual Part 1 Awards
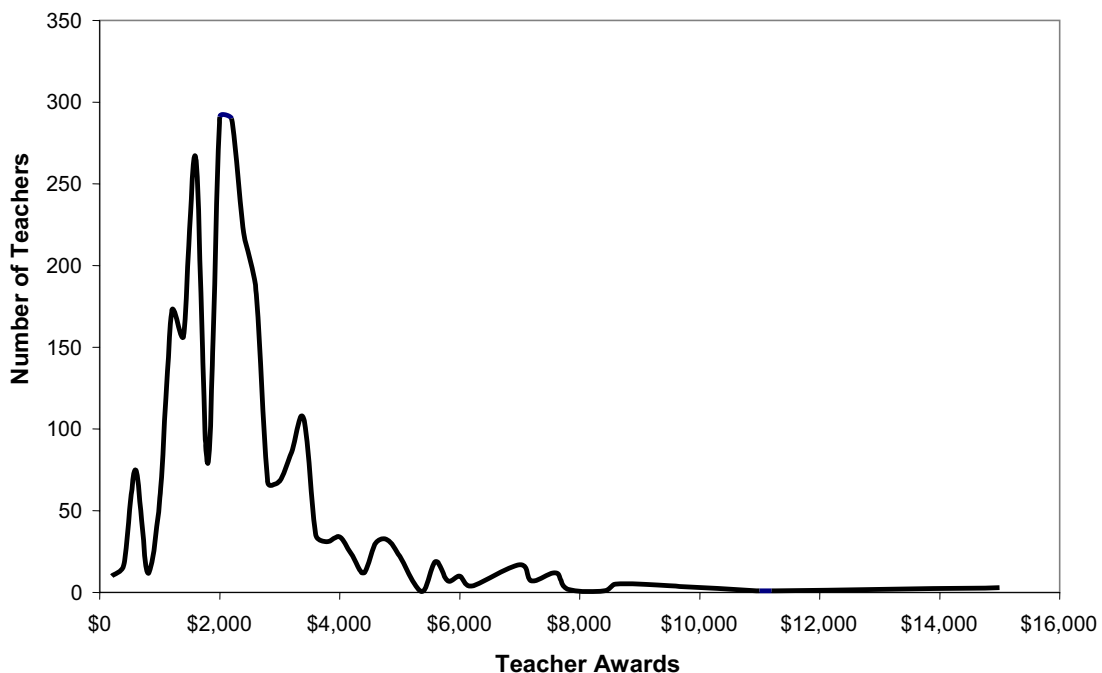
Source: GEEG teacher award information collected during fall 2006 using an online, secure data upload system.

Forty-three percent of GEEG schools distributed Part 1 awards that exceeded the maximum dollar amount specified in their original GEEG plan.[35] For example, although the proposed maximum award in one high school was less than $11,000, three teachers in that school received $15,000 each, while the other eight full-time teachers did not receive any Part 1 award in fall 2006. This suggests some schools resorted to contingency plans, allocating fund balances among those teachers meeting Part 1 performance criteria when other teachers did not meet necessary criteria to earn a Part 1 award.

Equality of Actual Part 1 Awards

Figure 5.4 provides results from a comparison of Plan Ginis with Actual Ginis as seen on the x-axis and y-axis, respectively. The Actual Ginis describe the distribution of awards among teachers who were eligible for Part 1 awards. The 45-degree line that extends from the bottom left to top right of the figure represents perfect alignment between the Plan and Actual Gini coefficient values. The Actual Gini has higher coefficient values than the Plan Gini in 49 of the 80 schools for which evaluators have data on both the proposed and actual distribution of GEEG awards. This indicates that the actual Part 1 award distribution in approximately 61 percent of schools is less egalitarian than the model identified in GEEG plans.[36]

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[35] This is initially surprising when considering principal responses on the first annual progress report (administered during the 2006-07 school year), in which only 11 of all 99 GEEG principals reported that their school had changed the award amount associated with Part 1 performance criteria.

[36] Evaluators could not reliably calculate a plan maximum award for four of the 85 schools that responded to the online data upload system. PEIMS data on the total number of teachers in the school was not available for a fifth school that did provide upload data.

Figure 5.4: Comparing Plan and Actual Gini Coefficients for GEEG Part 1 Awards
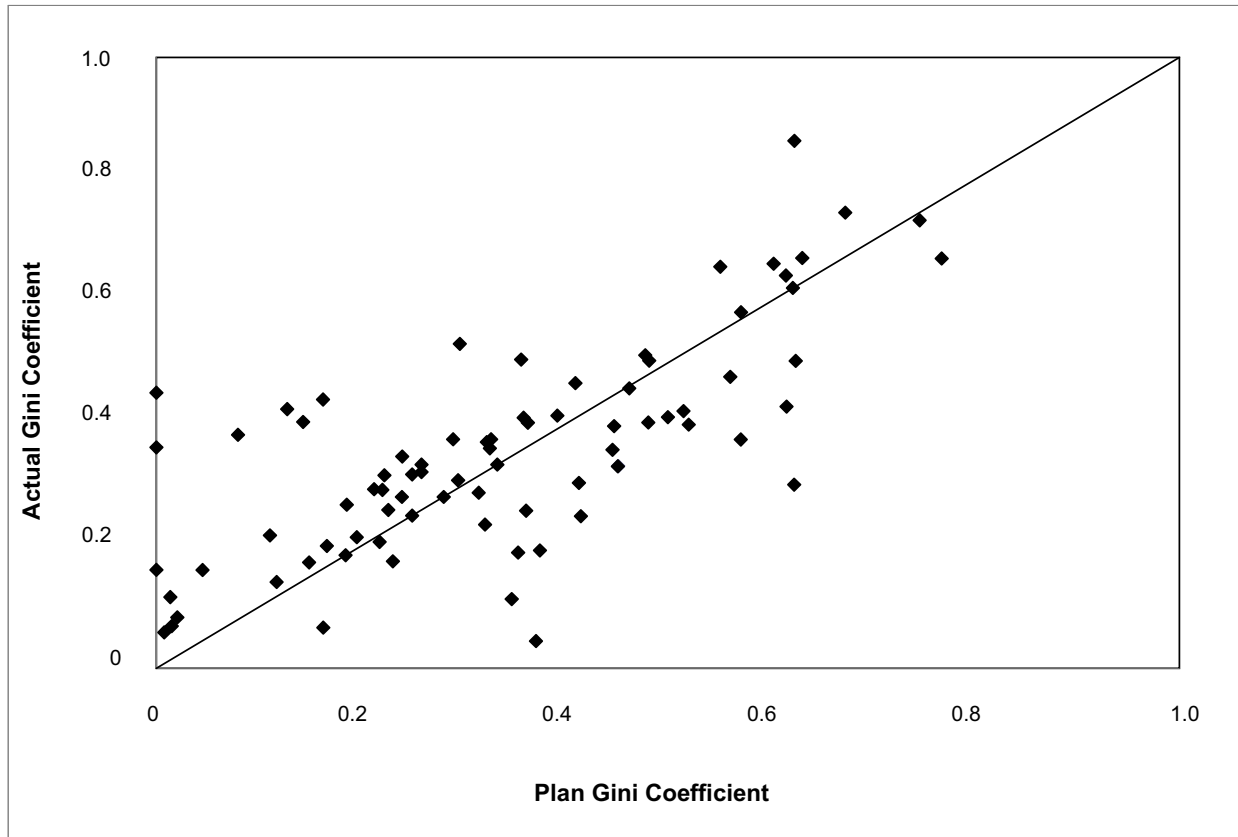
Source: Plan Gini derived from proposed GEEG award information collected during fall 2006 by coding GEEG plan applications submitted to the Texas Education Agency. Actual Gini derived from GEEG teacher award information collected during fall 2006 using an online, secure data upload system.

Determinants of GEEG Part 1 Awards

Determinants of GEEG Award Equality

To investigate determinants of award equality, evaluators incorporated characteristics of GEEG schools into a regression model. The school determinants include the size of the school, the %ED students, the average years of teacher experience, the Gini coefficient for teacher salaries, the share of teachers who are male, and indicators for elementary and secondary schools. The GEEG plan determinants include GEEG funding per pupil and an indicator for whether the school was eligible for GEEG based on Comparable Improvement.

Table 5.1 presents coefficient estimates and standard errors for three indicators of award equality, specifically Plan Gini coefficients, Actual Gini coefficients, and the share of teachers receiving no GEEG award at all in each school. The results provide evidence about relationships that exist between GEEG school characteristics and the indicators of award equality.

Table 5.1: Determinants of Part 1 Award Equality

Determinants	Plan Gini Coefficients	Actual Gini Coefficients	Percent Teachers with No Award
%ED students	-0.006 (0.002)**	-0.003 (0.003)	-0.003 (0.002)*
Average teacher experience	-0.009 (0.007)	-0.016 (0.007)**	-0.012 (0.005)**
Teacher salary Gini	2.808 (0.806)***	2.342 (0.904)**	2.042 (0.784)**
School size	0.084 (0.033)**	0.022 (0.027)	-0.039 (0.023)
GEEG funding per pupil	0.031 (0.086)	-0.147 (0.081)*	-0.245 (0.096)**
Share of teachers new to campus	0.119 (0.167)	0.278 (0.149)*	0.258 (0.178)
Share male teachers	0.065 (0.149)	-0.070 (0.138)	-0.160 (0.141)
Elementary school	-0.056 (0.045)	-0.068 (0.035)*	-0.052 (0.041)
Secondary school	-0.099 (0.058)*	0.049 (0.042)	0.058 (0.054)
High improving school	-0.003 (0.044)	0.042 (0.034)	0.037 (0.026)
Constant	0.191 (0.341)	0.480 (0.326)	0.745 (0.226)***
Observations	94	84	84
R-squared	0.30	0.42	0.51

Clustered, robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
Source: Based on authors' calculations.

Previous research suggests that schools use more egalitarian award models when it is more difficult to attribute differences in student performance to differences in teacher effectiveness (e.g., when there is greater heterogeneity in %ED students). All GEEG schools had a high %ED students, but there remains substantial variation in this school characteristic among GEEG participants. Schools with the highest %ED students were more homogeneous; that is, most students are of low socio-economic status. %ED students is also a function of grade level (i.e., elementary schools have higher %ED students), so this indicator must be evaluated jointly with the indicator for school grade type.

The %ED students indicator, evaluated jointly with the indicator for school type, was a significant determinant of all three measures of award equality. Schools with more economically similar student bodies had more egalitarian award plans, which does not align with assumptions held in literature. Additionally, results from two recent surveys conclude that elementary school teachers are less supportive of performance pay programs when compared to secondary-level teachers.[37] Results in

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[37] Goldhaber, DeArmond, and DeBurgomaster (2007) and Jacob and Springer (2007).

Table 5.1 do not suggest that these attitudes lead to systematically more egalitarian GEEG plans in elementary schools.

The analyses for Table 5.1 also include school size and a measure of teacher homogeneity (teacher salary Gini) because studies suggest that small groups are more likely to adopt egalitarian performance pay model than large groups,[38] and that an average-performing teacher prefers a more egalitarian model if he/she has full information about the abilities of other teachers (as would be more likely in a small school) and if there is significant variation in those abilities.[39] Table 5.1 illustrates that schools with similar teachers (i.e., a lower teacher salary Gini coefficient) designed GEEG award models with greater equality than their counterparts.

Small schools had more egalitarian plans than large schools. School size was highly and inversely correlated with GEEG funding per pupil, a variable that is included in the analyses to allow for the possibility that schools with more generous per-capita funding might be more willing to spread the wealth around. School size and GEEG funding per pupil, analyzed jointly, are significant determinants for all three indicators of award equality. A marginal increase in school size significantly increased the inequality of award distribution across a range of school sizes.[40]

Earlier research suggests that attitudes about performance pay vary by gender and years of experience.[41] For example, Niederle and Vesterlund (2007), find that even when there are no gender differences in performance, men are twice as likely as women to choose a more individualistic performance pay model.[42] Additionally, female teachers have more negative impressions of performance pay plans than male teachers.[43] Several studies on teacher attitudes toward performance pay policies conclude that beginning teachers are more accepting of performance pay than are veteran teachers.[44]

Results in Table 5.1 indicate that schools with more experienced teachers were more likely to have egalitarian award distribution models, although the effect is not significant for the Plan Gini. There is no evidence that schools with a higher share of male teachers adopted more individualistic Part 1 award models.

It is possible that schools with a greater share of newly hired teachers might distribute their awards less evenly since those teachers were not employed at the school during the 2005-06 school year. The evidence in Table 5.1 is mixed. While the share of new teachers had a significant and positive

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[38] For example, Encinosa, Gaynor and Rebitzer (2007) find that small groups are more likely to adopt equal sharing rules than are large groups, but that when mutual assistance is important, large groups must offer weaker incentives to achieve the same level of mutual aid.

[39] For example, see Freeman and Gelber (2006).

[40] The marginal effect of school size is a nonlinear function of enrollment. For the Plan Gini and Actual Gini analyses, the marginal effect is positive for all school sizes, and statistically significant (at the 10 percent level) for all but a handful of schools. For the share of teachers with no award, the marginal effect is significant and positive for some schools, and insignificant for the rest.

[41] The share of male teachers ranges from a minimum of zero to a maximum of 63 percent, with a sample mean of 26 percent.

[42] For other work on gender preferences in incentive pay, see Ballou and Podgursky (1993) ,Goldhaber, DeArmond, and DeBurgomaster (2007) or Eckel and Grossman (2002).

[43] Ballou and Podgursky (1993) or Goldhaber, DeArmond, and DeBurgomaster (2007).

[44] Ballou and Podgursky (1993), Goldhaber, DeArmond, and DeBurgomaster (2007), and Jacob and Springer (2007)

influence on the Actual Gini (i.e., the greater the share of new teachers, the less egalitarian award distribution), it had no influence on the other two indicators of award equality.

There is no evidence that GEEG eligibility criteria (i.e., whether a school was eligible based on high accountability ratings or Comparable Improvement) had any influence on the equality of award design or distribution.

Teacher Characteristics and Actual Part 1 Award Distribution

Evaluators used several analytical approaches (estimate probit, ordinary least squares (OLS), and Tobit models) to explore the relationship between teacher characteristics and the probability of a teacher receiving an award and the likelihood of that award amount. Results are detailed in Table 5.2 below.[45]

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[45] The probit analysis examines the probability that a teacher received an award in fall 2006, while the OLS and Tobit analyses examine the size of such awards. The dependent variable for the probit analysis is whether a teacher did or did not receive a GEEG award. The dependent variables for the OLS and Tobit models are the dollar amount of the actual award. Teachers who did not receive an award are coded as receiving an award of zero dollars. Because there may be a correlation in the residuals between two schools from the same school district, evaluators report robust standard errors clustered by school district for all three models. The regression dataset includes 85 GEEG schools and 3,245 full-time teachers that were employed in these schools during the 2005-06 school year.

Table 5.2: Teacher Characteristics as Determinants of Part 1 Award Distribution

Teacher Characteristic	Probability of Receiving an Award (Probit)	Size of Award (OLS)	Size of Award (Tobit)
Years of experience	0.001 (0.003)	4.154 (14.276)	4.179 (18.459)
Experience, squared	0.000 (0.000)	-0.110 (0.457)	-0.072 (0.575)
Experience, missing	-0.037 (0.047)	207.666 (142.582)	200.937 (171.727)
Bachelor's degree	0.124 (0.145)	9.230 (533.613)	326.425 (977.571)
Master's degree	0.067 (0.129)	-60.025 (531.859)	187.806 (984.537)
Doctorate degree	-0.008 (0.196)	129.136 (731.683)	283.820 (1,232.337)
New hire at school	-0.448 (0.053)***	-1,317.389 (132.980)***	-2,268.296 (317.541)***
Language arts	0.086 (0.027)***	292.414 (87.800)***	433.609 (116.424)***
Math	0.037 (0.024)	326.967 (82.250)***	405.267 (96.372)***
Science	0.002 (0.023)	-273.288 (113.608)**	-305.438 (130.200)**
Foreign language	0.025 (0.051)	79.468 (158.488)	121.649 (230.013)
Fine arts	-0.111 (0.045)**	-363.611 (99.383)***	-611.781 (157.546)***
Vocational technical	-0.097 (0.089)	-88.387 (233.708)	-254.122 (383.234)
Special education	0.008 (0.037)	211.960 (154.606)	224.161 (211.385)
Bilingual	0.127 (0.037)***	387.162 (94.773)***	573.781 (100.203)***
TAKS self-contained	0.117 (0.031)***	773.820 (127.558)***	976.561 (172.526)***
Constant	---	1,379.940 (549.165)**	661.851 (1,000.016)
Observations	3,245	3,245	3,245
R-squared	---	0.18	---

 Robust standard errors in parentheses. For ease of interpretation, the probit coefficients and standard errors have been transformed into marginal effects at the mean.
* significant at 10% level; ** significant at 5% level; *** significant at 1% level
Source: Based on authors' calculations.

Teacher characteristics and award receipt (Probit model)

The first column of Table 5.2 presents an analysis on the probability that a teacher received a Part 1 award in fall 2006 for performance during the 2005-06 school year. The table reports marginal effects. For example, the coefficient estimate of -0.448 for new teacher hire indicates that the probability of a teacher receiving a Part 1 award was 44.8 percentage points lower when that teacher was new to the building in the 2005-06 school year than for a teacher who was not, all other things being equal. The lower probability of a newly-arrived teacher receiving an award does not intimate a bias against teachers new to the profession. Less than half of teachers who were new to a GEEG school in the 2005-06 school year were also new to teaching, but there is no relationship between years of experience and the probability of receiving a Part 1 award.[46]

Language arts teachers, bilingual education/ESL teachers, and teacher with self-contained TAKS classrooms were significantly more likely to receive Part 1 awards than other teachers. Fine arts and vocational/technical teachers were the least likely to receive bonus awards. This pattern suggests that some schools may not have developed their own assessments to include as possible award recipients teachers assigned to subjects not tested by TAKS or other pre-existing state assessment instruments.

Math teachers were an anomaly; although their students were clearly tested by TAKS, math teachers were no more likely to receive a bonus award than teachers who did not teach math, holding all other characteristics constant. However, all but eight of the 518 math teachers in GEEG schools were also either language arts, bilingual/ESL, or TAKS teachers, so there might be insufficient variation in the sample of teachers to detect an independent effect for the math teaching assignment.

Teacher characteristics and award amounts (OLS and Tobit models)

The last two columns in Table 5.2 describe the relationship between teacher characteristics and award amounts received by a teacher.[47]

Teachers who were new to a GEEG school during the 2005-06 school year received a fall 2006 GEEG award nearly $2,300 less than other teachers with similar educational attainment and experience. This pattern does not suggest bias against teachers new to the profession because there is no evidence that the size of a Part 1 award is related to teacher experience.[48] Additionally, there is no evidence that teachers with advanced degrees earned larger awards than their counterparts.

The analysis of award amounts confirms that teachers in tested grades and subjects received significantly larger awards than other teachers. Teachers with self-contained classrooms in TAKS grades received the largest awards, all other things being equal. Teachers in language arts, bilingual

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[46] The three indictors of teacher experience—years of experience, years of experience squared and years of experience unknown—are jointly insignificant at the 10 percent level. The chi^2 test statistic is 2.07 and the probability of a greater test statistic is 0.5583.

[47] The Tobit analysis is more appropriate for this type of data, so it is the preferred specification for this set of analyses. Nonetheless, the results from both OLS and Tobit models are qualitatively similar to one another, and reinforce the general conclusions of the probit analysis.

[48] The hypothesis that the coefficients on the three experience variables are jointly equal to zero cannot be rejected at the 10-percent level

education/ESL and mathematics received significantly higher awards than other teachers, but significantly less than those received by TAKS teachers. On average, the fine arts teachers received the smallest awards.

Overall, the analyses in Table 5.2 suggest that math, science and fine arts teachers received higher awards than other teachers, but had no greater probability of receiving an award in the first place. When teachers assigned to math, science, and/or fine arts qualified for a bonus award, the average size of their award was larger than their peers.

Table 5.2 also reveals that the relationship between teacher characteristics and the dollar amount awarded to teachers in GEEG schools reflects factors other than those rewarded by the traditional single salary schedule. Years of experience and level of education – separately and jointly – had no influence on a teacher's probability of receiving a Part 1 award or the size of the award that a teacher received.

Chapter Summary

This chapter provides a thorough review of the nature of Part 1 bonus award design and distribution, including the dispersion of minimum and maximum awards and the measure of award equality for each school. The dispersion of minimum versus maximum awards – as designed by GEEG schools – varied considerably within and between schools. And, most GEEG schools proposed an award distribution model that did not align with the minimum and maximum dollar amounts recommended in state guidelines for the GEEG program.

Proposed Part 1 bonus award models had greater inequality than the distribution of teachers' base salaries in GEEG schools. In the majority of GEEG schools, the distribution of actual bonus awards was less equitable than the proposed award models.

Several GEEG school characteristics – school size, the equity of teachers' base salaries, and average teacher experience – are related to the distribution of Part 1 bonus awards. The probability that a particular teacher received a bonus award – and the actual amount received – was significantly related to the teacher's subject-area assignment and whether or not a teacher was a new employee at his/her GEEG school.

CHAPTER 6
Educator Attitudes and Beliefs about Performance Pay in GEEG Schools

This chapter describes results from surveys administered to teachers and other professionals in GEEG schools during the fall 2007 semester and conveys how attitudes of school personnel have changed during the first two years of the GEEG program. This mid-year survey is part of a two-pronged annual survey strategy for gathering information about school staff members' experiences, especially those of teachers', throughout the three-year GEEG program. This fall 2007 survey was the second administration of the mid-year survey and addressed the following topics:

- Perceptions about the school's GEEG plan, as well as the school's work climate and principal leadership; and
- Attitudes and beliefs about performance pay in general and the ability of staff to impact student learning.

Key Policy Questions

This chapter addresses the following questions.

- What attitudes did GEEG school personnel hold about performance pay, in general, and their GEEG plan in particular?

- Did GEEG school personnel believe their efforts could overcome challenging student background characteristics?

- How effective did GEEG school personnel perceive building leadership to be?

- What was the nature of professional expectations and collegial collaboration that personnel perceive in GEEG schools?

- Did attitudes and perceptions of GEEG school personnel differ across respondent characteristics (e.g., years of experience, whether or not a teacher received a GEEG award, professional position), school characteristics (e.g., grade levels served), or GEEG plan characteristics (e.g., how teacher eligibility for awards is determined)?

- Did GEEG personnel's attitudes about performance pay and perceptions of school climate changed during the first two years of the GEEG program?

Key Policy Points

This chapter highlights and expands upon the following key policy points based on surveys administered to instructional personnel in GEEG schools.

- Most personnel in GEEG schools supported the principle of teacher performance pay, and there was no decline in that support during the first two years of the GEEG program. Additionally, the majority of personnel viewed performance pay as good for compensation practices.

- Personnel did not believe the GEEG program had undermined collaboration or workplace collegiality. In fact, the majority of respondents viewed their colleagues, principals, and overall work environment positively.

- Both GEEG award recipients and non-recipients, as well as new and veteran teachers, had positive views about the GEEG program.

- Teachers and staff in GEEG schools more often preferred egalitarian award distribution models as part of an incentive pay plan.

- Staff characteristics, such as years of experience or professional position, explain little of the variation in teacher attitudes, nor are there consistent or large differences between GEEG award recipients and non-recipients.

Methodology

This chapter discusses results from a survey administered to full-time instructional personnel in GEEG schools during the fall 2007 semester.[49] This mid-year survey is the first of a two-pronged survey approach used to learn about GEEG's impact on attitudes and behavior of school personnel. This mid-year survey addresses several key concepts which are identified below:

- Perceptions and attitudes about performance pay and the GEEG program;
- Beliefs and attitudes about professional effectiveness and perceptions of school environment;
- Beliefs about what should be rewarded with performance pay and what GEEG plans actually reward; and,
- Personnel background characteristics (e.g., professional experience, educational level) and pay variables (e.g., salary level and amount of GEEG bonus award)

The subsequent sections describe the methodology used to conduct the survey, survey results, and a comparison of select survey items administered during the first and second year of the GEEG program.

Methodology for Reviewing Survey Results

Full-time instructional personnel in GEEG schools were asked to complete an online survey during the fall 2007 semester. The survey is primarily composed of closed-end survey items. Some of these items are the same as those included in the first mid-year survey administered during January, 2007, though many items are new on the fall 2007 survey. Where possible, evaluators examine how responses from the January 2007 survey compare to responses from the fall 2007 survey. Evaluators administered the third mid-year survey during the fall 2008 semester using the same items as the fall 2007 survey. Results from this survey will be reported in the next report on GEEG programs. This will allow further examination of how teachers' attitudes and perceptions change during the three-year GEEG program.

Simple descriptive statistics for the fall 2007 survey are presented in Appendix D and include frequency distributions and means for nearly all attitudinal items included on the survey. The frequency distributions are presented as three crosstabs with respondent position (teacher vs others), experience, and GEEG award status as the crossed variables.

Evaluators conducted principal components factor analyses on most of the questions contained on the survey to explore how statements in each major question cluster into meaningful groups. Scales from the survey responses were constructed based on factor loadings.[50] Evaluators calculated "factor scores" by averaging the survey responses to statements assigned to the same factor, and then calculated average factor scores by respondent experience level, for example whether or not a GEEG award was received, and by school year where relevant (see Appendix F). Evaluators also

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[49] A copy of the survey is provided in Appendix C.
[50] See Appendix E for the factor structures from all factor-analyzed survey items.

used the factor scores as dependent variables in regression analyses to determine how respondent and school characteristics influence attitudes.

Survey Sample

All 99 GEEG schools were invited to participate in the fall 2007 survey. Full-time instructional personnel were asked to complete the survey and were given approximately six weeks to respond. All responses were submitted anonymously. Building principals were contacted periodically throughout the survey administration window and informed of their school's estimated response rates. Principals were also asked to encourage their instructional personnel to complete the survey.

As shown in Table 6.1, 89 of the 99 GEEG schools had at least one individual complete and submit the online survey instrument. The overall response rate is 85 percent. The average response rates vary by size of GEEG-eligible school with smaller schools having lower average response rates. The average school responding to the survey has 39 respondents and 48 teachers.

Table 6.1: Average Response Rates by Eligible Teachers, Fall 2007 GEEG Survey

Eligible Teachers	Number of Schools	Average Response Rate
<6	4	15%
6-20	19	74%
21-40	30	93%
41-60	19	93%
61-80	12	91%
81+	5	96%
Total Respondents		3479
Total Schools		89
Total Response Rate		85.4%

Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007.

Ten GEEG schools did not participate in the fall 2007 survey. Approximately 400 teachers work in these non-represented schools. Table 6.2 indicates that the schools employing between 41 and 60 teachers had the lowest representation in the survey, with the survey capturing responses from roughly 75 percent of all teachers in that school category.

Table 6.2: Schools Not Represented in Fall 2007 GEEG Survey

Teachers in School	Number of Schools	Total teachers
<6	0	0
6-20	3	40
21-40	1	39
41-60	4	212
61-80	2	128
81+	0	0

Source: Information comes from a survey administered to personnel in 89 GEEG schools during fall of 2007 and data reported in the 2006-07 PEIMS.

Respondent and non-respondent schools are similar across a number of dimensions, but they are distinct when examining the criteria for which schools became eligible for GEEG participation (i.e., high accountability ratings or Comparable Improvement). Non-responding schools have a higher representation of schools eligible based on Comparable Improvement.

Evaluators also examine selected characteristics of respondents. Tables 6.3 through 6.6 present the job titles respondents selected for themselves, followed by summaries of respondents' years of professional experience, educational level, and salary.

Table 6.3 shows that roughly 80 percent of respondents are regular full-time teachers. Since a school's GEEG plan can include all staff, evaluators decided to keep all survey responses in survey analyses, even those submitted by personnel other than full-time teachers. However, excluding the 19 percent of the sample who are not teachers does not significantly affect the major findings reported in this chapter.

Table 6.3: Position Titles of Fall 2007 GEEG Survey Respondents

Position	Number of Respondents	Percent of Respondents
Full-time teacher	2821	81.1%
Part-time teacher	10	0.3%
Long-term substitute	4	0.1%
Short-term substitute	1	0.0%
Student teacher	1	0.0%
Teacher aide	315	9.1%
Administrator	35	1.0%
Instructional specialists	63	1.8%
Librarian	48	1.4%
Health support staff	63	1.8%
Campus support staff	3	0.1%
Other support staff	25	0.7%
Other	90	2.6%

N=3,479
Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007.

The sample of survey respondents is broadly representative of various years of total professional experience. However, veteran personnel are somewhat overrepresented in the survey sample, while personnel new to their specific schools are somewhat underrepresented (see Table 6.4).

Table 6.4: Respondents' Years of Teaching Experience, Fall 2007 GEEG Survey

Response Category	Overall Years Teaching		Years Teaching at School	
	Respondents	All GEEG Teachers	Respondents	All GEEG Teachers
Missing/Undefined	---	8.4%	---	---
1 to 3 years	17.7%	18.9%	23.2%	40.5%
4 to 9 years	30.1%	29.3%	38.3%	39.2%
10 to 14 years	16.2%	13.0%	11.4%	10.3%
15 to 19 years	12.2%	9.3%	8.2%	10.1%
20 or more years	23.7%	21.2%	9.0%	

Respondents' N=3,479; all GEEG teachers' N=3,972
Note: PEIMS does not provide information on teacher tenure at current campus. Therefore, that variable was constructed by evaluators using an 18-year panel of data; there was not sufficient information to distinguish between ranges 15 to 19 years and 20 or more years.
Source: Information on respondents comes from results of the GEEG survey administered in fall of 2007. Information on teachers in all 99 GEEG schools comes from PEIMS 2006-07.

Table 6.5 shows that more than 10 percent of the fall survey respondents have educational levels below a bachelor's degree or an "other" degree. This primarily reflects the education levels reported by instructional aides and other support staff responding to the survey. Survey respondents with advanced degrees (i.e., Master's, Doctorate) are slightly overrepresented compared to the population of teachers in GEEG schools.

Table 6.5: Respondent's Level of Education, Fall 2007 GEEG Survey

Highest Degree	Percent of Respondents	Percent of All GEEG Teachers
Associate	4.3%	0.9%
Bachelor's	65.2%	79.3%
Master's	22.9%	19.2%
Doctorate	0.8%	0.6%
Other	6.9%	---

Respondents' N=3,479; all GEEG teachers' N=3,972
Source: Information on respondents comes from results of the GEEG survey administered in fall of 2007. Information on teachers in all 99 GEEG schools comes from PEIMS 2006-07.

Table 6.6 indicates that more than 80 percent of respondents and more than 90 percent of all teachers earned between $30,000 and $59,999 for their annual salary during the 2007-08 school year, with the majority of those earning between $40,000 and $49,999. The relatively large percentage of fall survey respondents reporting earnings of less than $30,000 reflects the responses of aides and support staff.

Table 6.6: Respondents' Annual Salary, Fall 2007 GEEG Survey

Response Category	Percent of Respondents	Percent of All GEEG Teachers
Missing/Undefined	---	0.3%
$20,000 to $29,999	12.2%	1.1%
$30,000 to $39,999	15.0%	17.3%
$40,000 to $49,999	44.1%	51.4%
$50,000 to $59,999	20.8%	22.1%
$60,000 to $69,999	6.8%	6.9%
$70,000 or more	1.2%	1.0%

Respondents' N=3,479; all GEEG teachers' N=3,972
Source: Information on respondents comes from results of the GEEG survey administered in fall of 2007. Information on teachers in all 99 GEEG schools comes from PEIMS 2006-07.

Overall, survey respondents are quite similar to non-respondents, but they are somewhat more likely to be veteran teachers and – not surprisingly – have higher levels of education. While GEEG schools eligible for program participation based on Comparable Improvement are somewhat under-represented, it does not give too much cause for concern given that program eligibility status is not a significant determinant of plan design or bonus award distribution (see Chapters 4 and 5).

Attitudes about Performance Pay Design and GEEG Plans

Attitudes about Performance Pay Design and Impact

The fall 2007 survey represents the second opportunity for evaluators to learn about GEEG personnel's attitudes toward performance pay. Preliminary findings from the January 2007 survey were reported in an earlier GEEG evaluation report.[51] This chapter explores respondents' attitudes toward performance pay during the second program year of GEEG, and how attitudes may be changing.

Teacher and staff responses exhibit strong support for performance pay, as seen in Table 6.7. This support holds true when asked about group performance pay (i.e., school-wide, grade levels, subject areas), performance pay for individual teachers, and performance pay for administrators.

Most respondents (60.1%) indicated that they did not believe performance pay undermines group morale; 65 percent did believe it can cause teachers to work more effectively. Finally, approximately 60 percent and 65 percent of respondents, respectively, felt that performance pay will help recruit and retain more effective teachers in the teaching profession.

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[51] See Springer et al (2007).

Strategies for Designing Performance Pay	Strongly Disagree	Disagree	Agree	Strongly Agree	Mean
"Incentive pay for teachers based on **overall performance** at the school is a positive change to teacher pay practices."	5.6%	12.3%	53.6%	28.6%	3.05
"Incentive pay for teachers based on **group performance** (i.e., grade-level, department, interdisciplinary team) is a positive change to teacher pay practices."	7.1%	21.0%	51.5%	20.4%	2.85
"Incentive pay for teachers based on **individual teaching performance** is a positive change to teacher pay practices."	9.1%	19.8%	45.0%	26.2%	2.88
"Incentive pay for administrators based on **overall performance at the school** is a positive change to administrator pay practices."	7.8%	16.3%	56.7%	19.2%	2.87
"Rewarding teachers based on their students' performance will destroy the collaborative culture of teaching."	13.3%	46.8%	28.5%	11.4%	2.38
"Rewarding teachers based on their students' performance will cause teachers to work more effectively."	8.0%	26.5%	47.9%	17.7%	2.75
"Rewarding teachers based on their students' performance will attract more effective teachers into the profession."	10.2%	30.0%	43.7%	16.1%	2.66
"Rewarding teachers based on their students' performance will help retain more effective teachers in the profession."	8.9%	25.8%	45.9%	19.5%	2.76

N=3,479
Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007.

Attitudes about GEEG Plan Design and Impact

The fall 2007 survey addresses personnel attitudes about implementation of the GEEG plans in their schools. As displayed in Table 6.8, respondents viewed their schools' GEEG plans favorably. A large majority (69.7%) agreed that the plan is fair to teachers, while over 80 percent agreed that they have a clear understanding of what it takes to earn a GEEG award; a similar percentage

believed they can meet those standards. Most respondents (70.8%) believed that the size of the top potential GEEG award at their schools is sufficiently large to motivate them, while nearly 80 percent felt that their schools' GEEG performance criteria are worthy of extra pay.

Some dissent is evident among respondents. Over half of respondents (57.7%) disagreed with the statement that GEEG is doing a good job of distinguishing effective from ineffective teachers. And while a substantial majority of respondents agreed that GEEG award amounts are large enough to motivate them, roughly 75 percent of respondents agreed with the statement that their schools' GEEG plans do not affect teaching practices or professional behaviors.[52]

With a few exceptions, the findings reported in Table 6.8 are similar to principals' responses when asked about personnel experiences and attitudes toward GEEG in the fall 2007 progress report.[53] One exception is that nearly 70 percent of principals reported that school personnel believe GEEG does a good job of distinguishing between effective and ineffective teachers; just over 40 percent of school personnel reported similarly on the fall 2007 survey. Approximately two-thirds (66.7%) of principals believed that personnel agree that staff are changing their professional practice in light of GEEG, but only 24 percent of fall survey respondents believed similarly. While not a perfect comparison – given that the principal survey does not capture percent of overall GEEG personnel holding a given attitude – it is indicative of how principals' general beliefs about staff attitudes compare to the staff's actual beliefs.

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[52] With a few exceptions, the findings reported in Table 6.8 are similar to the responses of principals when asked about personnel experiences and attitudes toward GEEG in the fall 2007 progress report. The notable exceptions are that nearly 70 percent of principals report that school personnel believe GEEG does a good job of distinguishing between effective and ineffective teachers. Also, approximately two-thirds (66.7%) of principals believe that personnel agree with the statement that staff are changing their professional practice in light of GEEG. While not a perfect comparison – given that the principal survey does not capture percent of overall GEEG personnel holding a given attitude – it is indicative of how, in general, principals' beliefs about staff attitudes compare to the staff's actual beliefs.

[53] See Chapter 4 for further details about the methodology and concepts addressed by the annual principal progress report.

Table 6.8: Respondents' Perceptions of Involvement, Fairness, and Impact of GEEG

Attitudes about Schools' GEEG Plans	Strongly Disagree	Disagree	Agree	Strongly Agree	Mean
"The GEEG incentive system developed by my school is fair to teachers."	8.5%	21.7%	54.4%	15.3%	2.77
"The GEEG incentive system is having negative effects on my school."	15.4%	53.9%	23.2%	7.6%	2.23
"The GEEG incentive system in my school does a good job of distinguishing effective from ineffective teachers at my school."	13.5%	44.2%	36.5%	5.8%	2.35
"The GEEG incentive system causes resentment among teachers at my school."	11.4%	47.1%	31.1%	10.4%	2.41
"I have a clear understanding of the performance criteria that I need to meet in order to earn a GEEG bonus award."	4.9%	15.3%	60.7%	19.2%	2.94
"I do not believe that I can achieve the performance criteria established by my school's GEEG incentive system."	20.6%	60.9%	14.8%	3.8%	2.02
"I believe that the performance criteria established by my school's GEEG incentive system are worthy of extra pay."	5.4%	15.8%	61.3%	17.6%	2.91
"The size of the top bonus award in my school's GEEG incentive system is not large enough to motivate me to try to earn the top award."	11.1%	59.7%	23.1%	6.1%	2.24
"The GEEG incentive system does not affect my teaching practices or professional behaviors."	3.7%	20.2%	51.6%	24.6%	2.97

N=3,479

Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007.

Many of the items in Tables 6.7 and 6.8 are identical to items asked on the January 2007 survey. To identify differences in responses between the two years, evaluators combined the January 2007 and fall 2007 survey responses, and kept only responses for the 68 schools represented in both surveys.

Figure 6.1 reveals how responses in fall 2007 differ from those in January 2007 (labeled 2006) and shows that respondents had positive views of their schools' GEEG plans in both rounds of the survey, and by fairly substantial margins.

In both years, over 70 percent of respondents felt that the GEEG plans at their schools are fair, while similar percentages did not believe the program is having negative effects. Large majorities supported both individual and school-wide performance pay, although more respondents favored the latter. Approximately 75 percent favored performance pay for administrators. There has been little change in these attitudes over time, although there has been a modest increase in support for bonuses based on school-wide performance and administrator bonuses.

Figure 6.1: Comparison of Attitudes about Performance Pay and GEEG Program Design and Impact, January 2007 to Fall 2007
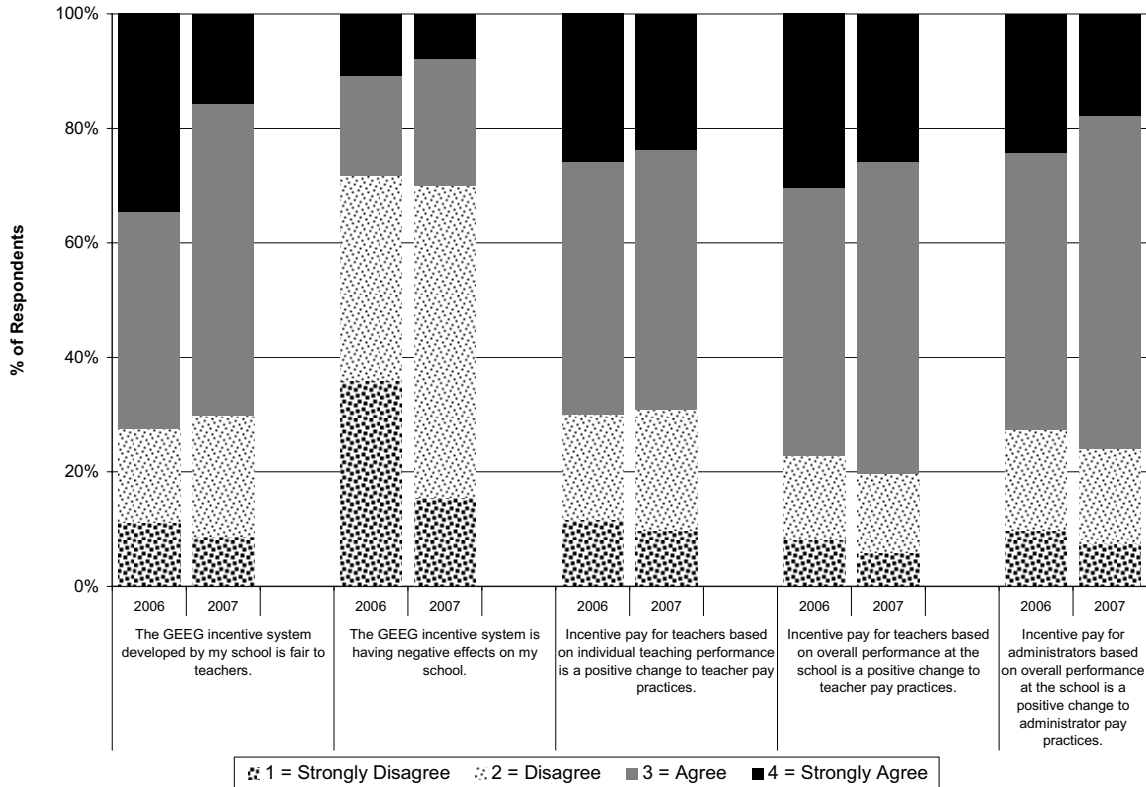
N_{2006} varies by item from 1,237 to 1,429; N_{2007}=2,461
Note: Figure 6.1 will provide three-years of data for comparison after administration of the final mid-year GEEG survey during the fall 2008 semester.
Source: Results come from surveys administered to personnel in 74 GEEG schools in January 2007 and 89 GEEG schools during fall of 2007. Responses were kept only for the 68 schools represented in both surveys.

Attitudes about Evaluation Measures for Performance Pay

Respondents were also asked to rate how much importance they would give to 17 different evaluation measures when designing a hypothetical performance pay program. A second battery of questions asked respondents to rate their perceptions of how important the same measures were in identifying high-performing teachers as part of their schools' GEEG plans. Both sets of questions were also asked on the January 2007 survey.

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Tables 6.9a through 6.9d present descriptive data from the fall 2007 survey with items organized into four groups reflecting the results of factor analyses: *test-based measures* (Table 6.9a), *market-based measures* (Table 6.9b), *extra-classroom contributions* (Table 6.9c), and *professional evaluations* (Table 6.9d).[54]

Table 6.9a reveals that respondents considered *test-based measure*s as having the most importance for a performance pay plan (mean=3.29 on a four-point Likert scale). They distinguished between using achievement levels versus achievement gains in student test scores, with 94 percent of respondents agreeing that student achievement gains should be an important factor in performance pay. This preference for the use of student achievement measures is somewhat inconsistent with other research revealing that teachers usually do not look so favorably upon the use of student achievement measures as determinants of performance pay eligibility (Ballou and Podgursky, 1993; Goldhaber, DeArmond, and DeBurgomaster, 2007; Jacob and Springer, 2007).

Table 6.9a: Importance of Evaluation Measures for a Performance Pay Plan:
Test-based Measures (Mean=3.29, α=0.73)

Survey Items	No Importance	Low Importance	Moderate Importance	High Importance	Mean
Improvements in students' test scores	1.7%	4.6%	36.6%	57.1%	3.49
High average test scores by students	3.7%	14.4%	51.7%	30.3%	3.09

N=3,479
Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007.

Over 80 percent of respondents agreed with providing performance pay for teachers in hard-to-staff fields and hard-to-staff schools, as is seen in Table 6.9b. This is again surprising given other survey research indicating that teachers typically view pay for assignment in a hard-to-staff field unfavorably (Ballou and Podgursky, 1993; Goldhaber, DeArmond, and DeBurgomaster, 2007; Jacob and Springer, 2007).

Table 6.9b: Importance of Evaluation Measures for a Performance Pay Plan:
Market-based Measures (Mean = 3.16, α = 0.93)

Survey Items	No Importance	Low Importance	Moderate Importance	High Importance	Mean
Teaching in hard-to-staff school	4.7%	12.0%	43.4%	39.9%	3.18
Teaching in hard-to-staff fields	4.8%	13.1%	45.3%	36.8%	3.14

N=3,479
Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007.

Teachers expressed strong support for rewarding *extra-classroom contributions* such as working with parents and mentoring other teachers (see Table 6.9c). While a majority of teachers favored rewarding National Board for Professional Teaching Standards (NBPTS) certification, the margin is smaller than for the other measures of *extra-classroom contributions*. These findings are relatively consistent with other survey research, namely that teachers view pay for extra duties quite favorably

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[54] See Appendix E for further information on factor analyses procedures and results.

(Ballou and Podgursky, 1993; Goldhaber, DeArmond, and DeBurgomaster, 2007; Jacob and Springer, 2007).

Table 6.9c: Importance of Evaluation Measures for a Performance Pay Plan: Extra-classroom Contributions (Mean = 3.02, α = 0.83)

Survey Items	No Importance	Low Importance	Moderate Importance	High Importance	Mean
Efforts to involve parents in students' education	3.9%	12.6%	44.4%	39.2%	3.19
Working with students outside of class time.	4.4%	14.2%	47.2%	34.2%	3.11
Time spent in professional development	3.1%	15.2%	52.2%	29.5%	3.08
Mentoring other teachers	6.2%	17.1%	46.2%	30.5%	3.01
Serving as a Master Teacher	8.5%	19.4%	46.5%	25.6%	2.89
National Board for Professional Teaching Standards (NBPTS) certification	10.8%	21.1%	41.6%	26.4%	2.84

N=3,479
Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007.

Table 6.9d: Importance of Evaluation Measures for a Performance Pay Plan: Professional Evaluations (Mean = 2.84, α = 0.87)

Survey Items	No Importance	Low Importance	Moderate Importance	High Importance	Mean
Collaboration with faculty and staff	2.7%	11.0%	47.1%	39.3%	3.23
Performance evaluations by supervisors	4.5%	15.8%	51.6%	28.1%	3.03
Independent evaluations of students' work (e.g., portfolios)	7.6%	19.7%	49.1%	23.6%	2.89
Parent satisfaction with teacher	12.0%	25.6%	41.7%	20.7%	2.71
Independent evaluation of teaching portfolios	11.3%	24.3%	47.1%	17.3%	2.70
Performance evaluations by peers	12.7%	24.8%	45.0%	17.5%	2.67
Student evaluations of teaching performance	16.1%	24.9%	40.4%	18.6%	2.61

N=3,479
Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007.

Finally, Table 6.9d reveals items related to *professional evaluations*, with respondents expressing strongest support for performance evaluations by supervisors and measures of collaboration with

other faculty and staff. The least support is evident for parent or student evaluations. While respondents tended to favor these measures, compared to the other evaluation measures in Tables 6.9a through 6.9c, respondents considered *professional evaluations* as being least important for inclusion in a performance pay plan (mean=2.84 on a four-point Likert scale).

Attitudes about Evaluation Measures in GEEG Plans

The survey inquired about measures of performance actually used to determine teachers' eligibility for GEEG bonus awards. Using the same 17 measures as described earlier, statements were grouped based on the results of a factor analysis. Responses to this survey item cluster into only three factors – *test-based measures* (Table 6.10a), *extra-classroom contributions* (Table 6.10b), and *professional evaluations and professional development* (Table 6.10c). Market-based measures are now perceived as part of *extra-classroom contributions*, and professional development is grouped with other professional evaluation measures (as opposed to extra-classroom contributions).

Similar to earlier responses about a hypothetical performance pay plan, respondents rated *test-based measures* as having most importance in determining GEEG award eligibility. This is not surprising given state requirements that such measures be included as Part 1 performance criteria. Over 90 percent of respondents indicated that student achievement <u>gains</u> play a role in GEEG award determination, while over 85 percent of respondents indicate that test score levels are moderate to highly important.

Table 6.10a: Importance of Evaluation Measures in Determining GEEG Awards:
Test-based Measures (Mean = 3.32, α = 0.65)

Survey Items	No Importance	Low Importance	Moderate Importance	High Importance	Mean
Improvements in students' test scores	3.1%	5.0%	38.8%	53.1%	3.42
High average test scores by students	3.1%	11.3%	46.0%	39.6%	3.22

N=3,479
Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007.

Most respondents agreed that measures of *extra-classroom contributions* were used to determine teachers' eligibility for a GEEG award, particularly measures that capture teachers' work with students outside of class time and their efforts to involve parents in students' education. Although only 15 GEEG schools used hard-to-staff fields as a criterion for rewarding teachers – at least as identified in their plan applications – nearly 75 percent of respondents indicated that teaching in hard-to-staff fields was an important measure for determining GEEG awards in their schools.

Table 6.10b: Importance of Evaluation Measures in Determining GEEG Awards: Extra-classroom Contributions (Mean = 2.93, α = 0.89)

Survey Items	No Importance	Low Importance	Moderate Importance	High Importance	Mean
Working with students outside of class time.	8.1%	13.9%	44.8%	33.3%	3.03
Efforts to involve parents in students' education	9.5%	14.5%	42.7%	33.3%	3.00
Teaching in hard-to-staff school	11.3%	13.5%	41.5%	33.8%	2.98
Teaching in hard-to-staff fields	10.8%	14.3%	42.0%	32.9%	2.97
Mentoring other teachers	11.9%	17.9%	43.4%	26.9%	2.85
Serving as a Master Teacher	14.4%	19.8%	43.4%	22.5%	2.74

N=3,479
Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007.

Similar to responses about hypothetical performance pay, respondents considered *professional evaluations and professional development* as having the least importance for determining teachers' eligibility for GEEG bonus awards (mean=2.74 on a four-point Likert scale). It should be noted that over 80 percent of respondents believed that collaboration with faculty and staff was of moderate or high importance for determining awards. Again, this is not too surprising given that teacher collaboration is another required award criterion in state guidelines.

Table 6.10c: Importance of Evaluation Measures in Determining GEEG Awards: Professional Evaluations and Professional Development (Mean = 2.74, α = 0.92)

Survey Items	No Importance	Low Importance	Moderate Importance	High Importance	Mean
Collaboration with faculty and staff	6.9%	12.2%	46.4%	34.6%	3.09
Time spent in professional development	6.5%	18.5%	47.0%	28.1%	2.97
Performance evaluations by supervisors	7.3%	15.9%	49.5%	27.3%	2.97
Independent evaluations of students' work (e.g., portfolios)	14.6%	19.3%	45.1%	21.0%	2.73
National Board for Professional Teaching Standards (NBPTS) certification	16.4%	19.6%	39.1%	24.9%	2.72
Independent evaluation of teaching portfolios	16.9%	23.2%	43.2%	16.7%	2.60
Parent satisfaction with teacher	18.8%	23.2%	38.0%	20.0%	2.59
Performance evaluations by peers	18.3%	23.6%	42.6%	15.5%	2.55
Student evaluations of teaching performance	23.2%	23.3%	37.0%	16.5%	2.47

N=3,479
Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007.

Table 6.11 provides an overview of the top ten performance measures that respondents identified for (1) what is most important for a performance pay plan and (2) what is most important in determining awards as part of their schools' GEEG plans. Of these top ten responses, only the top-ranked measure (improvements in students' test scores) and the tenth-ranked measure (mentoring other teachers) are perfectly aligned in rank order.

Table 6.11: Comparing Importance of Evaluation Measures,
General Performance Pay v. GEEG Plan

Evaluation Measures	Teachers' Rank Order of Important Performance Pay Measures	Teachers' Rank Order of Important GEEG Plan Measures
Improvements in students' test scores	**1** **(mean = 3.49)**	**1** **(mean = 3.42)**
Collaboration with faculty and staff	2 (mean = 3.23)	3 (mean = 3.09)
Efforts to involve parents in students' education	3 (mean = 3.19)	5 (mean = 3.00)
Teaching in hard-to-staff school	4 (mean = 3.18)	6 (mean = 2.98)
Teaching in hard-to-staff fields	5 (mean = 3.14)	7 (mean = 2.97)
Working with students outside of class time	6 (mean = 3.11)	4 (mean = 3.03)
High average test scores by students	7 (mean = 3.09)	2 (mean = 3.22)
Time spent in professional development	8 (mean = 3.08)	9 (mean = 2.97)
Performance evaluations by supervisors	9 (mean = 3.03)	8 (mean = 2.97)
Mentoring other teachers	**10** **(mean = 3.03)**	**10** **(mean = 2.85)**

N=3,479

Note: Performance measures are ranked from 1 to 10, with 1 being the most important and 10 being the least. Measures with equal ranks are in bold type. Respondents rated items' importance as None (1), Low (2), Moderate (3), or High (4).
Source: Results come from a survey administered to personnel in GEEG schools during fall of 2007.

Not all measures are well aligned with one another. Teachers believed "high average test scores by students" to be less important for a hypothetical performance pay plan, but reported that it was the second most important measure in their schools' GEEG plans. Additionally, "teaching in hard-to-staff schools/fields" was identified as being of high importance for performance pay in general, but less important for schools' GEEG plans.

Evaluators also examined whether respondents' average ratings of these measures change over time. Table 6.12 presents the results for the 68 schools represented in both survey administrations. The mean ratings and rank ordering of evaluation measures in a hypothetical performance pay plan suggest that involving parents garners much more importance on the second survey, while the use of high average test scores is viewed as slightly less important.

Perceptions about measures actually rewarded in GEEG plans changed very little, with test score measures remaining most important, time spent in professional development losing a bit of perceived importance, and efforts to involve parents becoming somewhat more important.

Evaluation Measures	Teachers' Rank Order of Important Performance Pay Measures		Teachers' Rank Order of Important GEEG Plan Measures	
	2006	2007	2006	2007
Improvements in students' test scores.	**(1)** **3.50**	**(1)** **3.49**	**(1)** **3.45**	**(1)** **3.43**
Collaboration with faculty and staff.	(2) 3.30	(2) 3.24	(3) 2.92	(3) 3.10
Efforts to involve parents in students' education.	(7) 3.13	(3) 3.20	(7) 2.63	(5) 3.01
Teaching in hard-to-staff school.	(3) 3.21	(4) 3.19	(9) 2.57	(9) 2.96
Teaching in hard-to-staff fields.	(4) 3.17	(5) 3.15	(8) 2.58	(8) 2.96
Working with students outside of class time.	(6) 3.14	(6) 3.11	(4) 2.85	(4) 3.04
Time spent in professional development.	(5) 3.16	(7) 3.08	(5) 2.79	(7) 2.97
High average test scores by students.	(8) 3.07	(8) 3.08	(2) 3.36	(2) 3.22
Performance evaluations by supervisors.	(9) 3.05	(9) 3.05	(6) 2.78	(6) 2.98
Mentoring other teachers.	**(10)** **2.94**	**(10)** **3.01**	**(10)** **2.41**	**(10)** **2.84**

N=1,516 for 2006, and 2,461 for 2007
Note: Performance measures are ranked from 1 to 10, with 1 being the most important and 10 being the least. Measures with equal ranks are in bold type. Respondents rated items' importance as None (1), Low (2), Moderate (3), or High (4).
Source: Results come from a survey administered to personnel in GEEG schools in January of 2007 and during fall of 2007; only responses from schools represented in both survey administrations are included.

Analysis of Factor Scores on Evaluation Measures

Evaluators explored how the perceived importance of measures for performance pay varies by personnel characteristics such as years of experience, and whether or not respondents received a GEEG bonus award. Evaluators used factor analyses to collapse the questions into a smaller number of measures with high internal consistency and used these new measures to explore how personnel characteristics help to explain these preferences for evaluation measures.[55] The results are shown in Tables 6.13 and 6.14 below.

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[55] Factor scores were converted to Z-scores prior to the regression analysis. All regression coefficients reported in this chapter and in the accompanying Appendix G represent changes in Z-scores associated with a unit change in the corresponding independent variable.

More experienced instructional staff and GEEG award recipients placed less importance on the use of *market-based* measures, *extra-classroom contributions*, and *professional evaluation* measures in a hypothetical performance pay plan. There is no significant change in attitudes about measures for a hypothetical plan when comparing survey responses between the January 2007 and fall 2007 administration. On this, and all subsequent regression analyses, evaluators note that these respondent characteristics explain very little (less than one percent) of the overall variation in the factor scores under analysis.

Table 6.13: Regression Analyses of Evaluations Measures for Hypothetical Performance Pay Plans

Variables	Means	Test-based Measures (Table 6.9a)	Market Based (Table 6.9b)	Extra-classroom Contribution (Table 6.9c)	Professional Evaluations (Table 6.9d)
		3.28	3.17	3.01	2.83
1 - 3 years of experience	0.17	---	---	---	---
4 to 14 years of experience	0.46	0.072	-0.050	-0.067	-0.082*
15+ years of experience	0.36	-0.039	-0.153**	-0.083*	-0.109**
Received GEEG award	0.67	0.004	-0.066*	-0.078*	-0.137**
2007 vs. 2006	0.68	0.034	-0.042	0.058	0.018
Model R^2	-	0.0021	0.0045	0.0031	0.0063

N=5117;* $p < .05$, ** $p < .01$
Note: The variable indicating a respondent had 1 - 3 years of experience was omitted from the regression because that group is used for comparison.
Source: Results come from a survey administered to full-time instructional personnel in 74 GEEG schools during January 2007 and from a survey administered to personnel in 89 GEEG schools during fall of 2007.

The results presented in Table 6.14 are based on respondents' perceptions of what is actually rewarded in schools' GEEG plan. Several differences by personnel characteristics are evident. First, experienced instructional staff were less likely to perceive *professional evaluation and professional development*, as well as *extra-classroom contributions*, as important in determining GEEG bonus awards. The same holds for staff who received GEEG awards versus those who did not.

Compared to responses on the January 2007 survey, respondents on the fall 2007 survey felt that *professional evaluation and professional development* measures, along with measures of *extra-classroom contributions*, played a more important role in determining their GEEG awards. Additionally, t*est-based measures* were perceived as less important for determining GEEG awards at the time of the fall 2007 survey, although the effect is small.

Table 6.14: Regression Analyses of Evaluation Measures in GEEG Plans

Variables	Means	Test-based Measures (Table 6.10a)	Extra-classroom Contributions (Table 6.10b)	Professional Evaluations and Professional Development (Table 6.10c)
		3.35	2.81	2.65
1 -3 years of experience	0.17	-	-	-
4 to 14 years of experience	0.46	0.036	-0.087*	-0.130**
15+ years of experience	0.36	0.010	-0.086*	-0.141**
Received GEEG award	0.67	-0.041	-0.154**	-0.191**
2007 vs. 2006	0.68	-0.128**	0.428**	0.339**
Model R²	-	0.0028	0.0526	0.0432

N=5,117; * $p < .05$, ** $p < .01$

Note: The variable indicating a respondent had 1 - 3 years of experience was omitted from the regression because that group is used for comparison.

Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007 and from a survey administered to full-time instructional personnel in 74 GEEG schools during January 2007.

Evaluators conducted additional regression analyses with variables available from the fall 2007 survey as well as school level variables, including design features of GEEG plans.[56]

Respondent job titles were captured in a new question added to the survey in fall 2007 and evaluators discovered the following results. Teachers were no more or less likely than non-teacher personnel to favor *market-based* measures, but they were somewhat less favorably disposed toward the use of *test-based measures* as a basis for bonus award determination in a hypothetical performance pay plan. Additionally, teachers were consistently less likely to view all evaluation measure factors as important in how their GEEG bonus awards actually were determined.

GEEG plan characteristics include whether individuals and/or groups are the unit of accountability; whether growth or achievement levels are used to measure student performance, and the equality of award distribution in each GEEG school. Respondents in GEEG schools using individual teachers as the unit of accountability perceived the *professional evaluations and professional development* factor, as well as the *extra-classroom contributions* factor, as less important in determining GEEG awards than respondents in schools in which groups are used as the unit of accountability.

Attitudes about Effectiveness and Perceptions of School Environment

The survey solicited views about the influence that students' family background characteristics have on student learning and the respondents' own professional efficacy. Table 6.15a presents the

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[56] Information about GEEG program characteristics comes from evaluators' coding of GEEG program applications during the 2006-07 school year, as well as information on actual award distribution collected after the first allocation of GEEG bonus awards in the fall of 2006. Results of additional regression analyses are reported in Appendix G.

responses to these statements and the results of comparing the average responses of teachers who received GEEG bonus awards to the average responses of teachers who did <u>not</u> receive a GEEG bonus award. Respondents were divided on the extent to which family background plays a role in student learning and behavior in school. In fact, many respondents believed these background characteristics limit what can be achieved in schools.

Nearly 80 percent disagreed that a teacher really cannot do much because most of a student's motivation and performance depends on his/her home environment. Similarly, approximately 70 percent disagreed that the amount a student can learn is primarily related to family background. However, over 40 percent agreed that a teacher is limited in what he/she can achieve because a student's home environment is a large influence on student achievement.

When examining differences between bonus award recipients and non-recipients, evaluators note that the former were slightly less pessimistic about the influence of home-based discipline and overall home environment on student achievement than were teachers who did not receive a GEEG award.

Respondents were more consistently in agreement with questions about their own professional efficacy; that is, their ability to impact student learning (see Table 6.15b). Over 90 percent of respondents (95.4%) agreed that they know techniques to redirect disruptive students. Eighty-four percent agreed with the statement, "When I really try, I can get through to the most difficult student".

There is little difference between award recipients and non-recipients on the items in Table 6.15b. Only one significant difference exists; award recipients were slightly more pessimistic about their own ability to impact achievement with the most difficult or unmotivated students. This difference is small.

Table 6.15a: Distribution of Responses to Statements about Teacher Effectiveness: Environmental/Family Background Attribution (Mean = 2.41, α = 0.78)

Survey Items	Strongly Disagree	Disagree	Agree	Strongly Agree	Mean	Means by Received GEEG Bonus Award (Teachers Only n=2,831)		
						Yes	No/DK	Diff
If parents would do more for their children, I could do more.	5.2%	24.2%	53.8%	16.8%	2.82	2.83	2.81	0.021
If students aren't disciplined at home, they aren't likely to accept any discipline.	7.9%	42.4%	36.8%	12.9%	2.55	2.52	2.58	-0.062*
A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement.	8.7%	49.8%	33.7%	7.9%	2.41	2.41	2.41	-0.004
The amount a student can learn is primarily related to family background.	16.0%	54.6%	23.3%	6.1%	2.20	2.18	2.22	-0.042
When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his/her home environment.	19.4%	59.5%	17.2%	3.9%	2.06	2.03	2.10	-0.073*

N=3,479; * p < .05

Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007. Comparisons of means are based only on responses from teachers.

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Table 6.15b: Distribution of Responses to Statements about Teacher Effectiveness: Teachers' Professional Efficacy (Mean = 3.08, α = 0.77)

Survey Items	Strongly Disagree	Disagree	Agree	Strongly Agree	Mean	Means by Received GEEG Bonus Award (Teachers Only n=2,831)		
						Yes	No/DK	Diff
If a student in my class becomes disruptive and noisy, I feel assured that I know some quick techniques to redirect him/her quickly.	0.8%	3.8%	68.2%	27.2%	3.22	3.22	3.22	-0.008
If one of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.	0.6%	5.9%	74.0%	19.5%	3.12	3.14	3.10	0.034
If I really try hard, I can get through to even the most difficult or unmotivated students.	1.4%	14.8%	62.0%	21.9%	3.04	3.03	3.07	-0.045*
When I really try, I can get through to the most difficult student.	1.6%	14.2%	63.6%	20.5%	3.03	3.03	3.04	-0.009
If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.	1.0%	10.6%	74.8%	13.6%	3.01	3.02	2.99	0.026

N=3,479; * $p < .05$

Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007. Comparisons of means are based only on responses from teachers.

The survey also asks respondents to rate *principal leadership* in their schools. Respondents had favorable views of the *principal leadership* factor. Table 6.16 indicates that survey respondents perceived that GEEG school principals exhibit many practices of an instructional leader. Nearly 90 percent of respondents, and often times even more, agreed that principals demonstrate the following principal leadership traits:

- Encourage teachers to raise test scores;
- Communicate a clear vision for our school;
- Evaluate teachers using criteria directly related to the school's improvement goals;
- Clearly communicate expected standards for instruction;
- Carefully track student academic progress; and
- Actively monitor the quality of instruction in the school.

Table 6.16: Responses to Items about Principal Leadership:
Principal Leadership (Mean = 3.18, α = 0.95)

Survey Items	Strongly Disagree	Disagree	Agree	Strongly Agree	Mean
Encourages teachers to raise test scores.	1.3%	4.2%	54.8%	39.7%	3.33
Communicates a clear vision for our school.	3.0%	6.5%	52.8%	37.7%	3.25
Evaluates teachers using criteria directly related to the school's improvement goals.	2.6%	6.8%	59.1%	31.5%	3.20
Clearly communicates expected standards for instruction in my classroom.	2.8%	6.4%	58.9%	31.9%	3.20
Carefully tracks student academic progress.	2.0%	8.1%	59.6%	30.3%	3.18
Actively monitors the quality of instruction in the school.	2.9%	9.0%	56.4%	31.7%	3.17
Knows what is going on in my classroom.	3.6%	11.8%	56.9%	27.7%	3.09
Works directly with teachers who are struggling to improve their instruction.	4.9%	15.3%	55.2%	24.6%	3.00

N=3,444 (All administrator responses are excluded.)
Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007.

Respondents were also asked about relationships among teachers and the professional expectations they have for student performance. Tables 6.17a and 6.17b reveal respondents' views about *teacher competition* and *expectations and collaboration* among peers, respectively. The first table indicates that the vast majority of respondents agreed that teachers in their schools trust one another (78.8%) and have a cooperative relationship (71.7%).

Table 6.17a: Responses to Items on School Climate:
Teacher Competition (Mean = 2.14, α = 0.72)

Survey Items	Strongly Disagree	Disagree	Agree	Strongly Agree	Mean
Seem more competitive than cooperative.	11.9%	59.8%	21.2%	7.0%	2.23
Do not really trust each other.	22.2%	56.6%	16.6%	4.6%	2.04

N=3,479
Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007.

Table 6.16b shows that respondents believed their colleagues are highly motivated and hold high expectations for student performance. Over 90 percent of respondents agreed that teachers in their school:

- Think it is important that all of their students do well in class;
- Encourage students to keep trying even when the work is challenging; and
- Expect students to complete every assignment.

Further, more than 80 percent of respondents indicated that teachers feel responsible for helping their colleagues do their best and can be counted on to help one another.

Table 6.17b: Responses to Items on School Climate:
Expectations and Collaboration (Mean = 3.16, α = 0.86)

Survey Items	Strongly Disagree	Disagree	Agree	Strongly Agree	Mean
Think it is important that all of their students do well in class.	1.0%	4.7%	58.1%	36.3%	3.30
Encourage students to keep trying even when the work is challenging.	0.9%	4.3%	65.1%	29.7%	3.24
Expect students to complete every assignment.	1.1%	8.3%	62.6%	27.9%	3.17
Feel responsible to help each other do their best.	2.5%	12.9%	57.5%	27.2%	3.09
Can be counted on to help out anywhere or anytime, even though it may not be part of their official assignment.	4.2%	15.4%	56.2%	24.1%	3.00

N=3,479
Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007.

Analysis of Factor Scores on Efficacy, Principal Leadership, and School Climate

When collapsing these questions about *environmental/family background*, *teachers' professional efficacy*, *principal leadership*, *teacher competition*, and *expectations and collaboration* into a series of factors, evaluators found little variation explained by personnel characteristics (i.e., years of experience, GEEG award recipient status, professional position). In fact, personnel characteristics as a group explain less than

one percent of the variation in factor scores. Experience has very modest effects. GEEG bonus award receipt status is not a significant predictor of any factor scores (see Table 6.18).

Table 6.18: Regression of Efficacy, Principal Leadership, and School Factors

Variables	Means	Environmental Background Attribution (Table 6.15a)	Teachers' Professional Efficacy (Table 6.15b)	Principal Leadership (Table 6.16)	Teacher Competition (Table 6.17a)	Expectations and Collaboration (Table 6.17b)
	Means	2.41	3.09	3.18	2.14	3.16
1 -3 years experience	0.18	---	---	---	---	---
4 - 14 years experience	0.46	-0.021*	0.053**	-0.030	0.028	0.035
15+ years experience	0.36	-0.060*	0.021	-0.025	0.005	0.013
Received award	0.60	-0.024	-0.006	-0.038	-0.024	-0.015
Teachers	0.81	-0.026	-0.089*	-0.131*	-0.043	-0.034
Other Certificated	0.04	-0.226**	-0.041	-0.094	0.041	-0.067
Support Staff	0.03	-0.144	-0.068	-0.035	0.191*	-0.012
Teacher's Aides	0.09	0.046	-0.129**	-0.111	0.049	0.009
Other	0.03	-	-	-	-	-
Model R²	-	0.0083	0.0032	0.0016	0.0035	-0.0003

N=3,479; * $p < .05$, ** $p < .01$
Note: The variable indicating a respondent had 1 -3 years of experience and the variable indicating that a respondent is in the "Other" position category were omitted from the regression because those groups are used for comparison.
Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007.

The results of additional regression analyses conducted on these factors with school level variables and GEEG plan characteristics are reported in Appendix G. When a school used individual teachers as the unit of accountability, respondents were somewhat more likely to perceive competition among teachers. The less egalitarian the distribution of GEEG awards in a school, the more likely respondents were to perceive teacher competition.

Preferences for Award Distribution Models

A final survey question asked respondents about their preferences for various award distribution models, some more egalitarian and others more competitive. The following scenario was presented to respondents.

Assume that you are designing an incentive pay program for teachers in your school. The school received $200,000 to divide among its 125 teachers using locally-designed performance requirements.

Respondents were asked whether they would prefer an across-the-board award or the chance of earning a progressively larger award reserved for progressively smaller numbers of teachers. The results are shown in Figure 6.2 below. The first bar in each scenario shows the response of GEEG award non-recipients; responses for award recipients are displayed in the second bar. The seven column groupings represent different choices between an award of $1,600 for all teachers (Option A) or the chance of earning an increasingly competitive and larger award, in this order.

- Scenario 1: $1,600 to all teachers (Option A) or $2,286 for those performing in the top 70 percent (Option B).
- Scenario 2: $1,600 to all teachers (Option A) or $2,667 for those performing in the top 60 percent (Option B).
- Scenario 3: $1,600 to all teachers (Option A) or $3,200 for those performing in the top 50 percent (Option B).
- Scenario 4: $1,600 to all teachers (Option A) or $4,000 for those performing in the top 40 percent (Option B).
- Scenario 5: $1,600 to all teachers (Option A) or $5,333 for those performing in the top 30 percent (Option B).
- Scenario 6: $1,600 to all teachers (Option A) or $8,000 for those performing in the top 20 percent (Option B).
- Scenario 7: $1,600 to all teachers (Option A) or $16,000 for those performing in the top 10 percent (Option B).

Figure 6.2: Preferences for Award Distribution Models by GEEG Award Status
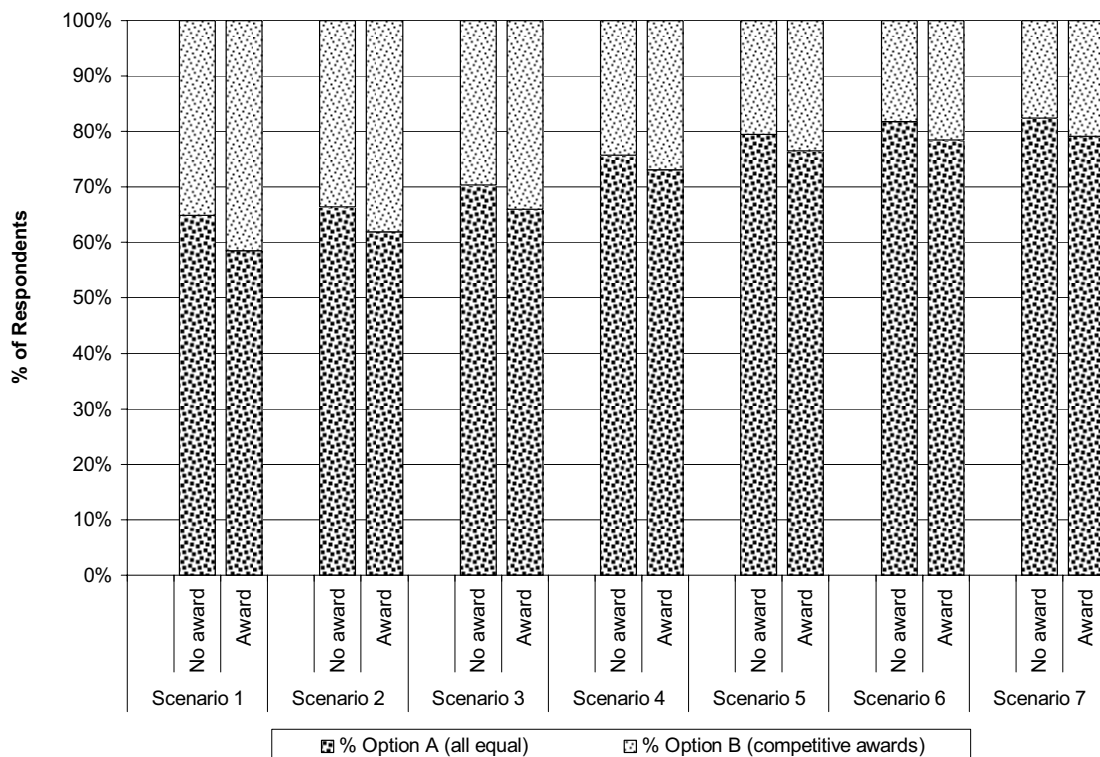
N=3,479
Source: Results come from a survey administered to personnel in 89 GEEG schools during fall of 2007.

Figure 6.2 reveals that respondents, as a whole, had egalitarian preferences for award distribution models. GEEG award recipients consistently showed stronger support than non-recipients for the more competitive option in each scenario, although the difference is not large. However, the majority of both recipients and non-recipients preferred across-the-board awards (i.e., Option A) in all scenarios. This preference for across-the-board awards increases as Option B becomes increasingly competitive. The results in Figure 6.2 suggest that at least 20 percent of respondents favored the chance of earning larger, more competitive awards in every scenario.[57]

Evaluators also examined individual response patterns across the scenarios and note that just over 61 percent of the total sample preferred Option A on the first scenario and nearly all of these respondents (55% of the total sample) always preferred the egalitarian award model in subsequent scenarios. While nearly 40 percent of the total sample selected Option B on the first scenario, less than half of these respondents (only 16% of the total sample) always preferred Option B in subsequent scenarios. Nearly 90 percent of the respondents who initially selected Option B and then switched to the more egalitarian Option A made the change by scenario 5 (i.e., $1,600 to all teacher or $5,333 for teachers performing in the top 30 percent).

Overall, these findings suggest that a slight majority of the respondents in GEEG schools always preferred an award model that is equally distributed to all eligible teachers while a small but meaningful minority (approximately 1 in 6 respondents) would always prefer larger awards earned by fewer teachers.

Chapter Summary

This chapter presents findings from the fall 2007 survey of GEEG teachers and staff, and draws conclusions about any changes in respondent attitudes from the first teacher attitude survey administered in January 2007. A majority of staff in GEEG schools supported the principle of performance pay and did not believe it undermines school culture. This majority has been stable over time. A majority of GEEG respondents also believed that performance pay will attract and retain more effective teachers into the profession and motivate incumbent teachers.

Over 80 percent said they have a clear understanding of the criteria for earning a GEEG bonus award, and a similar percentage believed they can meet those standards. They felt that the size of the maximum potential GEEG award in their schools is sufficient to motivate them. Some dissent is apparent. A slim majority disagreed with the statement that GEEG does a good job of distinguishing between effective and ineffective teachers at their school. It is also the case that teachers and staff in GEEG schools more often preferred egalitarian award distribution models as part of a performance pay plan.

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[57] The results reported in Figure 6.2 represent responses from all staff participating in the fall 2007 survey, which includes roughly 20 percent non-teachers. Since the question explicitly refers to bonuses for teachers, evaluators checked to see if restricting the tabulation to just teacher respondents would change the results, and found that the distribution of responses for teachers only is virtually identical to the findings in Figure 6.2.

Staff characteristics, such as years of experience or professional position, explain little of the variation in teacher attitudes, nor are there consistent or large differences between GEEG award recipients and non-recipients in attitudes about the program.

CHAPTER 7
The Impact of GEEG on Teacher Turnover

This chapter examines the impact of the GEEG program on teacher turnover during the first two years of the program's operation (2005-06 and 2006-07 school years). Evaluators compared turnover rates of teachers in GEEG and non-GEEG schools and explored the turnover of teachers within GEEG schools. The latter provides evidence about the impact of GEEG plan design features on teacher turnover decisions, specifically, how measures of student performance, units of accountability, as well as proposed and actual bonus award distribution influence teacher turnover.

Key Policy Questions

This chapter addresses the following questions.

- How does teacher turnover differ between GEEG and non-GEEG schools?

- How does teacher turnover in GEEG schools differ based on the design features of each school's GEEG plan?

- How does teacher turnover in GEEG schools differ based on the actual distribution of bonus awards to teachers?

Key Policy Points

This chapter highlights and expands upon the following key policy points based on a review of teacher turnover in GEEG schools.

- Following the first year of the GEEG program, teacher turnover was consistently lower in GEEG schools than in non-GEEG schools, but there is no evidence of this difference existing in the second program year. The same pattern holds when restricting analyses to only schools with high %ED students or to only math and science teachers.

- On average, experienced teachers had lower than expected turnover in GEEG schools than in non-GEEG schools in the first year of the program, but not in the subsequent school year. Turnover among beginning teachers is not statistically different between GEEG and non-GEEG schools.

- The exclusive use of student performance gains to determine GEEG bonus award eligibility increased the rate of teacher turnover in GEEG schools, especially among beginning teachers following the first year of the program.

- The unit of accountability used in a school's GEEG plan had an impact on teacher turnover, especially in the first program year. Beginning teachers had lower turnover when school-level performance was used exclusively, while experienced teachers had lower turnover when teacher performance was used exclusively.

- The proposed distribution of GEEG bonus awards had an impact on teacher turnover in both years of the program. More individualistic plans were related to lower teacher turnover in the first year, but higher teacher turnover in the second year, especially among beginning teachers.

- The receipt and size of actual GEEG bonus awards had a strong impact on teacher turnover. The probability of turnover fell for both beginning and experienced teachers as the size of the GEEG bonus award increased.

Teacher Turnover in GEEG v. Non-GEEG Schools

Figure 7.1 illustrates the teacher turnover rates for three types of Texas schools: GEEG schools, TEEG Cycle 1 schools, and the remaining public schools in Texas. Approximately 20 percent of Texas teachers changed schools in any given year. Teacher turnover rates for GEEG schools were lower than in other schools during the first two years of the program's operation (2005-06 and 2006-07 school years), but they were also lower in the two years preceding program implementation.

On average during the 2003-04 and 2004-05 school years, teacher turnover rates in GEEG schools were approximately one percentage point lower than those in TEEG Cycle 1 schools, and just over one percentage point (1.4) lower than those in the rest of the state's public schools. In the two years in which the GEEG program was in operation, teacher turnover rates were nearly three percentage points lower in GEEG schools than in TEEG Cycle 1 schools or the remaining public schools in Texas (2.7 percentage points lower and 2.8 percentage points lower, respectively).

**Figure 7.1: Overall School Turnover Rates,
GEEG v. TEEG v. Other Texas Public Schools**
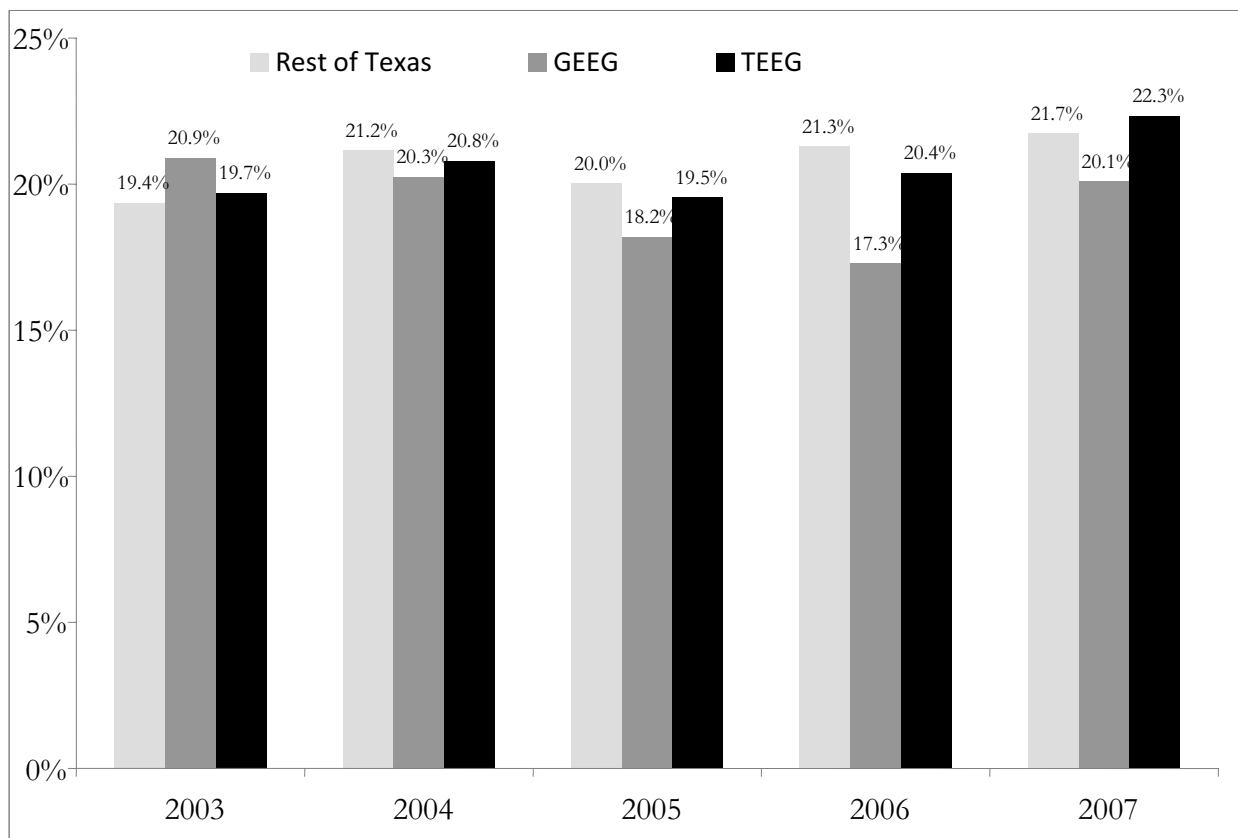
Source: Based on authors' calculations using PEIMS data.

Examining simple differences is not the strongest evidence about the influence of the GEEG program on teacher turnover rates, primarily because GEEG schools were systematically different from TEEG schools and the remaining public schools in Texas. Therefore, evaluators developed an

analytic model of individual teacher turnover, and used it to evaluate the impact of the GEEG program on teacher retention. The analytic model was adapted from a common one used in analyses of teacher turnover (for example, see Imazeki 2005). The underlying assumption is that teachers choose to leave their jobs only if they expect to be happier in an alternative situation than they are in their current positions. Therefore, turnover is modeled as depending on the characteristics of a teacher's current job, his or her employment alternatives, and any personal characteristics that might influence the turnover decision. The GEEG program was treated as one of the pertinent characteristics of a teacher's current job. See Appendix H for a detailed discussion of the analytic model and for the regression estimates that underlie the following tables.

Throughout this analysis, teachers are considered retained if they are teaching in the same school in the subsequent academic year. Teachers who are not retained are further classified into the following categories: those who continue teaching in the same district but change schools (internal movers); those who stay in teaching but change districts (external movers); and those no longer teaching in a Texas public school (leavers). On average over the analysis period, 80 percent of Texas teachers were retained each year, five percent were internal movers, another five percent were external movers, and 10 percent were leavers, at least temporarily.

Comparing Teacher Turnover between GEEG and Non-GEEG Schools

The first set of findings (Tables 7.1 to 7.4) illustrates the impact of the GEEG program on teacher turnover rates and, specifically, the differential impact for high-needs schools, teachers assigned to certain subject areas, and for beginning versus experienced teachers. Table 7.1 presents select findings from the baseline analysis of teacher turnover and indicates the expected turnover rates (i.e. the predicted probabilities of turnover) after any non-programmatic influences on teacher turnover are taken into account.

Table 7.1: The Impact of the GEEG Program on the Probability of Teacher Turnover

	Campus Turnover	Internal Mover	External Mover	Leaver
First Year (2005-06)				
GEEG	17.04%*	4.37%	3.85%**	8.81%*
Non-GEEG	20.29%	5.09%	5.34%	9.86%
Second Year (2006-07)				
GEEG	19.84%	5.43%	4.75%	9.71%
Non-GEEG	19.85%	5.09%	5.34%	9.86%

* significant at 5%; ** significant at 1%.
Source: Based on authors' calculations.

The first column indicates the overall impact of the GEEG program on the campus turnover rate (i.e. the share of teacher who are not retained each year) Participating in the GEEG program during the 2005-06 school year lowered the expected probability that a teacher would turn over from 20 percent to 17 percent. Taking all school, teacher, and student characteristics into consideration,

participating in the GEEG program alone lowered the expected turnover rate by approximately three percentage points following the 2005-06 school year.

The remaining three columns of Table 7.1 distinguish between the types of turnover: internal mover, external mover, and leaver. The first year of the GEEG program had a large impact on a teacher's likelihood of moving between districts. In 2006, the probability of moving to another district was nearly two percentage points (1.5) lower in GEEG schools than one would have otherwise expected. The probability of leaving teaching altogether was just over one percentage point lower than would have been expected without the program. There is no evidence that the initial year of GEEG had any effect on the probability that a teacher would change schools within the same school district (i.e., internal mover).

Table 7.1 also demonstrates that turnover rates in GEEG schools returned to normal during the second year of the program. During 2007, there were no significant differences between GEEG and non-GEEG teachers with respect to turnover.

Turnover in High Needs Schools

All GEEG schools had at least 40 %ED students in all five years of the analysis period, and most had more than 80 %ED students. Findings in Table 7.2 illustrate the probability of turnover in GEEG schools compared only with non-GEEG schools having a %ED level within 10 percentage points of the %ED thresholds used to identify schools as eligible for the GEEG program (see Chapter 3 for a review of the %ED thresholds for eligible GEEG schools).

Table 7.2: The Impact of the GEEG Program on the Probability of Teacher Turnover at High Need Schools

	Campus Turnover	Internal Mover	External Mover	Leaver
First Year (2005-06)				
GEEG	18.22%**	4.81%	4.01%**	9.36%*
Non-GEEG	21.47%	5.51%	5.65%	10.32%
Second Year (2006-07)				
GEEG	20.77%	5.76%	5.04%	9.99%
Non-GEEG	20.78%	5.50%	5.64%	10.31%

* significant at 5%; ** significant at 1%.
Source: Based on authors' calculations.

A pattern similar to Table 7.1 persists even though Table 7.2 is restricted to relatively high needs schools. Following the first year of the GEEG program, the turnover rate in GEEG schools was just over three percentage points (3.3) lower than one would have otherwise been expected in a high needs non-GEEG school. This reduction is fully attributable to a lower likelihood of teachers leaving their district (i.e., external mover) or leaving the field of teaching altogether (i.e., leaver). As with Table 7.1, the GEEG program had no statistically significant impact on a teacher's probability of moving to another school within the same district following the 2005-06 school year. Similarly,

there is no evidence that the GEEG program had an impact on turnover between GEEG and high-need non-GEEG schools following the 2006-07 school year.

Math and Science Teachers

GEEG schools had the option of using their grant – both Part 1 and Part 2 funds – to help recruit and retain teachers in hard-to-staff areas, such as math and science. Table 7.3 examines the impact of the GEEG program on turnover among teachers who were specifically certified in either math or science. Roughly 13 percent of GEEG teachers and 15 percent of non-GEEG teachers held either a math or science certificate during the analysis period.

Table 7.3: The Impact of the GEEG Program on the Probability of Turnover Among Math and Science Teachers

	Campus Turnover	Internal Mover	External Mover	Leaver
First Year (2005-06)				
GEEG	14.17%**	3.76%	2.44%**	8.10%
Non-GEEG	20.56%	4.39%	6.50%	9.67%
Second Year (2006-07)				
GEEG	19.41%	5.14%	5.17%	9.15%
Non-GEEG	20.55%	4.39%	6.49%	9.67%

* significant at 5%; ** significant at 1%.
Source: Based on authors' calculations.

Table 7.3 indicates that the first year of the GEEG program had a large impact on turnover among math and science teachers. Specifically, the turnover rate among teachers with math and science certificates was over six percentage points (6.4) lower in GEEG schools than one would have otherwise expected in a non-GEEG school. The reduction is attributed to a reduction in the probability that a teacher would switch school districts (i.e., external mover). There is no evidence that the GEEG program significantly reduced the probability that math and science teachers would be internal movers or leave teaching altogether. As with the earlier tables, there remains no evidence that the initial impact of the GEEG program on teacher turnover carried forward into the second year of the GEEG program.

Beginning and Experienced Teachers

Teacher turnover rates vary significantly by teacher experience in Texas. The average school-level turnover rate for beginning teachers is 26 percent, while the average school-level turnover rate for experienced teachers is only 18 percent.[58] Beginning teachers are also much more likely to move between districts (i.e., external mover) than are more experienced teachers.

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[58] Following NCES, beginning teachers are defined as those with less than four years experience. All other teachers are considered experienced teachers.

Table 7.4 compares the impact of the GEEG program on teacher turnover among beginning teachers and experienced teachers.[59] The GEEG program had a statistically significant impact on the probability of turnover among experienced teachers during the first program year. Specifically, GEEG participation reduced the likelihood that experienced teachers would change districts (i.e., external mover). There is no evidence that the GEEG program had any effect on turnover of beginning teachers in either year.

Table 7.4: The Impact of the GEEG Program on the Probability of Turnover by Teachers Years of Experience

	Campus Turnover	Internal Mover	External Mover	Leaver
Beginning Teachers First Year of GEEG (2005-06)				
GEEG	24.29%	7.16%	5.92%	11.15%
Non-GEEG	25.94%	6.10%	8.11%	11.75%
Beginning Teachers Second Year of GEEG (2006-07)				
GEEG	26.99%	7.67%	7.58%	11.90%
Non-GEEG	27.00%	6.09%	8.11%	11.74%
Experienced Teachers First Year of GEEG (2005-06)				
GEEG	14.43%**	3.52%*	2.77%**	8.31%
Non-GEEG	17.72%	4.81%	3.87%	9.04%
Experienced Teachers Second Year of GEEG (2006-07)				
GEEG	16.74%	4.74%	3.68%	8.54%
Non-GEEG	16.75%	4.80%	3.87%	9.04%

* significant at 5%; ** significant at 1%.
Note: Beginning teachers have less than four years teaching experience. Experienced teachers have four or more years of teaching experience. Teachers for whom years of experience could not be determined were excluded.
Source: Based on authors' calculations.

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[59] Appendix H also provides a graphical presentation of teacher turnover rates among beginning and experienced teachers in GEEG, TEEG, and the rest of public schools in Texas.

Impact of GEEG Plan Design on Teacher Turnover

This section explores the extent to which specific characteristics of a school's GEEG plan impacted teacher turnover. All GEEG schools were required to base Part 1 bonus awards for teachers on measures of student performance. Program guidelines also encouraged schools to design GEEG plans in which Part 1 bonus awards would be no less than $3,000 and no more than $10,000 for teachers. The tables below analyze turnover rates taking into account three features of each school's GEEG plan: (1) the measure of student performance; (2) the unit of accountability; and (3) the proposed distribution of bonus awards.[60]

Measure of Student Performance and Teacher Turnover

As discussed in Chapter 4, a review of GEEG plan applications revealed whether schools measured student achievement on the basis of student performance levels, student performance growth, or a combination of the two.[61] Sixty GEEG schools based their plans exclusively on student performance levels, while 12 based their plans exclusively on performance growth. Twenty-six based their plans on a combination of the two.

Table 7.5 presents findings from an analysis of the relationship between the student performance measure used and teacher turnover in 97 GEEG schools for which data were available.[62] The analysis also accounts for any differences in school characteristics among these GEEG schools.

Table 7.5: The Impact of Student Performance Measures on the Probability of Campus-Level Teacher Turnover in GEEG Schools

	All Teachers	Beginning Teachers	Experienced Teachers
Before GEEG (2002-03 through 2004-05)	19.06%	21.87%	16.91%
First-year GEEG (2005-06)			
Student Performance Gains	26.54%**	39.47%**	20.20%
Student Performance Levels	15.21%**	18.90%	14.15%
Both	15.50%*	17.21%	14.04%
Second-year GEEG (2006-07)			
Student Performance Gains	26.60%*	27.76%	25.17%*
Student Performance Levels	19.68%	26.12%	16.70%
Both	23.53%*	30.70%	18.17%

* significant at 5%; ** significant at 1%.
Source: Based on authors' calculations.

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[60] See Chapters 4 and 5 for a complete description of these indicators.
[61] Two schools are dropped due to incomplete information in their program application.
[62] Of those 98 GEEG applications for which this information was available, one did not provide PEIMS payroll records for the analysis period and was necessarily excluded from any analysis of teacher retention.

The first column in Table 7.5 indicates that the measure of student performance used in GEEG plans had a significant influence on teacher turnover. In the first year of GEEG, schools using exclusively student performance gains had significantly higher turnover than would be otherwise expected in GEEG schools. Schools using exclusively student performance levels, or a combination of levels and growth indicators, had significantly lower turnover than would be expected.

Turnover rates following the second year of GEEG operation varied from those in the previous school year. Turnover returned to normal in schools using exclusively performance level measures. While turnover remained elevated in schools that relied exclusively on performance gains, schools using a combination of level and growth indicators experienced higher than expected turnover rates following the 2006-07 school year.

The last two columns of Table 7.5 illustrate the impact of the student performance measure on the turnover of beginning versus more experienced teachers. The reduction in turnover for schools using exclusively performance levels during the first year of GEEG is mostly attributable to a decrease in turnover rates for more experienced teachers in those schools. The increased turnover rates among beginning teachers explains the increase in turnover in schools exclusively using performance gain measures. Higher turnover in the second year of GEEG, however, is mostly explained by an increase in turnover among more experienced teachers.[63]

Unit of Accountability and Teacher Turnover

Ninety-seven GEEG applications also specified the unit of accountability used to determine Part 1 bonus award eligibility; that is, whether or not the school used school-level performance, teacher team performance, individual teacher performance, or some combination of the three to determine bonus award eligibility. Nearly one-third of the GEEG schools (32) designed plans in which the only unit of accountability was school-level performance. Another 47 schools designed plans that allocated awards based on individual teacher performance. The remaining school plans mixed teacher-level evaluations with more aggregate measures.

Table 7.6 presents findings on the relationship between the unit(s) of accountability used in GEEG plans and teacher turnover in GEEG schools.

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[63] Similar analyses could not be conducted for teachers based upon their subject area certification because the sample was too small.

Table 7.6: The Impact of the Unit of Accountability on the Probability of Teacher Turnover in GEEG Schools

	All Teachers	Beginning Teachers	Experienced Teachers
Before GEEG (2002-03 through 2004-05)	19.13%	22.01%	16.98%
First-year GEEG (2005-06)			
Teacher Only	16.43%	24.29%	13.43%*
School Only	14.10%**	14.44%*	13.94%
Both	18.47%	21.34%	18.12%
Second-year GEEG (2006-07)			
Teacher Only	21.29%	23.11%	21.92%
School Only	17.73%	22.41%	15.92%
Both	19.13%	22.01%	16.98%

* significant at 5%; ** significant at 1%.
Source: Based on authors' calculations.

The unit of accountability used in GEEG plans also had a significant influence on teacher turnover, particularly in the first year of the program. In GEEG schools using school-level performance exclusively, turnover was significantly lower than expected following the 2005-06 school year. Overall turnover rates returned to normal following the second year of GEEG operation (2006-07) no matter the unit of accountability used in a school's plan.

When looking at turnover rates of beginning and experienced teachers in GEEG schools, there is no evidence of differences in the second year of the GEEG program, but there were differences in the first program year. Among beginning teachers, turnover rates fell at schools using a school-level unit of accountability exclusively. Turnover among experienced teachers decreased only at schools using exclusively teachers as the unit of accountability.

Proposed Distribution of Bonus Awards and Teacher Turnover

As discussed in Chapter 5, the Plan Gini calculated for GEEG schools is a measure of the equality of proposed bonus awards specified in GEEG plans. A low Plan Gini indicates that the school's proposed award distribution is highly egalitarian, while a high Plan Gini indicates that the school's proposed award distribution is highly individualistic. A Plan Gini coefficient of one indicates a winner-take-all award distribution plan in which one teacher receives all the bonus award funds and all other eligible teachers receive nothing. Plan Gini's for GEEG schools ranged from a minimum of zero, in which all eligible teachers would receive the same designated maximum award, to a maximum of 0.77, indicating a plan with substantial inequality.

Table 7.7 presents findings on the relationship between the Plan Gini coefficients and teacher turnover in GEEG schools.[64]

<div align="center">

Table 7.7: The Impact of Proposed Award Equality on the Probability of Teacher Turnover

</div>

	All Teachers	Beginning Teachers	Experienced Teachers
Before GEEG (2002-03 through 2004-05)	19.07%	21.43%	17.04%
First-year GEEG (2005-06)			
Minimum Inequality	17.17%	20.73%	16.76%
Maximum Inequality	15.44%	22.05%	12.34%*
Second-year GEEG (2006-07)			
Minimum Inequality	17.14%	21.20%	15.44%
Maximum Inequality	27.26%**	37.67%**	20.66%

* significant at 5%; ** significant at 1%.
Source: Based on authors' calculations.

The degree of inequality in GEEG plans had a significant influence on teacher turnover. While, overall teacher turnover was unrelated to plan inequality in the first year of the GEEG program, experienced teachers did have lower than expected turnover in schools proposing more individualistic award plans.

Overall teacher turnover was impacted by plan inequality in the second year. Schools with relatively individualistic plans (i.e., a higher Plan Gini coefficient) had higher than expected turnover in the second year of the GEEG program. Turnover rates following the 2006-07 school year were not significantly different than in prior years among GEEG schools with a Plan Gini of zero. However, GEEG schools with the most individualistic proposed award distribution (i.e., a Plan Gini coefficient of 0.77) experienced more than an eight percentage point increase in turnover in the second year of GEEG.

The second and third columns in Table 7.7 demonstrate that the relationship between plan inequality and turnover differs between beginning and experienced teachers. In the first year of GEEG, plan inequality had no significant impact on the average turnover rate among beginning teachers – whether or not they had received a bonus award – but led to a lower than expected turnover rate among experienced teachers in schools with more individualistic plans. In the second GEEG program year, plan inequality had no significant impact on the turnover rate among experienced teachers, but led to a substantially higher than expected turnover rate among beginning teachers in schools with highly individualistic award plans (i.e. high Plan Ginis)..

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[64] This analysis incorporates campus fixed effects, and covers the 94 GEEG schools for which necessary data were available. Coefficient estimates and robust standard errors are presented in Appendix H.

Impact of GEEG Bonus Awards on Teacher Turnover

The final section of this chapter explores the extent to which the actual receipt of a GEEG bonus award impacted individual teacher turnover decisions. This analysis relies on the actual Part 1 bonus awards distributed to teachers at the conclusion of the fall 2006 and fall 2007 semesters.[65]

Tables 7.8 and 7.9 present findings on the relationship between the receipt of GEEG bonus awards and teacher turnover. Table 7.8 presents the findings for the first year of GEEG. Table 7.9 presents findings spanning the first two years of GEEG (i.e., both the 2005-06 and 2006-07 school years). It is presumed that teachers know by the end of each GEEG program year whether or not they will receive a bonus award the following fall, and if so, how much. For example, it is assumed that the first GEEG bonus award, based on teacher performance in the 2005-06 school year and distributed in fall 2006, could influence whether or not a teacher returns for the 2006-07 school year.

Table 7.8 presents findings based on an analysis of 85 schools with useable data. As it illustrates, the receipt and size of the GEEG bonus award mattered for teacher turnover. Teachers who received no award were significantly more likely to turnover than those who received some award. The probability of turnover fell as the size of the bonus award increased.[66] This pattern holds for all teachers, beginning teachers, and experienced teachers.

Table 7.8: The Impact of Receiving a GEEG Bonus Award on the Probability of Teacher Turnover in 2005-06

	All Teachers	Beginning Teachers	Experienced Teachers
Before GEEG (2002-03 through 2004-05)	18.80%	22.02%	16.55%
First-year GEEG (2005-06)			
No Award	31.04%**	31.97%**	30.63%**
$1,000 Award	22.04%*	23.70%	21.34%*
$2,000 Award	14.76%**	16.79%	13.95%
$3,000 Award	9.31%**	11.34%**	8.54%**

* significant at 5%; ** significant at 1%.
Source: Based on authors' calculations using data from 85 schools.

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[65] Data on individual awards in 2006 are available for 85 of the 98 GEEG schools for which PEIMS personnel data are available. Data on individual awards in 2007 are also available for 85 schools, but unfortunately not the same 85 schools. Data from both years are only available for 71 GEEG schools. Therefore, the researchers examined both the impact of individual awards from 2006 on turnover in 2006, and, in a separate model, the impact of individual awards in 2006 and 2007. The analysis including awards data from 2007 should be considered preliminary, because the researchers hope to acquire additional data from the 15 schools that did not provide upload data for 2007.

[66] Because schools had the option of withholding awards from teacher who had left the building, the results with respect to no award may be inflated by reverse causation. Leaving may have led to no award rather than the other way around. The data do not indicate whether a teacher would have received an award had he or she stayed.

Receiving a GEEG bonus award of $1,000 or less is associated with a higher rate of turnover than would otherwise be expected among teachers in GEEG schools prior to program implementation. This pattern is greatly explained by the heightened turnover of experienced teachers receiving bonus awards of $1,000 or less. Among beginning teachers, those earning a year-one GEEG award of $1,000 had the same turnover rate as would otherwise be expected in the years prior to the implementation of GEEG.

Teachers who received an award of $1,800 or more were significantly less likely to turnover. Across all three groups of teachers, awards of $3,000 reduced turnover among recipients by approximately half the rate observed before the GEEG program.

Table 7.9 presents the probability of teacher turnover in the first two years of the GEEG program. The findings are based on 71 GEEG schools with necessary data from both school years. Table 7.10 suggests that the patterns observed in the first GEEG program year (see Table 7.9) are amplified in the following school year. Turnover rates surged for teachers not receiving a GEEG bonus award at the conclusion of the fall 2007 semester, but decreased significantly for those who received an award of $2,000 or more. Turnover for beginning teachers was particularly sensitive to the magnitude of the GEEG bonus awards, with a $3,000 award reducing the probability of beginning teacher turnover by 11 percentage points following the 2005-06 school year and by more than 15 percentage points in 2007.

Table 7.9: The Impact of Receiving a GEEG Bonus Award on the Probability of Teacher Turnover in 2005-06 and 2006-07

	All Teachers	Beginning Teachers	Experienced Teachers
Before GEEG (2002-03 through 2004-05)	17.94%	21.26%	16.22%
First-year GEEG (2005-06)			
No Award	28.58%**	30.35%*	27.32%**
$1,000 Award	20.05%	22.13%	18.71%
$2,000 Award	13.28%**	15.39%*	12.03%**
$3,000 Award	8.29%**	10.20%**	7.25%**
Second-year GEEG (2006-07)			
No Award	43.84%**	48.04%**	39.76%**
$1,000 Award	25.75%**	28.76%	22.18%*
$2,000 Award	12.58%*	14.27%	10.16%*
$3,000 Award	5.05%**	5.84%**	3.78%**

* significant at 5%; ** significant at 1%.
Source: Based on authors' calculations.

Chapter Summary

This chapter demonstrates that the GEEG program had a significant impact on teacher turnover. Compared with non-GEEG schools, schools participating in the GEEG program had significantly lower teacher turnover following the first year of the program. The effect was particularly pronounced for experienced teachers and teachers certified in math or science. However, turnover rates in GEEG schools returned to normal in the second year of GEEG.

Analyses also suggest that specific characteristics of schools' GEEG plans impacted teacher turnover. Compared with other GEEG schools, those using more individualistic programs (as indicated either by the unit of accountability or the Plan Gini coefficient) experienced lower than expected turnover among experienced teachers, but not among beginning teachers. On the other hand, individualistic bonus award plans were related to higher turnover among beginning teachers.

Analyses strongly indicate that the size of the GEEG bonus award received by a teacher is very influential to turnover decisions. Turnover increased among GEEG teachers receiving no bonus award or a relatively small award, while it greatly decreased among teachers receiving large bonus awards. As the size of the GEEG bonus award increased, the probability of teacher turnover decreased.

CHAPTER 8
The Estimated Effect of GEEG on Student Test Score Gains

This chapter examines of the association between GEEG program participation and student test score gains. Evaluators compared student test score gains in GEEG and non-GEEG schools and explored the test score gains of students within GEEG schools. The latter provides evidence about the association between GEEG plan design features and student test score gains, specifically, how measures of student performance, units of accountability, as well as proposed maximum bonus awards may influence test score gains.

Key Policy Questions

This chapter addresses the following questions:

- How do student test score gains differ between GEEG and non-GEEG schools?

- How do test score gains in GEEG schools differ based on the design features of each school's GEEG plan?

Key Policy Points

This chapter highlights and expands upon the following key policy points based on a review of student test score gains in GEEG and non-GEEG schools.

- All high-performing, high poverty schools were eligible to participate in the GEEG program, and teachers in those schools had to vote in favor of program participation.[67,68] This means estimates of the GEEG treatment effect will be biased unless researchers successfully control for all of the school and student factors that influenced both GEEG participation and student performance during the program years.

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[67] High-performing refers to schools that achieved a high accountability rating or schools that improved from one year to the next as defined by the state's Comparable Improvement measure. Comparable Improvement (CI) is a measure that calculates how student performance on the TAKS mathematics and reading/English language arts tests has changed (or grown) from one year to the next, and compares the change to that of the 40 schools that are demographically most similar to the target school. Student demographics used to construct groups include percent of African American, Hispanic and white students, percent of economically disadvantaged students, percent of limited English proficient students, and percent of mobile students. CI is calculated separately for reading/English language arts and mathematics, based on individual student *Texas Growth Index* (TGI) values. The student-level TGI values are aggregated to the campus level to create an average TGI for each campus.

[68] Funds were distributed in the form of non-competitive grants to schools that were in the top third of Texas schools (in 2004-05 school year) in terms of percentage of economically disadvantaged students and either carried an accountability rating of Exemplary or Recognized, or were in the top quartile on TEA's Comparable Improvement measure. Comparable improvement is a measure that calculates how student performance on the TAKS mathematics and reading/English language arts tests has changed (or grown) from one year to the next, and compares the change to that of the 40 schools that are demographically most similar to the target school.

- The evidence regarding GEEG program impacts on student test score gains is inconclusive. Depending on the specification of the statistical model used, the analysis indicates that GEEG had a weakly positive, negative or negligible effect on student test score gains. The instability in the estimates may be related to common measurement problems associated with standardized tests or the statistical methods used to control for selection bias.

- There is no evidence of a significant association between student test score gains and GEEG plan design features in schools. However, the small number of GEEG schools adopting any given plan design necessarily makes these estimates imprecise, and could be masking significant effects.

- Intermediate outcomes such as teacher attitudes, teacher behavior, and institutional dynamics associated with GEEG program participation may offer more appropriate outcomes measures for evaluating the GEEG program.

- Teacher recruitment and retention provides another important outcome to consider when evaluating the GEEG program, as seen in Chapter 7. In general, educator incentive systems can raise the overall quality of the workforce through the differential recruitment and retention of more effective workers. Thus, in the long run, student performance may increase significantly simply through differential recruitment and retention of high-performing teachers.

Challenges for Estimating the Relationship between GEEG Program and Student Test Score Gains

Several issues made evaluating the association between the GEEG program and student test score gains particularly challenging. While the evaluation team implemented numerous strategies to address the challenges, they concluded the issues were so pervasive that conclusions about the effect of the GEEG program on student achievement could not be estimated with any reasonable degree of confidence. Thus the purpose of this introductory section is to describe several factors that complicated the evaluation design and then, in the next section, illustrate how estimates varied across a variety of modeling strategies.

A primary challenge for estimating the relationship between the GEEG program and student test score gains has to do with all high–performing, high poverty schools being eligible to participate in GEEG. It is very difficult to identify a logical comparison group against which the evaluation team can compare test scores of students enrolled in GEEG schools because all possible comparator schools are systematically different from the GEEG program schools (i.e., they were either not high-performing or not high poverty in the 2004-05 school year). If the characteristics that led to GEEG schools becoming eligible for the program are related to student test scores in subsequent school years, estimates of program effectiveness will be misleading unless these characteristics are accounted for when evaluators estimate the association between the GEEG program and student test scores.

The identification of a logical comparison group is further complicated because the GEEG program was not the only statewide educator incentive plan being implemented during the analysis period. The Texas Education Agency rolled out a similar educator incentive program for more than 1,000 schools during the second year of GEEG implementation (2006-07 school year), which funded incentive pay plans for the highest performing, high poverty schools not already in GEEG. Essentially, the pool of schools that could have served as a constructed comparison group were exposed to a similar educator incentive program before the GEEG program had a chance to be implemented and independently evaluated.

Another challenge emerges from the outcome of interest being student test score gains on TAKS. Volatility or noise in test scores measured by standardized assessments like the TAKS test can provide misleading school rankings and estimates of test score gains, particularly when ranking, or test scores tend to be located at either extreme of the distribution.[69] This is particularly relevant when studying the association between the GEEG program and student test scores because the selection criteria by which GEEG schools became eligible to participate in the program required schools to have high test scores or large test score gains. As described in an important study by Chay, McEwan, and Urquiola (2003), since noise in the student test scores tends to have an average value over time as the literature seems to suggest (i.e., what is referred to as regression to the mean),

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[69] Volatility or noise in test scores refers to the fact that standardized assessments are imperfect ways of measuring student knowledge and a student's performance on a standardized assessment can be influenced by external factors (Kain and Staiger, 2001, 2002; Chay, McEwan, and Urquiola, 2003; Jansen, Gronberg, and Booker, 2006). These studies further note that volatility in measures of school performance from one year to the next may also be associated with changes in the student body, and non-persistent changes such as teacher turnover.

the subsequent test scores in high-performing schools selected into a program such as GEEG would decrease over time irrespective of program participation.

While the evaluation team adopted a multi-strategy approach to address these challenges, as illustrated in the next section of this chapter, they found that the estimates of the relationship between the GEEG program and student test scores varied across a variety of modeling strategies. This is particularly problematic because inconsistent estimates prevent the evaluators from reliably making a claim about the effect of the GEEG program. For those readers interested in learning more about types of evaluation designs for investigating the impact of a program or policy interventions, and how the current study of student test score gains situates within the broader context, Appendix I provides a more detailed discussion of the topic.

Student Test Score Gains in GEEG vs. Non-GEEG Schools

When estimating the association between the GEEG program and student test score gains, a key piece of the evaluation process is to explore whether the findings are sensitive to a variety of modeling strategies and assumptions. Researchers will typically check if their findings can be confirmed using a variety of modeling strategies or approaches. If findings from the evaluation are similar across a number of predictions from a series of secondary modeling strategies and assumptions, then the evidence about the effect of the program or policy being evaluated is believed to be more plausible. However, if estimates are not relatively consistent, there may be other factors outside the control of the evaluator that influenced the results.

Recognizing a number of challenges prevented the evaluation team from reliably making a claim about the effect of the GEEG program, this section presents findings from a series of modeling strategies that illustrate inconsistency in estimates across a variety of modeling strategies. Evaluators first summarize key variables and modeling strategies to estimate the relationship between the GEEG program and student test score gains and then report findings from each of the four approaches.

Summary of Modeling Strategies to Estimate the Association between the GEEG Program and Student Test Score Gains

Before summarizing the modeling strategies used to estimate the association between GEEG and student test score gains, Figure 8.1 provides an overview of the percentage of students scoring proficient in GEEG and non-GEEG schools during the analysis period (2002-03 to 2007-08 school year). Results are based on all public school students and campuses in Texas and show that GEEG schools' percent proficiency was consistently lower than non-GEEG schools, but within ten percentage points, on both Reading and Mathematics, each year. Table 2 of Appendix K provides similar results when restricting analyses to only those schools with 50 percent or more of their students qualifying for free and reduced price lunch. While Figure 8.1 illustrates the percent of students proficient on TAKS, the four modeling strategies employed by evaluators – and detailed below – examines the effect of GEEG on test score gains over time.

Figure 8.1: Percentage of Students Scoring Proficient in GEEG and Non-GEEG Schools by Subject and School Year*
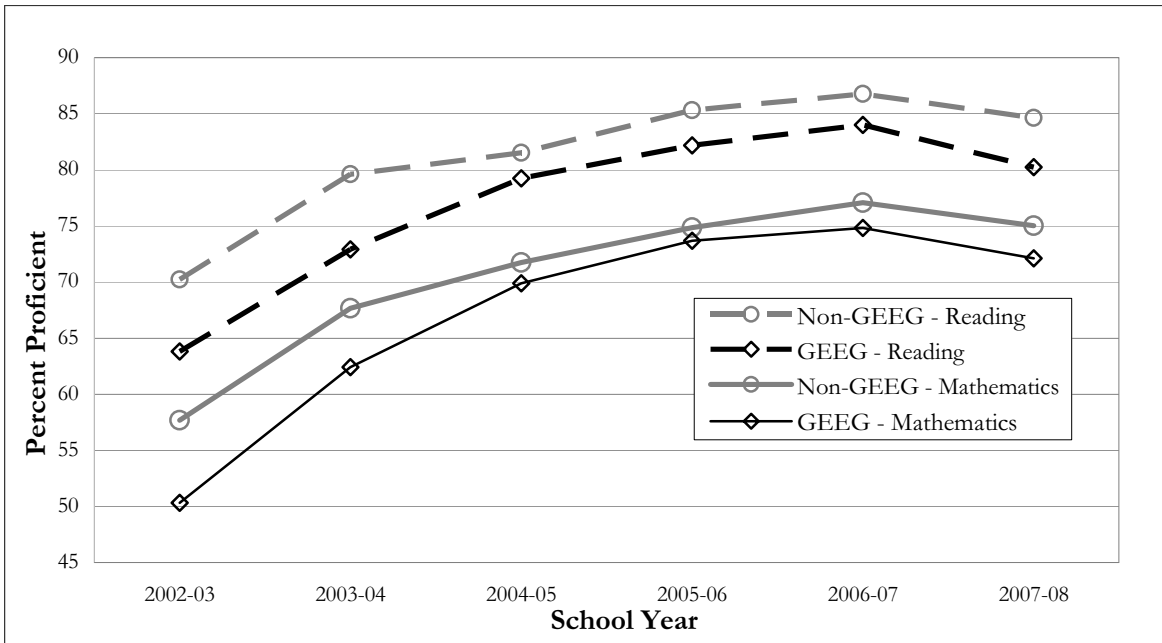
Source: Based on authors' calculations. * Proficiency score equals 2100 scale score points for all grades, years, and subjects.

Table 8.1 summarizes the four statistical modeling strategies that are reported in this subsection of the chapter. Modeling strategies varied based on construction of the GEEG effect variable and other variables that control for student- and school-level characteristics that may bias estimates of the association between the GEEG program and student test score gains.

Table 8.1: Summary of Modeling Strategies to Estimate GEEG Effect on Student Test Score Gains

Modeling Strategy	GEEG Effect	Fixed Effects	Dependent Variables	Sample
Strategy 1	GEEG indicator (0,1)			All schools with more than 5 students. All students in grades 3 to 11 with valid mathematics or reading test scores.
Strategy 2	GEEG indicator (0,1) with Pre-GEEG specific time trend (0,1)	Student	Standardized test score gains in mathematics and reading	
Strategy 3	GEEG indicator by school year (2005-06 (0,1); 2006-07 (0,1); 2007-08 (0,1)) with Pre-GEEG specific time trend (0,1)			
Strategy 4	GEEG indicator (0,1)	Student and school		

The first modeling strategy compares how a student who attends a school participating in the GEEG program performs compared to how that student is expected to have performed in the absence of the GEEG program. The GEEG indicator variable takes on a value of one for any students enrolled in a school participating in the GEEG program during the 2005-06, 2006-07, or 2007-08 school years. The GEEG indicator variable equal zero for all students during the 2003-04 and 2004-05 school years and any student not enrolled in a school participating in the GEEG program for each of the three program years (i.e., 2005-06, 2006-07, or 2007-08 school years).

The first modeling strategy also contains a student fixed effect estimator to control for unobserved individual student differences that do not change over time such as gender, race/ethnicity, ability, and motivation. This is an important component of the strategy if there are unobserved differences in characteristics of students enrolled in schools participating in the GEEG program and those students enrolled in schools not participating in the GEEG program. Subsequent modeling strategies take into account additional variables and statistical issues to further identify a GEEG student achievement effect.

The second modeling strategy adds a pre-GEEG specific time trend variable which is equal to one for all students enrolled in a school participating in the GEEG program in any school year in which a student was enrolled in that school. The pre-GEEG indicator is one way evaluators can explore if increases in student test scores during treatment years may not be due to the GEEG program, but rather trends in test scores during pre-treatment years that could have persisted with or without the GEEG program (e.g., maturation effect).

Evaluators further explore the relationship between student test score gains during treatment and pre-treatment years using the third modeling strategy identified in Table 8.1. This strategy estimates the GEEG program treatment effect by year accounting for pre-program trends in GEEG and non-GEEG schools, as well as controlling for other student- and school-level covariates. Instead of a single GEEG effect variable as defined in the first and second modeling strategy, there are three GEEG effect variables – one variable for each year of the GEEG program. Additionally, this strategy can inform potential delayed intervention effects, insofar as it takes several years for the GEEG program to be implemented at participating schools or for school personnel in GEEG schools to respond to the incentive program.

The fourth modeling strategy explores the relationship between GEEG program participation and student test score gains when controlling for student and school fixed effects. A school fixed effect estimator accounts for time-invariant school characteristics such as quality of teachers, the curriculum, and so forth. This is the most restrictive approach since a student must have valid test score observations in three consecutive years.

All models use a student's spring-to-spring test score gain in mathematics and reading as the outcome variable. Test scores are measured on the state's high-stakes accountability test, TAKS. Since raw scale scores from TAKS are not expressed on the same developmental scale from one year to the next or from one grade to the next, and the structure of the TAKS tests may lead to smaller or larger gains at various points on the achievement distribution, this study standardizes test scores into z-scores for each student by grade, year, and subject.

Standardized scores have a mean of zero and standard deviation of one. A simple gain score was constructed by subtracting scores at time t from those at time $t-1$. A negative z-score indicates a

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student's test score gain is below the mean for all tested students in that subject, grade, and year, while a positive z-score indicates a student's test score gain is above the distribution mean. A standardized gain score of zero means a student test score from one year to the next increased the average amount for that grade, year, and subject in the state.[70]

This analysis uses data on individual student performance in mathematics and reading from all public elementary and secondary schools in Texas that serve grades 3 to 11. There are more than 10.8 million student test score observations in the full sample, of which 134,893 come from GEEG schools. Of these observations, 51,095 are from pre-GEEG years (2003-04 through 2004-05 school years) and 83,798 from GEEG years (2005-06 through 2007-08 school years). About 43 percent of valid test score observations from GEEG years come from schools that qualified for GEEG participation based on their accountability rating, as opposed to being from schools that qualified for GEEG participation based on Comparable Improvement (see Table 1 of Appendix J for more information).

Select model specifications also separate the GEEG effect for those GEEG schools identified as eligible based on their Comparable Improvement score or accountability rating index for three reasons. First, sample statistics reported in Appendix J, Table 1 display sizable mean achievement gain differences among these two groups of schools (.07 standard deviation units in mathematics and .02 standard deviation units in reading). Second, there are systematic differences among accountability rating schools and Comparable Improvement schools in terms of plan design features proposed by GEEG schools. Third, GEEG qualification criteria are characterized by greater than expected volatility from one year to the next, which may confound estimated associations of GEEG plan design features and student achievement gains.

Table 8.2 provides a summary of the estimated effect of the GEEG program on student achievement gains for each of the four modeling strategies. Estimated effects are provided for all GEEG schools, Comparable Improvement schools, and those who were eligible for GEEG based on a high accountability rating. The table indicates whether the estimated effect of the GEEG program on test score gains is positive, negative, or no effect and the strength of the estimate (i.e., small, moderate, or large).

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[70] Evaluators also explored the robustness of estimates to different gain specifications. More specifically, evaluators took the statewide distribution of the students' prior year assessment scores and divided them into 20 equal intervals. The mean and standard deviation of the test score gain was then computed for all students starting in a particular interval and a student's test score gain was standardized by taking the difference between that student's nominal gain and the mean gain of all students in the interval over the standard deviation of all student gains in the interval. Results are similar to those contained in this report. The standardized gain score has a mean of zero and standard deviation of one and can be interpreted as an individual student's test score gain compared to the mean test score gain at a particular place in the achievement distribution. This standardization strategy further accounts for the possibility that it is easier to achieve gains when students have substantial room for improvement than it is when students are already relatively high achievers.

Table 8.2: Summary of the Estimated Effect of GEEG Program Participation on Student Test Score Gains in Mathematics and Reading

Modeling Approach	Subject	Sample	Estimated Effect
Strategy 1	Mathematics	All	Positive (Moderate)
	Reading		Positive (Small)
	Mathematics	Comparable Improvement	Positive (Moderate)
	Reading		Positive (Small)
	Mathematics	Accountability Rating	Positive (Small)
	Reading		Positive (Small)
Strategy 2	Mathematics	All	Negative (Moderate)
	Reading		Negative (Moderate)
	Mathematics	Comparable Improvement	Negative (Small)
	Reading		Negative (Small)
	Mathematics	Accountability Rating	Negative (Moderate)
	Reading		Negative (Small)
Strategy 3	Mathematics	All	Year 1: Negative (Small) Year 2: Negative (Small) Year 3: Negative (Large)
	Reading		Year 1: No effect Year 2: Negative (Small) Year 3: Negative (Small)
	Mathematics	Comparable Improvement	Year 1: No effect Year 2: No effect Year 3: Negative (Small)
	Reading		Year 1: No effect Year 2: Negative (Small) Year 3: Negative (Small)
	Mathematics	Accountability Rating	Year 1: Negative (Small) Year 2: Negative (Moderate) Year 3: Negative (Large)
	Reading		Year 1: Negative (Small) Year 2: Negative (Small) Year 3: Negative (Moderate)
Strategy 4	Mathematics	All	Negative (Small)
	Reading		Negative (Small)
	Mathematics	Comparable Improvement	No effect
	Reading		No effect
	Mathematics	Accountability Rating	Negative (Moderate)
	Reading		Negative (Moderate)

Source: Based on authors' calculations

What is the Association between the GEEG Program and Student Test Score Gains?

Figure 8.2 displays estimates from the first modeling strategy, which compares how a student who attends a school participating in the GEEG program performs compared to how that student is expected to have performed in the absence of the GEEG program. A positive (or negative) and statistically significant relationship suggests, on average, students enrolled in schools participating in the GEEG program had larger (or smaller) test score gains than they were expected to have in the absence of the GEEG program. A relationship that is not statistically significant means evaluators are unable to conclude if there is a difference in test score gains.

As reported in Figure 8.2, estimates indicate student test score gains in mathematics were approximately.06 standard deviations greater than expected for the average student enrolled in a school participating in the GEEG program. There were also significant test score gain differences in reading among students enrolled in GEEG schools during program years (2005-06 through 2007-08 school years), although the magnitude of this effect (0.0492) is smaller than it was in mathematics.

Evaluators also examined the effect of GEEG program participation by the criteria on which a school qualified to participate in the program. Qualified schools had to meet one of two performance criteria, either a levels-style measure based on their state accountability rating (i.e., accountability rating schools) or a gains-style measure based on their Comparable Improvement ranking (i.e., Comparable Improvement schools). Figure 8.2 indicates Comparable Improvement schools made larger test score gains in mathematics than accountability rating schools (0.0831 vs. 0.0334 standard deviation units). The difference is less pronounced in reading (0.0636 vs. 0.0322), but the magnitude of the effect is still about twice as large in Comparable Improvement schools.

Estimates displayed in Figure 8.2 do not take into consideration the quality of GEEG schools. Increases in student test scores during treatment years may not be due to the GEEG program, but rather trends in test scores during pre-treatment years that could have persisted with or without the GEEG program (e.g., maturation effect). Thus, the next subsection explores the association between the GEEG program and student test score gains when accounting for pre-existing trends in student test scores.

Figure 8.2: Effect of GEEG Program Participation on Mathematics and Reading Test Score Gains
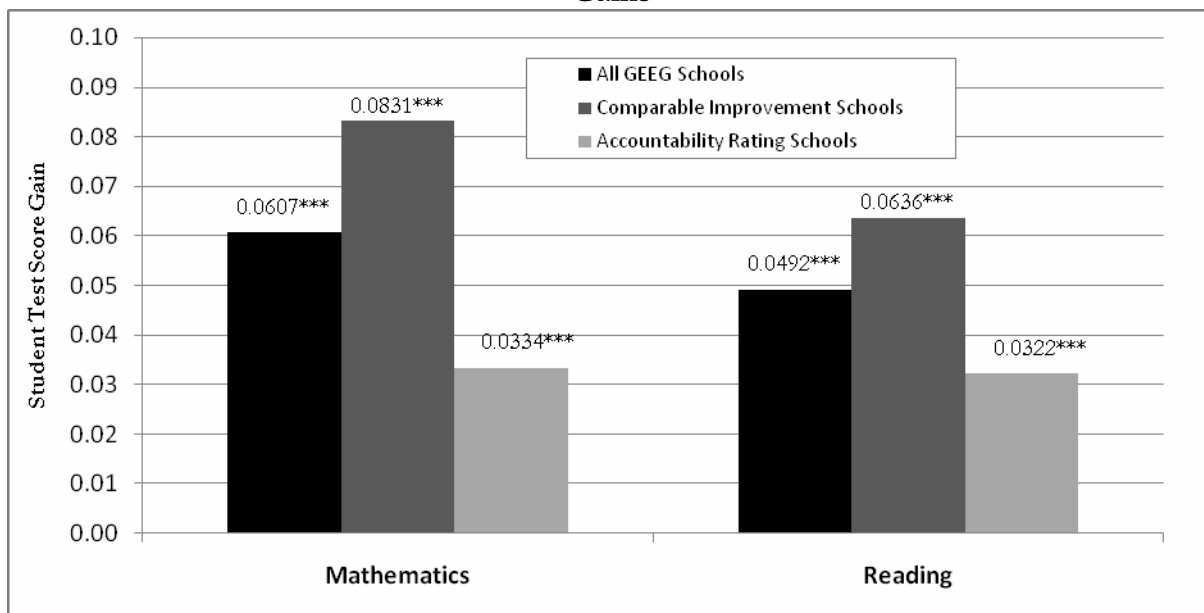
Source: Based on authors' calculations.

Note: *** indicates estimate is statistically significant at .01 level. Each value reports estimate from separate regression equation. Student test score gain differences between Comparable Improvement and accountability rating schools are statistically significant at $\alpha = .05$ level.

What is the Association between the GEEG Program and Student Test Score Gains when Accounting for Pre-Existing Trends in Test Scores?

Figure 8.3 displays estimates from the second modeling strategy identified in Table 8.1, which is one way evaluators can explore if increases in student test scores during treatment years may not be due to the GEEG program, but rather trends in test scores during pre-treatment years that could have persisted with or without the GEEG program. Estimates represent the difference between student test score gains realized during GEEG program years (i.e., 2005-06 to 2007-08 school year) and projected student test score gains if students continued to perform on a trajectory similar to pre-GEEG years (i.e., 2003-04 to 2004-05 school years). A positive (or negative) and statistically significant relationship suggests, on average, students enrolled in schools participating in the GEEG program had larger (or smaller) test score gains relative to the trajectory of performance in GEEG schools during GEEG years. A relationship that is not statistically significant means evaluators are unable to conclude if there is a difference in test score gains.

Estimates indicate the GEEG program had a negative average effect on student test score gains in mathematics and reading relative to the trajectory of performance in GEEG schools during pre-GEEG years. For example, when the sample includes all schools that participated in the GEEG program, student test score gains in mathematics in GEEG schools were, on average, 0.0695 standard deviations below the pre-intervention trend, whereas gains in reading are 0.0320 standard deviations below the average pre-existing trends in GEEG schools. When restricting the GEEG sample to either schools qualifying for program participation based on their Comparable Improvement score or accountability rating, estimates similarly suggest a negative GEEG program effect. The difference is not statistically significant in reading for Comparable Improvement schools.

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Figure 8.3: Estimated Effect of GEEG Program Participation on Mathematics and Reading Test Score Gains when Accounting for Pre-Existing Trends in Test Scores
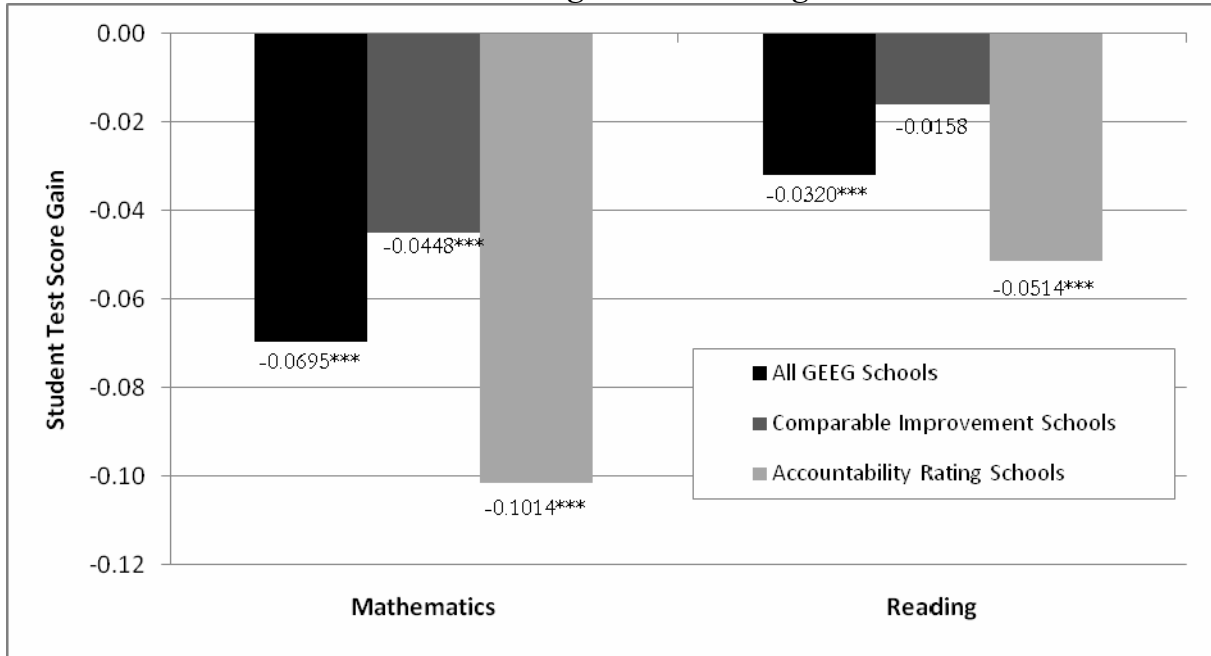
Source: Based on authors' calculations.
Note: *** indicates estimate is statistically significant at .01 level.

However, it is important to remember a negative association reported in Figure 8.3 does not necessarily mean that students enrolled in GEEG schools performed worse than students enrolled in non-GEEG schools. When subtracting this difference from predictions of future performance based on pre-intervention trends in performance, student test score gains in GEEG schools are still positive and statistically different from zero in most cases. This means students enrolled in schools participating in the GEEG program learn the same or more than expected in a single school year as measured by the TAKS mathematics and reading assessments, even though these gains do not keep pace with projected student test score gains if students continued to perform on a trajectory similar to pre-GEEG years.

The difference between student test score gains realized during GEEG program years and those gains projected if students continued to perform on a trajectory similar to pre-GEEG years reported in Figure 8.3 may also be an artifact of a sudden spike in test scores in 2004-05 school year (i.e., the year in which schools were identified as eligible for the GEEG program due to high achievement). For example, Figure 8.4 plots the predicted gain scores for successive cohorts of students in GEEG schools from the 2003-04 to 2007-08 school years relative to non-GEEG schools.[71] The spike in pre-GEEG test score gains in the 2004-05 school year is an anomaly not seen in non-GEEG schools. That year, the increase in GEEG test score gains was especially pronounced compared to non-GEEG schools. It suggests that estimating the GEEG treatment effect relative to pre-existing

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[71]Estimated gain scores were obtained from a simple regression analysis that controlled for observable student and school characteristics. Figure 8.4 displays the difference in average test score gains among GEEG and non-GEEG schools whereby the zero line represents the performance on non-GEEG schools.

trends in student test score gains may intensify bias (see dotted vertical line in Figure 8.4). That is, if larger than typical student test score increases on TAKS have an average value over time (i.e., 2005-06 through 2007-08 school years), there is a possibility that estimates of the GEEG treatment effect will indicate that the GEEG program has a negative effect simply because test score results were moving back to the mean performance for that group of schools.[72]

Figure 8.4: Student Test Score Gains in Mathematics and Reading in Schools Participating in the GEEG Program
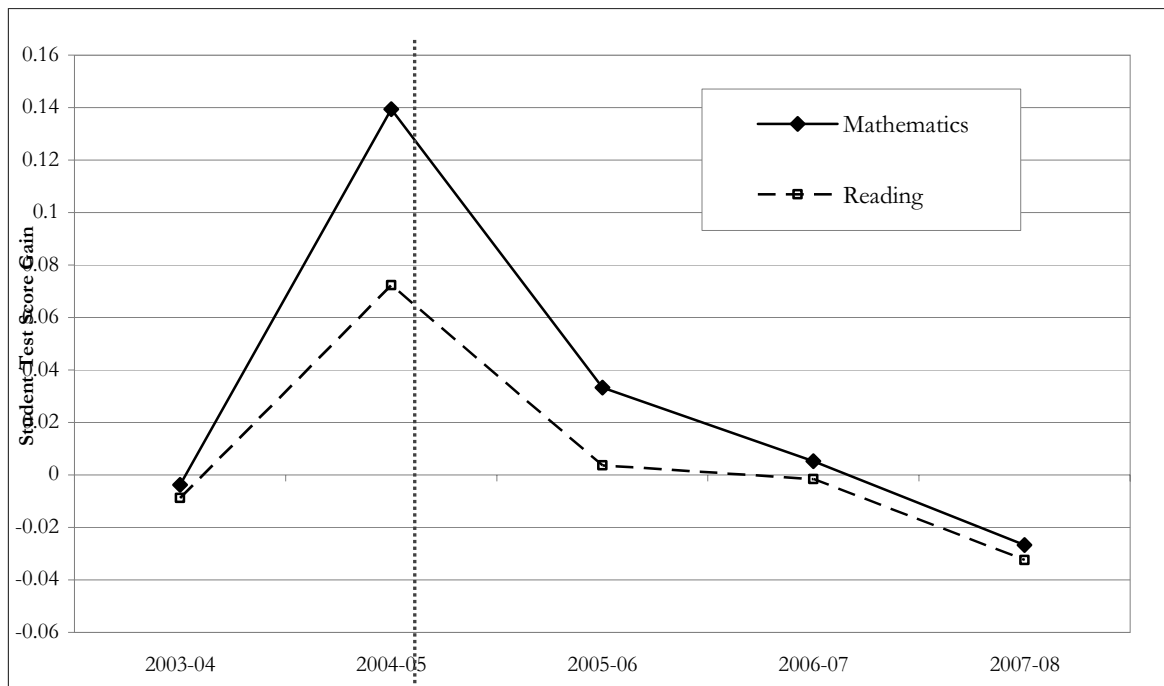
Source: Based on authors' calculations.

What is the Association between the GEEG Program and Student Test Score Gains by Year of Implementation and Accounting for Pre-Existing Trends in Test Scores?

Evaluators further explore the relationship between student test score gains during treatment and pre-treatment years using the third modeling strategy identified in Table 8.1. This strategy estimates the GEEG program treatment effect by year accounting for pre-program trends in GEEG and non-GEEG schools, as well as controlling for other student- and school-level covariates. This strategy can also inform potential delayed intervention effects, insofar as it takes several years for the GEEG program to be implemented at participating schools or for school personnel in GEEG schools to respond to the incentive program.

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[72] This may also be exacerbated by the fact that there are only two pre-GEEG time points in time prior to implementation and methodologists indicate more pre-intervention observations are needed to sufficiently estimate pre-existing trends. Glass (1997) reports anything less than 10 pre-intervention time points is inadequate. Bloom (2002) reports that, "In principle, the approach could be used with only one or two years of baseline test data. However, this would markedly reduce its protection against errors due to unusual student performance or local idiosyncratic events" (p.16).

Figure 8.5: Estimated Effect of GEEG Program Participation on Mathematics and Reading Test Score Gains by Year of Implementation and Accounting for Pre-Existing Trends in Student Test Score Gains
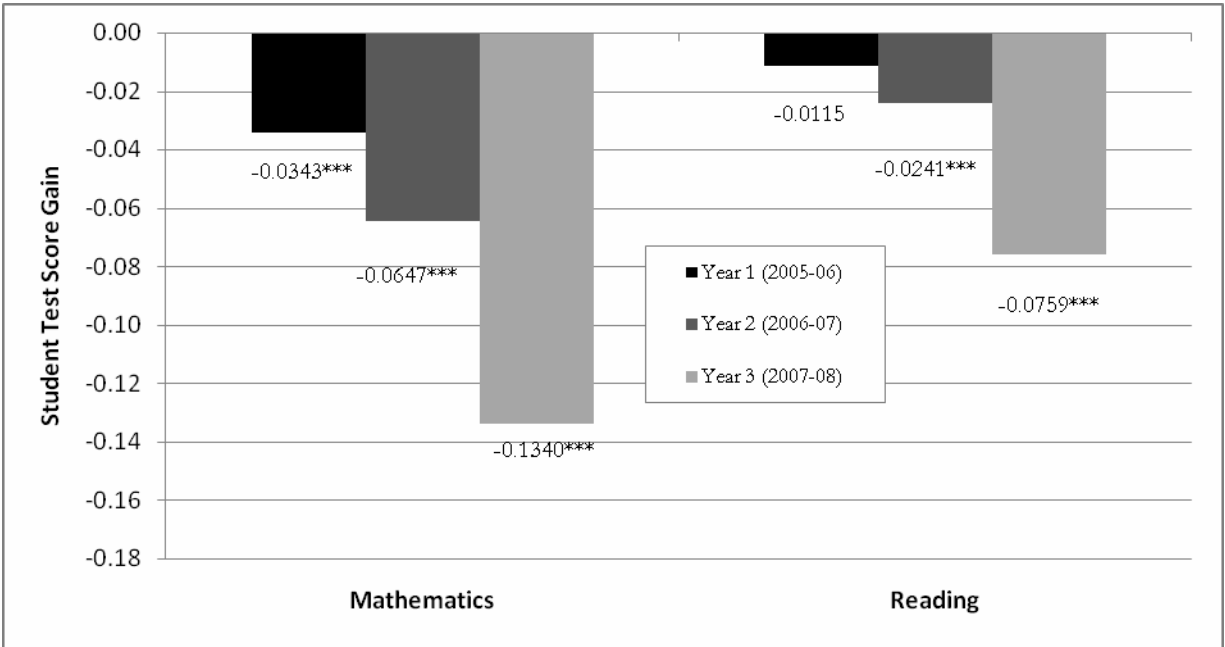
Source: Based on authors' calculations.
Note: *** indicates estimate is statistically significant at .01 level.

As displayed in Figure 8.5, estimates from the third modeling strategy indicate a negative relationship between GEEG program participation and student test score gains that grows increasingly negative in years two and three of program participation.[73] Although estimates run counter to expectation if intervention effects were lagged, they lend support for the argument that the trajectory of pre-intervention test scores provides misleading estimates of future performance. Furthermore, even though the estimates of these differences are negative, standardized gain scores in mathematics and reading for students enrolled in GEEG schools are either indistinguishable from average or greater than average (average in this context means one year worth of growth as measured by TAKS).

What is the Association between the GEEG Program and Student Test Score Gains using Student and School Fixed Effects?

Figure 8.6 displays estimates from the fourth modeling strategy identified in Table 8.1. This strategy explores the relationship between GEEG program participation and student test score gains when controlling for student and school fixed effects. This is the most restrictive approach since a student must have valid test score observations in three consecutive years. Estimates range from no effect when the sample of GEEG schools was restricted to Comparable Improvement schools to a large negative effect when the sample of GEEG schools was restricted to accountability rating schools.

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[73] Evaluators found a similar pattern of results when restricting the GEEG sample to either schools qualifying for program participation based on their Comparable Improvement score or accountability rating index (see Table 8.4 for a summary or, for more detailed results, see Tables 2 – 12 in Appendix J).

Figure 8.6: Effect of GEEG Program Participation on Mathematics and Reading Test Score Gains Using Student and School Fixed Effects
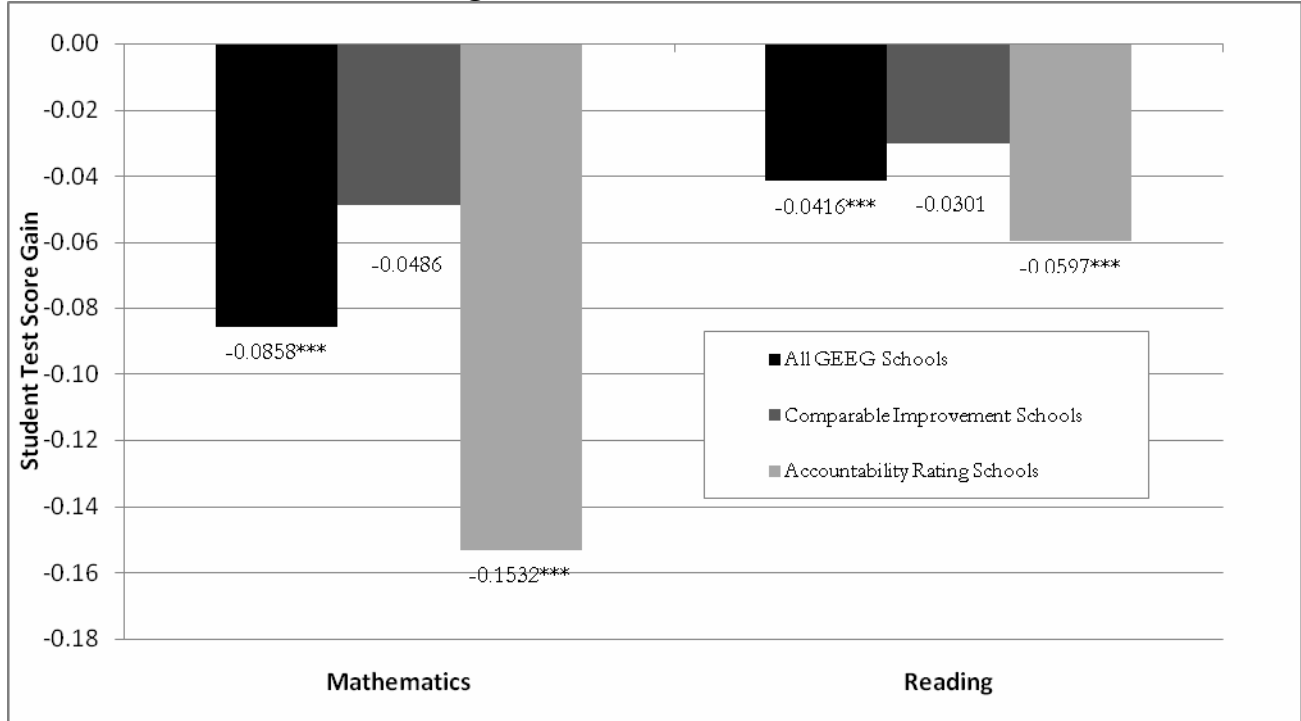
Source: Based on authors' calculations.
Note: *** indicates estimate is statistically significant at .01 level. Each value reports estimate from separate regression equation.

In summary, across the four models explored, the evidence regarding GEEG program impacts on student test scores is inconclusive. Depending on the model specification, the analysis indicates that GEEG had a weakly positive, negative or negligible effect on student test score gains. The instability in the estimates may be related to common measurement problems associated with standardized tests or the statistical methods used to control for selection bias.

GEEG Plan Design Features and Student Test Score Gains

This section reports estimates on the association between student test score gains in mathematics and reading and design features of educator incentive award programs used in schools participating in the GEEG program. Specific design features include the proposed maximum Part 1 bonus award amounts for teachers, measures of student performance, and the unit of accountability. Findings need to be interpreted with caution since some sample sizes are small (i.e., <30 schools). Readers should further note estimates come from comparisons of student test score gains in only those schools that participated in the GEEG program. Overall, there is no evidence of any association between student test score gains and the design features used in GEEG schools' incentive pay plans.

What is the Association between the Proposed Maximum Bonus Award and Student Test Score Gains in GEEG Schools?

The proposed maximum bonus award represents the total bonus award amount that a teacher could earn if he or she met all possible Part 1 award criteria identified in a school's GEEG plan application. The average proposed maximum bonus award in all GEEG plans was $3,716, ranging between the lowest proposed maximum bonus award of $1,429 and the highest of $10,937. The proposed maximum bonus award could not be determined for five schools, thus those schools are excluded from this regression sample.

Table 8.3 presents findings from two sets of analyses of the relationship between student test score gains and the proposed maximum bonus award. The first approach examines the linear association between the proposed maximum bonus award amounts and test score gains, while the second approach examines the nonlinear association between the proposed maximum bonus award amounts and test score gains. Findings from both of these approaches do not reveal a significant association between the proposed maximum bonus award and student test score gains, meaning the average test score gain in mathematics and reading does not change as the size of the proposed bonus award increases.

Table 8.3: Estimated Effect of GEEG on Mathematics and Reading Test Score Gains by Maximum Proposed Bonus Award

	Mathematics (Standardized Gain Score)		Reading (Standardized Gain Score)	
	Linear Association	Nonlinear Association	Linear Association	Nonlinear Association
Maximum proposed bonus	0.0067	0.0387	-0.0017	0.0343
	(0.0096)	(0.0365)	(0.0088)	(0.0335)
	[85]	[85]	[85]	[85]
Maximum proposed bonus (quadratic)	...	-0.0033	...	-0.0037
	...	(0.0036)	...	(0.0033)
	...	[85]	...	[85]

Source: Based on authors' calculations.
Note: Standard errors reported in parentheses. Number of GEEG schools reported in brackets [ ]. ... indicates referent category.

What is the Association between the Measure of Student Performance and Student Test Score Gains in GEEG Schools?

Evaluators also examined student test score gains within GEEG schools by looking at associations between test score gains and the way in which schools measured teachers' contributions to student learning. Measures of student performance are defined as whether a school's GEEG plan rewards high-performing teachers based on student attainment (level score), student growth, or a combination of the two. A measure based on student attainment, used exclusively by 61 percent of GEEG schools, is defined as a school measuring teachers' contribution to student performance

based on the test score or proficiency levels students attain that school year. A measure of student growth, used exclusively by 13 percent of GEEG schools, is defined as a school measuring a teachers' contribution to student performance by the change in student performance over time. About 25 percent of GEEG schools used both student attainment and student growth measures.

Table 8.4 displays the relationship between the measure of student performance and student test score gains in mathematics and reading. The referent category in this set of analyses is GEEG schools using both student attainment and student growth measures, meaning the estimates reported in Table 8.4 are compared to student test score gains in those schools that identified the use of both student attainment and student growth measures. Results indicate there is no significant association between the measure of student performance used in a GEEG school plan and the school's test score gains in mathematics and reading.

Table 8.4: Estimated Effect of GEEG on Mathematics and Reading Test Score Gains by Type of Student Performance Measure

	Mathematics (Standardized Gain Score)	Reading (Standardized Gain Score)
Attainment Only (i.e., Level Score)	0.0148	-0.0278
	(0.0339)	(0.0310)
	[54]	[54]
Growth Only	0.0197	0.0206
	(0.0535)	(0.0490)
	[11]	[11]
Growth + Attainment (referent category)	...	...
	...	...
	[23]	[23]

Source: Based on authors' calculations.
Note: Standard errors reported in parentheses. Number of GEEG schools reported in brackets [ ]. ... indicates referent category.

What is the Association between the Unit of Accountability and Student Test Score Gains in GEEG Schools?

The third, and final, design feature is the unit of accountability proposed in GEEG plan applications. The unit of accountability identifies the entity whose performance determines teachers' bonus award eligibility. If bonus awards are determined by the performance of individual teachers, then an individual teacher is considered to be the unit of accountability. A school is considered the unit of accountability when bonus awards are determined by the collective performance of an entire school.

To define the unit of accountability, GEEG schools were divided into one of three groups: those that use only school- or team-level performance to determine award eligibility; those that use only

teacher-level performance to determine award eligibility; those that use some combination of teacher and group-level performance.

Table 8.5 displays the relationship between the unit of accountability and student test score gains in mathematics and reading. The referent category in this set of analyses is GEEG schools using some combination of teacher and school-level performance. Estimates indicate there is no significant association between the unit of accountability used in a GEEG school plan and the school's test score gains in mathematics and reading.

Table 8.5: Estimated Effect of GEEG on Mathematics and Reading Test Score Gains by Unit of Accountability

	Mathematics (Standardized Gain Score)	Reading (Standardized Gain Score)
Individual Teacher	-0.0109	-0.0011
	(0.0383)	(0.0354)
	[43]	[43]
Campus	-0.0559	-0.0232
	(0.0427)	(0.0394)
	[30]	[30]
Combination (referent category)	...	...
	...	...
	[15]	[15]

Source: Based on authors' calculations.
Note: Standard errors reported in parentheses. Number of GEEG schools reported in brackets [ ]. ... indicates referent category.

In summary, this section presents estimates on the association between student test score gains and design features of GEEG plans used in schools. Specific design features included the proposed maximum Part 1 bonus award amounts for teachers, measures of student performance, and the unit of accountability. There is no evidence of a significant association between student test score gains and GEEG plan design features in schools. However, the small number of GEEG schools adopting any given plan design necessarily makes these estimates imprecise, and could be masking significant effects.

Chapter Summary

This chapter presents findings from analysis of the effect of the GEEG program on student test score gains. The evidence regarding GEEG program impacts on student test scores is inconclusive. Depending on the statistical model specification, the analysis indicates that GEEG had a weakly positive, negative or negligible effect on student test score gains. The instability in the estimates may

be related to common measurement problems associated with standardized tests or the statistical methods used to control for selection bias.

Furthermore, there is no evidence of a significant association between student test score gains and GEEG plan design features in schools. Specific design features include the proposed maximum Part 1 bonus award amounts for teachers, measures of student performance, and the unit of accountability. However, the small number of GEEG schools adopting any given plan design necessarily makes these estimates imprecise, and could be masking significant effects.

Intermediate outcomes discussed in previous chapters of this report – such as teacher attitudes, teacher behavior, and institutional dynamics associated with GEEG program participation – may offer more appropriate outcome measures for evaluating the GEEG program. Analysis of teacher turnover and mobility (see Chapter 7) also provides another important outcomes measure. Evaluators encourage policymakers and other key education stakeholders to focus more on these estimates, given the considerable limitations presented in the current analysis of GEEG's effect on student test score gains.

CHAPTER 9
Conclusions and Implications for Policy and Research

This chapter reviews findings from the second-year evaluation of the GEEG program. Findings suggest that some of the traditional arguments against performance incentives, such as detriments to school culture, were not evident during the first two years of the program. The report does suggest that the design of schools' GEEG plans impacts outcomes for teacher turnover, and that these design features are often related to the characteristics of teachers in GEEG schools.

Key Policy Questions

This chapter addresses the following questions:

- How do second-year GEEG evaluation findings inform debate on performance pay?

- What can be learned about the program design features and award distribution models used in GEEG plans?

- What can be learned about the attitudes of school personnel in GEEG schools?

- What can be learned about the impact of the GEEG program on teacher turnover?

- What can be learned about the impact of the GEEG program on student achievement gains?

Key Policy Points

This chapter highlights and expands upon the following key policy points based on a synthesis of findings presented throughout the entire evaluation report.

- The implementation of the state-funded GEEG program was influenced by the lessons learned from a long history of state policy debate on teacher compensation reform.

- GEEG plans relied heavily on measures of student achievement – especially performance levels – and teacher collaboration to determine teachers' eligibility for bonus awards. The use of these design features changed little over the first two program years.

- The distribution of GEEG bonus awards varied noticeably among schools, and the actual distribution typically exhibited greater inequality than the proposed distribution of bonus awards.

- School personnel continued to hold generally positive views about performance pay and the GEEG program, specifically.

- Teacher turnover was greatly influenced by GEEG program participation and the design features of GEEG plans, most noticeably the size of bonus awards distributed to teachers.

- The evidence regarding GEEG program impacts on student achievement is inconclusive. Depending on the specification, the analysis indicates that GEEG had a weakly positive, negative or negligible effect on student achievement gains. The instability in the estimates may be related to common measurement problems associated with standardized tests or the statistical methods used to control for selection bias.

- There is no evidence of a significant association between student achievement gains and GEEG plan design features in schools. However, the small number of GEEG schools adopting any given plan design necessarily makes these estimates imprecise, and could be masking significant effects.

- Intermediate outcomes such as teacher attitudes, teacher behavior, and institutional dynamics associated with GEEG program participation may offer more appropriate outcomes measure for evaluating the GEEG program. Furthermore, teacher turnover and mobility provides another important outcomes measure.

Discussion of Findings from the Second Year Evaluation of GEEG

Following the influential *A Nation at Risk* report in 1983, a number of school districts experimented with performance pay programs as a means to improve student outcomes and reform the single-salary schedule. Research on these programs highlighted the difficulty inherent in creating a reliable process for identifying teachers, measuring a teacher's value-added contribution, eliminating unprofessional preferential treatment during evaluation processes, and standardizing assessment systems across schools (e.g., Hatry, Greiner, & Ashford, 1994; Murnane & Cohen, 1986). Criticisms stemming from these generally short-lived programs have since stigmatized more recent attempts to devise and implement performance pay programs, claiming further that teachers do not support such performance-related pay policies (Darling-Hammond & Barnett, 1988; Murnane & Cohen, 1986). Such critiques and teacher experiences undoubtedly overshadow the performance pay plans of the Governor's Educator Excellence Grants (GEEG).

Second-year findings offer a better understanding of the program's implementation and impact during the first two years of its operation. Furthermore, these findings suggest that many of the reservations stemming from the theoretical arguments against performance incentives (e.g., detriments to teacher collaboration and school culture) have not been realized, while other program features merit further attention.

Comprehensive Review of Year 2 Findings

Design features and award distribution in GEEG plans

GEEG schools most frequently used measures of student performance and teacher collaboration to determine teachers' eligibility for Part 1 bonus awards. Additionally, most schools used student achievement levels opposed to measures of growth when analyzing teachers' contribution to student performance. GEEG schools typically considered the teacher as the unit of accountability for determining award eligibility, meaning that a teacher's ability to earn a bonus award depended on that individual teacher's performance, rather than the performance of a team of teacher of the entire school. However, school-level performance was also frequently used as an accountability unit. During the first two years of plan operation, principals reported little to no change in the design features used by their schools to determine Part 1 bonus awards.

The dispersion of minimum and maximum Part 1 bonus awards in GEEG plans varied considerably within and between schools, and most schools proposed and allocated awards lower than the recommended minimum of $3,000. In fact, nearly 80 percent of teachers who received a Part 1 bonus award in the fall 2006 semester earned less than $3,000. When looking at the inequality of proposed and actual award distribution, evaluators found that schools typically proposed award distribution models defined by greater inequality than found in the distribution of base teaching salaries in those same schools. And, the distribution of actual awards was more inequitable than the award models proposed in GEEG plan applications.

Some characteristics of GEEG schools explain the nature of award models designed and implemented by schools, including student enrollment, equality of teacher base salaries, and teachers' years of experience. Additionally, the probability of receiving an award and the actual

amount received was highly related to a teacher's subject-area assignment and whether or not a teacher was a new hire to his/her school.

Attitudes of school personnel in GEEG schools

Most personnel in GEEG schools supported the principle of teacher performance pay, and there was no decline in that support during the first two years of the GEEG program. Additionally, the majority of personnel viewed performance pay as good for compensation practices. However, teachers and staff in GEEG schools more often preferred egalitarian award distribution models over more individualistic ones as part of a performance pay plan.

Personnel did not believe that the GEEG program had undermined collaboration or workplace collegiality. In fact, the majority of respondents viewed their colleagues, principals, and overall work environment positively. Both GEEG bonus award recipients and non-recipients, as well as new and experienced teachers, had positive views about the GEEG program. Additionally, staff characteristics, such as years of experience or professional position, explained little of the variation in teacher attitudes.

Impact of the GEEG program on teacher turnover

Evaluators found that GEEG program participation, and the design features of individual GEEG plans, had a significant impact on teacher turnover. During the first year of the GEEG program, teacher turnover was consistently lower in GEEG schools than in non-GEEG schools, but there is no evidence of this difference existing in the second program year. The same pattern holds when restricting analyses to only schools with high %ED students, as well as to only math and science teachers. Additionally, during the first program year, experienced teachers had lower turnover in GEEG schools than in non-GEEG schools, but not in the subsequent school year. Turnover among beginning teachers was not statistically different between GEEG and non-GEEG schools.

Several design features of GEEG plans had a significant influence on teacher turnover within GEEG schools. For example, the exclusive use of student performance gains to determine GEEG bonus award eligibility increased teacher turnover in GEEG schools, especially among beginning teachers in the first GEEG program year. The unit of accountability used by GEEG schools impacted teacher turnover, particularly in the first program year. Beginning teachers had lower turnover when school-level performance was used exclusively, while experienced teachers had lower turnover when teacher performance was used exclusively.

The proposed bonus award distribution in GEEG plans impacted teacher turnover in the first two years of the program. More individualistic plans were related to lower teacher turnover in the first year, but higher teacher turnover in the second year, especially among beginning teachers. And perhaps most notably, the receipt and size of actual GEEG bonus awards had a strong impact on teacher turnover; the probability of turnover fell for both beginning and experienced teachers as the size of the GEEG bonus award increased.

GEEG participation, design features, and student achievement gains

Overall, the evidence regarding GEEG program impacts on student achievement is inconclusive. Depending on the specification, the analysis indicates that GEEG had a weakly positive, negative or

negligible effect on student achievement gains. The instability in the estimates may be related to common measurement problems associated with standardized tests or the statistical methods used to control for selection bias.

Additionally, there is no evidence of a significant association between student achievement gains and GEEG plan design features in schools. However, the small number of GEEG schools adopting any given plan design necessarily makes these estimates imprecise, and could be masking significant effects.

Intermediate outcomes such as teacher attitudes, teacher behavior, and institutional dynamics associated with GEEG program participation may offer more appropriate outcomes measure for evaluating the GEEG program. Furthermore, teacher turnover and mobility provides another important outcomes measure.

Next Steps for Policy and Research

Final year evaluation activities will further refine findings related to the implementation and impact of the GEEG program. More specifically, the forthcoming final evaluation report will examine bonus award distribution across all three years of the GEEG program, along with the impact of all three program years on outcomes such as the attitudes and behaviors of school personnel and teacher turnover. Evaluators will continue to explore ways in which school, teacher, and plan design features influence these outcomes.

The GEEG program provides a unique opportunity to study the differential effects of locally designed performance incentive plans and the outcomes associated with various design features, a question that is of high importance in current policy debate. Texas' willingness to partner with an independent third party to provide a comprehensive evaluation of GEEG's impact on teaching and learning will inform future incentive systems both in Texas and in the United States.

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Technical Appendices
for
Governor's Educator Excellence Grant (GEEG) Program:
Year Two Evaluation Report

APPENDIX A: Executive, Legislative, and Regulatory Division Interviewees

Jerel Booker – Acting Director of Policy Initiatives, Texas Education Agency

Von Byer – Director of the Senate Education Committee, Texas Legislature

Robin Gelinas – Sr. Director of Policy Initiatives, Texas Education Agency

Rita Ghazal – Program Manager of Policy Initiatives, Texas Education Agency

Karen Harmon – Grant Manager, Division of Discretionary Grants, Texas Education Agency

Harrison Keller – Director of Research, Office of the Speaker of the House, Texas Legislature

Noell Lambert – Sr. Policy Advisor to the Commissioner, Texas Education Agency

Earin Martin – Director, Division of Discretionary Grants, Texas Education Agency

Melissa Oehler – Education Advisor to the Governor of Texas and formerly Sr. Policy Analyst, House Education Committee

Amie Rapaport – Former Manager, Program Evaluation Unit, Texas Education Agency

Lizzette Gonzalez Reynolds – Deputy Commissioner, Statewide Policy and Programs, Texas Education Agency

Christy Rome – Former Sr. Policy Analyst of the Senate Education Committee, Texas Legislature

Andrea Sheridan – Sr. Policy Analyst for the Lt. Governor of Texas

Joseph Shields – Former Deputy Associate Commissioner for Grants and Evaluation, Texas Education Agency

Jenna Watts – Policy Analyst for the House Education Committee, Texas Legislature

Todd Webster – Former Sr. Education Policy Advisor to the Governor of Texas

APPENDIX B: Glossary of GEEG Taxonomy Components

Part 1 Funding Component
The Part 1 funding component of GEEG represents at least 75 percent of a school's total award. This award money must be used only for financial incentive payments to classroom teachers, and must be structured in such a way that teachers receiving payments demonstrate (1) success in improving student performance using objective, quantifiable measures, such as local benchmarking systems, portfolio assessment, end-of-course assessment, or value-added assessment; and (2) collaboration with faculty and staff that contributes to improving overall student performance on the campus.

Part 1 awards may also take into consideration the following two optional criteria: (1) a teacher's demonstration of ongoing initiative, commitment, personalization, professionalism, and involvement in other activities that directly result in improved student performance; and (2) a teacher's assignment in an area that is historically hard to staff or has had high turnover.

- **Amount $$**
    - **Total campus grant** – Total GEEG grant amount given to school.
    - **Total Part 1 funding** – Total amount of Part 1 funding awarded to the school. This amount should represent at least 75 percent of the total GEEG grant given to the school.
    - **Maximum $$ for teachers** – The maximum amount of money that an individual teacher could possibly earn from the Part 1 funding component.
    - **Minimum $$ for teachers** – The minimum amount of money that an individual teacher could possibly earn from the Part 1 funding component.
- **# Eligible teachers** – The number of teachers that could possibly earn money from the Part 1 funding component.

Criterion 1: Student performance
- **Indicator of student performance** – The type(s) of indicator(s) that a school uses to evaluate academic performance. These indicators are broken down into three distinct categories: campus ratings, student assessment instrument, and other non-academic performance measures.
- **Performance Analysis** – The nature of student achievement analysis used to determine a teacher's eligibility for a bonus award. A school might use achievement levels whereby a school only looks at the level of performance that students accomplish. A school might use measures of growth whereby a school only looks at change in student performance over time. Finally, a school might use a combination of both, considering both achievement levels and measures of growth when evaluating student performance.

Criterion 2: Teacher collaboration
- **Indicator of collaboration** – The type(s) of indicator(s) that a school uses to evaluate teacher collaboration.

Criterion 3: Teacher initiative and commitment
- **Indicator of initiative and commitment** – The type(s) of indicator(s) that a school uses to evaluate teacher initiative and commitment.

Criterion 4: Hard-to-staff areas
- **Indicator of hard-to-staff area** – The type(s) of indicator(s) that a school uses to define a hard-to-staff teacher.

Performance level benchmarks – For each criterion, the performance levels that must be met in order for a teacher or group of teachers to qualify for an award. A school might establish one threshold that a teacher or group of teachers must meet or exceed in order to qualify for the award. Others might establish a tiered threshold whereby teachers earn more money as they advance from a lower threshold to a higher one.

Unit of accountability – The unit (i.e., entity) that is held accountable for the performance used to determine award distribution. Some schools distribute awards to teachers based upon the performance of an "individual teacher," while others distribute awards based on the performance of a "team" of teachers (i.e., grade-level, subject department). A third approach is distributing awards based on "campus-wide" performance.

Award distribution method – Schools use varying methods to disseminate awards, including "weighting," "flat amount," and a "prerequisite."
- **Weighting** – This method is used to assign differential importance to criterion measures required to earn performance incentives. Measures that are weighted more should be associated with higher pay amounts. This method is often, but not always, associated with a tiered performance level benchmark structure. Common strategies for weighting include:
  - (1) <u>Qualitative</u> – Base award is assigned for achieving performance criterion measure, and supplemental awards are assigned based upon meeting some other additional measures or classification.
  - (2) <u>Points</u> – Points are assigned in an increasing fashion to performance criterion measures.
  - (3) <u>Percentages</u> – Percentages are assigned in an increasing fashion to performance criterion measures; therefore, highly weighted measures are assigned to a higher percentage of the total award amount associated with that criterion.
- **Flat amount** – A school does not use a weighting scheme to distribute awards; instead, it allocates awards at one flat amount based on the required performance threshold for a criterion. This method is often associated with a one-level performance benchmark structure.
- **Prerequisite** – An award amount is not determined by the performance on a given criterion; rather, the criterion performance must be achieved in order to qualify as an award recipient. The actual award amount is then determined by performance on a different criterion.

APPENDIX C: Fall 2007 GEEG School Personnel Survey

Governor's Educator Excellence Grant (GEEG) Fall 2007 Teacher Survey

Dear Educator,

The National Center on Performance Incentives (NCPI), under contract with the Texas Education Agency (TEA), is conducting an on-going evaluation of the Governor's Educator Excellence Grant (GEEG) program. This survey is intended to help us learn about teachers' perceptions and experiences with performance incentive pay and the GEEG program, specifically.

We recognize that you may have filled out a similar survey during the last school year (2006-07), but it is important that you complete the survey again this fall 2007. Gathering teacher feedback throughout the duration of the GEEG program will enable us to better understand teachers' experiences over time. Please note that it is okay if your answers have changed from last school year. We ask that you not try to remember how you responded last time in order to answer the same way again; rather, please indicate how you feel now. If this is your first opportunity to participate in this survey, we encourage you to participate at this time.

We want to survey all staff who are directly involved in delivering instruction, including classroom teachers, instructional aides, instructional specialists, and instructional coaches. Therefore, when we state that this survey should be completed by all "full-time instructional personnel", we say so with the following definition in mind.

1. A classroom teacher who teaches an average of four hours per day in an academic or career and technology instructional setting focusing on the delivery of the Texas Essential Knowledge and Skills (TEKS).
2. The term also includes teachers' assistants/instructional aides, instructional coaches, and specialists directly involved in delivering instruction.
3. Permanent substitutes can be included as survey respondents if they meet the above requirements of at least four hours per day of instructional work.

We appreciate your contribution to this study and believe that your feedback will provide important insight regarding the issues addressed by this survey. We remind you that this survey is voluntary and that all responses will remain entirely confidential; no identifying information will be included in published reports and papers on this project.

Our estimate for completing the survey is approximately 15 to 20 minutes. Please note that there is no online option to save your responses and resume later where you left off. Therefore, we have provided a copy of the survey questions for your use as worksheets to facilitate the online survey process. To view or print the survey worksheets, click on the following link: GEEG Teacher Survey Worksheets.

If you have any questions about the survey or the study, please contact:

Dr. Omar Lopez
geeg@cpse-k16.com

To begin the reporting process, proceed by pressing the "Next" button shown below.

1. How do you classify your MAIN position in your current school during this 2007-08 school year? Please select only one response below that most accurately describes your position.
   a. Regular full-time teacher (i.e., an educator who teaches in an academic setting or a career and technology setting for <u>not less than</u> an average of four hours each day.)
   b. Regular part-time teacher (i.e., an educator who teaches in an academic setting or a career and technology setting for <u>less than</u> an average of four hours each day.)
   c. Long-term substitute (i.e., your assignment requires that you fill the role of a "regular full-time teacher" – as defined above – on a long-term basis, but you are still considered a substitute.)
   d. Short-term substitute (i.e., your assignment requires that you fill the role of a "regular full-time teacher" – as defined above – on a short-term basis, but you are still considered a substitute)
   e. Student teacher
   f. Teacher aide
   g. Administrator (e.g., principal, assistant principal, director, head of school)
   h. Instructional specialists (e.g., curriculum coordinator, mentor teacher, literacy or math coach)
   i. Librarian or library media specialist
   j. Health support staff (e.g., nurse, counselor, therapist)
   k. Campus support staff (e.g., custodian, cafeteria worker)
   l. Other support staff (e.g., administrative assistant)
   m. Other – Please explain below

   _____

   _____

Perceptions and Attitudes about Incentive Pay Programs

2. Please indicate the extent to which you agree or disagree with each general statement about incentive pay that could be awarded in addition to base pay.

	Strongly Disagree	Disagree	Agree	Strongly Agree
a. Incentive pay for <u>teachers</u> based on **overall performance at the school** is a positive change to teacher pay practices.				
b. Incentive pay for <u>teachers</u> based on **group performance** (i.e., grade-level, department, interdisciplinary team) is a positive change to teacher pay practices.				
c. Incentive pay for <u>teachers</u> based on **individual teacher performance** is a positive change to teacher pay practices.				
d. Incentive pay for <u>administrators</u> based on **overall performance at the school** is a positive change to administrator pay practices.				
e. Rewarding teachers based on their students' performance will destroy the collaborative culture				

	Strongly Disagree	Disagree	Agree	Strongly Agree
of teaching.				
f. Rewarding teachers based on their students' performance will cause teachers to work more effectively.				
g. Rewarding teachers based on their students' performance will attract more effective teachers into the profession.				
h. Rewarding teachers based on their students' performance will help retain more effective teachers in the profession.				

3. Please indicate the extent to which you agree or disagree with each statement about the GEEG incentive system at your school.

	Strongly Disagree	Disagree	Agree	Strongly Agree
a. The GEEG incentive system developed by my school is fair to teachers.				
b. The GEEG incentive system is having negative effects on my school.				
c. The GEEG incentive system in my school does a good job of distinguishing effective from ineffective teachers at my school.				
d. The GEEG incentive system causes resentment among teachers at my school.				
e. I have a clear understanding of the performance criteria that I need to meet in order to earn a GEEG bonus award.				
f. I do not believe that I can achieve the performance criteria established by my school's GEEG incentive system.				
g. I believe that the performance criteria established by my school's GEEG incentive system are worthy of extra pay.				
h. The size of the top bonus award in my school's GEEG incentive system is not large enough to motivate me to try to earn the top award.				
i. The GEEG incentive system does not affect my teaching practices or professional behaviors.				

Educator Attitudes and School Environment

4. Please indicate the extent to which you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Agree	Strongly Agree
a. The amount a student can learn is primarily related to family background.				
b. If students aren't disciplined at home, they aren't likely to accept any discipline.				
c. When I really try, I can get through to the most difficult student.				
d. A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement.				
e. If parents would do more for their children, I could do more.				
f. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.				
g. If a student in my class becomes disruptive and noisy, I feel assured that I know some quick techniques to redirect him/her quickly.				
h. If one of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.				
i. If I really try hard, I can get through to even the most difficult or unmotivated students.				
j. When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his/her home environment.				

5. Think about the leadership that the principal at your school has provided this school year (2007-08). To what extent do you agree or disagree with each of the following statements about your principal's leadership?

The principal at my school …	Strongly Disagree	Disagree	Agree	Strongly Agree
a. Clearly communicates expected standards for instruction in my classroom.				
b. Carefully tracks student academic progress.				
c. Knows what is going on in my classroom.				
d. Encourages teachers to raise test scores.				
e. Actively monitors the quality of instruction in the school.				

f. Works directly with teachers who are struggling to improve their instruction.				
g. Communicates a clear vision for our school.				
h. Evaluates teachers using criteria directly related to the school's improvement goals.				

6. Think about teachers at your school this school year (2007-08). To what extent do you agree or disagree with the following statements about the teachers in your school?

Teachers in my school …	Strongly Disagree	Disagree	Agree	Strongly Agree
a. Feel responsible to help each other do their best.				
b. Expect students to complete every assignment.				
c. Seem more competitive than cooperative.				
d. Encourage students to keep trying even when the work is challenging.				
e. Think it is important that all of their students do well in class.				
f. Do not really trust each other.				
g. Can be counted on to help out anywhere or anytime, even though it may not be part of their official assignment.				

What Should be Rewarded with Incentive Pay

7. The current teacher salary schedule rewards experience and education. Several additional factors have been suggested for determining incentive pay for <u>individual teachers.</u> If you were designing an incentive pay program for individual teachers, how much importance would you give to each of the following:

	Importance			
	None	Low	Moderate	High
a. Time spent in professional development				
b. High average test scores by students				
c. Improvements in students' test scores				
d. Performance evaluations by supervisors				
e. Performance evaluations by peers				
f. Independent evaluation of teaching portfolios				
g. Independent evaluations of students' work (e.g., portfolios)				
h. Student evaluations of teaching performance				
i. Collaboration with faculty and staff				
j. Working with students outside of class time				
k. Efforts to involve parents in students' education				
l. Serving as a Master Teacher				
m. Mentoring other teachers				
n. National Board for Professional Teaching Standards				

(NBPTS) certification				
o. Parent satisfaction with teacher				
p. Teaching in hard-to-staff fields				
q. Teaching in hard-to-staff school				

8. Please indicate how important you believe each factor is in determining awards provided to teachers in your school from the Governor's Educator Excellence Grants (GEEG).

	Importance			
	None	Low	Moderate	High
a. Time spent in professional development				
b. High average test scores by students				
c. Improvements in students' test scores				
d. Performance evaluations by supervisors				
e. Performance evaluations by peers				
f. Independent evaluation of teaching portfolios				
g. Independent evaluations of students' work (e.g., portfolios)				
h. Student evaluations of teaching performance				
i. Collaboration with faculty and staff				
j. Working with students outside of class time				
k. Efforts to involve parents in students' education				
l. Serving as a Master Teacher				
m. Mentoring other teachers				
n. National Board for Professional Teaching Standards (NBPTS) certification				
o. Parent satisfaction with teacher				
p. Teaching in hard-to-staff fields				
q. Teaching in hard-to-staff school				

9. Assume that you are designing an incentive pay program for teachers in your school. The school received **$200,000.00** to divide among its **125 teachers** using locally-designed performance requirements.

Each of the following items asks you to choose between two possible award distribution models. These models were created strictly for the purposes of this survey and may not reflect your school's actual plan. Read each row carefully and indicate the option that you prefer in the far left column labeled "Preferred Option". For each row make sure to choose either Option A (in the 2nd column) or Option B (in the 3rd column).

Preferred Option	Option A	Option B
☐ Option A ☐ Option B	Awards are distributed evenly, so all 125 teachers receive $1,600.00.	Awards are distributed to teachers performing in the top 70%, with each receiving $2,285.71.
☐ Option A ☐ Option B	Awards are distributed evenly, so all 125 teachers receive $1,600.00.	Awards are distributed to teachers performing in the top 60%, with each receiving $2,666.67.
☐ Option A ☐ Option B	Awards are distributed evenly, so all 125 teachers receive $1,600.00.	Awards are distributed to teachers performing in the top 50%, with each receiving $3,200.00.
☐ Option A ☐ Option B	Awards are distributed evenly, so all 125 teachers receive $1,600.00.	Awards are distributed to teachers performing in the top 40%, with each receiving $4,000.00.
☐ Option A ☐ Option B	Awards are distributed evenly, so all 125 teachers receive $1,600.00.	Awards are distributed to teachers performing in the top 30%, with each receiving $5,333.33.
☐ Option A ☐ Option B	Awards are distributed evenly, so all 125 teachers receive $1,600.00.	Awards are distributed to teachers performing in the top 20%, with each receiving $8,000.00.
☐ Option A ☐ Option B	Awards are distributed evenly, so all 125 teachers receive $1,600.00.	Awards are distributed to teachers performing in the top 10%, with each receiving $16,000.00.

Background Information

10. Including this year (2007-08), please indicate the number of years you have taught on a full-time basis.
    a. 1 year
    b. 2-3 years
    c. 4-9 years
    d. 10-14 years
    e. 15-19 years
    f. 20 or more years

11. Including this year (2007-08), please indicate the number of years you have taught on a full-time basis at this school.
    a. 1 year
    b. 2-3 years
    c. 4-9 years
    d. 10-14 years
    e. 15-19 years
    f. 20 or more years

12. Including this year (2007-08), please indicate the number of years that the <u>current principal</u> has served in the principal position at this school.
   a. 1 year
   b. 2-3 years
   c. 4-9 years
   d. 10-14 years
   e. 15-19 years
   f. 20 or more years
   g. Do not know

13. What is the highest degree you hold?
   a. Associate Degree
   b. Bachelor's Degree
   c. Master's Degree
   d. Doctorate or Professional Degree
   e. Other – please specify

   _____

14. What subjects do you teach this school year (2007-08)? (check all that apply)
   a. Arts and Music
   b. Bilingual Education
   c. English and Language Arts
   d. English as a Second Language
   e. Foreign Languages
   f. Gym, Physical Education
   g. Health Education
   h. Mathematics and Computer Science
   i. Natural Sciences
   j. Social Sciences
   k. Special Education
   l. Gifted and Talented
   m. Vocational/Technical Education
   n. Other

15. Do you teach in a subject and grade that is held accountable under the No Child Left Behind Act or Texas accountability system?
   a. Yes
   b. No
   c. Do not know

16. Are you male or female?
   a. Male
   b. Female

17. What is your race?
   a. White
   b. Black or African-American
   c. Hispanic or Latino

d. Asian
e. Native Hawaiian or Other Pacific Islander
f. American Indian or Alaska Native
g. Other

Teacher Compensation Information

18. What is your current annual teaching and extra duty salary (i.e., not including any GEEG awards or other bonus or incentive pay)?
    a. $20,000 to $24,999
    b. $25,000 to $29,999
    c. $30,000 to $34,999
    d. $35,000 to $39,999
    e. $40,000 to $44,999
    f. $45,000 to $49,999
    g. $50,000 to $54,999
    h. $55,000 to $59,999
    i. $60,000 to $64,999
    j. $65,000 to $69,999
    k. $70,000 to $74,999
    l. $75,000 or more

19. Did you receive an award from the GEEG program in your school during this fall 2007 semester (i.e., its second award distribution cycle)?
    a. Yes [go to 20]
    b. No [go to 21]
    c. Do not know [go to 21]

20. How much did you personally receive from the GEEG award during the fall 2007 semester?
    a. $0 to $999
    b. $1,000 to $1,999
    c. $2,000 to $2,999
    d. $3,000 to $3,999
    e. $4,000 to $4,999
    f. $5,000 to $5,999
    g. $6,000 to $6,999
    h. $7,000 to $7,999
    i. $8,000 to $8,999
    j. $9,000 to $9,999
    k. $10,000 or more
    l. Do not know

21. Do you receive any bonus or incentive pay – other than a GEEG award – that is over and beyond that which is your annual teaching and extra duty salary?
    a. Yes
    b. No

22. Is there anything else that you would like to share about your experience with your school's GEEG program that you did not have the opportunity to convey in your survey responses above? If so, please use the space provided below.

_____

_____

APPENDIX D: Crosstabs for Selected Fall Survey Items

The tables in this appendix present frequency responses and means for most items contained on the fall GEEG surveys. These results are presented as crosstab analyses across three respondent characteristic variables.

Appendix D-1: Respondent position – teachers compared to all other respondents.

Appendix D-2: Respondent experience – across four experience categories.

Appendix D-3: GEEG Award – those reporting they received a GEEG award compared to those reporting they did not.

Frequency distributions and means are presented in each table for All Respondents and each identified subgroup. A Chi-square statistic is reported for each reported survey item that tests whether the distributions across subgroups are equivalent (i.e., are the classification variable and responses to the survey question related?)

APPENDIX D-1: Crosstabs across Respondent Position

(2) Please indicate the extent to which you agree or disagree with each general statement about incentive pay that could be awarded in addition to base pay.

a. Incentive pay for teachers based on overall performance at the school is a positive change to teacher pay practices.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	4.2	10.8	58.5	26.5		3.07
Teachers	2831	5.9	12.6	52.4	29.1	8.98*	3.05
All Respondents	3479	5.5	12.3	53.5	28.6		3.05

b. Incentive pay for teachers based on group performance (i.e., grade-level, department, interdisciplinary team) is a positive change to teacher pay practices.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	4.9	17.9	57.9	19.3		2.92
Teachers	2831	7.6	21.7	50	20.7	15.77**	2.84
All Respondents	3479	7.1	21	51.5	20.4		2.85

c. Incentive pay for teachers based on individual teacher performance is a positive change to teacher pay practices.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	6.9	15.4	54.3	23.3		2.94
Teachers	2831	9.5	20.7	42.8	26.9	29.58**	2.87
All Respondents	3479	9.1	19.7	45	26.2		2.88

d. Incentive pay for administrators based on overall performance at the school is a positive change to administrator pay practices.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	5.1	17.1	57.1	20.7		2.93
Teachers	2831	8.4	16.1	56.6	18.9	8.51*	2.86
All Respondents	3479	7.8	16.3	56.7	19.2		2.87

e. Rewarding teachers based on their students' performance will destroy the collaborative culture of teaching.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	13.9	49.8	27	9.3		2.32
Teachers	2831	13.1	46.1	28.8	11.9	5.64	2.39
All Respondents	3479	13.3	46.8	28.5	11.4		2.38

f. Rewarding teachers based on their students' performance will cause teachers to work more effectively.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	4.2	19.9	55.9	20.1		2.92
Teachers	2831	8.8	28	46.1	17.1	40.68**	2.71
All Respondents	3479	8.0	26.5	47.9	17.6		2.75

g. Rewarding teachers based on their students' performance will attract more effective teachers into the profession.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	5.4	22.2	54.3	18.1		2.85
Teachers	2831	11.3	31.8	41.2	15.7	56.65**	2.61

| All Respondents | 3479 | 10.2 | 30.0 | 43.7 | 16.1 | | 2.66 |

(2) Please indicate the extent to which you agree or disagree with each general statement about incentive pay that could be awarded in addition to base pay.							
h. Rewarding teachers based on their students' performance will help retain more effective teachers in the profession.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	5.4	19.1	54.8	20.7		2.91
Teachers	2831	9.6	27.3	43.8	19.2	38.92**	2.73
All Respondents	3479	8.9	25.8	45.8	19.5		2.76

(3) Please indicate the extent to which you agree or disagree with each statement about the GEEG incentive system at your school.							
a. The GEEG incentive system developed by my school is fair to teachers.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	6.0	17.4	58.2	18.4		2.89
Teachers	2831	9.1	22.7	53.6	14.6	19.41**	2.74
All Respondents	3479	8.5	21.7	54.4	15.3		2.77
b. The GEEG incentive system is having negative effects on my school.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	17.7	54.3	21.8	6.2		2.16
Teachers	2831	14.8	53.8	23.6	7.9	5.78	2.25
All Respondents	3479	15.3	53.9	23.2	7.6		2.23
c. The GEEG incentive system in my school does a good job of distinguishing effective from ineffective teachers at my school.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	10.5	34.7	47.2	7.6		2.52
Teachers	2831	14.2	46.4	34.1	5.3	51.03**	2.31
All Respondents	3479	13.5	44.2	36.5	5.7		2.35
d. The GEEG incentive system causes resentment among teachers at my school.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	13.4	47.5	29.5	9.6		2.35
Teachers	2831	10.9	47	31.4	10.6	4.18	2.42
All Respondents	3479	11.4	47.1	31.1	10.4		2.41
e. I have a clear understanding of the performance criteria that I need to meet in order to earn a GEEG bonus award.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	4.9	16.2	59.7	19.1		2.93
Teachers	2831	4.9	15.1	60.9	19.2	0.55	2.94
All Respondents	3479	4.9	15.3	60.6	19.2		2.94
f. I do not believe that I can achieve the performance criteria established by my school's GEEG incentive system.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	19.6	59.9	15	5.6		2.06
Teachers	2831	20.8	61.1	14.7	3.4	6.75	2.01

| All Respondents | 3479 | 20.6 | 60.9 | 14.8 | 3.8 | | 2.02 |

(3) Please indicate the extent to which you agree or disagree with each statement about the GEEG incentive system at your school.

g. I believe that the performance criteria established by my school's GEEG incentive system are worthy of extra pay.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	4.5	12.3	65.6	17.6		2.96
Teachers	2831	5.6	16.5	60.3	17.6	9.47*	2.9
All Respondents	3479	5.4	15.8	61.3	17.6		2.91

h. The size of the top bonus award in my school's GEEG incentive system is not large enough to motivate me to try to earn the top award.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	11.0	61.4	20.8	6.8		2.23
Teachers	2831	11.1	59.3	23.6	6.0	2.69	2.24
All Respondents	3479	11.1	59.7	23.1	6.1		2.24

i. The GEEG incentive system does not affect my teaching practices or professional behaviors.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	4.2	18.7	55.4	21.8		2.95
Teachers	2831	3.6	20.5	50.7	25.2	6.17	2.98
All Respondents	3479	3.7	20.2	51.6	24.5		2.97

4) Please indicate the extent to which you agree or disagree with each of the following statements.

a. The amount a student can learn is primarily related to family background.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	19.1	53.9	20.8	6.2		2.14
Teachers	2831	15.3	54.7	23.9	6.1	7.03	2.21
All Respondents	3479	16.0	54.6	23.3	6.1		2.20

b. If students aren't disciplined at home, they aren't likely to accept any discipline.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	9.4	41.4	35.3	13.9		2.54
Teachers	2831	7.6	42.7	37.1	12.6	3.60	2.55
All Respondents	3479	7.9	42.4	36.8	12.9		2.55

c. When I really try, I can get through to the most difficult student.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	1.7	11.3	65.1	21.9		3.07
Teachers	2831	1.6	14.9	63.3	20.2	5.99	3.02
All Respondents	3479	1.6	14.2	63.6	20.5		3.03

d. A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	10.3	48.3	32.6	8.8		2.40

Teachers	2831	8.3	50.1	33.9	7.7	4.06	2.41
All Respondents	3479	8.7	49.8	33.7	7.9		2.41

4) Please indicate the extent to which you agree or disagree with each of the following statements.

e. If parents would do more for their children, I could do more.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	7.7	24.7	52.0	15.6		2.75
Teachers	2831	4.6	24.1	54.2	17.1	11.22*	2.84
All Respondents	3479	5.2	24.2	53.8	16.8		2.82

f. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	0.8	11.7	73.8	13.7		3.00
Teachers	2831	1.1	10.4	75.0	13.5	1.55	3.01
All Respondents	3479	1.0	10.6	74.8	13.6		3.01

g. If a student in my class becomes disruptive and noisy, I feel assured that I know some quick techniques to redirect him/her quickly.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	1.1	3.2	71.6	24.1		3.19
Teachers	2831	0.7	4.0	67.5	27.9	6.06	3.23
All Respondents	3479	0.7	3.8	68.2	27.2		3.22

h. If one of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	0.9	6.8	75.0	17.3		3.09
Teachers	2831	0.6	5.7	73.8	20.0	4.15	3.13
All Respondents	3479	0.6	5.9	74.0	19.5		3.12

i. If I really try hard, I can get through to even the most difficult or unmotivated students.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	2.3	9.1	65.1	23.5		3.10
Teachers	2831	1.2	16.1	61.3	21.5	24.56*	3.03
All Respondents	3479	1.4	14.8	62.0	21.9		3.04

j. When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his/her home environment.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	19.4	57.6	16.2	6.8		2.10
Teachers	2831	19.4	59.9	17.4	3.2	18.34**	2.04
All Respondents	3479	19.4	59.5	17.2	3.9		2.06

(5) Think about the leadership that the principal at your school has provided this school year (2007-08). To what extent do you agree or disagree with each of the following statements about your principal's leadership? The principal at my school …							
a. Clearly communicates expected standards for instruction in my classroom.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	2.8	4.6	59.0	33.6		3.23
Teachers	2831	2.7	6.7	59.0	31.5	4.35	3.19
All Respondents	3479	2.7	6.3	59.0	31.9		3.20
b. Carefully tracks student academic progress.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	2.2	6.0	60.0	31.8		3.21
Teachers	2831	1.9	8.5	59.6	30.0	4.93	3.18
All Respondents	3479	2.0	8.1	59.6	30.3		3.18
c. Knows what is going on in my classroom.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	2.9	9.7	56.0	31.3		3.16
Teachers	2831	3.7	12.2	57.2	26.9	7.45	3.07
All Respondents	3479	3.6	11.7	57.0	27.7		3.09
d. Encourages teachers to raise test scores.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	1.4	6.3	52.8	39.5		3.30
Teachers	2831	1.2	3.7	55.4	39.7	9.35*	3.34
All Respondents	3479	1.3	4.2	54.9	39.7		3.33
e. Actively monitors the quality of instruction in the school.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	2.5	6.9	54.8	35.8		3.24
Teachers	2831	2.9	9.4	56.8	30.9	8.43*	3.16
All Respondents	3479	2.8	9.0	56.4	31.8		3.17
f. Works directly with teachers who are struggling to improve their instruction.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	3.9	11.0	56.5	28.7		3.10
Teachers	2831	5.0	16.3	55.0	23.7	16.75**	2.97
All Respondents	3479	4.8	15.3	55.2	24.7		3.00
g. Communicates a clear vision for our school.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	2.6	5.9	50.8	40.7		3.30
Teachers	2831	3.0	6.6	53.3	37.0	3.37	3.24
All Respondents	3479	3.0	6.5	52.8	37.7		3.25
h. Evaluates teachers using criteria directly related to the school's improvement goals.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	2.2	6.5	59.0	32.4		3.22
Teachers	2831	2.6	6.9	59.3	31.2	0.78	3.19
All Respondents	3479	2.5	6.8	59.2	31.4		3.20

(6) Think about teachers at your school this school year (2007-08). To what extent do you agree or disagree with the following statements about the teachers in your school? Teachers at my school …							
a. Feel responsible to help each other do their best.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	2.3	9.9	61.0	26.9		3.12
Teachers	2831	2.5	13.5	56.7	27.3	7.25	3.09
All Respondents	3479	2.5	12.8	57.5	27.2		3.09
b. Expect students to complete every assignment.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	0.6	6.5	66.5	26.4		3.19
Teachers	2831	1.2	8.8	61.7	28.3	7.71	3.17
All Respondents	3479	1.1	8.3	62.6	27.9		3.17
c. Seem more competitive than cooperative.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	8.6	56.0	26.2	9.1		2.36
Teachers	2831	12.6	60.7	20.1	6.5	23.36**	2.21
All Respondents	3479	11.9	59.8	21.2	7.0		2.23
d. Encourage students to keep trying even when the work is challenging.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	1.1	3.5	64.7	30.7		3.25
Teachers	2831	0.8	4.5	65.1	29.5	1.75	3.23
All Respondents	3479	0.9	4.3	65.0	29.7		3.24
e. Think it is important that all of their students do well in class.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	0.6	4.0	59.6	35.8		3.31
Teachers	2831	1.1	4.8	57.7	36.3	2.32	3.29
All Respondents	3479	1.0	4.7	58.1	36.2		3.30
f. Do not really trust each other.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	20.7	56.3	17.4	5.6		2.08
Teachers	2831	22.5	56.7	16.5	4.4	2.69	2.03
All Respondents	3479	22.2	56.6	16.6	4.6		2.04
g. Can be counted on to help out anywhere or anytime, even though it may not be part of their official assignment.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	4.3	13.4	58.0	24.2		3.02
Teachers	2831	4.2	15.9	55.8	24.1	2.58	3.00
All Respondents	3479	4.2	15.4	56.2	24.1		3.00

(7) The current teacher salary schedule rewards experience and education. Several additional factors have been suggested for determining incentive pay for individual teachers. If you were designing an incentive pay program for individual teachers, how much importance would you give to each of the following:

a. Time spent in professional development.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	1.9	9.7	48.5	40.0		3.27
Teachers	2831	3.4	16.5	53.0	27.1	51.33**	3.04
All Respondents	3479	3.1	15.2	52.2	29.5		3.08

b. High average test scores by students.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	2.3	7.9	49.5	40.3		3.28
Teachers	2831	4.0	15.9	52.1	28.0	54.69**	3.04
All Respondents	3479	3.7	14.4	51.7	30.3		3.09

c. Improvements in students' test scores.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	1.7	1.7	34.6	62.0		3.57
Teachers	2831	1.7	5.2	37.1	56.0	18.67**	3.47
All Respondents	3479	1.7	4.6	36.6	57.1		3.49

d. Performance evaluations by supervisors.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	2.3	11.3	46.9	39.5		3.24
Teachers	2831	5.0	16.8	52.7	25.5	58.90**	2.99
All Respondents	3479	4.5	15.8	51.6	28.1		3.03

e. Performance evaluations by peers.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	6.9	18.2	48.1	26.7		2.95
Teachers	2831	14.0	26.3	44.3	15.3	75.52**	2.61
All Respondents	3479	12.7	24.8	45.0	17.4		2.67

f. Independent evaluation of teaching portfolios.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	4.9	14.5	49.7	30.9		3.06
Teachers	2831	12.8	26.6	46.5	14.2	146.27**	2.62
All Respondents	3479	11.3	24.3	47.1	17.3		2.70

g. Independent evaluations of students' work (e.g., portfolios).

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	2.9	9.3	50.2	37.7		3.23
Teachers	2831	8.7	22.1	48.9	20.3	134.14**	2.81
All Respondents	3479	7.6	19.7	49.1	23.6		2.89

h. Student evaluations of teaching performance.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	8.2	14.8	46.9	30.1		2.99
Teachers	2831	17.9	27.2	38.9	16.0	128.63**	2.53

| All Respondents | 3479 | 16.1 | 24.9 | 40.4 | 18.6 | | 2.61 |

(7) The current teacher salary schedule rewards experience and education. Several additional factors have been suggested for determining incentive pay for individual teachers. If you were designing an incentive pay program for individual teachers, how much importance would you give to each of the following:

i. Collaboration with faculty and staff.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	1.9	6.2	38.4	53.5		3.44
Teachers	2831	2.9	12.0	49.1	36.0	72.75**	3.18
All Respondents	3479	2.7	11.0	47.1	39.3		3.23

j. Working with students outside of class time.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	3.2	8.5	46.0	42.3		3.27
Teachers	2831	4.7	15.5	47.5	32.3	36.54**	3.07
All Respondents	3479	4.4	14.2	47.2	34.1		3.11

k. Efforts to involve parents in students' education.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	1.9	7.4	38.1	52.6		3.42
Teachers	2831	4.3	13.8	45.8	36.1	69.04**	3.14
All Respondents	3479	3.9	12.6	44.4	39.2		3.19

l. Serving as a Master Teacher.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	6.2	10.6	46.9	36.3		3.13
Teachers	2831	9.0	21.4	46.4	23.2	71.50**	2.84
All Respondents	3479	8.5	19.4	46.5	25.6		2.89

m. Mentoring other teachers.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	4.3	9.6	43.1	43.1		3.25
Teachers	2831	6.7	18.8	46.9	27.6	73.71**	2.96
All Respondents	3479	6.2	17.0	46.2	30.5		3.01

n. National Board for Professional Teaching Standards (NBPTS) certification.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	6.8	12.3	44.8	36.1		3.10
Teachers	2831	11.8	23.1	40.9	24.2	71.15**	2.78
All Respondents	3479	10.8	21.1	41.6	26.4		2.84

o. Parent satisfaction with teacher.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	6.5	17.4	46.1	29.9		3.00
Teachers	2831	13.2	27.5	40.7	18.6	77.11**	2.65
All Respondents	3479	12.0	25.6	41.7	20.7		2.71

p. Teaching in hard-to-staff fields.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	3.4	8.6	46.3	41.7		3.26

Teachers	2831	5.2	14.1	45.1	35.6	20.89**	3.11
All Respondents	3479	4.8	13.1	45.3	36.8		3.14

(7) The current teacher salary schedule rewards experience and education. Several additional factors have been suggested for determining incentive pay for individual teachers. If you were designing an incentive pay program for individual teachers, how much importance would you give to each of the following:

q. Teaching in hard-to-staff school.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	3.9	8.2	43.2	44.8		3.29
Teachers	2831	4.9	12.9	43.4	38.7	15.72**	3.16
All Respondents	3479	4.7	12.0	43.4	39.9		3.18

(8) Please indicate how important you believe each factor is in determining awards provided to teachers in your school from the Governor's Educator Excellence Grants (GEEG).

a. Time spent in professional development.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	2.8	11.7	45.8	39.7		3.22
Teachers	2831	7.3	20.0	47.2	25.4	75.06**	2.91
All Respondents	3479	6.5	18.5	47.0	28.1		2.97

b. High average test scores by students.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	1.7	7.4	43.5	47.4		3.37
Teachers	2831	3.4	12.2	46.6	37.9	28.70**	3.19
All Respondents	3479	3.1	11.3	46.0	39.6		3.22

c. Improvements in students' test scores.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	1.7	3.4	35.5	59.4		3.53
Teachers	2831	3.4	5.4	39.6	51.7	17.18**	3.40
All Respondents	3479	3.0	5.0	38.8	53.1		3.42

d. Performance evaluations by supervisors.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	3.7	9.6	48.3	38.4		3.21
Teachers	2831	8.2	17.3	49.8	24.7	70.72**	2.91
All Respondents	3479	7.3	15.9	49.5	27.3		2.97

e. Performance evaluations by peers.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	9.3	16.8	46.1	27.8		2.92
Teachers	2831	20.3	25.2	41.8	12.7	130.99**	2.47
All Respondents	3479	18.3	23.6	42.6	15.5		2.55

f. Independent evaluation of teaching portfolios.

Position	N	1	2	3	4	Chi-Sq	Mean

Others	648	7.4	15.0	45.5	32.1		3.02
Teachers	2831	19.1	25.1	42.7	13.2	179.76**	2.50
All Respondents	3479	16.9	23.2	43.2	16.7		2.60

(8) Please indicate how important you believe each factor is in determining awards provided to teachers in your school from the Governor's Educator Excellence Grants (GEEG).

g. Independent evaluations of students' work (e.g., portfolios).

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	6.0	11.1	46.3	36.6		3.13
Teachers	2831	16.5	21.2	44.8	17.4	159.78**	2.63
All Respondents	3479	14.6	19.3	45.1	21.0		2.73

h. Student evaluations of teaching performance.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	12.7	19.1	38.9	29.3		2.85
Teachers	2831	25.6	24.3	36.5	13.6	124.42**	2.38
All Respondents	3479	23.2	23.3	37.0	16.5		2.47

i. Collaboration with faculty and staff.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	3.2	7.6	42.4	46.8		3.33
Teachers	2831	7.7	13.2	47.3	31.8	66.33**	3.03
All Respondents	3479	6.9	12.2	46.4	34.6		3.09

j. Working with students outside of class time.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	4.8	7.4	45.2	42.6		3.26
Teachers	2831	8.8	15.4	44.6	31.2	55.51**	2.98
All Respondents	3479	8.1	13.9	44.8	33.3		3.03

k. Efforts to involve parents in students' education.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	5.1	7.3	38.7	48.9		3.31
Teachers	2831	10.6	16.2	43.6	29.7	106.81**	2.92
All Respondents	3479	9.5	14.5	42.7	33.3		3.00

l. Serving as a Master Teacher.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	8.2	12.0	45.1	34.7		3.06
Teachers	2831	15.8	21.6	43.0	19.7	99.17**	2.67
All Respondents	3479	14.4	19.8	43.3	22.5		2.74

m. Mentoring other teachers.

Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	6.0	10.5	43.5	40.0		3.17
Teachers	2831	13.2	19.6	43.3	23.9	98.07**	2.78
All Respondents	3479	11.9	17.9	43.4	26.9		2.85

n. National Board for Professional Teaching Standards (NBPTS) certification.

Position	N	1	2	3	4	Chi-Sq	Mean

Others	648	8.5	12.3	42.3	36.9		3.08
Teachers	2831	18.3	21.2	38.4	22.1	99.97**	2.64
All Respondents	3479	16.4	19.6	39.1	24.9		2.72

(8) Please indicate how important you believe each factor is in determining awards provided to teachers in your school from the Governor's Educator Excellence Grants (GEEG).							
o. Parent satisfaction with teacher.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	10.2	16.2	42.9	30.7		2.94
Teachers	2831	20.7	24.8	36.9	17.5	99.06**	2.51
All Respondents	3479	18.8	23.2	38.0	20.0		2.59
p. Teaching in hard-to-staff fields.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	6.3	9.3	43.1	41.4		3.19
Teachers	2831	11.8	15.5	41.8	30.9	46.44**	2.92
All Respondents	3479	10.8	14.3	42.0	32.9		2.97
q. Teaching in hard-to-staff school.							
Position	N	1	2	3	4	Chi-Sq	Mean
Others	648	6.9	10.0	40.6	42.4		3.19
Teachers	2831	12.3	14.2	41.6	31.8	38.27**	2.93
All Respondents	3479	11.3	13.5	41.4	33.8		2.98

APPENDIX D-2: Crosstabs across Experience Levels

(2) Please indicate the extent to which you agree or disagree with each general statement about incentive pay that could be awarded in addition to base pay.

a. Incentive pay for teachers based on overall performance at the school is a positive change to teacher pay practices.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	3.8	12.4	61.6	22.2		3.02
2-3 Years	433	4.4	9.2	55.9	30.5		3.12
4-9 Years	1046	4.3	9.6	56.0	30.1		3.12
10+ Years	1815	6.7	14.5	50.7	28.0	37.53**	3.00
All Respondents	3479	5.5	12.3	53.5	28.6		3.05

b. Incentive pay for teachers based on group performance (i.e., grade-level, department, interdisciplinary team) is a positive change to teacher pay practices.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	6.5	21.1	55.7	16.8		2.83
2-3 Years	433	5.1	16.6	53.6	24.7		2.98
4-9 Years	1046	6.1	18.5	53.2	22.2		2.91
10+ Years	1815	8.3	23.4	49.6	18.7	31.51**	2.79
All Respondents	3479	7.1	21.0	51.5	20.4		2.85

c. Incentive pay for teachers based on individual teacher performance is a positive change to teacher pay practices.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	4.9	14.6	56.8	23.8		2.99
2-3 Years	433	7.2	15.2	43.9	33.7		3.04
4-9 Years	1046	6.6	17.9	46.5	29.1		2.98
10+ Years	1815	11.3	22.4	43.1	23.1	65.63**	2.78
All Respondents	3479	9.1	19.7	45.0	26.2		2.88

d. Incentive pay for administrators based on overall performance at the school is a positive change to administrator pay practices.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	8.1	13.5	62.2	16.2		2.86
2-3 Years	433	5.3	10.9	60.3	23.6		3.02
4-9 Years	1046	5.3	14.0	60.5	20.3		2.96
10+ Years	1815	9.8	19.3	53.1	17.9	59.46**	2.79
All Respondents	3479	7.8	16.3	56.7	19.2		2.87

e. Rewarding teachers based on their students' performance will destroy the collaborative culture of teaching.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	10.3	51.4	33.0	5.4		2.34
2-3 Years	433	12.2	54.0	26.3	7.4		2.29
4-9 Years	1046	15.2	47.9	27.3	9.5		2.31
10+ Years	1815	12.7	44.0	29.2	14.1	43.77**	2.45
All Respondents	3479	13.3	46.8	28.5	11.4		2.38

(2) Please indicate the extent to which you agree or disagree with each general statement about incentive pay that could be awarded in addition to base pay.

f. Rewarding teachers based on their students' performance will cause teachers to work more effectively.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	8.1	22.7	55.7	13.5		2.75
2-3 Years	433	6.5	23.3	49.4	20.8		2.85
4-9 Years	1046	6.1	25.3	49.1	19.4		2.82
10+ Years	1815	9.4	28.3	46.0	16.3	27.77**	2.69
All Respondents	3479	8.0	26.5	47.9	17.6		2.75

g. Rewarding teachers based on their students' performance will attract more effective teachers into the profession.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	8.1	31.9	47.6	12.4		2.64
2-3 Years	433	9.0	25.2	46.0	19.9		2.77
4-9 Years	1046	8.3	27.4	46.7	17.6		2.74
10+ Years	1815	11.8	32.5	41.0	14.8	34.10**	2.59
All Respondents	3479	10.2	30.0	43.7	16.1		2.66

h. Rewarding teachers based on their students' performance will help retain more effective teachers in the profession.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	6.5	24.3	53.5	15.7		2.78
2-3 Years	433	7.6	20.1	47.6	24.7		2.89
4-9 Years	1046	6.6	23.0	48.0	22.4		2.86
10+ Years	1815	10.7	28.9	43.4	17.0	54.27**	2.67
All Respondents	3479	8.9	25.8	45.8	19.5		2.76

(3) Please indicate the extent to which you agree or disagree with each statement about the GEEG incentive system at your school.

a. The GEEG incentive system developed by my school is fair to teachers.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	3.8	11.4	73.5	11.4		2.92
2-3 Years	433	4.8	17.8	61.0	16.4		2.89
4-9 Years	1046	6.6	19.6	57.6	16.2		2.83
10+ Years	1815	11.0	25.0	49.1	15.0	82.30**	2.68
All Respondents	3479	8.5	21.7	54.4	15.3		2.77

b. The GEEG incentive system is having negative effects on my school.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	11.4	67.0	17.8	3.8		2.14
2-3 Years	433	16.6	59.1	17.8	6.5		2.14
4-9 Years	1046	17.7	54.4	21.4	6.5		2.17
10+ Years	1815	14.1	51.0	26.1	8.8	44.35**	2.30

All Respondents	3479	15.3	53.9	23.2	7.6		2.23

(3) Please indicate the extent to which you agree or disagree with each statement about the GEEG incentive system at your school.

c. The GEEG incentive system in my school does a good job of distinguishing effective from ineffective teachers at my school.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	8.1	36.8	48.6	6.5		2.54
2-3 Years	433	8.5	40.6	42.5	8.3		2.51
4-9 Years	1046	12.7	44.2	37.5	5.6		2.36
10+ Years	1815	15.7	45.8	33.3	5.1	46.88**	2.28
All Respondents	3479	13.5	44.2	36.5	5.7		2.35

d. The GEEG incentive system causes resentment among teachers at my school.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	11.4	59.5	23.8	5.4		2.23
2-3 Years	433	12.9	49.4	30.0	7.6		2.32
4-9 Years	1046	11.8	51.1	28.2	8.9		2.34
10+ Years	1815	10.8	43.0	33.7	12.5	46.08**	2.48
All Respondents	3479	11.4	47.1	31.1	10.4		2.41

e. I have a clear understanding of the performance criteria that I need to meet in order to earn a GEEG bonus award.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	8.6	30.8	51.4	9.2		2.61
2-3 Years	433	5.5	18.0	56.1	20.3		2.91
4-9 Years	1046	4.9	13.3	61.3	20.6		2.98
10+ Years	1815	4.4	14.2	62.3	19.1	58.12**	2.96
All Respondents	3479	4.9	15.3	60.6	19.2		2.94

f. I do not believe that I can achieve the performance criteria established by my school's GEEG incentive system.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	17.3	66.5	14.6	1.6		2.01
2-3 Years	433	21.7	61.9	12.2	4.2		1.99
4-9 Years	1046	22.5	61.4	13.2	3.0		1.97
10+ Years	1815	19.5	59.7	16.3	4.5	18.52*	2.06
All Respondents	3479	20.6	60.9	14.8	3.8		2.02

g. I believe that the performance criteria established by my school's GEEG incentive system are worthy of extra pay.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	4.3	10.3	74.1	11.4		2.92
2-3 Years	433	3.9	12.2	65.4	18.5		2.98
4-9 Years	1046	3.0	14.7	63.3	19.0		2.98
10+ Years	1815	7.2	17.7	57.9	17.2	52.98**	2.85
All Respondents	3479	5.4	15.8	61.3	17.6		2.91

(3) Please indicate the extent to which you agree or disagree with each statement about the GEEG incentive system at your school.

h. The size of the top bonus award in my school's GEEG incentive system is not large enough to motivate me to try to earn the top award.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	8.1	60.0	27.0	4.9		2.29
2-3 Years	433	10.2	60.5	22.6	6.7		2.26
4-9 Years	1046	11.5	60.5	22.3	5.6		2.22
10+ Years	1815	11.4	59.0	23.2	6.4	5.34	2.25
All Respondents	3479	11.1	59.7	23.1	6.1		2.24

i. The GEEG incentive system does not affect my teaching practices or professional behaviors.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	4.9	23.2	55.1	16.8		2.84
2-3 Years	433	3.0	23.3	47.6	26.1		2.97
4-9 Years	1046	3.3	19.9	54.4	22.4		2.96
10+ Years	1815	3.9	19.3	50.6	26.2	18.44*	2.99
All Respondents	3479	3.7	20.2	51.6	24.5		2.97

4) Please indicate the extent to which you agree or disagree with each of the following statements.

a. The amount a student can learn is primarily related to family background.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	15.7	46.5	29.2	8.6		2.31
2-3 Years	433	18.7	48.5	25.9	6.9		2.21
4-9 Years	1046	15.4	53.9	24.3	6.4		2.22
10+ Years	1815	15.8	57.2	21.5	5.5	20.26*	2.17
All Respondents	3479	16.0	54.6	23.3	6.1		2.20

b. If students aren't disciplined at home, they aren't likely to accept any discipline.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	5.9	36.8	43.8	13.5		2.65
2-3 Years	433	6.9	39.5	38.3	15.2		2.62
4-9 Years	1046	8.4	42.6	35.9	13.0		2.54
10+ Years	1815	8.0	43.6	36.2	12.2	10.43	2.53
All Respondents	3479	7.9	42.4	36.8	12.9		2.55

c. When I really try, I can get through to the most difficult student.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	2.2	17.3	62.7	17.8		2.96
2-3 Years	433	1.4	15.5	60.3	22.9		3.05
4-9 Years	1046	1.3	12.3	65.4	20.9		3.06
10+ Years	1815	1.8	14.7	63.5	19.9	9.54	3.02

| All Respondents | 3479 | 1.6 | 14.2 | 63.6 | 20.5 | | 3.03 |

4) Please indicate the extent to which you agree or disagree with each of the following statements.

d. A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	7.6	47.6	34.6	10.3		2.48
2-3 Years	433	8.8	43.6	38.3	9.2		2.48
4-9 Years	1046	7.8	48.3	35.9	7.9		2.44
10+ Years	1815	9.2	52.3	31.2	7.3	18.74*	2.37
All Respondents	3479	8.7	49.8	33.7	7.9		2.41

e. If parents would do more for their children, I could do more.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	7.6	22.2	53.0	17.3		2.80
2-3 Years	433	6.9	22.9	53.1	17.1		2.80
4-9 Years	1046	4.5	24.7	52.0	18.8		2.85
10+ Years	1815	4.9	24.5	55.1	15.5	12.19	2.81
All Respondents	3479	5.2	24.2	53.8	16.8		2.82

f. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	1.1	15.1	72.4	11.4		2.94
2-3 Years	433	1.2	9.7	76.7	12.5		3.00
4-9 Years	1046	0.9	9.3	75.9	14.0		3.03
10+ Years	1815	1.1	11.2	73.9	13.8	8.65	3.00
All Respondents	3479	1.0	10.6	74.8	13.6		3.01

g. If a student in my class becomes disruptive and noisy, I feel assured that I know some quick techniques to redirect him/her quickly.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	0.5	11.4	69.7	18.4		3.06
2-3 Years	433	0.9	4.8	66.1	28.2		3.21
4-9 Years	1046	0.5	3.1	69.4	27.1		3.23
10+ Years	1815	0.9	3.3	67.9	27.9	39.92**	3.23
All Respondents	3479	0.7	3.8	68.2	27.2		3.22

h. If one of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	1.1	10.8	74.1	14.1		3.01
2-3 Years	433	0.7	6.7	76.9	15.7		3.08
4-9 Years	1046	0.1	5.3	75.9	18.7		3.13
10+ Years	1815	0.9	5.6	72.2	21.3	27.38**	3.14
All Respondents	3479	0.6	5.9	74.0	19.5		3.12

4) Please indicate the extent to which you agree or disagree with each of the following statements.							
i. If I really try hard, I can get through to even the most difficult or unmotivated students.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	3.2	15.7	58.4	22.7		3.01
2-3 Years	433	1.6	15.2	59.4	23.8		3.05
4-9 Years	1046	0.6	13.6	63.6	22.3		3.08
10+ Years	1815	1.6	15.3	62.0	21.1	14.51	3.03
All Respondents	3479	1.4	14.8	62.0	21.9		3.04
j. When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his/her home environment.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	18.9	57.3	20.5	3.2		2.08
2-3 Years	433	23.1	51.3	22.6	3.0		2.06
4-9 Years	1046	18.1	61.0	17.3	3.6		2.07
10+ Years	1815	19.4	60.8	15.5	4.3	23.56	2.05
All Respondents	3479	19.4	59.5	17.2	3.9		2.06

(5) Think about the leadership that the principal at your school has provided this school year (2007-08). To what extent do you agree or disagree with each of the following statements about your principal's leadership? The principal at my school …							
a. Clearly communicates expected standards for instruction in my classroom.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	2.7	6.5	60.5	30.3		3.18
2-3 Years	433	1.8	7.2	54.0	37.0		3.26
4-9 Years	1046	2.3	5.5	60.6	31.5		3.21
10+ Years	1815	3.2	6.6	59.1	31.1	11.38	3.18
All Respondents	3479	2.7	6.3	59.0	31.9		3.20
b. Carefully tracks student academic progress.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	1.1	9.2	61.6	28.1		3.17
2-3 Years	433	1.6	5.5	58.2	34.6		3.26
4-9 Years	1046	1.6	7.8	60.0	30.5		3.19
10+ Years	1815	2.3	8.7	59.6	29.4	11.20	3.16
All Respondents	3479	2.0	8.1	59.6	30.3		3.18
c. Knows what is going on in my classroom.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	1.6	17.3	56.8	24.3		3.04
2-3 Years	433	2.5	12.7	54.3	30.5		3.13

Experience	N	1	2	3	4	Chi-Sq	Mean
4-9 Years	1046	3.0	10.9	58.8	27.3		3.11
10+ Years	1815	4.4	11.3	56.6	27.7	17.16*	3.07
All Respondents	3479	3.6	11.7	57.0	27.7		3.09

(5) Think about the leadership that the principal at your school has provided this school year (2007-08). To what extent do you agree or disagree with each of the following statements about your principal's leadership? The principal at my school …

d. Encourages teachers to raise test scores.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	1.6	5.4	53.0	40.0		3.31
2-3 Years	433	0.9	4.2	53.6	41.3		3.35
4-9 Years	1046	1.1	3.0	56.0	39.9		3.35
10+ Years	1815	1.4	4.8	54.7	39.1	7.83	3.32
All Respondents	3479	1.3	4.2	54.9	39.7		3.33

e. Actively monitors the quality of instruction in the school.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	2.7	9.7	54.6	33.0		3.18
2-3 Years	433	1.8	8.3	53.1	36.7		3.25
4-9 Years	1046	2.6	8.0	58.3	31.1		3.18
10+ Years	1815	3.3	9.6	56.3	30.9	10.59	3.15
All Respondents	3479	2.8	9.0	56.4	31.8		3.17

f. Works directly with teachers who are struggling to improve their instruction.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	5.4	16.2	54.1	24.3		2.97
2-3 Years	433	4.4	17.6	50.6	27.5		3.01
4-9 Years	1046	4.4	14.6	54.4	26.6		3.03
10+ Years	1815	5.1	15.0	57.0	22.9	10.91	2.98
All Respondents	3479	4.8	15.3	55.2	24.7		3.00

g. Communicates a clear vision for our school.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	1.6	8.1	53.0	37.3		3.26
2-3 Years	433	1.4	6.5	52.0	40.2		3.31
4-9 Years	1046	3.1	5.3	53.5	38.1		3.27
10+ Years	1815	3.4	7.1	52.6	36.9	11.37	3.23
All Respondents	3479	3.0	6.5	52.8	37.7		3.25

h. Evaluates teachers using criteria directly related to the school's improvement goals.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	2.2	9.2	55.1	33.5		3.20
2-3 Years	433	1.6	7.2	54.7	36.5		3.26
4-9 Years	1046	2.8	4.8	59.8	32.7		3.22
10+ Years	1815	2.6	7.6	60.4	29.3	20.92*	3.16
All Respondents	3479	2.5	6.8	59.2	31.4		3.20

(6) Think about teachers at your school this school year (2007-08). To what extent do you agree or disagree with the following statements about the teachers in your school? Teachers at my school …							
a. Feel responsible to help each other do their best.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	4.3	11.9	55.1	28.6		3.08
2-3 Years	433	2.1	15.9	57.0	24.9		3.05
4-9 Years	1046	2.6	11.3	57.3	28.9		3.12
10+ Years	1815	2.3	13.1	58.0	26.6	11.05	3.09
All Respondents	3479	2.5	12.8	57.5	27.2		3.09
b. Expect students to complete every assignment.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	2.7	9.2	64.9	23.2		3.09
2-3 Years	433	0.9	12.7	58.2	28.2		3.14
4-9 Years	1046	0.8	7.1	61.7	30.5		3.22
10+ Years	1815	1.2	7.9	64.0	26.9	24.83**	3.17
All Respondents	3479	1.1	8.3	62.6	27.9		3.17
c. Seem more competitive than cooperative.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	14.1	55.1	22.7	8.1		2.25
2-3 Years	433	12.7	58.4	21.9	6.9		2.23
4-9 Years	1046	12.2	59.5	21.1	7.2		2.23
10+ Years	1815	11.3	60.9	21.0	6.8	3.58	2.23
All Respondents	3479	11.9	59.8	21.2	7.0		2.23
d. Encourage students to keep trying even when the work is challenging.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	2.2	4.3	68.1	25.4		3.17
2-3 Years	433	0.5	4.2	62.1	33.3		3.28
4-9 Years	1046	0.9	4.3	62.6	32.2		3.26
10+ Years	1815	0.9	4.4	66.8	27.9	14.24	3.22
All Respondents	3479	0.9	4.3	65.0	29.7		3.24
e. Think it is important that all of their students do well in class.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	1.6	4.3	63.2	30.8		3.23
2-3 Years	433	0.7	6.2	57.5	35.6		3.28
4-9 Years	1046	1.0	4.1	55.3	39.7		3.34
10+ Years	1815	1.0	4.7	59.3	35.0	12.70	3.28
All Respondents	3479	1.0	4.7	58.1	36.2		3.30

(6) Think about teachers at your school this school year (2007-08). To what extent do you agree or disagree with the following statements about the teachers in your school? Teachers at my school …

f. Do not really trust each other.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	20.0	58.4	18.4	3.2		2.05
2-3 Years	433	27.7	49.7	17.3	5.3		2.00
4-9 Years	1046	21.8	55.9	17.2	5.1		2.06
10+ Years	1815	21.3	58.5	16.0	4.3	15.33	2.03
All Respondents	3479	22.2	56.6	16.6	4.6		2.04

g. Can be counted on to help out anywhere or anytime, even though it may not be part of their official assignment.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	4.9	14.1	59.5	21.6		2.98
2-3 Years	433	4.4	14.8	53.1	27.7		3.04
4-9 Years	1046	4.4	13.9	56.4	25.3		3.03
10+ Years	1815	4.0	16.6	56.5	22.9	9.92	2.98
All Respondents	3479	4.2	15.4	56.2	24.1		3.00

(7) The current teacher salary schedule rewards experience and education. Several additional factors have been suggested for determining incentive pay for individual teachers. If you were designing an incentive pay program for individual teachers, how much importance would you give to each of the following:

a. Time spent in professional development.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	2.7	13.5	47.6	36.2		3.17
2-3 Years	433	2.1	15.2	51.7	30.9		3.12
4-9 Years	1046	4.0	14.4	52.8	28.8		3.06
10+ Years	1815	2.9	15.8	52.4	28.9	10.27	3.07
All Respondents	3479	3.1	15.2	52.2	29.5		3.08

b. High average test scores by students.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	5.9	12.4	49.2	32.4		3.08
2-3 Years	433	2.5	14.5	50.1	32.8		3.13
4-9 Years	1046	3.0	13.4	51.0	32.7		3.13
10+ Years	1815	4.1	15.2	52.7	28.0	15.54	3.05
All Respondents	3479	3.7	14.4	51.7	30.3		3.09

c. Improvements in students' test scores.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	2.2	3.8	39.5	54.6		3.46
2-3 Years	433	1.4	5.1	38.3	55.2		3.47
4-9 Years	1046	1.4	3.3	35.2	60.0		3.54
10+ Years	1815	1.9	5.2	36.7	56.1	10.63	3.47
All Respondents	3479	1.7	4.6	36.6	57.1		3.49

(7) The current teacher salary schedule rewards experience and education. Several additional factors have been suggested for determining incentive pay for individual teachers. If you were designing an incentive pay program for individual teachers, how much importance would you give to each of the following:

d. Performance evaluations by supervisors.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	4.3	11.4	56.8	27.6		3.08
2-3 Years	433	2.3	15.7	47.8	34.2		3.14
4-9 Years	1046	4.5	15.6	51.2	28.7		3.04
10+ Years	1815	5.1	16.3	52.2	26.4	18.61*	3.00
All Respondents	3479	4.5	15.8	51.6	28.1		3.03

e. Performance evaluations by peers.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	5.9	16.2	57.3	20.5		2.92
2-3 Years	433	9.5	21.7	49.2	19.6		2.79
4-9 Years	1046	13.1	25.8	44.5	16.6		2.65
10+ Years	1815	13.9	25.8	43.1	17.1	33.01**	2.63
All Respondents	3479	12.7	24.8	45.0	17.4		2.67

f. Independent evaluation of teaching portfolios.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	7.6	22.2	47.0	23.2		2.86
2-3 Years	433	6.0	23.8	49.9	20.3		2.85
4-9 Years	1046	11.0	23.9	48.0	17.1		2.71
10+ Years	1815	13.1	24.9	46.0	16.0	28.31	2.65
All Respondents	3479	11.3	24.3	47.1	17.3		2.70

g. Independent evaluations of students' work (e.g., portfolios).

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	5.9	18.9	47.6	27.6		2.97
2-3 Years	433	4.4	19.2	50.6	25.9		2.98
4-9 Years	1046	6.9	20.2	49.1	23.8		2.90
10+ Years	1815	9.0	19.6	48.9	22.5	15.48	2.85
All Respondents	3479	7.6	19.7	49.1	23.6		2.89

h. Student evaluations of teaching performance.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	13.5	22.7	38.4	25.4		2.76
2-3 Years	433	11.1	24.2	43.6	21.0		2.75

	N	1	2	3	4	Chi-Sq	Mean
4-9 Years	1046	14.4	24.8	41.1	19.7		2.66
10+ Years	1815	18.5	25.4	39.4	16.7	28.60	2.54
All Respondents	3479	16.1	24.9	40.4	18.6		2.61

(7) The current teacher salary schedule rewards experience and education. Several additional factors have been suggested for determining incentive pay for individual teachers. If you were designing an incentive pay program for individual teachers, how much importance would you give to each of the following:

i. Collaboration with faculty and staff.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	4.9	13.5	43.2	38.4		3.15
2-3 Years	433	1.6	9.2	49.9	39.3		3.27
4-9 Years	1046	3.1	10.2	47.1	39.6		3.23
10+ Years	1815	2.5	11.5	46.8	39.2	10.66	3.23
All Respondents	3479	2.7	11.0	47.1	39.3		3.23

j. Working with students outside of class time.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	2.7	10.3	45.9	41.1		3.25
2-3 Years	433	2.1	17.3	44.1	36.5		3.15
4-9 Years	1046	4.5	14.0	48.1	33.5		3.11
10+ Years	1815	5.1	14.0	47.5	33.3	18.43*	3.09
All Respondents	3479	4.4	14.2	47.2	34.1		3.11

k. Efforts to involve parents in students' education.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	2.7	10.8	41.1	45.4		3.29
2-3 Years	433	2.5	12.9	45.3	39.3		3.21
4-9 Years	1046	4.0	12.2	43.1	40.6		3.20
10+ Years	1815	4.2	12.9	45.2	37.7	8.54	3.16
All Respondents	3479	3.9	12.6	44.4	39.2		3.19

l. Serving as a Master Teacher.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	5.4	18.9	47.6	28.1		2.98
2-3 Years	433	8.1	16.2	50.1	25.6		2.93
4-9 Years	1046	9.0	21.4	44.6	25.0		2.86
10+ Years	1815	8.7	19.0	46.6	25.7	9.91	2.89
All Respondents	3479	8.5	19.4	46.5	25.6		2.89

m. Mentoring other teachers.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	3.2	16.2	45.4	35.1		3.12

2-3 Years	433	5.5	17.8	45.7	30.9		3.02
4-9 Years	1046	7.0	17.5	45.6	29.9		2.98
10+ Years	1815	6.3	16.7	46.8	30.2	6.13	3.01
All Respondents	3479	6.2	17.0	46.2	30.5		3.01

(7) The current teacher salary schedule rewards experience and education. Several additional factors have been suggested for determining incentive pay for individual teachers. If you were designing an incentive pay program for individual teachers, how much importance would you give to each of the following:

n. National Board for Professional Teaching Standards (NBPTS) certification.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	5.9	16.2	45.4	32.4		3.04
2-3 Years	433	8.1	18.9	37.9	35.1		3.00
4-9 Years	1046	9.2	19.9	42.0	29.0		2.91
10+ Years	1815	12.9	22.9	41.9	22.3	54.85**	2.74
All Respondents	3479	10.8	21.1	41.6	26.4		2.84

o. Parent satisfaction with teacher.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	8.1	24.9	38.4	28.6		2.88
2-3 Years	433	9.7	29.3	39.5	21.5		2.73
4-9 Years	1046	12.0	25.5	41.2	21.3		2.72
10+ Years	1815	12.9	24.8	42.9	19.4	17.36*	2.69
All Respondents	3479	12.0	25.6	41.7	20.7		2.71

p. Teaching in hard-to-staff fields.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	3.2	8.1	46.5	42.2		3.28
2-3 Years	433	2.5	13.2	44.1	40.2		3.22
4-9 Years	1046	4.7	13.3	44.4	37.7		3.15
10+ Years	1815	5.6	13.5	46.0	34.9	17.26*	3.10
All Respondents	3479	4.8	13.1	45.3	36.8		3.14

q. Teaching in hard-to-staff school.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	4.3	7.0	44.9	43.8		3.28
2-3 Years	433	2.1	11.1	43.0	43.9		3.29
4-9 Years	1046	4.4	12.3	42.7	40.5		3.19
10+ Years	1815	5.6	12.5	43.7	38.1	18.58*	3.14
All Respondents	3479	4.7	12.0	43.4	39.9		3.18

(8) Please indicate how important you believe each factor is in determining awards

provided to teachers in your school from the Governor's Educator Excellence Grants (GEEG).							
a. Time spent in professional development.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	4.3	16.2	41.6	37.8		3.13
2-3 Years	433	6.7	21.0	45.3	27.0		2.93
4-9 Years	1046	6.3	17.7	48.7	27.3		2.97
10+ Years	1815	6.8	18.6	46.9	27.7	12.80	2.96
All Respondents	3479	6.5	18.5	47.0	28.1		2.97

(8) Please indicate how important you believe each factor is in determining awards provided to teachers in your school from the Governor's Educator Excellence Grants (GEEG).							
b. High average test scores by students.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	3.2	9.7	48.1	38.9		3.23
2-3 Years	433	3.2	9.5	45.3	42.0		3.26
4-9 Years	1046	2.4	10.4	45.7	41.5		3.26
10+ Years	1815	3.5	12.3	46.1	38.1	9.63	3.19
All Respondents	3479	3.1	11.3	46.0	39.6		3.22
c. Improvements in students' test scores.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	2.7	3.8	44.3	49.2		3.40
2-3 Years	433	4.2	4.4	41.1	50.3		3.38
4-9 Years	1046	2.7	3.8	38.1	55.4		3.46
10+ Years	1815	3.0	6.0	38.1	52.9	14.26	3.41
All Respondents	3479	3.0	5.0	38.8	53.1		3.42
d. Performance evaluations by supervisors.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	3.8	10.8	55.1	30.3		3.12
2-3 Years	433	6.2	15.0	46.0	32.8		3.05
4-9 Years	1046	7.4	15.2	50.1	27.3		2.97
10+ Years	1815	7.9	17.0	49.5	25.6	19.28*	2.93
All Respondents	3479	7.3	15.9	49.5	27.3		2.97
e. Performance evaluations by peers.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	8.1	19.5	52.4	20.0		2.84
2-3 Years	433	14.3	22.6	42.7	20.3		2.69
4-9 Years	1046	18.3	24.1	42.9	14.7		2.54
10+ Years	1815	20.3	24.0	41.4	14.3	35.71**	2.50
All Respondents	3479	18.3	23.6	42.6	15.5		2.55
f. Independent evaluation of teaching portfolios.							
Experience	N	1	2	3	4	Chi-Sq	Mean

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	8.1	20.5	51.4	20.0		2.83
2-3 Years	433	12.7	23.3	42.7	21.2		2.73
4-9 Years	1046	16.4	23.3	45.2	15.0		2.59
10+ Years	1815	19.1	23.4	41.3	16.3	32.64**	2.55
All Respondents	3479	16.9	23.2	43.2	16.7		2.60

g. Independent evaluations of students' work (e.g., portfolios).

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	8.6	16.8	47.6	27.0		2.93
2-3 Years	433	12.2	18.9	44.1	24.7		2.81
4-9 Years	1046	14.5	18.6	46.8	20.0		2.72
10+ Years	1815	15.8	20.1	44.1	20.1	17.95*	2.69
All Respondents	3479	14.6	19.3	45.1	21.0		2.73

(8) Please indicate how important you believe each factor is in determining awards provided to teachers in your school from the Governor's Educator Excellence Grants (GEEG).

h. Student evaluations of teaching performance.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	16.2	19.5	42.2	22.2		2.70
2-3 Years	433	17.6	23.3	38.1	21.0		2.63
4-9 Years	1046	21.4	20.7	40.8	17.0		2.53
10+ Years	1815	26.3	25.2	33.9	14.5	49.33**	2.37
All Respondents	3479	23.2	23.3	37.0	16.5		2.47

i. Collaboration with faculty and staff.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	6.5	10.8	47.6	35.1		3.11
2-3 Years	433	5.5	11.1	48.7	34.6		3.12
4-9 Years	1046	7.1	12.7	47.5	32.7		3.06
10+ Years	1815	7.2	12.2	45.1	35.5	5.50	3.09
All Respondents	3479	6.9	12.2	46.4	34.6		3.09

j. Working with students outside of class time.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	4.9	14.1	42.2	38.9		3.15
2-3 Years	433	6.2	15.5	42.0	36.3		3.08
4-9 Years	1046	6.7	15.0	46.0	32.3		3.04
10+ Years	1815	9.6	12.8	45.0	32.6	20.21*	3.00
All Respondents	3479	8.1	13.9	44.8	33.3		3.03

k. Efforts to involve parents in students' education.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	5.4	14.6	40.5	39.5		3.14
2-3 Years	433	8.5	15.9	42.7	32.8		3.00
4-9 Years	1046	9.6	15.5	40.3	34.6		3.00
10+ Years	1815	10.2	13.6	44.2	32.0	12.97	2.98
All Respondents	3479	9.5	14.5	42.7	33.3		3.00

l. Serving as a Master Teacher.

Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	7.0	18.4	48.6	25.9		2.94
2-3 Years	433	12.2	18.2	47.1	22.4		2.80
4-9 Years	1046	14.9	20.8	42.5	21.7		2.71
10+ Years	1815	15.3	19.7	42.4	22.6	15.40	2.72
All Respondents	3479	14.4	19.8	43.3	22.5		2.74

(8) Please indicate how important you believe each factor is in determining awards provided to teachers in your school from the Governor's Educator Excellence Grants (GEEG).							
m. Mentoring other teachers.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	5.4	15.7	47.6	31.4		3.05
2-3 Years	433	9.2	18.7	42.5	29.6		2.92
4-9 Years	1046	13.2	18.1	43.2	25.5		2.81
10+ Years	1815	12.4	17.8	43.3	26.6	15.86	2.84
All Respondents	3479	11.9	17.9	43.4	26.9		2.85
n. National Board for Professional Teaching Standards (NBPTS) certification.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	6.5	14.6	49.7	29.2		3.02
2-3 Years	433	12.5	17.1	36.7	33.7		2.92
4-9 Years	1046	14.5	19.1	41.0	25.3		2.77
10+ Years	1815	19.5	20.9	37.5	22.1	62.43**	2.62
All Respondents	3479	16.4	19.6	39.1	24.9		2.72
o. Parent satisfaction with teacher.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	10.3	21.1	42.2	26.5		2.85
2-3 Years	433	15.9	24.7	37.6	21.7		2.65
4-9 Years	1046	18.2	24.8	37.2	19.9		2.59
10+ Years	1815	20.7	22.2	38.2	19.0	21.88**	2.55
All Respondents	3479	18.8	23.2	38.0	20.0		2.59
p. Teaching in hard-to-staff fields.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	3.8	11.9	45.4	38.9		3.19
2-3 Years	433	8.5	14.8	41.8	34.9		3.03
4-9 Years	1046	10.2	12.8	44.5	32.5		2.99
10+ Years	1815	12.3	15.4	40.3	32.0	24.70**	2.92
All Respondents	3479	10.8	14.3	42.0	32.9		2.97

q. Teaching in hard-to-staff school.							
Experience	N	1	2	3	4	Chi-Sq	Mean
1 Year	185	4.3	8.6	49.7	37.3		3.20
2-3 Years	433	9.0	12.9	40.6	37.4		3.06
4-9 Years	1046	10.4	12.6	43.4	33.6		3.00
10+ Years	1815	13.1	14.5	39.7	32.7	29.87**	2.92
All Respondents	3479	11.3	13.5	41.4	33.8		2.98

APPENDIX D-3: Crosstabs across GEEG Award Status

(2) Please indicate the extent to which you agree or disagree with each general statement about incentive pay that could be awarded in addition to base pay.							
a. Incentive pay for teachers based on overall performance at the school is a positive change to teacher pay practices.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	5.2	10.5	55.4	28.9		3.08
Received	2102	5.8	13.4	52.3	28.4	7.81	3.03
All Respondents	3479	5.5	12.3	53.5	28.6		3.05
b. Incentive pay for teachers based on group performance (i.e., grade-level, department, interdisciplinary team) is a positive change to teacher pay practices.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	6.6	20.0	52.7	20.6		2.87
Received	2102	7.5	21.6	50.7	20.3	2.56	2.84
All Respondents	3479	7.1	21.0	51.5	20.4		2.85
c. Incentive pay for teachers based on individual teacher performance is a positive change to teacher pay practices.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	7.8	19.2	45.2	27.9		2.93
Received	2102	9.9	20.1	44.8	25.2	6.90	2.85
All Respondents	3479	9.1	19.7	45.0	26.2		2.88
d. Incentive pay for administrators based on overall performance at the school is a positive change to administrator pay practices.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	6.4	14.9	57.6	21.1		2.93
Received	2102	8.7	17.3	56.1	18.0	13.03**	2.83
All Respondents	3479	7.8	16.3	56.7	19.2		2.87
e. Rewarding teachers based on their students' performance will destroy the collaborative culture of teaching.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	11.7	49.3	29.0	10.0		2.37
Received	2102	14.3	45.2	28.2	12.3	11.24*	2.38
All Respondents	3479	13.3	46.8	28.5	11.4		2.38
f. Rewarding teachers based on their students' performance will cause teachers to work more effectively.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	7.2	25.9	48.6	18.3		2.78
Received	2102	8.5	26.9	47.4	17.2	2.77	2.73
All Respondents	3479	8.0	26.5	47.9	17.6		2.75
g. Rewarding teachers based on their students' performance will attract more effective teachers into the profession.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	9.7	31.3	42.9	16.1		2.66
Received	2102	10.6	29.2	44.1	16.1	2.22	2.66

All Respondents	3479	10.2	30.0	43.7	16.1		2.66

(2) Please indicate the extent to which you agree or disagree with each general statement about incentive pay that could be awarded in addition to base pay.							
h. Rewarding teachers based on their students' performance will help retain more effective teachers in the profession.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	8.1	25.3	47.4	19.2		2.78
Received	2102	9.3	26.2	44.8	19.7	2.94	2.75
All Respondents	3479	8.9	25.8	45.8	19.5		2.76

(3) Please indicate the extent to which you agree or disagree with each statement about the GEEG incentive system at your school.							
a. The GEEG incentive system developed by my school is fair to teachers.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	8.2	19.4	58.1	14.3		2.79
Received	2102	8.7	23.3	52.0	16.0	13.12**	2.75
All Respondents	3479	8.5	21.7	54.4	15.3		2.77
b. The GEEG incentive system is having negative effects on my school.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	13.9	55.8	23.4	6.9		2.23
Received	2102	16.3	52.6	23.1	8.0	5.81	2.23
All Respondents	3479	15.3	53.9	23.2	7.6		2.23
c. The GEEG incentive system in my school does a good job of distinguishing effective from ineffective teachers at my school.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	10.7	43.6	39.4	6.2		2.41
Received	2102	15.3	44.6	34.6	5.4	19.30	2.30
All Respondents	3479	13.5	44.2	36.5	5.7		2.35
d. The GEEG incentive system causes resentment among teachers at my school.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	9.8	50.7	29.6	9.9		2.40
Received	2102	12.4	44.8	32.0	10.8	13.39**	2.41
All Respondents	3479	11.4	47.1	31.1	10.4		2.41
e. I have a clear understanding of the performance criteria that I need to meet in order to earn a GEEG bonus award.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	6.1	19.8	58.8	15.4		2.83
Received	2102	4.1	12.4	61.9	21.6	54.84**	3.01
All Respondents	3479	4.9	15.3	60.6	19.2		2.94
f. I do not believe that I can achieve the performance criteria established by my school's GEEG incentive system.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	18.4	61.6	16.2	3.8		2.05
Received	2102	21.9	60.4	13.8	3.9	8.24*	2.00

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All Respondents	3479	20.6	60.9	14.8	3.8		2.02

(3) Please indicate the extent to which you agree or disagree with each statement about the GEEG incentive system at your school.

g. I believe that the performance criteria established by my school's GEEG incentive system are worthy of extra pay.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	4.4	15.6	63.4	16.6		2.92
Received	2102	6.0	15.8	59.9	18.3	6.87	2.90
All Respondents	3479	5.4	15.8	61.3	17.6		2.91

h. The size of the top bonus award in my school's GEEG incentive system is not large enough to motivate me to try to earn the top award.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	9.7	60.0	24.2	6.1		2.27
Received	2102	12.0	59.5	22.3	6.1	5.12	2.23
All Respondents	3479	11.1	59.7	23.1	6.1		2.24

i. The GEEG incentive system does not affect my teaching practices or professional behaviors.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	2.8	20.4	53.7	23.2		2.97
Received	2102	4.3	20.0	50.2	25.5	8.96*	2.97
All Respondents	3479	3.7	20.2	51.6	24.5		2.97

4) Please indicate the extent to which you agree or disagree with each of the following statements.

a. The amount a student can learn is primarily related to family background.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	15.3	54.0	24.0	6.7		2.22
Received	2102	16.5	54.9	22.8	5.8	2.50	2.18
All Respondents	3479	16.0	54.6	23.3	6.1		2.20

b. If students aren't disciplined at home, they aren't likely to accept any discipline.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	7.4	40.6	38.2	13.8		2.58
Received	2102	8.2	43.6	35.9	12.3	5.24	2.52
All Respondents	3479	7.9	42.4	36.8	12.9		2.55

c. When I really try, I can get through to the most difficult student.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	1.5	14.2	63.5	20.8		3.04
Received	2102	1.7	14.3	63.7	20.3	0.27	3.03
All Respondents	3479	1.6	14.2	63.6	20.5		3.03

d. A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	8.5	49.5	34.5	7.6		2.41

Received	2102	8.8	50.0	33.2	8.1	0.90	2.41
All Respondents	3479	8.7	49.8	33.7	7.9		2.41

| 4) Please indicate the extent to which you agree or disagree with each of the following statements. | | | | | | | |

e. If parents would do more for their children, I could do more.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	5.3	24.7	53.7	16.3		2.81
Received	2102	5.1	23.9	53.9	17.2	0.71	2.83
All Respondents	3479	5.2	24.2	53.8	16.8		2.82

f. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	0.9	11.0	76.2	12.0		2.99
Received	2102	1.1	10.4	73.8	14.6	5.65	3.02
All Respondents	3479	1.0	10.6	74.8	13.6		3.01

g. If a student in my class becomes disruptive and noisy, I feel assured that I know some quick techniques to redirect him/her quickly.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	0.6	3.6	68.8	27.1		3.22
Received	2102	0.9	4.0	67.9	27.3	1.37	3.22
All Respondents	3479	0.7	3.8	68.2	27.2		3.22

h. If one of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	0.5	7.0	74.3	18.2		3.10
Received	2102	0.7	5.2	73.8	20.3	6.61	3.14
All Respondents	3479	0.6	5.9	74.0	19.5		3.12

i. If I really try hard, I can get through to even the most difficult or unmotivated students.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	1.1	13.8	62.1	23.0		3.07
Received	2102	1.6	15.4	61.9	21.1	4.24	3.03
All Respondents	3479	1.4	14.8	62.0	21.9		3.04

j. When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his/her home environment.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	18.2	57.4	20.5	3.8		2.10
Received	2102	20.2	60.8	15.1	3.9	17.36**	2.03
All Respondents	3479	19.4	59.5	17.2	3.9		2.06

(5) Think about the leadership that the principal at your school has provided this school year (2007-08). To what extent do you agree or disagree with each of the following statements about your principal's leadership? The principal at my school …							
a. Clearly communicates expected standards for instruction in my classroom.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	2.0	5.7	60.3	31.9		3.22
Received	2102	3.2	6.7	58.1	32.0	5.99	3.19
All Respondents	3479	2.7	6.3	59.0	31.9		3.20
b. Carefully tracks student academic progress.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	1.7	7.4	60.6	30.4		3.20
Received	2102	2.1	8.5	59.0	30.3	2.53	3.18
All Respondents	3479	2.0	8.1	59.6	30.3		3.18
c. Knows what is going on in my classroom.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	2.5	10.7	58.5	28.3		3.13
Received	2102	4.3	12.3	56.0	27.4	10.94*	3.06
All Respondents	3479	3.6	11.7	57.0	27.7		3.09
d. Encourages teachers to raise test scores.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	0.7	3.9	55.2	40.2		3.35
Received	2102	1.7	4.4	54.7	39.3	7.37	3.32
All Respondents	3479	1.3	4.2	54.9	39.7		3.33
e. Actively monitors the quality of instruction in the school.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	2.1	8.1	56.1	33.8		3.21
Received	2102	3.3	9.6	56.6	30.5	9.32*	3.14
All Respondents	3479	2.8	9.0	56.4	31.8		3.17
f. Works directly with teachers who are struggling to improve their instruction.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	4.1	15.2	54.9	25.8		3.02
Received	2102	5.2	15.4	55.5	23.9	3.30	2.98
All Respondents	3479	4.8	15.3	55.2	24.7		3.00
g. Communicates a clear vision for our school.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	2.0	6.1	53.9	38.0		3.28
Received	2102	3.6	6.8	52.1	37.5	7.69	3.24
All Respondents	3479	3.0	6.5	52.8	37.7		3.25
h. Evaluates teachers using criteria directly related to the school's improvement goals.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	1.8	7.0	58.9	32.3		3.22
Received	2102	3.0	6.7	59.5	30.9	5.31	3.18
All Respondents	3479	2.5	6.8	59.2	31.4		3.20

(6) Think about teachers at your school this school year (2007-08). To what extent do you agree or disagree with the following statements about the teachers in your school? Teachers at my school …							
a. Feel responsible to help each other do their best.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	2.4	12.3	58.0	27.3		3.10
Received	2102	2.5	13.2	57.2	27.1	0.60	3.09
All Respondents	3479	2.5	12.8	57.5	27.2		3.09
b. Expect students to complete every assignment.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	0.7	9.3	61.7	28.3		3.18
Received	2102	1.4	7.7	63.2	27.7	6.14	3.17
All Respondents	3479	1.1	8.3	62.6	27.9		3.17
c. Seem more competitive than cooperative.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	11.5	58.5	23.0	6.9		2.25
Received	2102	12.1	60.7	20.1	7.1	4.33	2.22
All Respondents	3479	11.9	59.8	21.2	7.0		2.23
d. Encourage students to keep trying even when the work is challenging.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	0.9	3.4	65.1	30.6		3.25
Received	2102	0.9	4.9	65.0	29.2	5.08	3.22
All Respondents	3479	0.9	4.3	65.0	29.7		3.24
e. Think it is important that all of their students do well in class.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	1.2	4.0	58.0	36.8		3.31
Received	2102	0.9	5.1	58.1	35.9	3.08	3.29
All Respondents	3479	1.0	4.7	58.1	36.2		3.30
f. Do not really trust each other.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	21.2	57.4	17.1	4.3		2.04
Received	2102	22.8	56.0	16.4	4.8	1.96	2.03
All Respondents	3479	22.2	56.6	16.6	4.6		2.04
g. Can be counted on to help out anywhere or anytime, even though it may not be part of their official assignment.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	4.2	15.4	56.4	24.0		3.00
Received	2102	4.2	15.5	56.0	24.3	0.06	3.00
All Respondents	3479	4.2	15.4	56.2	24.1		3.00

(7) The current teacher salary schedule rewards experience and education. Several additional factors have been suggested for determining incentive pay for individual teachers. If you were designing an incentive pay program for individual teachers, how much importance would you give to each of the following:

a. Time spent in professional development.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	2.9	13.9	51.4	31.7		3.12
Received	2102	3.2	16.0	52.7	28.1	6.72	3.06
All Respondents	3479	3.1	15.2	52.2	29.5		3.08

b. High average test scores by students.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	4.0	14.6	49.7	31.7		3.09
Received	2102	3.4	14.3	52.9	29.4	3.85	3.08
All Respondents	3479	3.7	14.4	51.7	30.3		3.09

c. Improvements in students' test scores.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	1.5	5.0	35.5	58.0		3.50
Received	2102	1.8	4.3	37.3	56.6	2.40	3.49
All Respondents	3479	1.7	4.6	36.6	57.1		3.49

d. Performance evaluations by supervisors.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	3.5	16.1	51.5	28.9		3.06
Received	2102	5.2	15.5	51.7	27.6	6.04	3.02
All Respondents	3479	4.5	15.8	51.6	28.1		3.03

e. Performance evaluations by peers.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	10.3	22.2	48.2	19.2		2.76
Received	2102	14.3	26.5	43.0	16.3	25.73**	2.61
All Respondents	3479	12.7	24.8	45.0	17.4		2.67

f. Independent evaluation of teaching portfolios.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	8.8	21.9	49.0	20.3		2.81
Received	2102	12.9	25.9	45.9	15.3	31.56**	2.64
All Respondents	3479	11.3	24.3	47.1	17.3		2.70

g. Independent evaluations of students' work (e.g., portfolios).

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	6.3	17.6	51.5	24.6		2.94
Received	2102	8.5	21.1	47.6	22.9	13.89**	2.85
All Respondents	3479	7.6	19.7	49.1	23.6		2.89

h. Student evaluations of teaching performance.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	13.9	24.7	41.0	20.4		2.68
Received	2102	17.6	25.1	40.0	17.4	11.31*	2.57

All Respondents	3479	16.1	24.9	40.4	18.6		2.61

(7) The current teacher salary schedule rewards experience and education. Several additional factors have been suggested for determining incentive pay for individual teachers. If you were designing an incentive pay program for individual teachers, how much importance would you give to each of the following:

i. Collaboration with faculty and staff.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	2.5	11.4	46.1	40.0		3.24
Received	2102	2.8	10.7	47.8	38.8	1.58	3.23
All Respondents	3479	2.7	11.0	47.1	39.3		3.23

j. Working with students outside of class time.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	3.8	14.7	47.6	33.8		3.11
Received	2102	4.8	13.9	46.9	34.4	2.17	3.11
All Respondents	3479	4.4	14.2	47.2	34.1		3.11

k. Efforts to involve parents in students' education.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	3.3	12.1	43.5	41.1		3.22
Received	2102	4.2	12.9	45.0	37.9	4.96	3.17
All Respondents	3479	3.9	12.6	44.4	39.2		3.19

l. Serving as a Master Teacher.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	7.6	17.9	48.4	26.1		2.93
Received	2102	9.1	20.4	45.2	25.4	6.81	2.87
All Respondents	3479	8.5	19.4	46.5	25.6		2.89

m. Mentoring other teachers.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	5.5	16.5	46.3	31.7		3.04
Received	2102	6.7	17.4	46.2	29.7	3.45	2.99
All Respondents	3479	6.2	17.0	46.2	30.5		3.01

n. National Board for Professional Teaching Standards (NBPTS) certification.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	9.2	20.1	42.3	28.4		2.90
Received	2102	11.9	21.8	41.2	25.2	10.10	2.80
All Respondents	3479	10.8	21.1	41.6	26.4		2.84

o. Parent satisfaction with teacher.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	9.4	23.7	43.4	23.5		2.81
Received	2102	13.7	26.8	40.6	18.9	25.70**	2.65
All Respondents	3479	12.0	25.6	41.7	20.7		2.71

p. Teaching in hard-to-staff fields.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	4.3	11.5	46.8	37.4		3.17

Received	2102	5.2	14.2	44.3	36.3	7.48	3.12
All Respondents	3479	4.8	13.1	45.3	36.8		3.14

(7) The current teacher salary schedule rewards experience and education. Several additional factors have been suggested for determining incentive pay for individual teachers. If you were designing an incentive pay program for individual teachers, how much importance would you give to each of the following:

q. Teaching in hard-to-staff school.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	3.9	11.0	44.4	40.7		3.22
Received	2102	5.3	12.7	42.8	39.3	6.15	3.16
All Respondents	3479	4.7	12.0	43.4	39.9		3.18

(8) Please indicate how important you believe each factor is in determining awards provided to teachers in your school from the Governor's Educator Excellence Grants (GEEG).

a. Time spent in professional development.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	4.5	17.6	45.8	32.1		3.05
Received	2102	7.8	19.0	47.8	25.4	28.81**	2.91
All Respondents	3479	6.5	18.5	47.0	28.1		2.97

b. High average test scores by students.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	2.8	10.6	44.8	41.8		3.25
Received	2102	3.3	11.7	46.8	38.2	4.71	3.20
All Respondents	3479	3.1	11.3	46.0	39.6		3.22

c. Improvements in students' test scores.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	2.3	5.3	37.5	54.9		3.45
Received	2102	3.6	4.9	39.6	52.0	7.36	3.40
All Respondents	3479	3.0	5.0	38.8	53.1		3.42

d. Performance evaluations by supervisors.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	5.5	14.5	50.5	29.5		3.04
Received	2102	8.5	16.8	48.9	25.8	17.61**	2.92
All Respondents	3479	7.3	15.9	49.5	27.3		2.97

e. Performance evaluations by peers.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	13.5	23.2	46.1	17.2		2.67
Received	2102	21.4	23.9	40.3	14.4	39.57**	2.48
All Respondents	3479	18.3	23.6	42.6	15.5		2.55

f. Independent evaluation of teaching portfolios.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	12.5	22.3	45.8	19.5		2.72

Received	2102	19.8	23.8	41.5	14.9	40.87**	2.52
All Respondents	3479	16.9	23.2	43.2	16.7		2.60

(8) Please indicate how important you believe each factor is in determining awards provided to teachers in your school from the Governor's Educator Excellence Grants (GEEG).

g. Independent evaluations of students' work (e.g., portfolios).

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	11.4	17.1	48.3	23.2		2.83
Received	2102	16.7	20.8	43.0	19.6	32.24**	2.65
All Respondents	3479	14.6	19.3	45.1	21.0		2.73

h. Student evaluations of teaching performance.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	19.2	23.1	38.7	19.0		2.58
Received	2102	25.9	23.5	35.8	14.8	26.86**	2.40
All Respondents	3479	23.2	23.3	37.0	16.5		2.47

i. Collaboration with faculty and staff.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	5.3	12.2	46.4	36.1		3.13
Received	2102	7.9	12.1	46.4	33.5	10.00*	3.06
All Respondents	3479	6.9	12.2	46.4	34.6		3.09

j. Working with students outside of class time.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	6.9	13.2	45.5	34.4		3.07
Received	2102	8.8	14.3	44.3	32.5	5.78	3.01
All Respondents	3479	8.1	13.9	44.8	33.3		3.03

k. Efforts to involve parents in students' education.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	7.0	13.1	42.6	37.2		3.10
Received	2102	11.2	15.4	42.7	30.7	28.26**	2.93
All Respondents	3479	9.5	14.5	42.7	33.3		3.00

l. Serving as a Master Teacher.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	11.3	18.9	45.2	24.6		2.83
Received	2102	16.4	20.4	42.2	21.1	22.06**	2.68
All Respondents	3479	14.4	19.8	43.3	22.5		2.74

m. Mentoring other teachers.

Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	9.3	16.6	45.2	28.9		2.94
Received	2102	13.6	18.7	42.2	25.5	20.28**	2.80
All Respondents	3479	11.9	17.9	43.4	26.9		2.85

n. National Board for Professional Teaching Standards (NBPTS) certification.

Award	N	1	2	3	4	Chi-Sq	Mean

No or Unknown	1377	12.5	18.2	40.7	28.6		2.85
Received	2102	19.0	20.5	38.0	22.5	38.24**	2.64
All Respondents	3479	16.4	19.6	39.1	24.9		2.72

(8) Please indicate how important you believe each factor is in determining awards provided to teachers in your school from the Governor's Educator Excellence Grants (GEEG).							
o. Parent satisfaction with teacher.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	14.6	21.6	40.1	23.7		2.73
Received	2102	21.5	24.3	36.7	17.5	42.59**	2.50
All Respondents	3479	18.8	23.2	38.0	20.0		2.59
p. Teaching in hard-to-staff fields.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	8.8	13.7	43.1	34.4		3.03
Received	2102	12.0	14.7	41.3	31.9	11.01*	2.93
All Respondents	3479	10.8	14.3	42.0	32.9		2.97
q. Teaching in hard-to-staff school.							
Award	N	1	2	3	4	Chi-Sq	Mean
No or Unknown	1377	8.8	12.9	42.0	36.2		3.06
Received	2102	13.0	13.8	41.1	32.2	17.72**	2.92
All Respondents	3479	11.3	13.5	41.4	33.8		2.98

APPENDIX E: Factor Analysis of Fall Survey Items

We combined responses to items that were the same on the January, 2007 and fall 2007 surveys completed by respondents from GEEG schools and the fall 2007 survey completed by respondents from TEEG schools. The number of observations taken from each of the surveys is presented below.

	GEEG Jan 2007	GEEG 2007 Fall	TEEG 2007 Fall
Valid Survey Responses			
# of schools	77	89	986
# of school personnel	1643	3479	35147

We conducted an exploratory principal component factor analysis on each of the major questions included in the surveys.[1] The results of the factor analyses are summarized in this appendix. We used the rotated factor loadings to group items and then calculated "factor scores" by finding the mean value of the items that made up each factor. Correlations among the factor scores for the GEEG survey responses are presented at the end of the appendix.

Note: Responses from the GEEG 2006 Fall Survey were only included in the factor analyses of questions 7 and 8, as only those questions were common to it and the other surveys.

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[1] We combined questions with the same Likert response options and conducted exploratory analyses across questions. The resulting factor structures clustered items by question so we determined that each question was measuring a different domain and use results of factor analyses on items within questions in our analyses.

(7) The current teacher salary schedule rewards experience and education. Several additional factors have been suggested for determining incentive pay for individual teachers. If you were designing an incentive pay program for individual teachers, how much importance would you give to each of the following:

a. Time spent in professional development.
b. High average test scores by students.
c. Improvements in students' test scores.
d. Performance evaluations by supervisors.
e. Performance evaluations by peers.
f. Independent evaluation of teaching portfolios.
g. Independent evaluations of students' work (e.g., portfolios).
h. Student evaluations of teaching performance.
i. Collaboration with faculty and staff.
j. Working with students outside of class time.
k. Efforts to involve parents in students' education.
l. Serving as a Master Teacher.
m. Mentoring other teachers.
n. National Board for Professional Teaching Standards (NBPTS) certification.
o. Parent satisfaction with teacher.
p. Teaching in hard-to-staff fields.
q. Teaching in hard-to-staff school.

1=None
2=Low
3=Moderate
4=High

Factor analysis/correlation   Number of obs   =   40266

Method: principal-component factors   Retained factors   =   4

Rotation: orthogonal varimax (Horst off)   Number of parameters   =   62

Factor	Variance	Difference	Proportion	Cumulative
Factor71	3.52595	0.69794		0.2074	0.2074
Factor72	2.82802	0.69002	0.1664	0.3738
Factor73	2.13800	0.18583	0.1258	0.4995
Factor74	1.95217	.		0.1148	0.6144

Rotated factor loadings (pattern matrix) and unique variances

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Variable	71	72	73	74	Uniqueness
Q7, Item a.	0.2489	*0.4570*	0.0386	0.2334	0.6732
Q7, Item b.	0.2573	0.1431	0.0639	*0.7962*	0.2753
Q7, Item c.	0.0760	0.0743	0.1497	*0.8755*	0.1998
Q7, Item d.	*0.4911*	0.2128	0.0539	0.3393	0.5955
Q7, Item e.	*0.7147*	0.1631	0.1369	0.1068	0.4324
Q7, Item f.	*0.7845*	0.2100	0.0962	0.0756	0.3256
Q7, Item g.	*0.7414*	0.1739	0.1159	0.2099	0.3626
Q7, Item h.	*0.7482*	0.1326	0.1415	0.1531	0.3792
Q7, Item i.	*0.4123*	0.4021	0.1305	0.2609	0.5833
Q7, Item j.	0.2559	*0.5160*	0.1954	0.2604	0.5623
Q7, Item k.	0.3716	*0.5257*	0.1618	0.2868	0.4772
Q7, Item l.	0.1559	*0.8028*	0.2184	0.0744	0.2780
Q7, Item m.	0.1583	*0.8139*	0.2342	0.0794	0.2514
Q7, Item n.	0.3330	*0.5403*	0.2017	0.1040	0.5456
Q7, Item o.	*0.5972*	0.2733	0.2521	0.2032	0.4639
Q7, Item p.	0.1258	0.1647	*0.9342*	0.0951	0.0752
Q7, Item q.	0.0953	0.1562	*0.9406*	0.0798	0.0755

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(8) Please indicate how important you believe each factor is in determining awards provided to teachers in your school from the Governor's Educator Excellence Grants (GEEG).

a. Time spent in professional development
b. High average test scores by students
c. Improvements in students' test scores
d. Performance evaluations by supervisors
e. Performance evaluations by peers
f. Independent evaluation of teaching portfolios
g. Independent evaluations of students' work (e.g., portfolios)
h. Student evaluations of teaching performance
i. Collaboration with faculty and staff
j. Working with students outside of class time.
k. Efforts to involve parents in students' education
l. Serving as a Master Teacher
m. Mentoring other teachers
n. National Board for Professional Teaching Standards (NBPTS) certification
o. Parent satisfaction with teacher
p. Teaching in hard-to-staff fields
q. Teaching in hard-to-staff school

1=None
2=Low
3=Moderate
4=High

Question 8 (Continued)

Factor analysis/correlation   Number of obs   =   40262
Method: principal-component factors   Retained factors   =   3
Rotation: orthogonal varimax (Horst off)   Number of parameters   =   48

```
-----------------------------------------------------------------------------
    Factor   |   Variance   Difference       Proportion Cumulative
-----------------------------------------------------------------------------
    Factor81 |   4.72027    0.86487          0.2777      0.2777
    Factor82 |   3.85540    1.69972          0.2268      0.5045
    Factor83 |   2.15568       .                         0.1268    0.6313
-----------------------------------------------------------------------------
```

Rotated factor loadings (pattern matrix) and unique variances

```
-----------------------------------------------------------------------------
     Variable    |      81          82          83    |  Uniqueness
-----------------------------------------------------------------------------
 Q8, Item a.     |   0.3870    0.3395     0.3667 |    0.6005
 Q8, Item b.     |   0.1848   -0.0333     0.8160 |    0.2988
 Q8, Item c.     |   0.0829    0.1951     0.8167 |    0.2880
 Q8, Item d.     |   0.5164    0.2245     0.4333 |    0.4952
 Q8, Item e.     |   0.7695    0.2435     0.1489 |    0.3263
 Q8, Item f.     |   0.8235    0.2383     0.1252 |    0.2493
 Q8, Item g.     |   0.7898    0.2576     0.1720 |    0.2803
 Q8, Item h.     |   0.8078    0.2258     0.0967 |    0.2871
 Q8, Item i.     |   0.4046    0.3860     0.3653 |    0.5539
 Q8, Item j.     |   0.3505    0.5069     0.3318 |    0.5101
 Q8, Item k.     |   0.5001    0.5113     0.2760 |    0.4123
 Q8, Item l.     |   0.4287    0.6481     0.1478 |    0.3743
 Q8, Item m.     |   0.4170    0.6799     0.1538 |    0.3403
 Q8, Item n.     |   0.5167    0.4932     0.1596 |    0.4643
 Q8, Item o.     |   0.6895    0.3777     0.1644 |    0.3549
 Q8, Item p.     |   0.2015    0.8577     0.0640 |    0.2196
 Q8, Item q.     |   0.1968    0.8636     0.0441 |    0.2135
-----------------------------------------------------------------------------
```

4) Please indicate the extent to which you agree or disagree with each of the following statements.

a. The amount a student can learn is primarily related to family background.
b. If students aren't disciplined at home, they aren't likely to accept any discipline.
c. When I really try, I can get through to the most difficult student.
d. A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement.
e. If parents would do more for their children, I could do more.
f. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.
g. If a student in my class becomes disruptive and noisy, I feel assured that I know some quick techniques to redirect him/her quickly.
h. If one of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.
i. If I really try hard, I can get through to even the most difficult or unmotivated students.
j. When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his/her home environment.

1=Strongly Disagree
2=Disagree
3=Agree
4=Strongly Agree

Question 4 (Continued)

Factor analysis/correlation   Number of obs   =   38626
Method: principal-component factors   Retained factors   =   2
Rotation: orthogonal varimax (Horst off)   Number of parameters = 19

    Factor | Variance Difference   Proportion Cumulative

    Factor41 | 2.73239   0.14723   0.2732   0.2732
    Factor42 | 2.58516   .   0.2585   0.5318

Rotated factor loadings (pattern matrix) and unique variances

----
        Variable | 41   42 | Uniqueness

Q4, Item a. | *0.7313*   -0.0245 | 0.4646
Q4, Item b. | *0.7398*   -0.0741 | 0.4472
Q4, Item c. | -0.2639   *0.6537* | 0.5030
Q4, Item d. | *0.7926*   -0.0980 | 0.3622
Q4, Item e. | *0.6153*   0.0922 | 0.6129
Q4, Item f. | 0.0572   *0.6595* | 0.5617
Q4, Item g. | -0.0254   *0.7632* | 0.4169
Q4, Item h. | 0.0478   *0.7288* | 0.4665
Q4, Item i. | -0.2431   *0.7381* | 0.3961
Q4, Item j. | *0.7131*   -0.2006 | 0.4512

Question 5

(5) Think about the leadership that the principal at your school has provided this school year (2007-08). To what extent do you agree or disagree with each of the following statements about your principal's leadership?
The principal at my school …

a. Clearly communicates expected standards for instruction in my classroom.
b. Carefully tracks student academic progress.
c. Knows what is going on in my classroom.
d. Encourages teachers to raise test scores.
e. Actively monitors the quality of instruction in the school.
f. Works directly with teachers who are struggling to improve their instruction.
g. Communicates a clear vision for our school.
h. Evaluates teachers using criteria directly related to the school's improvement goals.

1=Strongly Disagree
2=Disagree
3=Agree
4=Strongly Agree

Factor analysis/correlation   Number of obs   =   38626
Method: principal-component factors   Retained factors   =   1
Rotation: orthogonal varimax (Horst off)   Number of parameters   =   8

Factor	Variance	Difference	Proportion	Cumulative
Factor51	5.77016	.	0.7213	0.7213

Rotated factor loadings (pattern matrix) and unique variances

Variable	Factor51	Uniqueness
Q5, Item a.	*0.8637*	0.2541
Q5, Item b.	*0.8543*	0.2701
Q5, Item c.	*0.8525*	0.2732
Q5, Item d.	*0.7404*	0.4518
Q5, Item e.	*0.8924*	0.2035
Q5, Item f.	*0.8418*	0.2914
Q5, Item g.	*0.8724*	0.2390
Q5, Item h.	*0.8679*	0.2468

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Question 6

(6) Think about teachers at your school this school year (2007-08). To what extent do you agree or disagree with the following statements about the teachers in your school? Teachers at my school …

a. Feel responsible to help each other do their best.
b. Expect students to complete every assignment.
c. Seem more competitive than cooperative.
d. Encourage students to keep trying even when the work is challenging.
e. Think it is important that all of their students do well in class.
f. Do not really trust each other.
g. Can be counted on to help out anywhere or anytime, even though it may not be part of their official assignment.

1=Strongly Disagree
2=Disagree
3=Agree
4=Strongly Agree

Factor analysis/correlation   Number of obs   =   38626
Method: principal-component factors   Retained factors   =   2
Rotation: orthogonal varimax (Horst off)   Number of parameters   =   13

    Factor | Variance   Difference   Proportion   Cumulative

    Factor61 | 1.91862   .   0.2741   0.6787
    Factor62 | 2.83245   0.91382   0.4046   0.4046

Rotated factor loadings (pattern matrix) and unique variances

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    Variable | Factor61   Factor62 | Uniqueness

    Q6, Item a. | -0.4526   **0.6655** | 0.3522
    Q6, Item b. | 0.0118   **0.7880** | 0.3789
    Q6, Item c. | **0.8667**   -0.0161 | 0.2486
    Q6, Item d. | -0.1617   **0.8337** | 0.2788
    Q6, Item e. | -0.1664   **0.8295** | 0.2842
    Q6, Item f. | **0.8186**   -0.2459 | 0.2694
    Q6, Item g. | -0.4883   **0.5698** | 0.4369

Summary

Items making up each factor and reliability estimates are shown in the following table.

Factor Number	Factor Name	Question Items	α
41	Environmental/Family Background Attribution	a, b, d, e, j	0.78
42	Teachers' Professional Efficacy	c, f, g, h, i	0.77
51	Principal Leadership	a, b, c, d, e, f, g, h	0.95
61	Teacher Competition	c, f	0.72
62	Expectations and Collaboration	a, b, d, e, g	0.86
71	Professional Evaluations	d, e, f, g, h, i, o	0.87
72	Extra-classroom contributions	a, j, k, l, m, n	0.83
73	Market Based	b, c	0.93
74	Test-based Measures	p, q	0.73
81	Professional Evaluations and Professional Development	a, d, e, f, g, h, i, n, o	0.92
82	Extra-classroom contributions	j, k, l, m, p, q	0.89
83	Test-based Measures	b, c	0.65

Correlations among calculated factor scores are presented below.

Factor Number	41	42	51	61	62	71	72	73	74	81	82	83
41	1.000											
42	-0.154	1.000										
51	-0.101	0.306	1.000									
61	0.249	-0.062	-0.197	1.000								
62	-0.051	0.335	0.496	-0.389	1.000							
71	-0.013	0.114	0.223	0.013	0.192	1.000						
72	-0.050	0.142	0.209	-0.001	0.169	0.693	1.000					
73	-0.021	0.075	0.129	0.003	0.081	0.371	0.452	1.000				
74	-0.058	0.167	0.180	-0.082	0.164	0.422	0.406	0.247	1.000			
81	0.020	0.082	0.235	0.019	0.194	0.719	0.596	0.266	0.340	1.000		
82	0.009	0.074	0.221	-0.022	0.162	0.539	0.610	0.416	0.311	0.833	1.000	
83	-0.057	0.146	0.186	-0.063	0.132	0.342	0.330	0.191	0.556	0.371	0.324	1.000

All coefficients except those that are shaded are significant at the p < .01 level.

APPENDIX F: Means of Factor Scores Across Selected Respondent Characteristics

Means on the calculated factor scores developed from responses to the survey items are presented in this appendix. For each factor, we present the overall means and then means and standard deviations for subgroups based on the respondent characteristics listed below.

- Whether or not respondents reported receiving a GEEG award
- Experience level
- Position – Teachers compared to other respondents

		N	4-1: Environmental/ Background Attribution		4-2: Teachers' Professional Efficacy		5-1: Principal Leadership		6-1: Competition		6-2: Expectations and Collaboration	
			Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Received Geeg Award	Yes	2102	2.39	0.56	3.08	0.42	3.16	0.61	2.13	0.67	3.16	0.53
	No or Unknown	1377	2.42	0.56	3.08	0.41	3.20	0.56	2.15	0.65	3.17	0.51
Respondent Experience	1 year	185	2.46	0.57	3.00	0.43	3.16	0.58	2.15	0.67	3.11	0.56
	2 - 3 years	433	2.43	0.57	3.08	0.41	3.23	0.58	2.12	0.70	3.16	0.52
	4 - 9 years	1046	2.42	0.56	3.11	0.40	3.20	0.57	2.14	0.67	3.19	0.51
	10+ years	1815	2.38	0.56	3.08	0.42	3.16	0.60	2.13	0.65	3.15	0.52
Position	Teachers	2831	2.41	0.55	3.08	0.41	3.17	0.59	2.12	0.66	3.16	0.52
	Others	648	2.39	0.60	3.09	0.41	3.22	0.59	2.22	0.67	3.18	0.50
Overall		3479	2.41	0.56	3.08	0.41	3.18	0.59	2.14	0.66	3.16	0.52

		N	7-1: Professional Evaluations		7-2: Extra-classroom contributions		7-3: Market Based		7-4: Test-based Measures	
			Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Received Geeg Award	Yes	2102	2.79	0.66	3.00	0.62	3.14	0.81	3.28	0.63
	No or Unknown	1377	2.90	0.63	3.05	0.60	3.20	0.77	3.29	0.65
Respondent Experience	1 year	185	2.94	0.65	3.15	0.58	3.28	0.73	3.27	0.68
	2 - 3 years	433	2.93	0.62	3.07	0.58	3.25	0.72	3.30	0.62
	4 - 9 years	1046	2.84	0.65	3.02	0.63	3.17	0.79	3.34	0.61
	10+ years	1815	2.80	0.65	2.99	0.62	3.12	0.81	3.26	0.65
Position	Teachers	2831	2.77	0.64	2.97	0.61	3.14	0.80	3.26	0.64
	Others	648	3.13	0.61	3.24	0.57	3.28	0.74	3.42	0.60
Overall		3479	2.84	0.65	3.02	0.62	3.16	0.79	3.29	0.63

		N	8-1: Professional Evaluations and Professional Development		8-2: Extra-classroom contributions		8-3: Test-based Measures	
			Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Received Geeg Award	Yes	2102	2.67	0.76	2.88	0.78	3.30	0.66
	No or Unknown	1377	2.85	0.70	3.01	0.73	3.35	0.64
Respondent Experience	1 year	185	2.95	0.67	3.11	0.66	3.31	0.66
	2 - 3 years	433	2.84	0.74	2.98	0.73	3.32	0.66
	4 - 9 years	1046	2.75	0.73	2.93	0.75	3.36	0.62
	10+ years	1815	2.69	0.75	2.90	0.78	3.30	0.67
Position	Teachers	2831	2.66	0.73	2.87	0.76	3.29	0.66
	Others	648	3.08	0.68	3.20	0.71	3.45	0.60
Overall		3479	2.74	0.74	2.93	0.76	3.32	0.65

APPENDIX G: Results for Regression Analyses on Factors Derived from Survey Questions

The dependent variable in all regression models is a Z-Score computed from calculated factor scores.

Factors 4-1 through 6-2
Model 1 – includes only selected respondent characteristics
Model 2 – adds selected school characteristics
Model 3 – adds selected characteristics of GEEG plan
Model 4a – adds selected measures from GEEG award distribution
Model 4b – adds alternate measures from GEEG award distribution

Factors 7-1 through 8-3
Model 1 – combined January 2007 and fall 2007 results -- includes selected respondent
         characteristics and a time variable
Model 1a – only fall 2007 and adds position to respondent characteristics
Model 2 – fall 2007 only and adds selected school characteristics
Model 3 – adds selected characteristics of GEEG plan
Model 4a – adds selected measures from GEEG award distribution
Model 4b – adds alternate measures from GEEG award distribution

All significant coefficients are noted by:
* $p < .05$ and ** $p < .01$

Means of Independent Variables Used in the Regressions

Variable	Label	N	Mean	Std Dev	Min	Max
exp_new	1 to 3 years of experience	5124	0.1729118	0.3782079	0	1.0000000
exp_mid	4 to 14 years of experience	5124	0.4627244	0.4986573	0	1.0000000
exp_car	15 and more years of experience	5124	0.3587041	0.4796669	0	1.0000000
award	received GEEG award	5124	0.6703747	0.4701230	0	1.0000000
elem_sch	elementary school	5055	0.5200791	0.4996461	0	1.0000000
mid_sch	middle school	5055	0.2534125	0.4350081	0	1.0000000
high_sch	high school	5055	0.2089021	0.4065645	0	1.0000000
allg_sch	all grade school	5055	0.0176063	0.1315286	0	1.0000000
elig_lev	GEEG eligible based on level	5055	0.4813056	0.4996998	0	1.0000000
elig_ci	GEEG eligible based on growth	5055	0.5082097	0.4999821	0	1.0000000
elig_ae	GEEG eligible based on Alt Ed	5027	0.0105431	0.1021469	0	1.0000000
teach	Teachers	3479	0.8137396	0.3893726	0	1.0000000
other_cert	Other Certificated Staff	3479	0.0419661	0.2005405	0	1.0000000
support	Support Staff	3479	0.0261569	0.1596248	0	1.0000000
tchaide	Teacher Aides	3479	0.0905433	0.2869997	0	1.0000000
other	Other Staff	3479	0.0275941	0.1638304	0	1.0000000
time	time - 1 for 2007, 0 for 2006	5124	0.6789617	0.4669210	0	1.0000000
cam	Campus-based Measures	4915	0.2917599	0.4546187	0	1.0000000
tch	Teacher Only Measures	4915	0.5346897	0.4988459	0	1.0000000
tm	Team-based Measures	4915	0.0063072	0.0791752	0	1.0000000
tchcam	Teacher and Campus-based	4915	0.1440488	0.3511750	0	1.0000000
tchtmcam	Teacher. Team, and Campus	4915	0.0231943	0.1505355	0	1.0000000
lev_crit	award based on level criterion	5048	0.6679873	0.4709822	0	1.0000000
growth_crit	award based on growth criterion	5048	0.1055864	0.3073379	0	1.0000000
both_crit	award based on both criteria	5048	0.2264263	0.4185596	0	1.0000000
PLANGINI	(mean) plangini	4846	3.3987195	1.9521703	0	7.6775998
MEANBONUS	(mean) bonus	4323	1.7108821	0.6490152	0.5171628	8.7400000
GINI	GINI based on award distributions	4323	3.7135967	1.6501880	0.6896000	8.6952001
NOAWARD	Percent of teachers with NO award	4323	0.2068893	0.1173786	0	0.6666666

Factor 4-1: Environmental/ Background Attribution

	Model 1	Model 2	Model 3	Model 4	Model 4a
1 -3 Years Experience	-	-	-	-	-
4 - 14 Years Experience	-0.020	-0.008	-0.025	-0.027	-0.028
15+ Years Experience	-0.080	-0.075	-0.094	-0.080	-0.081
Received Award	-0.042	-0.042	-0.027	-0.043	-0.036
Teachers	-0.046	-0.070	-0.066	-0.088	-0.090
Other Certificated	-0.403 **	-0.397**	-0.418**	-0.416**	-0.420**
Support Staff	-0.257	-0.297*	-0.319*	-0.284	-0.314*
Teacher's Aides	0.081	0.087	0.103	0.114	0.109
Other	-	-	-	-	-
Elementary Schools	-	-	-	-	-
Middle Schools	-	0.163**	0.125**	0.198**	0.200**
High Schools	-	0.230**	0.247**	0.209**	0.222**
All-grade Schools	-	0.310**	0.295*	0.313*	0.260
School Eligible from Perf. Level	-	-0.064*	-0.091*	-0.052	-0.081*
School Eligible from Improvement	-	-	-	-	-
Campus	-	-	-	-	-
Teacher	-	-	-0.040	-0.073	-0.033
Team	-	-	-0.111	-0.159	-0.131
Teacher and Campus	-	-	-0.070	-0.200**	-0.157*
Teacher, Team and Campus	-	-	-0.144	-0.217	-0.179
Performance Growth Criteria	-	-	-	-	-
Performance Level Criteria	-	-	0.064	0.034	0.062
Both Criteria	-	-	-0.094	-0.080	-0.081
Plan Gini	-	-	0.156	-	-
Mean Bonus	-	-	-	-0.111**	-
Gini of Awards at School Level	-	-	-	-	-0.029
Model R²	0.0083	0.0189	0.0196	0.0257	0.0213
N	3479	3479	3262	2805	2805

Factor 4-2: Teachers' Professional Efficacy

	Model 1	Model 2	Model 3	Model 4	Model 4a
1 -3 Years Experience	-	-	-	-	-
4 - 14 Years Experience	0.1227*	0.103*	0.123*	0.129*	0.129*
15+ Years Experience	0.037	0.029	0.022	0.062	0.063
Received Award	-0.014	-0.001	-0.002	0.009	0.010
Teachers	-0.21464*	-0.193	-0.207*	-0.191	-0.192
Other Certificated	-0.100	-0.107	-0.092	-0.068	-0.069
Support Staff	-0.163	-0.124	-0.098	-0.096	-0.103
Teacher's Aides	-0.3103**	-0.329**	-0.328**	-0.220	-0.221
Other	-	-	-	-	-
Elementary Schools	-	-	-	-	-
Middle Schools	-	-0.147**	-0.210**	-0.137**	-0.141**
High Schools	-	-0.284**	-0.310**	-0.283**	-0.293**
All-grade Schools	-	-0.307**	-0.385**	-0.449**	-0.495**
School Eligible from Perf. Level	-	-0.025	-0.063	0.016	0.013
School Eligible from Improvement	-	-	-	-	-
Campus	-	-	-	-	-
Teacher	-	-	0.029	0.000	-0.004
Team	-	-	0.413	0.322	0.327
Teacher and Campus	-	-	0.059	0.072	0.060
Teacher, Team and Campus	-	-	0.020	-0.021	-0.029
Performance Growth Criteria	-	-	-	-	-
Performance Level Criteria	-	-	-0.022	-0.038	-0.030
Both Criteria	-	-	-0.084	-0.053	-0.060
Plan Gini	-	-	0.385**	-	-
Mean Bonus	-	-	-	-0.012	-
Gini of Awards at School Level	-	-	-	-	0.102
Model R²	0.0032	0.0149	0.0181	0.0142	0.0143
N	3479	3479	3262	2805	2805

Factor 5-1: Principal Leadership
Note: Model 1 is not significant

	Model 1	Model 2	Model 3	Model 4	Model 4a
1 -3 Years Experience	-	-	-	-	-
4 - 14 Years Experience	-0.050	-0.095*	-0.111*	-0.160	-0.160**
15+ Years Experience	-0.046	-0.078	-0.106*	-0.100	-0.105
Received Award	-0.062	-0.039	-0.010	-0.035	-0.037
Teachers	-0.221*	-0.189	-0.153	-0.163	-0.161
Other Certificated	-0.159	-0.151	-0.147	-0.176	-0.172
Support Staff	-0.060	-0.002	-0.041	-0.023	-0.001
Teacher's Aides	-0.188	-0.188	-0.117	-0.132	-0.128
Other	-	-	-	-	-
Elementary Schools	-	-	-	-	-
Middle Schools	-	-0.081*	-0.077	0.045	0.060
High Schools	-	-0.397**	-0.341*	-0.346**	-0.301**
All-grade Schools	-	-0.121	-0.065	-0.223	-0.052
School Eligible from Perf. Level	-	0.048	0.053	0.011	0.017
School Eligible from Improvement	-	-	-	-	-
Campus	-	-	-	-	-
Teacher	-	-	-0.095*	-0.111*	-0.083
Team	-	-	0.241	0.281	0.266
Teacher and Campus	-	-	-0.095	-0.128	-0.066
Teacher, Team and Campus	-	-	-0.408**	-0.394**	-0.351**
Performance Growth Criteria	-	-	-	-	-
Performance Level Criteria	-	-	0.076	0.034**	0.008
Both Criteria	-	-	0.241**	0.220	0.253**
Plan Gini	-	-	0.025	-	-
Mean Bonus	-	-	-	0.017	-
Gini of Awards at School Level	-	-	-	-	-0.427**
Model R²	0.0016	0. 0232	0.0259	0.0305	0.0329
N	3479	3479	3262	2805	2805

Factor 6-1: Teacher Competition

	Model 1	Model 2	Model 3	Model 4	Model 4a
1 -3 Years Experience	-	-	-	-	-
4 - 14 Years Experience	0.043	0.056	0.074	0.067	0.067
15+ Years Experience	0.005	0.015	0.024	-0.013	-0.007
Received Award	-0.032	-0.031	-0.020	-0.034	-0.031
Teachers	-0.065	-0.083	-0.109	-0.150	-0.153
Other Certificated	0.062	0.059	0.055	0.059	0.054
Support Staff	0.288*	0.257	0.294*	0.269	0.243
Teacher's Aides	0.073	0.066	0.058	0.002	-0.003
Other	-	-	-	-	-
Elementary Schools	-	-	-	-	-
Middle Schools	-	0.090*	-0.010	0.082	0.064
High Schools	-	0.136**	0.044	0.023	-0.029
All-grade Schools	-	-0.056	-0.206	-0.112	-0.312*
School Eligible from Perf. Level	-	-0.095**	-0.145**	-0.129**	-0.137**
School Eligible from Improvement	-	-	-	-	-
Campus	-	-	-	-	-
Teacher	-	-	0.087*	0.136**	0.106*
Team	-	-	-0.395	-0.388	-0.370
Teacher and Campus	-	-	0.155*	0.266**	0.197*
Teacher, Team and Campus	-	-	0.119	0.080	0.032
Performance Growth Criteria	-	-	-	-	-
Performance Level Criteria	-	-	0.066	0.044	0.076
Both Criteria	-	-	-0.102	-0.038	-0.075
Plan Gini	-	-	0.426**	-	-
Mean Bonus	-	-	-	-0.025	-
Gini of Awards at School Level	-	-	-	-	0.492**
Model R²	0.0035	0.0087	0.0162	0.0176	0.0205
N	3479	3479	3262	2805	2805

Factor 6-2: Expectations and Collaboration
Note: Model 1 is not significant

	Model 1	Model 2	Model 3	Model 4	Model 4a
1 -3 Years Experience	-	-	-	-	-
4 - 14 Years Experience	0.073	0.025	0.019	-0.028	-0.028
15+ Years Experience	0.033	-0.001	0.000	0.017	0.012
Received Award	-0.028	-0.009	-0.012	-0.002	-0.007
Teachers	-0.066	-0.024	-0.013	-0.023	-0.020
Other Certificated	-0.129	-0.122	-0.112	-0.154	-0.148
Support Staff	-0.022	0.051	-0.002	-0.048	-0.013
Teacher's Aides	0.017	0.020	0.031	0.074	0.080
Other	-	-	-	-	-
Elementary Schools	-	-	-	-	-
Middle Schools	-	-0.147**	-0.086	-0.089	-0.074
High Schools	-	-0.459**	-0.392**	-0.350**	-0.306**
All-grade Schools	-	-0.170	-0.076	-0.234	-0.028
School Eligible from Perf. Level	-	0.101**	0.139**	0.160**	0.178**
School Eligible from Improvement	-	-	-	-	-
Campus	-	-	-	-	-
Teacher	-	-	-0.060	-0.071	-0.057
Team	-	-	0.662**	0.671**	0.644**
Teacher and Campus	-	-	-0.191	-0.193**	-0.143
Teacher, Team and Campus	-	-	-0.392**	-0.205	-0.175
Performance Growth Criteria	-	-	-	-	-
Performance Level Criteria	-	-	-0.257**	-0.210**	-0.250**
Both Criteria	-	-	-0.140	-0.086	-0.057
Plan Gini	-	-	-0.008	-	-
Mean Bonus	-	-	-	0.063*	-
Gini of Awards at School Level	-	-	-	-	-0.449**
Model R²	-0.0003	0.0312	0.0421	0.0400	0.0413
N	3479	3479	3262	2805	2805

Factor 7-1: Professional Evaluations

	Model 1	Model 1a	Model 2	Model 3	Model 4	Model 4a
1 -3 Years Experience	-	-	-	-	-	-
4 - 14 Years Experience	-0.082*	-0.111*	-0.127**	-0.123*	-0.176**	-0.177**
15+ Years Experience	-0.109**	-0.135**	-0.142**	-0.123*	-0.219**	-0.218**
Received Award	-0.137**	-0.124**	-0.112**	-0.122**	-0.093*	-0.090*
Time – 2006 vs. 2007	0.018	-	-	-	-	-
Teachers	-	-0.553**	-0.539**	-0.525**	-0.519**	-0.521**
Other Certificated	-	-0.288*	-0.293*	-0.283*	-0.270*	-0.272*
Support Staff	-	-0.049	-0.022	-0.028	-0.017	-0.031
Teacher's Aides	-	0.138	0.128	0.159	0.168	0.165
Other	-	-	-	-	-	-
Elementary Schools	-	-	-	-	-	-
Middle Schools	-	-	-0.090*	-0.135**	-0.023	-0.025
High Schools	-	-	-0.200**	-0.192**	-0.222**	-0.228**
All-grade Schools	-	-	-0.166	-0.271*	-0.338*	-0.393**
School Eligible from Perf. Level	-	-	-0.036	-0.059	-0.002	-0.013
School Eligible from Improvement	-	-	-	-	-	-
Campus	-	-	-	-	-	-
Teacher	-	-	-	-0.066	-0.068	-0.062
Team	-	-	-	-0.238	-0.290	-0.278
Teacher and Campus	-	-	-	-0.133*	-0.150*	-0.149*
Teacher, Team and Campus	-	-	-	-0.360**	-0.292*	-0.288*
Performance Growth Criteria	-	-	-	-	-	-
Performance Level Criteria	-	-	-	-0.107	-0.104	-0.089
Both Criteria	-	-	-	-0.244**	-0.083	-0.085
Plan Gini	-	-	-	0.658**	-	-
Mean Bonus	-	-	-	-	-0.040	-
Gini of Awards at School Level	-	-	-	-	-	0.082
Model R²	0.0063	0.0578	0.0628	0.0745	0.0739	0.0734
N	5117	3479	3479	3262	2805	2805

Factor 7-2: Extra-classroom Contributions

	Model 1	Model 1a	Model 2	Model 3	Model 4	Model 4a
1 -3 Years Experience	-	-	-	-	-	-
4 - 14 Years Experience	-0.067	-0.103*	-0.113*	-0.114*	-0.155**	-0.156**
15+ Years Experience	-0.083*	-0.127**	-0.129**	-0.126*	-0.197**	-0.194**
Received Award	-0.078*	-0.060	-0.052	-0.065	-0.036	-0.028
Time – 2006 vs. 2007	0.058	-	-	-	-	-
Teachers	-	-0.346**	-0.334**	-0.330**	-0.309**	-0.314**
Other Certificated	-	0.006	-0.002	0.019	0.045	0.038
Support Staff	-	-0.051	-0.029	-0.017	0.093	0.048
Teacher's Aides	-	0.186	0.174	0.180	0.227	0.220
Other	-	-	-	-	-	-
Elementary Schools	-	-	-	-	-	-
Middle Schools	-	-	-0.106**	-0.132**	-0.083	-0.092
High Schools	-	-	-0.167**	-0.157**	-0.194**	-0.218**
All-grade Schools	-	-	-0.189	-0.299**	-0.144	-0.330*
School Eligible from Perf. Level	-	-	-0.049	-0.069	-0.025	-0.058
School Eligible from Improvement	-	-	-	-	-	-
Campus	-	-	-	-	-	-
Teacher	-	-	-	-0.006	-0.002	0.013
Team	-	-	-	-0.154	-0.166	-0.127
Teacher and Campus	-	-	-	-0.114	-0.132	-0.141
Teacher, Team and Campus	-	-	-	-0.251	-0.138	-0.136
Performance Growth Criteria	-	-	-	-	-	-
Performance Level Criteria	-	-	-	-0.023	-0.061	-0.013
Both Criteria	-	-	-	-0.223**	-0.126	-0.136
Plan Gini	-	-	-	0.541**	-	-
Mean Bonus	-	-	-	-	-0.117**	-
Gini of Awards at School Level	-	-	-	-	-	0.313
Model R²	0.0031	0.0329	0.0372	0.0458	0.0500	0.0463
N	5117	3479	3479	3262	2805	2805

Factor 7-3: Market Based

	Model 1	Model 1a	Model 2	Model 3	Model 4	Model 4a
1 -3 Years Experience	-	-	-	-	-	-
4 - 14 Years Experience	-0.050	-0.102*	-0.104*	-0.104*	-0.114*	-0.114*
15+ Years Experience	-0.153**	-0.184**	-0.179**	-0.179**	-0.165**	-0.161**
Received Award	-0.066*	-0.042	-0.030	-0.026	0.003	0.001
Time – 2006 vs. 2007	-0.042	-	-	-	-	-
Teachers	-	-0.042	-0.044	-0.047	-0.033	-0.034
Other Certificated	-	0.196	0.186	0.150	0.184	0.183
Support Staff	-	0.171	0.172	0.172	0.224	0.221
Teacher's Aides	-	0.127	0.108	0.122	0.155	0.154
Other	-	-	-	-	-	-
Elementary Schools	-	-	-	-	-	-
Middle Schools	-	-	-0.046	-0.122*	-0.088	-0.101*
High Schools	-	-	-0.073	-0.097	-0.146*	-0.186**
All-grade Schools	-	-	-0.148	-0.185	-0.190	-0.294
School Eligible from Perf. Level	-	-	-0.139**	-0.172**	-0.163**	-0.155**
School Eligible from Improvement	-	-	-	-	-	-
Campus	-	-	-	-	-	-
Teacher	-	-	-	-0.002	0.012	-0.025
Team	-	-	-	-0.047	-0.069	-0.071
Teacher and Campus	-	-	-	-0.088	-0.073*	-0.137
Teacher, Team and Campus	-	-	-	0.191	0.235	0.187
Performance Growth Criteria	-	-	-	-	-	-
Performance Level Criteria	-	-	-	0.082	0.094	0.101
Both Criteria	-	-	-	0.034	0.074	0.042
Plan Gini	-	-	-	0.279*	-	-
Mean Bonus	-	-	-	-	0.035	-
Gini of Awards at School Level	-	-	-	-	-	0.328*
Model R²	0.0045	0.0086	0.0136	0.0156	0.0141	0.0151
N	5117	3479	3479	3262	2805	2805

Factor 7-4: Test-based Measures

	Model 1	Model 1a	Model 2	Model 3	Model 4	Model 4a
1 -3 Years Experience	-	-	-	-	-	-
4 - 14 Years Experience	0.072	0.055	0.029	0.008	0.004	0.004
15+ Years Experience	-0.039	-0.053	-0.068	-0.064	-0.109	-0.108
Received Award	0.004	-0.005	0.013	0.011	0.032	0.031
Time – 2006 vs. 2007	0.034	-	-	-	-	-
Teachers	-	-0.279**	-0.261*	-0.251*	-0.234*	-0.234*
Other Certificated	-	-0.178	-0.179	-0.112	-0.133	-0.132
Support Staff	-	-0.166	-0.132	-0.105	-0.133	-0.131
Teacher's Aides	-	0.097	0.088	0.119	0.146	0.146
Other	-	-	-	-	-	-
Elementary Schools	-	-	-	-	-	-
Middle Schools	-	-	-0.072	-0.087	0.002	-0.002
High Schools	-	-	-0.268**	-0.284**	-0.227**	-0.237**
All-grade Schools	-	-	-0.187	-0.240*	-0.462**	-0.480**
School Eligible from Perf. Level	-	-	-0.032	-0.039	0.013	0.017
School Eligible from Improvement	-	-	-0.152	-0.216	-0.061	-0.074
Campus	-	-	-	-	-	-
Teacher	-	-	-	-0.049	-0.059	-0.071
Team	-	-	-	0.134	0.076	0.073
Teacher and Campus	-	-	-	-0.062	-0.037	-0.055
Teacher, Team and Campus	-	-	-	-0.201	-0.328**	-0.342**
Performance Growth Criteria	-	-	-	-	-	-
Performance Level Criteria	-	-	-	0.040	0.036	0.035
Both Criteria	-	-	-	-0.013	0.006	-0.003
Plan Gini	-	-	-	0.324**	-	-
Mean Bonus	-	-	-	-	0.018	-
Gini of Awards at School Level	-	-	-	-	-	0.077
Model R^2	0.0021	0.0139	0.0232	0.0250	0.0244	0.0243
N	5117	3479	3479	3262	2805	2805

Factor 8-1: Professional Evaluations and Professional Development

	Model 1	Model 1a	Model 2	Model 3	Model 4	Model 4a
1 -3 Years Experience	-	-	-	-	-	-
4 - 14 Years Experience	-0.130**	-0.104*	-0.118**	-0.124**	-0.173**	-0.174**
15+ Years Experience	-0.141**	-0.131**	-0.136**	-0.138**	-0.215**	-0.216**
Received Award	-0.191**	-0.178**	-0.170**	-0.169**	-0.152**	-0.148**
Time – 2006 vs. 2007	0.339**	-	-	-	-	-
Teachers	-	-0.389**	-0.371**	-0.350**	-0.372**	-0.373**
Other Certificated	-	-0.242*	-0.249*	-0.190	-0.241	-0.243
Support Staff	-	0.103	0.135	0.150	0.139	0.127
Teacher's Aides	-	0.347**	0.338**	0.365**	0.377**	0.376**
Other	-	-	-	-	-	-
Elementary Schools	-	-	-	-	-	-
Middle Schools	-	-	-0.128**	-0.112*	-0.054	-0.050
High Schools	-	-	-0.211**	-0.178**	-0.205**	-0.193**
All-grade Schools			-0.014	-0.006	0.024	0.010
School Eligible from Perf. Level	-	-	0.188	0.159	0.081	0.179
School Eligible from Improvement	-	-	-	-	-	-
Campus	-	-	-	-	-	-
Teacher	-	-	-	-0.125**	-0.124**	-0.102*
Team	-	-	-	-0.314	-0.320	-0.307
Teacher and Campus	-	-	-	-0.203**	-0.249**	-0.221**
Teacher, Team and Campus	-	-	-	-0.512**	-0.449**	-0.426**
Performance Growth Criteria	-	-	-	-	-	-
Performance Level Criteria	-	-	-	-0.041	-0.040	-0.029
Both Criteria	-	-	-	-0.161*	-0.019	-0.006
Plan Gini	-	-	-	0.484**	-	-
Mean Bonus	-	-	-	-	-0.052	-
Gini of Awards at School Level	-	-	-	-	-	-0.061
Model R²	0.0432	0.0721	0.0793	0.0926	0.0990	0.0979
N	5117	3479	3479	3262	2805	2805

Factor 8-2: Extra-classroom Contributions

	Model 1	Model 1a	Model 2	Model 3	Model 4	Model 4a
1 -3 Years Experience	-	-	-	-	-	-
4 - 14 Years Experience	-0.087*	-0.074	-0.087*	-0.084	-0.107*	-0.108*
15+ Years Experience	-0.086*	-0.086	-0.092*	-0.091	-0.127*	-0.129*
Received Award	-0.154**	-0.126**	-0.116**	-0.121**	-0.088*	-0.082*
Time – 2006 vs. 2007	0.428**	-	-	-	-	-
Teachers	-	-0.236	-0.227*	-0.207*	-0.261**	-0.263**
Other Certificated	-	-0.082	-0.085	-0.036	-0.131	-0.133
Support Staff	-	0.135	0.152	0.139	0.171	0.151
Teacher's Aides	-	0.324**	0.316**	0.315**	0.307**	0.304**
Other	-	-	-	-	-	-
Elementary Schools	-	-	-	-	-	-
Middle Schools	-	-	-0.049	-0.017	-0.027	-0.020
High Schools	-	-	-0.146**	-0.106*	-0.120*	-0.099
All-grade Schools	-	-	-0.172	-0.192	-0.118	-0.124
School Eligible from Perf. Level	-	-	-0.032	-0.013	0.015	-0.008
School Eligible from Improvement	-	-	-	-	-	-
Campus	-	-	-	-	-	-
Teacher	-	-	-	-0.076*	-0.092*	-0.054
Team	-	-	-	-0.281	-0.282	-0.262
Teacher and Campus	-	-	-	-0.202**	-0.238**	-0.190**
Teacher, Team and Campus	-	-	-	-0.236	-0.234*	-0.193
Performance Growth Criteria	-	-	-	-	-	-
Performance Level Criteria	-	-	-	-0.030	-0.006	0.011
Both Criteria	-	-	-	-0.096	0.010	0.031
Plan Gini	-	-	-	0.229*	-	-
Mean Bonus	-	-	-	-	-0.086**	-
Gini of Awards at School Level	-	-	-	-	-	-0.118
Model R²	0.0526	0.0410	0.0441	0.0494	0.0522	0.0492
N	5117	3479	3479	3262	2805	2805

Factor 8-3: Test-based Measures

	Model 1	Model 1a	Model 2	Model 3	Model 4	Model 4a
1 -3 Years Experience	-	-	-	-	-	-
4 - 14 Years Experience	0.036	0.050	0.022	0.005	0.000	0.000
15+ Years Experience	0.010	0.035	0.018	0.009	0.000	0.003
Received Award	-0.041	-0.0766*	-0.056	-0.042	-0.033	-0.032
Time – 2006 vs. 2007	-0.128**	-	-	-	-	-
Teachers	-	-0.267**	-0.250*	-0.245*	-0.213**	-0.214*
Other Certificated	-	-0.219	-0.219	-0.203	-0.171	-0.173
Support Staff	-	-0.153	-0.117	-0.143	-0.098	-0.107
Teacher's Aides	-	0.059	0.050	0.090	0.106	0.104
Other	-	-	-	-	-	-
Elementary Schools	-	-	-	-	-	-
Middle Schools	-	-	-0.076*	-0.091	-0.022	-0.032
High Schools	-	-	-0.260**	-0.269**	-0.226**	-0.255**
All-grade Schools	-	-	0.000	0.024	-0.179	-0.275
School Eligible from Perf. Level	-	-	-0.059	-0.059	-0.030	-0.029
School Eligible from Improvement	-	-	-	-	-	-
Campus	-	-	-	-	-	-
Teacher	-	-	-	-0.030	-0.053	-0.074
Team	-	-	-	0.616**	0.572*	0.577*
Teacher and Campus	-	-	-	-0.129*	-0.157*	-0.200**
Teacher, Team and Campus	-	-	-	-0.047	-0.152	-0.183
Performance Growth Criteria	-	-	-	-	-	-
Performance Level Criteria	-	-	-	-0.100	-0.085	-0.073
Both Criteria	-	-	-	-0.058	-0.033	-0.055
Plan Gini	-	-	-	0.208	-	-
Mean Bonus	-	-	-	-	0.003	-
Gini of Awards at School Level	-	-	-	-	-	0.260
Model R²	0.0028	0.0108	0.0202	0.0289	0.0202	0.0211
N	5117	3479	3479	3262	2805	2805

APPENDIX H: Technical Appendix for Teacher Turnover Analyses

This appendix presents the analytic model, data and regression coefficients underlying the analysis of teacher turnover in Chapter 7.

The Analytic Model

It is common to model teacher turnover as the voluntary consequence of each teacher's pursuit of happiness (Imazeki, 2005). Let the utility (happiness) that teacher i receives from employment situation j (U_{ij}) be defined as:

$$U_{ij} = U_i(W_{ij}, X_{ij}) + e_{ij}$$

where W_{ij} is the wage received in situation j, X_{ij} is a set of nonwage characteristics of situation j, and e_{ij} is a random variable representing the unobserved determinants of utility. Then the probability that a teacher chooses to leave a teaching position is the probability that her utility in a different situation would be higher than her utility in the current position.

$$\Pr[quit] = \Pr[U_i(W_{ij}, X_{ij}) + e_{ij} > U_i(W_{id}, X_{id}) + e_{id}]$$

or equivalently,

$$\Pr[quit] = \Pr[e_{ij} - e_{id} > U_i(W_{id}, X_{id}) - U_i(W_{ij}, X_{ij})]$$

where the d subscript denotes the current employer.

Teachers choose to leave their current positions only if their expected utility from staying is lower than their expected utility from their best alternative situation. Thus, the probability that a teacher leaves his/her current position is a function of the wages and non-wage aspects of the current position, wages and non-wage aspects of alternative positions, and personal characteristics that might alter the shape of the utility function. If e_{ij} and e_{id} are distributed as independent, normal random variables, then their difference is also normally distributed, and equation 3 can be estimated using probit regression (Singell 1991).

Probit and multinomial logit analyses of equation 3 provide the foundation for the empirical analysis of the effect of performance pay plans on teacher retention. The probit analysis is used to examine the impact of GEEG on turnover in general. The multinomial analyses are used to examine any differential impact of GEEG on the three types of turnover—internal movers, external movers and leavers.

The Data

The theory indicates that teachers choose to leave their jobs only if they expect to be happier in an alternative situation than they are in their current positions. Thus, the data for any analysis of teacher turnover needs to reflect pertinent characteristics about the teacher's current job, her employment

alternatives, any personal characteristics that might influence her turnover decision, and the characteristics of GEEG plans operating in their schools. Data on teacher characteristics, including compensation, turnover and teaching assignment, come from the administrative records of the Texas Education Agency and Texas' State Board for Educator Certification (SBEC). Data on other school, district and locational characteristics come from the Texas Education Agency, the National Center for Education Statistics (NCES), the U.S. Bureau of Labor Statistics, the U.S. Department of Housing and Urban Development, and the 2000 U.S. Census. GEEG plan characteristics are available from the evaluation team's review of GEEG plan applications (see Chapter 4) and analysis of the distribution of Part 1 bonus award amounts (see Chapter 5).

The data cover the five academic years from the 2002-03 school year through the 2006-07 school year. The GEEG program operated during the last two years of the analysis period (2005-06, 2006-07); that is, teachers in GEEG schools had the opportunity to receive bonus awards for their performance in the 2005-06 and 2006-07 school years. The first year of the TEEG program (2006-07) was the last year of the analysis period. Analyses are restricted to individuals who taught more than half time during at least one year of the analysis period. Teachers who were also administrators were excluded from the analysis.

Teacher data

The examination of teacher turnover uses three categories of teacher data: (1) teacher retention, (2) wages and working conditions, and (3) individual teacher characteristics.

Teachers are considered retained if they are teaching in the same school in the subsequent academic year. Teachers who are not retained are further classified into the following categories: those who remain in the same district but change schools (internal movers); those who stay in teaching but change districts (external movers); and those no longer teaching in a Texas public school (leavers). On average over the analysis period, 80 percent of Texas teachers were retained each year, five percent were internal movers, another five percent were external movers, and 10 percent were leavers, at least temporarily.

A teacher's turnover decision can be influenced by the wage and non-wage characteristics of his/her current teaching position. In addition to the inclusion of a teacher's monthly wage , the analyses also consider a teacher's classroom assignment. That is, is he/she assigned to teach mathematics, science, language arts, fine arts, vocational education, bilingual education, special education, a foreign language, and/or to teach in a self-contained classroom that is subject to the TAKS test?

All analyses described in this chapter also account for a teacher's years of experience, gender, race/ethnicity, educational attainment, and certification status.

Some analyses separately evaluate teachers who are certified in math and science. Table H.1 indicates the certificate descriptions held by teachers who are identified in the analysis as being certified in math or science.

Table H.1: Math and Science Certificates

Certificate Descriptions	
Elementary Biology	Middle School Life-Earth Science
Elementary Chemistry	Middle School Mathematics
Elementary Earth Science	Middle School Science Composite
Elementary Geology	Physical Science/Mathematics/Engineering
Elementary Life-Earth Science	Physical Sciences
Elementary Mathematics	Physics/Mathematics
Elementary Physical Science	Science
Elementary Physics	Secondary Biology
Health Science Technology	Secondary Chemistry
Junior High Mathematics	Secondary Earth Science
Junior High Physical Science	Secondary Life-Earth Science
Life Sciences	Secondary Mathematical Science Composite
Master Math Teacher (4-8)	Secondary Mathematics
Master Math Teacher (8-12)	Secondary Physical Science
Master Math Teacher (EC-4)	Secondary Physics
Mathematics	Secondary Science Composite
Mathematics/Science	Vocational Health Science Technology
Middle School Biology	

Source: Author's calculations from State Board for Educator Certification data.

School, district, and locational data

Student demographics and school size have a significant influence on teacher turnover (Hanushek, Kain and Rivkin, 2004). Student demographics used in these analyses include: the %ED students in the school, the percent of limited English proficient students, as well as the percent of black and Hispanic students. Student enrollment provides a measure of school size. Analyses also include measures of school district size, given that variations in teacher turnover may arise from the lack of transfer opportunities within a district.

The analyses also include several indicators of local labor market conditions outside of education. The NCES Comparable Wage Index (CWI) measures the prevailing wage for college graduates in each school district (Taylor and Fowler, 2006). Labor market unemployment rates are available from the U.S. Bureau of Labor Statistics. The analyses also include indicators for whether or not the district is located in a major metropolitan area – Austin, Dallas, Fort Worth, Houston or San Antonio – a metropolitan area or a micropolitan area. The distance from the district to the center of the closest metropolitan area is also included to reflect typical housing patterns and geographic isolation.

GEEG plan characteristics

Finally, the analyses include five characteristics of a school's GEEG plan. The first is an indicator identifying participation in the GEEG program. Evaluators identified the 99 GEEG schools participating in the program during the 2005-06 and 2006-07 school years. Evaluators are able to

determine if the turnover rate for teachers in GEEG schools was significantly different than the rate in non-GEEG schools before the program was implemented, and during the time of program operation. The analyses similarly identify TEEG Cycle 1 schools in all years of the analysis period, seeing as those schools first implemented their TEEG plans during the 2006-07 school year.

The analyses also consider the plan design features of a GEEG school. First, analyses used the performance analysis used by a school to determine a teacher's contribution to student achievement, and subsequently, his/her eligibility for a GEEG bonus award (i.e., the use of achievement levels and/or measures of student growth). Another plan design feature used is the unit of accountability for determining bonus award eligibility. Turnover analyses also considered the equality of bonus award distribution proposed in the school's GEEG plan (i.e., Plan Gini), and the equality of actual bonus award distribution (i.e., Actual Gini).

The Regression Coefficients

Tables H.2 through H.6 present coefficient estimates and robust standard errors from analyses comparing turnover in GEEG schools with turnover in schools that are not part of the GEEG program. Each table applies the same model to a different subset of data. In all cases, the tables present two alternative analyses of teacher retention. The first column in each table presents results from a probit analysis of teacher turnover. The probit analysis is used to examine the impact of GEEG on turnover in general. The remaining three columns present results from a multinomial logit analysis of the three types of turnover. This part of the analysis is used to examine any differential impact of GEEG on internal movers, external movers and leavers. In all cases, the robust standard errors have been adjusted for clustering by district.

Because teacher salaries are potentially influenced by the same factors that influence teacher turnover, the researchers also estimated the probit models using instrumental variables. The instruments were the cost of living in the labor market (as measured by the fair market rent on a two-bedroom apartment) and an array of district characteristics typically used to model voter demand for education–tax base per pupil, the share of residential property in the tax base, the percent of the adult population with a high school diploma but no college degree, the percent of the adult population with at least a bachelors' degree, the percentage of households with school age children, and the percentage of residents over 65. All of the instruments but the housing costs, property wealth per pupil and the share of residential property in the tax base came from the 2000 U.S. Census of population, school district files. Data on fair market rents came from the U.S. Department of Housing and Urban Development, while data on tax bases and residential shares came from TEA. The researchers used the teacher-weighted means of the instruments for all traditional school districts in the same metropolitan area, micropolitan area or rural county as instruments for the charter schools. In all cases, the instruments were highly correlated with salaries, but one could not reject the hypothesis that the teacher's monthly salary was in fact exogenous. Therefore, only the probit analyses are presented here.

Tables 7.1 through 7.4 in the main report present selected predictions from the probit and multinomial logit analyses in Tables H.2 through H.6. Each prediction indicates the expected turnover rate, holding constant at the mean all of the teacher, school and student characteristics in the model. The predicted probabilities were calculated using the method of recycled predictions.

Tables H.7 through H.11 present coefficient estimates and robust standard errors from the probit regressions underlying the predictions in Tables 7.5 through 7.10 of the main text. Only data on GEEG schools are included in these regressions, and all of the models include campus fixed effects. To allow for a correlation in the errors across multiple observations of the same teacher, the standard errors are adjusted for clustering by individual. The turnover rates presented in Tables 7.5 through 7.10 of the main text indicate predicted turnover rates, holding constant at the mean all of the teacher, school and student characteristics in the model, and were calculated using the method of recycled predictions.

Table H.2: Regression Analyses of Turnover, All Teachers, All Schools

	Changed campus or job	External Mover	Internal Mover	Leaver
Base Salary (log)	-0.704***	-2.069***	-0.569***	-0.860***
	(0.044)	(0.092)	(0.172)	(0.080)
Charter school	0.262***	-0.193**	-0.035	0.738***
	(0.043)	(0.089)	(0.239)	(0.069)
Black	-0.116***	-0.325***	-0.103***	-0.201***
	(0.010)	(0.044)	(0.032)	(0.020)
Hispanic	-0.102***	-0.207***	-0.015	-0.256***
	(0.009)	(0.029)	(0.031)	(0.023)
Asian/American Indian	-0.059***	-0.255***	-0.003	-0.082
	(0.019)	(0.060)	(0.037)	(0.056)
Male	0.041***	0.134***	0.119***	0.006
	(0.007)	(0.016)	(0.016)	(0.014)
Years of Experience	-0.033***	-0.042***	-0.014***	-0.069***
	(0.001)	(0.003)	(0.003)	(0.003)
Experience, squared	0.001***	0.000	0.000	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)
Experience missing	-0.023	0.147***	-0.077**	-0.140***
	(0.016)	(0.037)	(0.038)	(0.032)
No Degree	-0.009	-0.514***	0.081	0.156***
	(0.031)	(0.075)	(0.109)	(0.059)
MA	0.146***	0.060***	0.095***	0.400***
	(0.006)	(0.015)	(0.018)	(0.013)
PhD	0.164***	-0.069	0.235***	0.412***
	(0.020)	(0.064)	(0.053)	(0.057)
TAKS	0.061***	0.164***	0.111***	0.061***
	(0.006)	(0.013)	(0.018)	(0.012)
Language Arts	-0.007	-0.071***	-0.001	0.017
	(0.007)	(0.016)	(0.025)	(0.011)
Math	0.002	0.007	-0.007	0.013
	(0.010)	(0.021)	(0.033)	(0.016)
Science	-0.007	0.026	-0.051	-0.018
	(0.009)	(0.020)	(0.032)	(0.015)
Foreign Language	0.088***	0.216***	0.054	0.155***
	(0.015)	(0.037)	(0.062)	(0.023)
Fine Arts	-0.001	0.150***	0.078**	-0.129***
	(0.009)	(0.020)	(0.035)	(0.018)
Vocational-Technical	-0.084***	-0.291***	-0.088	-0.111***
	(0.010)	(0.024)	(0.059)	(0.016)
Special Education	0.149***	0.142***	0.370***	0.217***
	(0.011)	(0.022)	(0.036)	(0.022)

	Changed campus or job	External Mover	Internal Mover	Leaver
Bilingual	-0.021	0.040	-0.005	-0.078***
	(0.014)	(0.040)	(0.049)	(0.028)
Math Certified	0.022***	0.111***	0.012	0.011
	(0.007)	(0.019)	(0.024)	(0.015)
Science Certified	0.024***	0.074***	-0.016	0.058***
	(0.008)	(0.018)	(0.030)	(0.016)
Bilingual Certified	0.050***	0.142***	0.030	0.070**
	(0.012)	(0.036)	(0.038)	(0.034)
Special Ed Certified	0.032***	0.049***	0.209***	-0.026*
	(0.007)	(0.015)	(0.023)	(0.015)
Certified	-0.188***	0.154***	-0.047*	-0.649***
	(0.009)	(0.023)	(0.026)	(0.018)
Coach	0.076***	0.573***	0.175***	-0.297***
	(0.010)	(0.021)	(0.030)	(0.018)
Percent students economically disadvantaged	-0.034	0.135	-0.070	-0.105*
	(0.038)	(0.082)	(0.142)	(0.063)
Percent students LEP	0.121**	0.403***	-0.033	0.215***
	(0.059)	(0.108)	(0.243)	(0.061)
Percent students Hispanic	0.241***	0.526***	0.508***	0.321***
	(0.035)	(0.079)	(0.136)	(0.058)
Percent students African-American	0.462***	1.184***	0.854***	0.579***
	(0.053)	(0.095)	(0.172)	(0.079)
School enrollment (log)	-0.060***	-0.010	-0.202***	-0.064***
	(0.008)	(0.017)	(0.034)	(0.012)
Miles to metro center	-0.001	-0.002	0.006	-0.003*
	(0.001)	(0.002)	(0.004)	(0.002)
Miles squared	0.002	-0.006	-0.025	0.022**
	(0.007)	(0.015)	(0.033)	(0.010)
Houston ISD	-0.105***	-0.142***	-0.401***	-0.123***
	(0.021)	(0.042)	(0.079)	(0.032)
Dallas ISD	-0.011	-0.181***	0.046	-0.086**
	(0.023)	(0.044)	(0.090)	(0.036)
District size	-0.010	-0.241***	0.153***	0.009
	(0.009)	(0.015)	(0.035)	(0.013)
Comparable Wage Index	0.559***	1.682***	0.741*	0.748***
	(0.099)	(0.194)	(0.420)	(0.180)
Unemployment rate	-0.005	-0.023*	-0.005	-0.010
	(0.007)	(0.012)	(0.035)	(0.009)
Major metropolitan area	0.029	0.178***	-0.116	0.048
	(0.035)	(0.048)	(0.174)	(0.041)
Metropolitan area	-0.060**	-0.347***	0.333***	-0.140**
	(0.030)	(0.061)	(0.123)	(0.055)
Micropolitan area	-0.010	0.011	0.159*	-0.077**
	(0.023)	(0.052)	(0.094)	(0.036)
TEEG2007	0.040**	-0.010	0.133**	0.076
	(0.017)	(0.035)	(0.067)	(0.053)
EVER TEEG	-0.054***	-0.075***	-0.228***	-0.042**
	(0.011)	(0.020)	(0.047)	(0.019)
EVER GEEG	-0.031	-0.150**	-0.057	-0.037
	(0.021)	(0.072)	(0.087)	(0.048)

	Changed campus or job	External Mover	Internal Mover	Leaver
GEEG2006	-0.125**	-0.383***	-0.197	-0.159**
	(0.050)	(0.094)	(0.191)	(0.065)
GEEG2007	-0.016	-0.128	0.060	-0.021
	(0.053)	(0.092)	(0.183)	(0.113)
School year 2003-04	0.045***	0.200***	-0.030	0.071***
	(0.013)	(0.023)	(0.059)	(0.020)
School year 2004-05	-0.009	0.135***	-0.019	-0.101***
	(0.017)	(0.034)	(0.070)	(0.027)
School year 2005-06	0.024	0.210***	0.029	-0.060**
	(0.017)	(0.037)	(0.081)	(0.030)
School year 2006-07	0.060**	0.213***	-0.090	0.114***
	(0.027)	(0.051)	(0.127)	(0.043)
Elementary school	-0.032	-0.170***	0.397***	-0.123***
	(0.021)	(0.046)	(0.107)	(0.032)
Middle school	0.054***	0.098**	0.481***	0.013
	(0.020)	(0.045)	(0.104)	(0.033)
Secondary school	0.022	0.226***	-0.072	0.036
	(0.022)	(0.046)	(0.124)	(0.033)
Constant	4.922***	13.739***	0.477	5.303***
	(0.329)	(0.712)	(1.357)	(0.596)
Observations	1433588	1433588	1433588	1433588

Source: Author's calculations.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table H.3: Regression Analyses of Turnover, All Teachers, High Needs Schools

	Changed campus or job	External Mover	Internal Mover	Leaver
Base Salary (log)	-0.777***	-2.104***	-0.721***	-1.041***
	(0.053)	(0.131)	(0.180)	(0.093)
Charter school	0.201***	-0.362***	0.181	0.573***
	(0.055)	(0.107)	(0.275)	(0.093)
Black	-0.151***	-0.413***	-0.149***	-0.258***
	(0.009)	(0.049)	(0.039)	(0.017)
Hispanic	-0.126***	-0.284***	-0.038	-0.289***
	(0.011)	(0.031)	(0.034)	(0.029)
Asian/American Indian	-0.104***	-0.333***	-0.008	-0.189**
	(0.025)	(0.074)	(0.040)	(0.075)
Male	0.036***	0.075***	0.103***	0.030
	(0.009)	(0.019)	(0.018)	(0.019)
Years of Experience	-0.030***	-0.045***	-0.009**	-0.058***
	(0.002)	(0.004)	(0.004)	(0.004)
Experience, squared	0.001***	0.000	-0.000	0.002***
	(0.000)	(0.000)	(0.000)	(0.000)
Experience missing	0.006	0.156***	-0.015	-0.084**
	(0.021)	(0.049)	(0.043)	(0.041)
No Degree	-0.037	-0.533***	-0.037	0.110
	(0.039)	(0.098)	(0.124)	(0.074)
MA	0.169***	0.088***	0.136***	0.444***
	(0.008)	(0.020)	(0.024)	(0.018)
PhD	0.174***	0.009	0.208***	0.425***

	Changed campus or job	External Mover	Internal Mover	Leaver
	(0.029)	(0.091)	(0.067)	(0.076)
TAKS	0.068***	0.174***	0.120***	0.077***
	(0.009)	(0.018)	(0.024)	(0.018)
Language Arts	-0.006	-0.071***	-0.010	0.025*
	(0.009)	(0.021)	(0.034)	(0.014)
Math	0.009	0.020	0.027	0.009
	(0.016)	(0.032)	(0.048)	(0.024)
Science	0.000	0.036	-0.021	-0.015
	(0.013)	(0.028)	(0.041)	(0.022)
Foreign Language	0.066***	0.122**	0.074	0.132***
	(0.024)	(0.055)	(0.089)	(0.032)
Fine Arts	0.018	0.158***	0.142***	-0.102***
	(0.012)	(0.030)	(0.040)	(0.023)
Vocational-Technical	-0.099***	-0.342***	-0.143**	-0.111***
	(0.012)	(0.032)	(0.063)	(0.022)
Special Education	0.124***	0.059*	0.337***	0.181***
	(0.014)	(0.033)	(0.042)	(0.033)
Bilingual	-0.029**	0.043	-0.039	-0.086***
	(0.014)	(0.041)	(0.052)	(0.031)
Math Certified	0.025**	0.131***	0.009	0.013
	(0.011)	(0.028)	(0.036)	(0.023)
Science Certified	0.026*	0.101***	-0.024	0.054**
	(0.014)	(0.029)	(0.042)	(0.026)
Bilingual Certified	0.046***	0.110***	0.003	0.085**
	(0.014)	(0.037)	(0.040)	(0.041)
Special Ed Certified	0.035***	0.059***	0.184***	-0.007
	(0.012)	(0.020)	(0.031)	(0.027)
Certified	-0.185***	0.177***	-0.055*	-0.657***
	(0.012)	(0.029)	(0.034)	(0.024)
Coach	0.056***	0.538***	0.154***	-0.338***
	(0.014)	(0.029)	(0.035)	(0.027)
Percent students economically disadvantaged	0.023	-0.139	0.153	0.099
	(0.059)	(0.123)	(0.200)	(0.096)
Percent students LEP	0.144**	0.405***	0.003	0.258***
	(0.065)	(0.117)	(0.265)	(0.067)
Percent students Hispanic	0.229***	0.551***	0.499***	0.326***
	(0.049)	(0.111)	(0.170)	(0.081)
Percent students African-American	0.447***	1.100***	0.866***	0.597***
	(0.073)	(0.131)	(0.204)	(0.113)
School enrollment (log)	-0.075***	-0.001	-0.304***	-0.070***
	(0.010)	(0.020)	(0.032)	(0.012)
Miles to metro center	-0.002*	-0.008***	0.006	-0.005**
	(0.001)	(0.002)	(0.004)	(0.002)
Miles squared	0.011	0.024	-0.014	0.031***
	(0.008)	(0.015)	(0.027)	(0.012)
Houston ISD	-0.074***	-0.016	-0.415***	-0.079**
	(0.024)	(0.053)	(0.082)	(0.039)
Dallas ISD	0.017	-0.080	0.012	-0.031
	(0.025)	(0.051)	(0.091)	(0.039)
District size	-0.026**	-0.291***	0.198***	-0.031

	Changed campus or job	External Mover	Internal Mover	Leaver
	(0.012)	(0.019)	(0.037)	(0.019)
Comparable Wage Index	0.642***	1.741***	1.156**	0.844***
	(0.130)	(0.254)	(0.540)	(0.216)
Unemployment rate	-0.003	-0.010	-0.005	-0.007
	(0.007)	(0.014)	(0.035)	(0.008)
Major metropolitan area	0.028	0.219***	-0.268	0.094*
	(0.043)	(0.062)	(0.186)	(0.050)
Metropolitan area	-0.074**	-0.396***	0.194	-0.136**
	(0.036)	(0.082)	(0.157)	(0.062)
Micropolitan area	-0.007	0.005	0.096	-0.052
	(0.027)	(0.065)	(0.108)	(0.042)
TEEG2007	0.029*	-0.004	0.091	0.050
	(0.016)	(0.036)	(0.070)	(0.036)
EVER TEEG	-0.055***	-0.079***	-0.221***	-0.048***
	(0.012)	(0.021)	(0.049)	(0.015)
EVER GEEG	-0.034*	-0.105	-0.077	-0.059
	(0.020)	(0.070)	(0.086)	(0.044)
GEEG2006	-0.121***	-0.401***	-0.180	-0.145**
	(0.043)	(0.093)	(0.151)	(0.064)
GEEG2007	-0.025	-0.128	0.036	-0.043
	(0.050)	(0.092)	(0.185)	(0.097)
School year 2003-04	0.050***	0.217***	0.026	0.052**
	(0.016)	(0.030)	(0.065)	(0.023)
School year 2004-05	0.005	0.187***	0.015	-0.100***
	(0.021)	(0.045)	(0.075)	(0.033)
School year 2005-06	0.027	0.268***	0.018	-0.078**
	(0.021)	(0.045)	(0.114)	(0.033)
School year 2006-07	0.078**	0.268***	-0.072	0.143***
	(0.034)	(0.065)	(0.148)	(0.055)
Elementary school	-0.017	-0.122*	0.524***	-0.134***
	(0.028)	(0.066)	(0.129)	(0.041)
Middle school	0.079***	0.098	0.643***	0.039
	(0.027)	(0.064)	(0.120)	(0.043)
Secondary school	0.062**	0.203***	0.209	0.077*
	(0.030)	(0.066)	(0.142)	(0.045)
Constant	5.574***	14.459***	1.393	6.756***
	(0.407)	(1.022)	(1.390)	(0.708)
Observations	713,007	713,007	713,007	713,007

Source: Author's calculations.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table H.4: Regression Analyses of Turnover, Math and Science Teachers

	Changed Campus or Job	External Mover	Internal Mover	Leaver
Base Salary (log)	-0.754***	-2.155***	-0.439*	-0.898***
	(0.058)	(0.137)	(0.258)	(0.123)
Charter school	0.348***	0.031	-0.031	0.918***
	(0.060)	(0.122)	(0.428)	(0.116)
Black	-0.108***	-0.428***	-0.142**	-0.087**
	(0.020)	(0.074)	(0.060)	(0.038)

	Changed Campus or Job	External Mover	Internal Mover	Leaver
Hispanic	-0.125***	-0.311***	-0.107**	-0.224***
	(0.017)	(0.048)	(0.054)	(0.041)
Asian/American Indian	-0.072**	-0.319***	0.023	-0.079
	(0.030)	(0.091)	(0.086)	(0.067)
Male	0.057***	0.148***	0.115***	0.055**
	(0.010)	(0.022)	(0.030)	(0.022)
Years of Experience	-0.038***	-0.032***	-0.021***	-0.089***
	(0.002)	(0.005)	(0.007)	(0.004)
Experience, squared	0.001***	0.000	0.000	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)
Experience missing	-0.053**	0.168***	-0.157**	-0.252***
	(0.021)	(0.049)	(0.066)	(0.046)
No Degree	0.111**	0.201	0.093	0.197*
	(0.050)	(0.127)	(0.221)	(0.114)
MA	0.134***	0.085***	0.038	0.382***
	(0.009)	(0.027)	(0.031)	(0.021)
PhD	0.079	-0.171	0.076	0.278**
	(0.049)	(0.118)	(0.092)	(0.122)
TAKS	0.045***	0.211***	0.125***	-0.030
	(0.013)	(0.036)	(0.035)	(0.031)
Language Arts	0.030**	-0.076*	0.178***	0.066**
	(0.013)	(0.039)	(0.045)	(0.029)
Math	-0.018	0.001	0.044	-0.092***
	(0.015)	(0.034)	(0.046)	(0.028)
Science	-0.030**	0.002	-0.098**	-0.069***
	(0.012)	(0.032)	(0.040)	(0.023)
Foreign Language	0.057	0.157	0.051	0.071
	(0.038)	(0.104)	(0.159)	(0.095)
Fine Arts	-0.069***	-0.035	-0.115	-0.178***
	(0.027)	(0.077)	(0.090)	(0.057)
Vocational-Technical	-0.069***	-0.211***	-0.136	-0.082**
	(0.018)	(0.054)	(0.089)	(0.039)
Special Education	0.103***	0.085	0.345***	0.093
	(0.036)	(0.089)	(0.115)	(0.079)
Bilingual	-0.063	-0.099	-0.058	-0.140
	(0.044)	(0.121)	(0.143)	(0.088)
Math Certified	0.034**	0.042	-0.064	0.130***
	(0.015)	(0.044)	(0.059)	(0.031)
Science Certified	0.041***	0.016	-0.006	0.139***
	(0.013)	(0.040)	(0.056)	(0.030)
Bilingual Certified	0.106***	0.262***	0.115	0.113
	(0.030)	(0.096)	(0.093)	(0.074)
Special Ed Certified	0.069***	0.180***	0.246***	0.022
	(0.017)	(0.047)	(0.053)	(0.042)
Coach	0.057***	0.539***	0.146***	-0.362***
	(0.012)	(0.032)	(0.046)	(0.029)
Percent students economically disadvantaged	-0.032	0.252**	-0.246	-0.108
	(0.053)	(0.125)	(0.196)	(0.091)
Percent students LEP	0.137	0.415**	-0.150	0.288***
	(0.084)	(0.203)	(0.320)	(0.101)
Percent students Hispanic	0.296***	0.610***	0.821***	0.319***

	Changed Campus or Job	External Mover	Internal Mover	Leaver
	(0.048)	(0.121)	(0.183)	(0.087)
Percent students African-American	0.606***	1.412***	1.398***	0.651***
	(0.063)	(0.134)	(0.214)	(0.095)
School enrollment (log)	-0.048***	-0.007	-0.206***	-0.039**
	(0.009)	(0.021)	(0.037)	(0.016)
Miles to metro center	-0.002*	-0.006***	0.003	-0.003*
	(0.001)	(0.002)	(0.005)	(0.002)
Miles squared	0.011	0.021	0.002	0.025*
	(0.009)	(0.017)	(0.037)	(0.013)
Houston ISD	-0.033	-0.117**	-0.086	-0.083**
	(0.022)	(0.055)	(0.092)	(0.039)
Dallas ISD	-0.125***	-0.264***	-0.239**	-0.255***
	(0.024)	(0.057)	(0.101)	(0.041)
District size	-0.023**	-0.255***	0.163***	0.005
	(0.009)	(0.019)	(0.040)	(0.015)
Comparable Wage Index	0.663***	1.781***	0.870*	0.899***
	(0.111)	(0.259)	(0.519)	(0.199)
Unemployment rate	-0.012*	-0.044***	-0.029	-0.010
	(0.007)	(0.015)	(0.040)	(0.012)
Major metropolitan area	0.021	0.148**	-0.185	0.035
	(0.033)	(0.063)	(0.176)	(0.050)
Metropolitan area	-0.092***	-0.323***	0.163	-0.168***
	(0.035)	(0.079)	(0.157)	(0.065)
Micropolitan area	-0.009	0.067	0.061	-0.090*
	(0.030)	(0.070)	(0.118)	(0.051)
TEEG2007	0.043	0.087	0.119	0.049
	(0.030)	(0.069)	(0.139)	(0.070)
EVER TEEG	-0.052***	-0.073*	-0.249***	-0.046
	(0.016)	(0.040)	(0.067)	(0.031)
EVER GEEG	0.013	0.149	-0.006	-0.066
	(0.052)	(0.140)	(0.143)	(0.113)
GEEG2006	-0.258***	-1.090***	-0.238	-0.262
	(0.086)	(0.236)	(0.345)	(0.169)
GEEG2007	-0.042	-0.252	0.146	-0.071
	(0.087)	(0.247)	(0.361)	(0.181)
School year 2003-04	0.071***	0.258***	-0.016	0.114***
	(0.017)	(0.040)	(0.074)	(0.030)
School year 2004-05	0.053***	0.234***	0.044	0.024
	(0.020)	(0.048)	(0.090)	(0.036)
School year 2005-06	0.105***	0.340***	0.107	0.105**
	(0.023)	(0.053)	(0.107)	(0.042)
School year 2006-07	0.118***	0.339***	-0.067	0.215***
	(0.029)	(0.070)	(0.143)	(0.057)
Elementary school	-0.023	-0.159**	0.725***	-0.238***
	(0.028)	(0.068)	(0.130)	(0.058)
Middle school	0.057**	0.075	0.667***	-0.022
	(0.026)	(0.064)	(0.125)	(0.056)
Secondary school	0.029	0.215***	0.078	-0.002
	(0.026)	(0.063)	(0.149)	(0.057)
Constant	5.073***	14.496***	-0.771	4.778***
	(0.453)	(1.078)	(2.069)	(0.977)

	Changed Campus or Job	External Mover	Internal Mover	Leaver
Observations	218828	218828	218828	218828

Table H.5: Regression Analyses of Turnover, Beginning Teachers

	Changed Campus or Job	External Mover	Internal Mover	Leaver
Base Salary (log)	-0.465***	-1.101***	0.055	-0.814***
	(0.068)	(0.146)	(0.257)	(0.145)
Charter school	0.291***	-0.147	0.098	0.851***
	(0.051)	(0.100)	(0.238)	(0.091)
Black	-0.142***	-0.353***	-0.107**	-0.246***
	(0.017)	(0.056)	(0.043)	(0.036)
Hispanic	-0.160***	-0.305***	-0.081**	-0.364***
	(0.015)	(0.040)	(0.033)	(0.039)
Asian/American Indian	-0.062**	-0.306***	-0.082	-0.026
	(0.028)	(0.079)	(0.057)	(0.074)
Male	0.021**	-0.018	0.149***	0.009
	(0.009)	(0.025)	(0.024)	(0.018)
Years of Experience	0.009	-0.037	-0.002	0.057*
	(0.015)	(0.029)	(0.029)	(0.032)
Experience, squared	-0.007	-0.012	0.000	-0.018*
	(0.004)	(0.008)	(0.009)	(0.010)
No Degree	-0.010	-0.490***	0.066	0.163***
	(0.025)	(0.086)	(0.089)	(0.051)
MA	0.134***	-0.006	0.072**	0.411***
	(0.009)	(0.024)	(0.031)	(0.023)
PhD	0.116***	-0.128	0.157	0.344***
	(0.045)	(0.112)	(0.180)	(0.071)
TAKS	0.051***	0.123***	0.058**	0.073***
	(0.008)	(0.019)	(0.025)	(0.018)
Language Arts	-0.023**	-0.071***	-0.036	-0.015
	(0.010)	(0.022)	(0.028)	(0.020)
Math	0.019	0.029	-0.025	0.065***
	(0.013)	(0.028)	(0.044)	(0.022)
Science	0.002	0.033	-0.002	-0.016
	(0.011)	(0.030)	(0.037)	(0.021)
Foreign Language	0.158***	0.255***	0.101	0.344***
	(0.023)	(0.056)	(0.080)	(0.040)
Fine Arts	0.046***	0.165***	0.092**	0.008
	(0.013)	(0.032)	(0.043)	(0.027)
Vocational-Technical	-0.063***	-0.123***	-0.131**	-0.109***
	(0.016)	(0.037)	(0.067)	(0.032)
Special Education	0.127***	0.147***	0.236***	0.220***
	(0.014)	(0.034)	(0.042)	(0.030)
Bilingual	0.027	0.052	0.025	0.064
	(0.019)	(0.051)	(0.053)	(0.047)
Math Certified	0.041***	0.103***	0.027	0.070***
	(0.011)	(0.032)	(0.037)	(0.024)
Science Certified	0.054***	0.086**	-0.039	0.153***
	(0.016)	(0.035)	(0.046)	(0.034)
Bilingual Certified	-0.030	-0.024	-0.040	-0.109
	(0.025)	(0.056)	(0.053)	(0.069)

	Changed Campus or Job	External Mover	Internal Mover	Leaver
Special Ed Certified	0.044***	0.093***	0.243***	-0.035
	(0.012)	(0.028)	(0.036)	(0.026)
Certified	-0.205***	0.121***	-0.070**	-0.702***
	(0.010)	(0.025)	(0.031)	(0.019)
Coach	0.115***	0.521***	0.282***	-0.170***
	(0.012)	(0.026)	(0.040)	(0.025)
Percent students economically disadvantaged	-0.004	0.303***	-0.044	-0.127
	(0.043)	(0.091)	(0.146)	(0.086)
Percent students LEP	0.112*	0.305**	-0.113	0.239**
	(0.057)	(0.120)	(0.211)	(0.094)
Percent students Hispanic	0.234***	0.501***	0.376**	0.324***
	(0.043)	(0.094)	(0.154)	(0.086)
Percent students African-American	0.477***	1.155***	0.707***	0.604***
	(0.054)	(0.099)	(0.173)	(0.102)
School enrollment (log)	-0.052***	-0.020	-0.156***	-0.057***
	(0.010)	(0.020)	(0.044)	(0.016)
Miles to metro center	-0.001	-0.001	0.005	-0.005**
	(0.001)	(0.002)	(0.004)	(0.002)
Miles squared	0.003	-0.018	-0.014	0.034**
	(0.008)	(0.017)	(0.029)	(0.015)
Houston ISD	0.009	0.061	-0.211***	0.055
	(0.023)	(0.057)	(0.080)	(0.046)
Dallas ISD	0.061**	-0.031	0.151*	0.033
	(0.026)	(0.063)	(0.084)	(0.048)
District size	-0.044***	-0.309***	0.125***	-0.012
	(0.009)	(0.016)	(0.033)	(0.017)
Comparable Wage Index	0.672***	1.573***	0.565	1.173***
	(0.118)	(0.265)	(0.413)	(0.248)
Unemployment rate	-0.007	-0.027*	0.008	-0.015
	(0.008)	(0.015)	(0.031)	(0.015)
Major metropolitan area	-0.011	0.104*	-0.178	-0.044
	(0.037)	(0.061)	(0.143)	(0.068)
Metropolitan area	-0.110***	-0.348***	0.350***	-0.232***
	(0.037)	(0.080)	(0.130)	(0.076)
Micropolitan area	-0.032	-0.022	0.119	-0.066
	(0.029)	(0.064)	(0.098)	(0.057)
TEEG2007	0.067***	0.050	0.127*	0.143*
	(0.024)	(0.048)	(0.075)	(0.079)
EVER TEEG	-0.065***	-0.117***	-0.215***	-0.059**
	(0.013)	(0.027)	(0.049)	(0.027)
EVER GEEG	-0.074***	-0.232**	-0.212*	-0.032
	(0.026)	(0.112)	(0.113)	(0.076)
GEEG2006	-0.053	-0.348	0.141	-0.080
	(0.076)	(0.222)	(0.252)	(0.117)
GEEG2007	0.033	-0.054	0.250	0.029
	(0.070)	(0.163)	(0.280)	(0.149)
School year 2003-04	0.010	0.181***	-0.018	-0.075***
	(0.017)	(0.033)	(0.067)	(0.029)
School year 2004-05	-0.008	0.074*	-0.007	-0.081**
	(0.020)	(0.045)	(0.071)	(0.037)
School year 2005-06	-0.016	0.113**	-0.029	-0.139***

	Changed Campus or Job	External Mover	Internal Mover	Leaver
	(0.021)	(0.050)	(0.084)	(0.043)
School year 2006-07	0.060*	0.124*	-0.120	0.164**
	(0.032)	(0.070)	(0.119)	(0.067)
Elementary school	-0.052**	-0.188***	0.329***	-0.111**
	(0.026)	(0.058)	(0.114)	(0.050)
Middle school	0.045*	0.096*	0.375***	0.037
	(0.026)	(0.058)	(0.110)	(0.051)
Secondary school	0.008	0.128**	-0.232*	0.109**
	(0.028)	(0.060)	(0.129)	(0.053)
Constant	3.098***	6.735***	-4.319**	4.564***
	(0.517)	(1.115)	(1.941)	(1.129)
Observations	328083	328083	328083	328083

Source: Author's calculations.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table H.6: Regression Analyses of Turnover, Experienced Teachers

	changed campus or job	External Mover	Internal Mover	Leaver
Base Salary (log)	-0.305***	-1.092***	-0.439	-0.352***
	(0.071)	(0.175)	(0.299)	(0.121)
Charter school	0.558***	0.360***	-0.025	1.254***
	(0.051)	(0.109)	(0.321)	(0.085)
Black	-0.105***	-0.316***	-0.108***	-0.178***
	(0.010)	(0.051)	(0.034)	(0.020)
Hispanic	-0.084***	-0.176***	-0.015	-0.213***
	(0.010)	(0.034)	(0.039)	(0.023)
Asian/American Indian	-0.062***	-0.218***	0.041	-0.144**
	(0.019)	(0.071)	(0.044)	(0.056)
Male	0.039***	0.194***	0.100***	-0.011
	(0.007)	(0.018)	(0.019)	(0.015)
Years of Experience	-0.048***	-0.039***	-0.017***	-0.098***
	(0.002)	(0.005)	(0.007)	(0.005)
Experience, squared	0.001***	-0.000***	0.000	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)
No Degree	-0.042	-0.333***	0.198	-0.107
	(0.056)	(0.118)	(0.219)	(0.098)
MA	0.142***	0.086***	0.107***	0.386***
	(0.007)	(0.019)	(0.021)	(0.016)
PhD	0.142***	-0.197**	0.270***	0.363***
	(0.028)	(0.092)	(0.070)	(0.077)
TAKS	0.061***	0.185***	0.128***	0.052***
	(0.007)	(0.016)	(0.020)	(0.013)
Language Arts	-0.001	-0.071***	0.004	0.028*
	(0.008)	(0.021)	(0.029)	(0.014)
Math	-0.005	0.009	-0.013	-0.012
	(0.012)	(0.027)	(0.037)	(0.020)
Science	-0.014	0.010	-0.061*	-0.021
	(0.010)	(0.026)	(0.036)	(0.020)
Foreign Language	0.054***	0.216***	0.036	0.057**
	(0.016)	(0.044)	(0.065)	(0.024)

	changed campus or job	External Mover	Internal Mover	Leaver
Fine Arts	-0.018*	0.178***	0.073*	-0.189***
	(0.011)	(0.024)	(0.040)	(0.022)
Vocational-Technical	-0.074***	-0.337***	-0.052	-0.090***
	(0.012)	(0.034)	(0.066)	(0.020)
Special Education	0.157***	0.088***	0.412***	0.228***
	(0.013)	(0.033)	(0.041)	(0.026)
Bilingual	-0.023	0.024	0.008	-0.095***
	(0.015)	(0.045)	(0.056)	(0.031)
Math Certified	0.017**	0.102***	0.024	-0.004
	(0.008)	(0.024)	(0.029)	(0.018)
Science Certified	0.019**	0.089***	-0.008	0.030
	(0.009)	(0.022)	(0.035)	(0.019)
Bilingual Certified	0.063***	0.241***	0.049	0.094***
	(0.013)	(0.043)	(0.050)	(0.030)
Special Ed Certified	0.026***	0.035*	0.202***	-0.042***
	(0.008)	(0.019)	(0.027)	(0.015)
Certified	-0.201***	0.472***	0.077	-0.724***
	(0.016)	(0.058)	(0.066)	(0.033)
Coach	0.049***	0.611***	0.129***	-0.376***
	(0.011)	(0.025)	(0.035)	(0.023)
Percent students economically disadvantaged	0.005	0.176*	-0.005	-0.026
	(0.043)	(0.100)	(0.161)	(0.067)
Percent students LEP	0.134*	0.434***	0.036	0.222***
	(0.068)	(0.133)	(0.275)	(0.071)
Percent students Hispanic	0.187***	0.384***	0.478***	0.258***
	(0.038)	(0.094)	(0.150)	(0.062)
Percent students African-American	0.415***	1.092***	0.878***	0.530***
	(0.059)	(0.120)	(0.195)	(0.081)
School enrollment (log)	-0.065***	-0.027	-0.218***	-0.061***
	(0.009)	(0.019)	(0.035)	(0.013)
Miles to metro center	-0.001	-0.003	0.006	-0.003*
	(0.001)	(0.002)	(0.005)	(0.002)
Miles squared	0.003	0.002	-0.022	0.022*
	(0.008)	(0.018)	(0.036)	(0.012)
Houston ISD	-0.121***	-0.129***	-0.444***	-0.176***
	(0.024)	(0.049)	(0.086)	(0.035)
Dallas ISD	-0.046*	-0.253***	-0.010	-0.156***
	(0.026)	(0.051)	(0.097)	(0.038)
District size	-0.013	-0.275***	0.143***	-0.001
	(0.010)	(0.016)	(0.040)	(0.014)
Comparable Wage Index	0.506***	1.748***	0.772*	0.659***
	(0.109)	(0.223)	(0.465)	(0.190)
Unemployment rate	-0.012	-0.040***	-0.017	-0.020**
	(0.008)	(0.014)	(0.038)	(0.010)
Major metropolitan area	0.004	0.119**	-0.131	0.023
	(0.038)	(0.053)	(0.193)	(0.042)
Metropolitan area	-0.037	-0.393***	0.373***	-0.101
	(0.032)	(0.066)	(0.134)	(0.062)
Micropolitan area	-0.013	-0.014	0.180*	-0.091**
	(0.025)	(0.056)	(0.106)	(0.041)
TEEG2007	0.024	-0.043	0.140*	0.029

	changed campus or job	External Mover	Internal Mover	Leaver
	(0.019)	(0.042)	(0.081)	(0.051)
EVER TEEG	-0.054***	-0.045*	-0.242***	-0.044**
	(0.013)	(0.026)	(0.053)	(0.020)
EVER GEEG	-0.027	-0.160*	0.011	-0.085
	(0.023)	(0.089)	(0.087)	(0.052)
GEEG2006	-0.138***	-0.380***	-0.353*	-0.124
	(0.048)	(0.108)	(0.184)	(0.076)
GEEG2007	-0.039	-0.062	-0.024	-0.067
	(0.055)	(0.120)	(0.169)	(0.117)
School year 2003-04	0.052***	0.191***	-0.030	0.118***
	(0.013)	(0.026)	(0.063)	(0.022)
School year 2004-05	-0.030*	0.124***	-0.028	-0.143***
	(0.017)	(0.036)	(0.076)	(0.028)
School year 2005-06	0.008	0.174***	0.038	-0.074**
	(0.019)	(0.041)	(0.088)	(0.033)
School year 2006-07	-0.007	0.119**	-0.130	-0.013
	(0.030)	(0.057)	(0.136)	(0.049)
Elementary school	-0.005	-0.129**	0.458***	-0.113***
	(0.025)	(0.052)	(0.131)	(0.039)
Middle school	0.074***	0.134**	0.559***	0.013
	(0.025)	(0.052)	(0.129)	(0.038)
Secondary school	0.050*	0.340***	0.034	0.026
	(0.027)	(0.053)	(0.149)	(0.040)
Constant	1.909***	5.742***	-0.624	1.634*
	(0.534)	(1.349)	(2.298)	(0.910)
Observations	974064	974064	974064	974064

Source: Author's calculations.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table H.7: Regression Analyses of Turnover by Measures of Student Achievement

	All Teachers	Beginning Teachers	Experienced Teachers
Base Salary (log)	-1.081	-0.277	-0.550
	(0.165)***	(0.452)	(0.322)*
Black	-0.114	-0.102	-0.131
	(0.044)***	(0.086)	(0.055)**
Hispanic	-0.180	-0.274	-0.113
	(0.033)***	(0.065)***	(0.041)***
Asian/American Indian	-0.294	-0.325	-0.416
	(0.073)***	(0.113)***	(0.123)***
Male	0.004	-0.051	0.021
	(0.026)	(0.049)	(0.034)
Years of Experience	-0.010	0.170	-0.025
	(0.005)*	(0.065)***	(0.010)**
Experience, squared	0.001	-0.054	0.001
	(0.000)***	(0.021)***	(0.000)***
Experience missing	0.157		
	(0.052)***		
No Degree	-0.335	-0.375	-0.264
	(0.118)***	(0.169)**	(0.210)

	All Teachers	Beginning Teachers	Experienced Teachers
MA	0.191	0.044	0.211
	(0.030)***	(0.080)	(0.036)***
PhD	0.271	0.311	0.297
	(0.131)**	(0.298)	(0.157)*
TAKS	0.024	0.051	-0.001
	(0.029)	(0.056)	(0.037)
Language Arts	0.019	-0.013	0.049
	(0.033)	(0.063)	(0.042)
Math	-0.036	-0.204	0.056
	(0.043)	(0.080)**	(0.059)
Science	-0.079	0.058	-0.141
	(0.043)*	(0.076)	(0.060)**
Foreign Language	0.031	0.102	-0.059
	(0.070)	(0.154)	(0.091)
Fine Arts	0.020	0.174	-0.051
	(0.047)	(0.097)*	(0.059)
Vocational-Technical	-0.099	0.110	-0.123
	(0.061)	(0.130)	(0.079)
Special Education	0.142	0.304	0.058
	(0.059)**	(0.120)**	(0.076)
Bilingual	0.080	0.018	0.134
	(0.046)*	(0.085)	(0.059)**
Math Certified	0.025	0.257	-0.080
	(0.054)	(0.109)**	(0.071)
Science Certified	0.163	0.046	0.173
	(0.053)***	(0.110)	(0.068)**
Bilingual Certified	-0.004	0.031	-0.084
	(0.040)	(0.083)	(0.050)*
Special Ed Certified	0.052	0.092	0.046
	(0.041)	(0.087)	(0.051)
Certified	-0.274	-0.207	-0.265
	(0.048)***	(0.068)***	(0.112)**
Coach	0.004	0.033	-0.038
	(0.045)	(0.090)	(0.057)
Comparable Wage Index	2.294	3.207	1.650
	(0.831)***	(1.587)**	(1.049)
Unemployment rate	0.094	0.194	0.071
	(0.025)***	(0.048)***	(0.031)**
Growth only 2006	0.409	0.725	0.257
	(0.096)***	(0.171)***	(0.130)**
Growth only 2007	0.101	-0.091	0.251
	(0.094)	(0.175)	(0.125)**
Levels only 2006	-0.013	0.069	0.005
	(0.066)	(0.132)	(0.083)
Levels only 2007	-0.138	-0.145	-0.060
	(0.062)**	(0.125)	(0.079)
First year GEEG	-0.147	-0.181	-0.127
	(0.068)**	(0.136)	(0.086)
Second year GEEG	0.162	0.291	0.051
	(0.082)**	(0.167)*	(0.106)
Campus Fixed Effects?	yes	Yes	yes

	All Teachers	Beginning Teachers	Experienced Teachers
Observations	19064	4967	12494

Source: Author's calculations.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table H.8: Regression Analyses of Turnover by Units of Accountability

	All Teachers	Beginning Teachers	Experienced Teachers
Base Salary (log)	-1.089	-0.242	-0.486
	(0.166)***	(0.455)	(0.323)
Black	-0.112	-0.101	-0.128
	(0.044)**	(0.086)	(0.056)**
Hispanic	-0.181	-0.264	-0.118
	(0.033)***	(0.067)***	(0.041)***
Asian/American Indian	-0.289	-0.339	-0.371
	(0.075)***	(0.117)***	(0.124)***
Male	0.007	-0.054	0.028
	(0.027)	(0.050)	(0.035)
Years of Experience	-0.010	0.174	-0.027
	(0.005)*	(0.066)***	(0.010)**
Experience, squared	0.001	-0.053	0.001
	(0.000)***	(0.021)**	(0.000)***
Experience missing	0.141		
	(0.053)***		
No Degree	-0.315	-0.356	-0.224
	(0.118)***	(0.168)**	(0.211)
MA	0.195	0.033	0.211
	(0.030)***	(0.081)	(0.036)***
PhD	0.268	0.310	0.280
	(0.131)**	(0.301)	(0.157)*
TAKS	0.024	0.051	-0.003
	(0.029)	(0.057)	(0.037)
Language Arts	0.024	-0.001	0.049
	(0.033)	(0.064)	(0.042)
Math	-0.027	-0.193	0.061
	(0.043)	(0.080)**	(0.059)
Science	-0.085	0.031	-0.139
	(0.044)**	(0.077)	(0.060)**
Foreign Language	0.033	0.105	-0.045
	(0.072)	(0.158)	(0.092)
Fine Arts	0.018	0.173	-0.056
	(0.047)	(0.099)*	(0.059)
Vocational-Technical	-0.129	0.057	-0.135
	(0.062)**	(0.132)	(0.080)*
Special Education	0.132	0.291	0.063
	(0.060)**	(0.122)**	(0.076)
Bilingual	0.074	0.004	0.133
	(0.046)	(0.085)	(0.059)**
Math Certified	0.027	0.227	-0.065

	All Teachers	Beginning Teachers	Experienced Teachers
	(0.055)	(0.112)**	(0.072)
Science Certified	0.165	0.047	0.176
	(0.054)***	(0.112)	(0.068)***
Bilingual Certified	0.000	0.027	-0.083
	(0.040)	(0.084)	(0.050)*
Special Ed Certified	0.044	0.064	0.037
	(0.041)	(0.088)	(0.051)
Certified	-0.276	-0.212	-0.282
	(0.048)***	(0.068)***	(0.112)**
Coach	0.002	0.010	-0.031
	(0.045)	(0.092)	(0.057)
Comparable Wage Index	2.598	3.405	1.855
	(0.834)***	(1.606)**	(1.053)*
Unemployment rate	0.105	0.199	0.081
	(0.025)***	(0.049)***	(0.031)**
Teacher incentives only 2006	-0.084	0.105	-0.206
	(0.073)	(0.141)	(0.092)**
Teacher incentives only 2007	0.081	0.039	0.190
	(0.071)	(0.140)	(0.091)**
Campus incentives only 2006	-0.188	-0.285	-0.181
	(0.086)**	(0.166)*	(0.108)*
Campus incentives only 2007	-0.056	0.014	-0.045
	(0.082)	(0.157)	(0.107)
First year of GEEG	-0.026	-0.024	0.047
	(0.073)	(0.141)	(0.091)
Second year of GEEG	0.049	0.156	-0.064
	(0.084)	(0.168)	(0.110)
Campus Fixed Effects?	yes	yes	yes
Observations	18797	4836	12376

Source: Author's calculations.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table H.9: Regression Analyses of Turnover by Plan Inequality

	All Teachers	Beginning Teachers	Experienced Teachers
Base Salary (log)	-1.142	-0.258	-0.614
	(0.170)***	(0.467)	(0.335)*
Black	-0.127	-0.138	-0.132
	(0.045)***	(0.090)	(0.057)**
Hispanic	-0.182	-0.275	-0.126
	(0.033)***	(0.066)***	(0.042)***
Asian/American Indian	-0.298	-0.302	-0.436
	(0.075)***	(0.119)**	(0.127)***
Male	0.014	-0.052	0.036
	(0.027)	(0.050)	(0.035)
Years of Experience	-0.008	0.172	-0.023
	(0.005)	(0.067)***	(0.011)**
Experience, squared	0.001	-0.054	0.001
	(0.000)***	(0.021)**	(0.000)***

	All Teachers	Beginning Teachers	Experienced Teachers
Experience missing	0.187		
	(0.054)***		
No Degree	-0.302	-0.426	-0.156
	(0.120)**	(0.175)**	(0.209)
MA	0.196	0.048	0.211
	(0.031)***	(0.082)	(0.037)***
PhD	0.262	0.273	0.303
	(0.135)*	(0.318)	(0.162)*
TAKS	0.029	0.032	0.009
	(0.029)	(0.057)	(0.037)
Language Arts	0.026	0.032	0.051
	(0.033)	(0.065)	(0.043)
Math	-0.037	-0.218	0.066
	(0.045)	(0.083)***	(0.061)
Science	-0.086	0.053	-0.156
	(0.045)*	(0.080)	(0.062)**
Foreign Language	0.018	0.071	-0.048
	(0.072)	(0.155)	(0.093)
Fine Arts	0.044	0.247	-0.050
	(0.047)	(0.098)**	(0.060)
Vocational-Technical	-0.109	0.130	-0.134
	(0.062)*	(0.135)	(0.079)*
Special Education	0.150	0.313	0.062
	(0.060)**	(0.121)***	(0.077)
Bilingual	0.076	0.013	0.127
	(0.046)	(0.086)	(0.059)**
Math Certified	0.026	0.290	-0.085
	(0.056)	(0.113)**	(0.074)
Science Certified	0.174	0.075	0.180
	(0.055)***	(0.112)	(0.069)***
Bilingual Certified	0.007	0.029	-0.066
	(0.040)	(0.084)	(0.051)
Special Ed Certified	0.040	0.058	0.041
	(0.042)	(0.090)	(0.052)
Certified	-0.291	-0.248	-0.264
	(0.049)***	(0.069)***	(0.119)**
Coach	0.009	-0.009	-0.021
	(0.046)	(0.093)	(0.058)
Comparable Wage Index	2.558	3.160	2.005
	(0.844)***	(1.612)**	(1.063)*
Unemployment rate	0.112	0.212	0.090
	(0.025)***	(0.048)***	(0.032)***
Plan Gini 2006	-0.096	0.063	-0.265
	(0.154)	(0.281)	(0.197)
Plan Gini 2007	0.470	0.675	0.272
	(0.146)***	(0.286)**	(0.186)
First year of GEEG	-0.076	-0.026	-0.012
	(0.076)	(0.142)	(0.095)
Second year of GEEG	-0.077	-0.008	-0.068
	(0.088)	(0.175)	(0.112)
Campus Fixed Effects?	yes	yes	yes

	All Teachers	Beginning Teachers	Experienced Teachers
Observations	18256	4750	11966

Source: Author's calculations.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table H.10: Regression Analyses of Turnover Including Individual GEEG Awards, 2006

	All Teachers	Beginning Teachers	Experienced Teachers
Year One Bonus (in 1,000s)	-0.290	-0.266	-0.304
	(0.029)***	(0.053)***	(0.039)***
GEEG 2006	0.410	0.326	0.491
	(0.069)***	(0.127)**	(0.091)***
Base Salary (log)	-1.012	-0.087	-0.693
	(0.219)***	(0.578)	(0.447)
Black	-0.129	-0.138	-0.161
	(0.051)**	(0.098)	(0.068)**
Hispanic	-0.181	-0.206	-0.118
	(0.040)***	(0.080)***	(0.052)**
Asian/American Indian	-0.257	-0.264	-0.404
	(0.093)***	(0.137)*	(0.169)**
Male	0.018	-0.071	0.034
	(0.033)	(0.062)	(0.045)
Years of Experience	-0.004	0.228	-0.017
	(0.007)	(0.082)***	(0.014)
Experience, squared	0.001	-0.062	0.001
	(0.000)***	(0.026)**	(0.000)***
Experience missing	0.211		
	(0.068)***		
No Degree	-0.369	-0.332	-0.524
	(0.162)**	(0.228)	(0.333)
MA	0.208	-0.016	0.241
	(0.037)***	(0.100)	(0.046)***
PhD	0.312	0.572	0.199
	(0.167)*	(0.323)*	(0.202)
TAKS	0.061	0.069	0.053
	(0.036)*	(0.068)	(0.046)
Language Arts	0.063	0.126	0.083
	(0.042)	(0.082)	(0.054)
Math	0.045	-0.029	0.088
	(0.055)	(0.102)	(0.075)
Science	-0.068	0.003	-0.098
	(0.055)	(0.096)	(0.075)
Foreign Language	0.081	0.123	-0.027
	(0.091)	(0.220)	(0.114)
Fine Arts	-0.042	0.124	-0.136
	(0.063)	(0.129)	(0.081)*

	All Teachers	Beginning Teachers	Experienced Teachers
Vocational-Technical	-0.019	0.214	0.011
	(0.079)	(0.164)	(0.102)
Special Educationj	0.078	0.137	0.033
	(0.075)	(0.153)	(0.097)
Bilingual	0.026	-0.174	0.146
	(0.056)	(0.104)*	(0.073)**
Math Certified	0.022	0.182	-0.041
	(0.067)	(0.132)	(0.088)
Science Certified	0.126	0.029	0.125
	(0.067)*	(0.137)	(0.085)
Bilingual Certified	-0.005	0.133	-0.138
	(0.049)	(0.099)	(0.063)**
Special Ed Certified	0.039	0.078	0.040
	(0.053)	(0.109)	(0.066)
Certified	-0.286	-0.253	-0.330
	(0.058)***	(0.083)***	(0.132)**
Coach	0.031	0.132	-0.011
	(0.060)	(0.119)	(0.079)
Comparable Wage Index	0.798	2.278	0.099
	(1.028)	(1.978)	(1.275)
Unemployment Rate	0.051	0.130	0.028
	(0.031)	(0.061)**	(0.039)
Campus Fixed Effects?	Yes	Yes	Yes
Observations	12384	3327	8113

Source: Author's calculations.

* significant at 10%; ** significant at 5%; *** significant at 1%

**Table H.11: Regression Analyses of Turnover Including Individual GEEG Awards, 2006 and 2007**

	All Teachers	Beginning Teachers	Experienced Teachers
Year One Bonus (in 1,000s)	-0.297	-0.282	-0.310
	(0.032)***	(0.062)***	(0.042)***
Year Two Bonus (in 1,000s)	-0.526	-0.552	-0.537
	(0.040)***	(0.072)***	(0.047)***
GEEG 2006	0.356	0.289	0.406
	(0.072)***	(0.132)**	(0.096)***
GEEG 2007	0.829	0.825	0.792
	(0.091)***	(0.180)***	(0.117)***
Base Salary (log)	-1.027	0.094	-0.558
	(0.215)***	(0.575)	(0.428)
Black	-0.092	-0.142	-0.103
	(0.050)*	(0.097)	(0.065)
Hispanic	-0.172	-0.257	-0.087
	(0.040)***	(0.077)***	(0.052)*
Asian/American Indian	-0.263	-0.396	-0.348
	(0.089)***	(0.138)***	(0.158)**
Male	-0.003	-0.070	0.002
	(0.033)	(0.061)	(0.044)

|	All Teachers	Beginning Teachers	Experienced Teachers
Years of Experience	-0.005	0.305	-0.023
	(0.007)	(0.081)***	(0.014)*
Experience, squared	0.001	-0.085	0.001
	(0.000)***	(0.025)***	(0.000)***
Experience missing	0.166		
	(0.068)**		
No Degree	-0.471	-0.411	-0.226
	(0.175)***	(0.241)*	(0.313)
MA	0.178	-0.039	0.190
	(0.038)***	(0.106)	(0.045)***
PhD	0.327	0.643	0.182
	(0.166)**	(0.232)***	(0.206)
TAKS	0.112	0.071	0.125
	(0.035)***	(0.067)	(0.045)***
Language Arts	0.037	0.106	0.050
	(0.040)	(0.077)	(0.051)
Math	0.056	-0.044	0.074
	(0.054)	(0.101)	(0.073)
Science	-0.109	0.004	-0.153
	(0.054)**	(0.094)	(0.073)**
Foreign Language	0.097	0.050	0.040
	(0.080)	(0.190)	(0.098)
Fine Arts	-0.063	0.012	-0.065
	(0.059)	(0.118)	(0.074)
Vocational-Technical	-0.061	0.208	-0.033
	(0.078)	(0.158)	(0.103)
Special Education	0.088	0.220	0.011
	(0.074)	(0.142)	(0.095)
Bilingual	0.039	-0.187	0.167
	(0.056)	(0.103)*	(0.071)**
Math Certified	0.007	0.281	-0.064
	(0.067)	(0.134)**	(0.087)
Science Certified	0.161	0.096	0.171
	(0.067)**	(0.136)	(0.087)**
Bilingual Certified	0.004	0.153	-0.112
	(0.048)	(0.099)	(0.061)*
Special Ed Certified	0.071	0.090	0.103
	(0.050)	(0.102)	(0.062)*
Certified	-0.312	-0.291	-0.282
	(0.056)***	(0.081)***	(0.125)**
Coach	0.000	0.090	-0.047
	(0.057)	(0.111)	(0.074)
Comparable Wage Index	1.722	2.699	1.322
	(0.957)*	(1.853)	(1.190)
Unemployment Rate	0.071	0.142	0.053
	(0.028)**	(0.055)**	(0.036)
Campus Fixed Effects?	Yes	Yes	Yes
Observations	13532	3583	8940

Source: Author's calculations.
* significant at 10%; ** significant at 5%; *** significant at 1%

**Figure H.1: School Turnover Rates for Beginning Teachers,
GEEG v. TEEG v. Other Texas Public Schools**
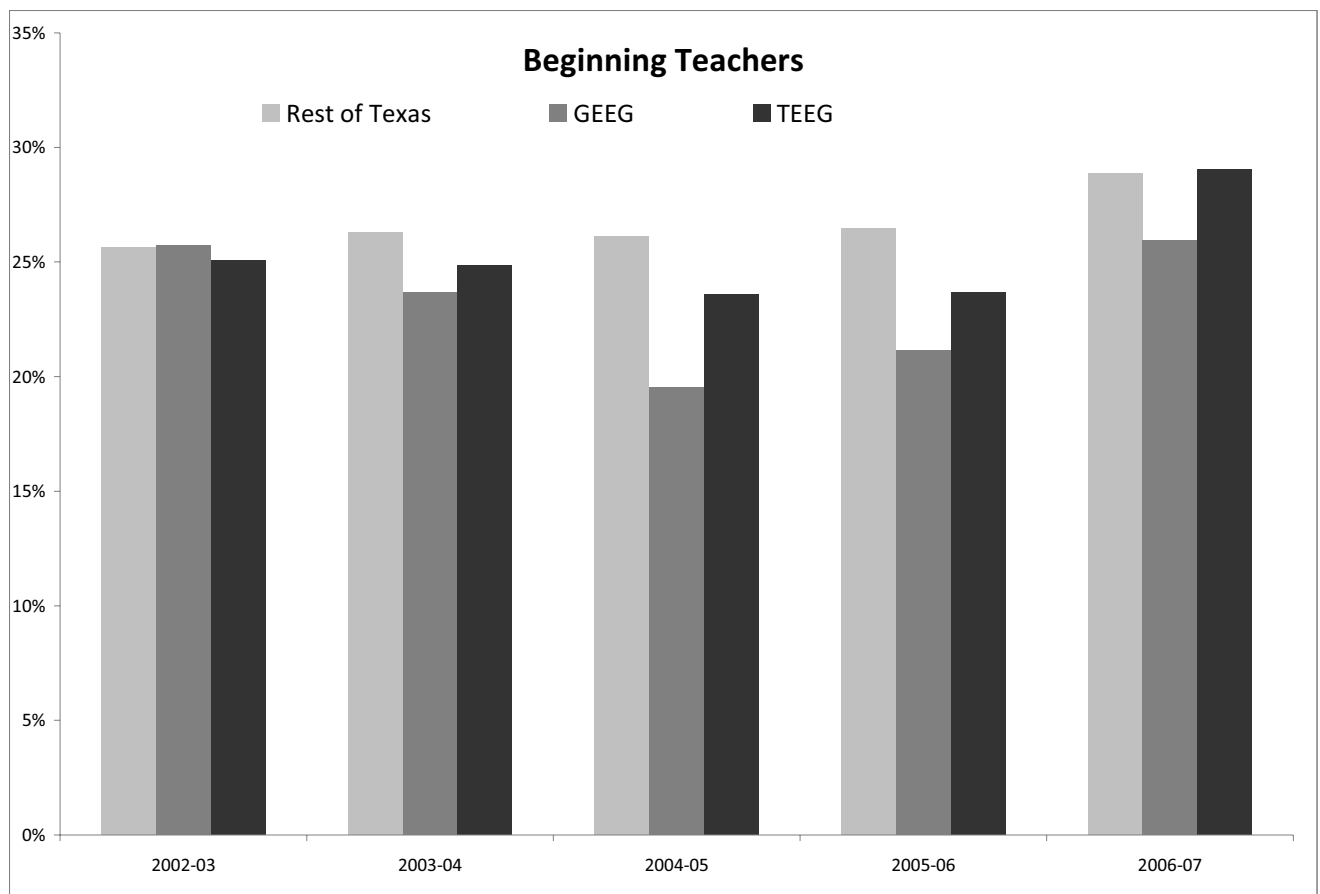
Source: Based on authors' calculations using PEIMS data.

**Figure H.2: School Turnover Rates for Experienced Teachers,
GEEG v. TEEG v. Other Texas Public Schools**
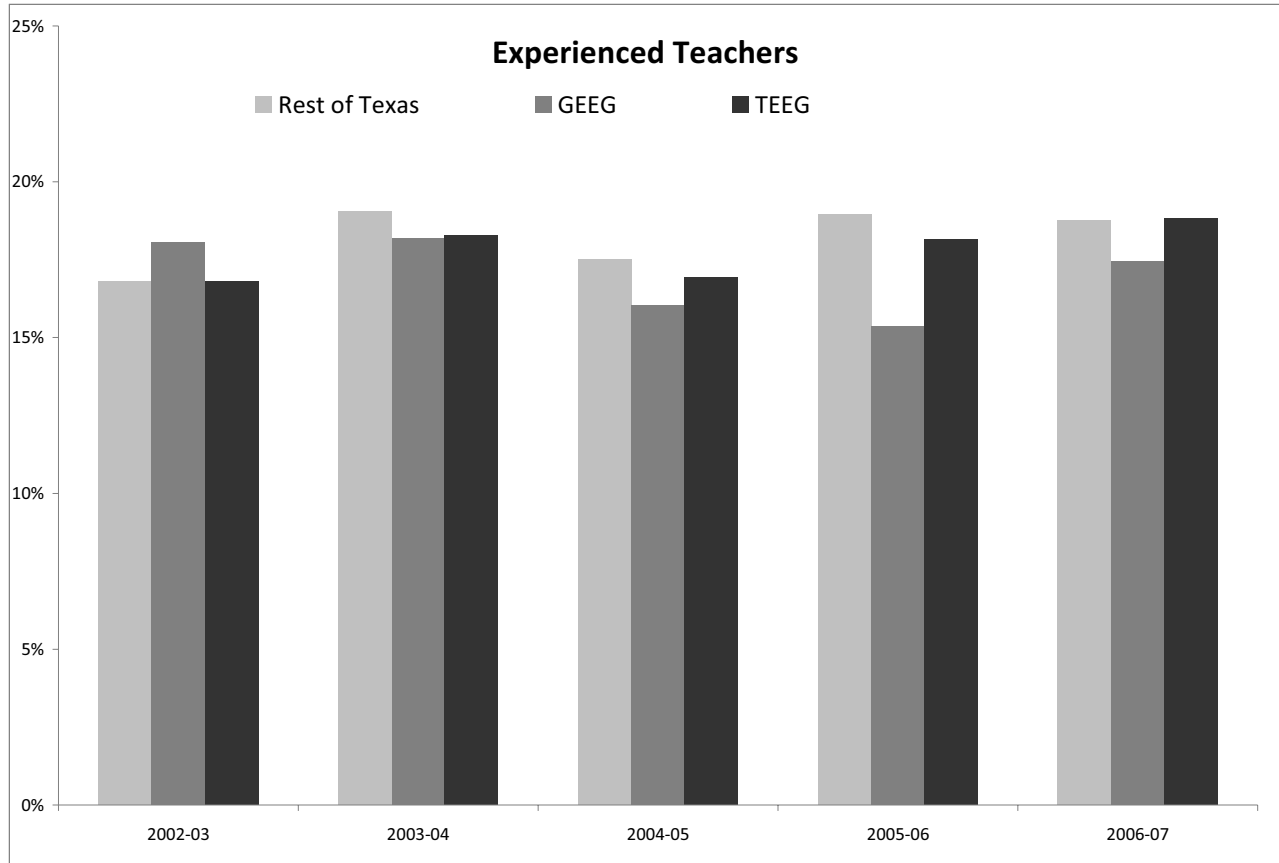
Source: Based on authors' calculations using PEIMS data.

APPENDIX I: Technical Appendix for Student Achievement Analyses

This section provides background on evaluation designs and then describes the data, sample, key variables, and statistical approach used to examine the estimated effect of the GEEG program on student achievement gains.

Background on Evaluation Designs

There are three basic types of program evaluations in education—experimental designs, quasi-experimental designs and non-experimental designs. As summarized in Table 8.1, experimental designs are characterized by random assignment of subjects to treatment and control groups, adequate sample sizes and high quality measures of the behavior under study. Quasi-experimental designs replace random assignment with sophisticated statistical methods designed to control for any systematic differences between treated and non-treated subjects. Non-experimental designs do not use comparison groups to evaluate the effect of a program or policy, but instead use pre-intervention trends or a pre-test/post-test comparison to evaluate treatment effects before and after implementation of the intervention.

Table I.1: Evaluation Designs to Investigate the Impact of
Program and Policy Interventions

Grade	Class	Description
Highest Quality	Experimental designs	Random assignment to control and treatment conditions. Adequate sample size, measurement instruments, data collection methods, and analysis techniques. High response rates, low attrition.
Moderate Quality	Quasi-experimental designs	Use of matching, statistical controls, or similar strategy to establish treatment and comparison groups in the absence of random assignment. Adequate sample size, measurement instruments, data collection methods, and analysis techniques. High response rates, low attrition, and establish equivalence of groups.
Low Quality	Non-experimental designs	Correlational or observational study. No random assignment of units under observation to control and treatment conditions, or statistically constructed comparison group. Adequate sample size, measurement instruments, data, and analysis techniques

Note: Information adapted from Rossi, Lipsey, and Freeman (2004); Shadish, Cook, and Campbell (2002); National Mathematics Advisory Panel (2008).

Experimental designs are considered the "gold standard" in program evaluation. By randomly assigning schools or students to either the treatment or control groups, a well-designed and implemented experimental evaluation design ensures that unobserved differences between the treated and the non-treated units under observation are not responsible for any observed differences in outcomes. When properly implemented, experimental designs allow researchers to attribute to the program being evaluated any significant differences in the outcomes. However, numerous political, legal, fiscal, and ethical considerations can make the conduct of experimental design evaluations in elementary and secondary public schools difficult to implement.

Quasi-experimental designs are different from experimental designs in that a comparison group is constructed using some strategy other than random assignment. The comparison group is then used as the counterfactual against which evaluators measure the effects of the program or policy. Sophisticated modeling strategies and statistical adjustments enable social scientists to effectively evaluate the effect of a policy or program under certain conditions. However, quasi-experimental designs are only as good as their constructed comparison groups. If there are systematic differences between the treatment and comparison groups that cannot be corrected for statistically, then estimates of any treatment effect will be biased.

Non-experimental designs such as observational or correlational studies are a third type of evaluation design. Whereas experimental designs, and some well-implemented quasi-experimental designs, can estimate the causal effect of a program, observational studies are limited to suggesting whether there is a relationship between two variables (i.e., observational studies cannot prove that one variable causes a change in another variable). Thus, for example, a non-experimental design could indicate that test score growth was higher during the program years than it had been before, but unless researchers know that growth did not also accelerate in non-program schools, they cannot conclude that the program led to the acceleration in growth.

Virtually all quasi- and non-experimental designs struggle with accurately estimating the counterfactual condition; that is, knowing what participants' outcomes would have been in the absence of the program or policy. If the outcomes of non-participants differ systematically from the prediction of what the outcomes of participants would have been without the program or policy, then estimates of the treatment effect will be misleading.

The class of the evaluation design presented in this chapter is non-experimental using an interrupted time series analysis. An interrupted time series analysis uses observations before and after implementation of an intervention, where the period prior to implementation serves as the comparison condition for the period in which the intervention operated. The difference between before and after adoption of the intervention is used to measure the effect of the intervention. The potential for a biased comparison is a pervasive problem, particularly if there are not enough pre- and post-intervention observations to establish the nature of the time series.[2]

Data, Sample, and Key Variables

Data

Data for this analysis come from three sources. First, characteristics of students, teachers, and schools are drawn from the Public Education Information Management System (PEIMS). PEIMS is maintained by the Texas Education Agency and encompasses all data requested and received by the agency from local education agencies, including student demographic, personnel, financial, and organizational information.

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[2] As noted by Bloom (2002), an interrupted time-series approach to projecting a counterfactual proceeds from two related premises: (1) that past experience is the best predictor of future experience in the absence of systemic change, and (2) that multiple observations of past experience predict future experience better than a single observation (p. 14).

Second, achievement results in mathematics and reading are drawn from the Academic Excellence Indicator System (AEIS) also maintained by the Texas Education Agency. AEIS contains longitudinal, student-level achievement data for grades 3 through 11 in mathematics and reading along with achievement data in science, social studies, and writing for select grades. Achievement results come from the TAKS, a standardized assessment adopted in spring 2003 that evaluates student performance on a subset of the state-defined and state-mandated curriculum. This study does not analyze achievement results in science, social studies, or writing because those subjects are not administered in all grades and years.

Third, information on characteristics of GEEG plan design features are drawn from evaluators' own collection and review of GEEG applications submitted to the Texas Education Agency. Evaluators conducted a systematic review of GEEG applications for the 99 schools participating in GEEG program. During the review process, evaluators recorded information on the amount of the total GEEG school grant, proposed minimum and maximum bonus award amounts for individual teachers, indicators used to measure teacher performance, and models used to disseminate teacher bonus awards. All applications were independently reviewed and coded by two research associates, and checked by a third research associate to ensure accuracy.

Sample

This analysis uses data on individual student performance in mathematics and reading from all public elementary and secondary schools in Texas that serve grades 3 to 11. There are more than 10.8 million student test score observations in the full sample, of which 134,893 come from GEEG schools. Of these observations, 51,095 are from pre-GEEG years (2003-04 through 2004-05 school years) and 83,798 from GEEG years (2005-06 through 2007-08 school years). About 43 percent of valid test score observations from GEEG years come from schools that qualified for the GEEG participation based on their accountability rating.

Table 1 in Appendix J displays additional sample statistics on student, school, and GEEG plan design features by GEEG schools (All, Comparable Improvement, or accountability rating) and all public schools in Texas. In terms of school-level characteristics, 88.25 percent of students enrolled in GEEG schools are Hispanic compared to approximately 41 percent of those students enrolled in Texas public schools being identified as Hispanic. Ninety-one percent of students enrolled in GEEG schools qualify for free price lunch, which is nearly twice the statewide average (49.30 percent). The percentage of students enrolled in special education services (12.07 vs. 11.69 percent) or gifted and talented services (8.26 vs. 9.16 percent) are roughly similar between GEEG and non-GEEG schools.

The average teacher salary in GEEG schools ($43,622.26) and the average years of teaching experience in GEEG schools (10.98 years) are roughly similar to statewide averages ($42,387.52 and 11.50 years). The same holds true for the student teacher ratio (14.96 vs. 15.22) and the proportion of schools identified as exemplary (0.05 vs. 0.04) in GEEG and non-GEEG schools. GEEG schools have a slightly larger proportion of students enrolled in schools identified as recognized under the state accountability system (0.39 vs. 0.25), whereas the proportion of students enrolled in GEEG schools identified as acceptable under the state accountability system is much lower than the statewide average (0.46 vs. 0.62).

In terms of students with valid test score observations, roughly half of students enrolled in GEEG schools are female (51 percent) which is the same as the statewide average. Once again, the great majority of students in GEEG schools are identified as Hispanic (88 percent) while a much smaller percentage of students in the state are Hispanic (41 percent). Almost twice as many students in the state are identified as Black (14 percent) when compared to those students enrolled in GEEG schools with valid test score observations (8 percent). The opposite is true for students in GEEG schools identified as limited English proficient (19 vs. 8 percent). There are also large difference between the percentage of students in GEEG and non-GEEG schools as Asian/Pacific Islander (<1 vs. 4 percent), White (3 vs. 41 percent), and migrant status (6 vs. 1 percent).

Students enrolled in GEEG schools had average achievement gains in mathematics 0.02 standard deviations higher than the statewide average. Variation in mathematics scores in GEEG schools was slightly higher (1.04) than non-GEEG schools (1.00). Reading achievement gains were 0.06 standard deviation units below the statewide average (the statewide average is 0.00 standard deviation units). Interestingly, schools qualifying for the GEEG program because of their accountability rating scored much higher in mathematics than Comparable Improvement GEEG schools (0.06 vs. -0.01 standard deviation units), while there was less of a difference between reading scores (-0.07 vs. -0.05 standard deviation units).

Key variables

Variables used to estimate the effect of the GEEG program on student achievement includes a measure of student growth in mathematics and reading, GEEG plan design features, and controls for student, school, and GEEG program characteristics.

Student test scores

This study uses a student's spring-to-spring test score gain in mathematics and reading as the primary dependent variable. Test scores are measured on the state's high-stakes accountability test, TAKS. Since raw scale scores from TAKS are not expressed on the same developmental scale from one year to the next or from one grade to the next, and the structure of the TAKS tests may lead to smaller or larger gains at various points on the achievement distribution, this study standardizes test scores into z-scores for each student by grade, year, and subject.

Standardized scores have a mean of zero and standard deviation of one. A simple gain score was constructed by subtracting scores at time *t* from those at time *t-1*. A negative z-score indicates a student's test score is below the mean for all tested students in that subject, grade, and year, while a positive z-score indicates a student's test score is above the distribution mean. A standardized gain score of zero means a student test score from one year to the next increased the average amount for that grade, year, and subject in the state.

Evaluators also explored the robustness of estimates to different gain specifications. More specifically, evaluators took the statewide distribution of the students' prior year assessment scores and divided them into 20 equal intervals. The mean and standard deviation of the test score gain was then computed for all students starting in a particular interval and a student's test score gain was standardized by taking the difference between that student's nominal gain and the mean gain of all

students in the interval over the standard deviation of all student gains in the interval.[3] Results are similar to those contained in this report.

The standardized gain score has a mean of zero and standard deviation of one and can be interpreted as an individual student's test score gain compared to the mean test score gain at a particular place in the achievement distribution. This standardization strategy further accounts for the possibility that it is easier to achieve gains when students have substantial room for improvement than it is when students are already relatively high achievers.

GEEG plan design features

Analysis is focused primarily on three design features of a GEEG school's incentive plan: the proposed maximum Part 1 bonus award; types of student performance analysis; and the unit of accountability. The proposed maximum bonus award represents the total bonus award amount that a teacher could earn if he or she met all possible Part 1 award criteria identified in a school's grant application. The average proposed maximum bonus award in all GEEG plans was $3,716, ranging between the lowest proposed maximum bonus award of $1,429 and the highest of $10,937.

Types of student performance analysis is defined as whether a school's GEEG plan rewards high-performing teachers based on student attainment (level score), student growth, or a combination of the two. A measure based on student attainment, used exclusively by 61.3 percent of GEEG schools, is defined as a school measuring teachers' contribution to student performance based on the achievement or proficiency levels students attain that school year. A measure of student growth, used exclusively by 12.9 percent of GEEG schools, is defined as a school measuring a teachers' contribution to student performance by the change in student performance over time. About 25 percent of GEEG schools used both student attainment and student growth measures.

The third, and final, design feature is the unit of accountability proposed in GEEG grant applications. The unit of accountability identifies the entity whose performance determines teachers' bonus award eligibility. If bonus awards are determined by the performance of individual teachers, then an individual teacher is considered to be the unit of accountability. A school is considered the unit of accountability when bonus awards are determined by the collective performance of an entire grade level, subject area, and/or school-wide performance determines bonus award eligibility.

To define the unit of accountability, GEEG schools were divided into one of three groups: those that use only school-level performance to determine award eligibility; those that use only teacher-level performance to determine award eligibility; those that use some combination of teacher and school-level performance.

Controlling for student, school, and program characteristics

The analyses use a number of control variables to account for non-programmatic differences across schools with respect to student, school, and GEEG eligibility characteristics. All models include a student-fixed effect estimator to account for time invariant characteristics of students that may be

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[3] This approach is described in Hanushek et al (2005) and has been used by Springer (2007, 2008) and others.

correlated with student achievement gains, including parent and student motivation, parental education, and innate student ability.

One of the analyses (strategy 4) controls for student, teacher, and school characteristics at the school-level using school fixed effects. All of the other analyses control for a subset of such factors using an array of observable school characteristics. Those characteristics include the school-level (elementary school, middle school, high school, and mixed grade configuration) and the percentage of students who are economically disadvantaged, limited English proficient, participating in the special education program, participating in the gifted and talented program, Anglo, Hispanic, African American, Native American, and Asian/Pacific Islanders.

The Texas Education Agency established a two-tier system for determining school qualification for GEEG program participation, one of which was designed to limit participation to higher-performing schools.[4] Qualified schools had to meet one of two performance criteria: a levels-style measure based on a school's accountability rating or a gains-style measure based on a school's Comparable Improvement ranking. Throughout this chapter these two groups of schools are referred to as either *accountability rating schools* or *Comparable Improvement schools.*

For several reasons, select analyses report estimates from separate equations for (1) all GEEG schools and (2) GEEG accountability rating schools and GEEG Comparable Improvement schools. First, sample statistics reported in Appendix J, Table 1 display sizable mean achievement gain differences among these two groups of schools (.07 standard deviation units in mathematics and .02 standard deviation units in reading). Second, there are systematic differences among accountability rating schools and Comparable Improvement schools in terms of plan design features proposed by GEEG schools. Third, GEEG qualification criteria are characterized by greater than expected volatility from one year to the next, which may confound estimated associations of GEEG plan design features and student achievement gains.

All analyses include grade by year fixed effects. This accounts for changes in test performance across grade levels and cohorts that may give an invalid appearance of an association between GEEG plan characteristics and student achievement (i.e., spurious correlation). That is, if test difficulty varies from year to year, and/or varies for different student populations from year to year, estimates of the association between GEEG plan design features and student achievement gains will be biased toward zero.

Statistical Approach

This analysis relies on two general analytic approaches. Comparisons between GEEG schools and non-GEEG schools were conducted using data on individual student performance. The baseline model is

$$y_{it} = x_{it}\beta + S_{it}\eta + \alpha_i + GEEG_{it}\delta + TEEG1_{it}\tau_1 + TEEG2_{it}\tau_2 + \sum_g \sum_t \gamma_{gt} + a_{it}$$

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[4] See Chapter 5 for a detailed overview of the TEEG qualification and eligibility criteria used to select TEEG participants.

where y_{it} is the standardized gain score of student i in year t, x_{ut} is a vector of student characteristics that can change over time (namely indicators for whether or not a student is limited English proficient and economically disadvantaged), S_{it} is a vector of school characteristics, $GEEG_{it}$ is an indicator variable that takes on a value of one if the student's school is currently participating in the GEEG program (and zero otherwise), TEEG1 is an indicator variable that takes on a value of one if the student's school is participating in Cycle 1 TEEG and the year is 2007 (and zero otherwise), $TEEG2_{it}$ is an indicator variable that takes on a value of one if the student's school is participating in Cycle 2 TEEG and the year is 2008 (and zero otherwise), and the γ_{gt} are grade-by-year fixed effects. This is the specification for strategy 1. Strategy 2 adds additional indicator variables for whether or not the school the student attends is a GEEG, TEEG1 or TEEG2 school in either a program or non-program year. Strategy 3 decomposes the GEEG program indicator in strategy 2 into three indicators—one for each of the three program years. Strategy 4 replaces the vector of school characteristics with a series of school fixed effects.

Analyses of the plan design features require an alternative approach. For this analysis, GEEG schools must be compared to one another, not to non-GEEG schools. However, students move frequently between GEEG and non-GEEG schools over the analysis period. For example, sixth graders could age out of a GEEG elementary school into a non-GEEG middle school, or enter a GEEG middle school from a non-GEEG elementary school. Restricting the analysis only to student level data from GEEG schools would greatly reduce the precision with which student fixed effects could be estimated, and therefore increase the imprecision in the estimates of program effects.

Rather than restricting the sample, the researchers adopted a two-stage analysis. In the first stage, they used all the available data on student performance to estimate school effects for each year. In the second stage of the analysis, they used variations in school characteristics and plan design features to explain the variation in the first-stage estimates of school effects.

The first stage models the performance of student i in year t as a function of student characteristics that do not change over time, student characteristics that can change over time, and year-specific school effects. Furthermore, the researchers presume that the marginal effect of time-varying individual characteristics need not be constant over time. Thus, the first stage model is:

$$y_{it} = \alpha_t + x_{it}\beta_t + \sum_s \sum_t S_{ist}\delta_{st} + \sum_g \sum_t \gamma_{gt} + \epsilon_{it}$$

where y_{it} is the standardized gain score of student i in year t, x_{ut} is a vector of student characteristics that can change over time (namely indicators for whether or not a student is limited English proficient and economically disadvantaged), S_{ist} is an indicator that takes on a value of one if student i attends school s in year t (and zero otherwise) and the $\tilde{a}_{gt}$ are school by year fixed effects. Because $\hat{a}_t$ varies over time, one can think of the x_{it} vector as containing separate variables for each year-characteristic interaction. Thus, rather than having a single indicator variable for limited English proficiency that has the same effect across all years, there is an indicator for being Limited English Proficient in 2004 and another for being Limited English Proficient in 2005.

Subtracting the person-specific means from each observation yields the ``within'' transformation:

$$y_{it} - \overline{y_{it}} = (x_{it} - \overline{x_{it}})\beta_t + \sum_s \sum_t (S_{ist} - \overline{S_{ist}})\delta_{st} + \sum_g \sum_t (Y_{gt} - \overline{Y_{gt}}) + \epsilon_{it} - \overline{\epsilon_{it}}$$

where the overbars indicate person-specific means. Given a time-variant β and δ, this transformed model is block diagonal—all observations from any one year have a block of zeros for all of the other-year variables—and can be estimated year-by-year from the transformed data using generalized least squares. Given the extremely large number of indicator variables required for the analysis, the researchers were forced to adopt this approach rather than estimate equation 2 using untransformed data.[5]

The coefficients on the school indicators in the above regression represent the best available estimate of the effect of school s on student performance in year t. The second stage of the analysis uses these estimated school effects for GEEG schools as the dependent variables in a regression of school effects on school characteristics, including the GEEG plan design features. To reflect measurement error in the estimates of school effects, the second stage regression is weighted by the inverse of the standard errors of the school effects from the first stage regression.[6] Weighting by the inverse of the standard error give more influence to school effects that are measured precisely than to school effects that are less precisely measured.

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[5] This method was also used in Grosskopf et al, forthcoming.
[6] For a similar analysis, see Hanushek, Rivkin, and Taylor (1996).

APPENDIX J: Results for Student Achievement Analyses

Table 1. Sample Statistics

School-Level Variables	GEEG Schools						All Texas Schools	
	All		Accountability Rating		Comparable Improvement			
	Mean	(Std. Dev.)	Mean	(Std. Dev.)	Mean	(Std. Dev.)	Mean	(Std. Dev.)
Student Characteristics								
Percent Asian/Pacific Islander	0.45	(0.83)	0.33	(0.57)	0.55	(0.98)	3.28	(5.27)
Percent Black	7.88	(17.33)	3.73	(9.02)	10.94	(21.17)	13.83	(17.08)
Percent Hispanic	88.25	(19.90)	91.66	(15.46)	86.25	(22.01)	41.66	(30.65)
Percent Native American	0.18	(0.59)	0.18	(0.40)	0.18	(0.71)	0.34	(0.57)
Percent White	3.23	(8.81)	4.11	(11.97)	2.08	(2.41)	40.88	(29.67)
Percent Special Education	12.07	(4.34)	11.93	(4.10)	12.18	(4.47)	11.69	(4.21)
Percent Gifted and Talented	8.26	(4.21)	8.59	(3.77)	8.09	(4.48)	9.16	(6.95)
Percent Limited English Proficiency	27.25	(18.69)	24.05	(16.11)	30.14	(20.02)	11.04	(14.43)
Percent Bilingual	25.04	(18.41)	22.18	(16.20)	27.62	(19.60)	10.02	(13.82)
Percent Free or Reduced Price Lunch	90.94	(6.79)	90.54	(6.42)	91.45	(6.33)	49.30	(27.62)
Teacher Characteristics								
Teacher Base Salary	43622.26	(3481.44)	44414.68	(3432.14)	43159.67	(3205.07)	42387.52	(3904.68)
Teacher Experience	10.98	(2.48)	11.42	(2.65)	10.69	(2.24)	11.50	(2.63)
School Characteristics								
Student Teacher Ratio	14.96	(2.02)	14.96	(1.77)	15.00	(2.11)	15.22	(2.27)
Proportion Exemplary	0.05	(0.20)	0.11	(0.29)	0.00	(0.04)	0.04	(0.18)
Proportion Recognized	0.39	(0.43)	0.57	(0.42)	0.25	(0.40)	0.25	(0.41)
Proportion Acceptable	0.46	(0.44)	0.24	(0.38)	0.64	(0.40)	0.62	(0.44)

Student Variables	Mean	(Std. Dev.)	Mean	(Std. Dev.)	Mean	(Std. Dev.)	Mean	(Std. Dev.)
Female	0.51	(0.50)	0.51	(0.50)	0.52	(0.50)	0.51	(0.50)
Asian / Pacific Islander	0.00	(0.07)	0.00	(0.06)	0.01	(0.08)	0.04	(0.18)
Black	0.08	(0.27)	0.04	(0.18)	0.11	(0.31)	0.14	(0.34)
Hispanic	0.88	(0.32)	0.92	(0.27)	0.87	(0.34)	0.41	(0.49)
Native American	0.00	(0.04)	0.00	(0.04)	0.00	(0.04)	0.00	(0.06)
White	0.03	(0.18)	0.04	(0.20)	0.02	(0.14)	0.41	(0.49)
Special Education	0.06	(0.24)	0.06	(0.24)	0.06	(0.24)	0.06	(0.24)
Limited English Proficiency	0.19	(0.39)	0.16	(0.36)	0.22	(0.41)	0.08	(0.26)
Migrant	0.06	(0.24)	0.06	(0.25)	0.06	(0.23)	0.01	(0.11)
Free or Reduced Price Lunch	0.91	(0.29)	0.91	(0.29)	0.91	(0.28)	0.50	(0.50)

Table 1. Sample Statistics (Continued…)

	GEEG Schools						All Texas Schools
	All		Accountability Rating		Comparable Improvement		
Program Variables	Mean	(Std. Dev.) [N]	Mean	(Std. Dev.) [N]	Mean	(Std. Dev.) [N]	
Size of Bonus							
Proposed Maximum Bonus Award	3470.36	(1583.40) [90]	3147.92	(1300.38) [41]	3641.30	(1656.50) [43]	…
Quartile 1	2085.93	(310.38) [23]	2262.02	(98.45) [12]	1780.19	(315.39) [11]	…
Quartile 2	2668.08	(212.53) [23]	2583.73	(222.49) [9]	2713.12	(192.45) [14]	…
Quartile 3	3597.50	(499.36) [21]	3644.76	(551.99) [10]	3564.72	(456.51) [11]	…
Quartile 4	6448.90	(1176.07) [23]	6291.86	(1511.22) [10]	6462.83	(893.61) [7]	…
> $2,500	4085.61	(1569.03) [62]	4017.80	(1392.53) [27]	4049.65	(1569.75) [29]	…
> $3,500	5620.20	(1411.58) [33]	5078.39	(1400.34) [17]	5851.83	(1239.06) [10]	…
> $5,000	6503.21	(1162.42) [20]	6353.73	(1515.80) [9]	6471.76	(888.97) [6]	…
Type of Performance Measure							
Student Attainment	0.62	(0.48) [57]	0.77	(0.43) [30]	0.51	(0.50) [24]	…
Student Growth	0.08	(0.27) [12]	0.03	(0.16) [2]	0.12	(0.32) [9]	…
Student Attainment + Student Growth	0.30	(0.46) [24]	0.21	(0.41) [10]	0.37	(0.48) [12]	…

Unit of Accountability

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	Mean	(Std. Dev.)	Mean	(Std. Dev.)	Mean	(Std. Dev.)	Mean	(Std. Dev.)
Individual Teacher	0.51	(0.50) [44]	0.37	(0.48) [18]	0.62	(0.49) [23]		...
Team	0.05	(0.21) [2]	0.11	(0.31) [2]	0.00	(0.00) [0]		...
Campus	0.21	(0.41) [31]	0.15	(0.36) [15]	0.25	(0.43) [14]		...
Combination	0.21	(0.41) [16]	0.38	(0.48) [8]	0.09	(0.29) [7]		...
Award Distribution								
Gini Coefficient (Actual)	0.42	(0.18) [80]	0.36	(0.17) [36]	0.45	(0.18) [39]		...

Student Test Score Gains (Dependent Variable)	Mean	(Std. Dev.)	Mean	(Std. Dev.)	Mean	(Std. Dev.)	Mean	(Std. Dev.)
Mathematics	0.02	(1.04)	-0.01	(1.03)	0.06	(1.05)	0.00	(1.00)
Reading	-0.06	(1.00)	-0.05	(0.98)	-0.07	(1.10)	0.00	(1.00)

Student Observations				
All Years	134,893	...	...	10,853,653
Pre-GEEG Years (2004 - 2005)	51,095	...	...	4,125,847
GEEG Years (2006 - 2008)	83,798	36,427	46,529	6,727,806

Table 2. Estimated Effect of GEEG Program on Mathematics and Reading Achievement Gains

		Sample: All Texas Schools			
		Panel A: Mathematics		*Panel B: Reading*	
	(model)	(1)	(2)	(3)	(4)
GEEG		0.0607*** (0.0040)		0.0492*** (0.0048)	
Comparable Improvement			0.0831*** (0.0053)		0.0636*** (0.0064)
Accountability Rating			0.0334*** (0.0058)		0.0322*** (0.0071)
Sample Size					
All students		8579308	8579308	8543079	8543079
GEEG students		67647	69239	67367	67196
R^2		0.1292	0.1292	0.1162	0.1162

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*, **, *** Estimates statistically significant from zero at the 10%, 5%, and 1% levels, respectively.

Notes: All models include student fixed effects and grade*year fixed effects. All models control for school-level covariates including, percentage of economically disadvantaged students, percentage of limited English proficient students, percentage of special education students, percentage of gifted and talented students, percentage of students by race/ethnicity, and level (elementary school, middle school, high school, or mixed grade configuration). All models control for TEEG program effects for Cycle 1 and Cycle 2 (2006-07 and 2007-08 school year, respectively). Student-level controls include indicators for economically disadvantaged status, limited English proficient status, and moving to a school in the same district or a different one.

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Table 3. Estimated Effect of GEEG Program on Mathematics and Reading Achievement Gains when Accounting for Pre-GEEG Time Trend

Sample: All Texas Schools

(model)	Panel A: Mathematics		Panel B: Reading	
	(1)	(2)	(3)	(4)
Ever-GEEG	0.1502*** (0.0047)	0.1510*** (0.0047)	0.0935*** (0.0057)	0.0936*** (0.0057)
GEEG	-0.0695*** (0.0057)		-0.0320*** (0.0069)	
Comparable Improvement		-0.0448*** (0.0066)		-0.0158 (0.0081)
Accountability Rating		-0.1014*** (0.0072)		-0.0514*** (0.0087)
Sample Size				
All students	8579308	8579308	8543079	8543079
GEEG students	67647	69239	67367	67196

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R^2	0.1294	0.1294	0.1294
	0.1162	0.1162	

*, **, *** Estimates statistically significant from zero at the 10%, 5%, and 1% levels, respectively.

Notes: All models include student fixed effects and grade*year fixed effects. All models control for school-level covariates including, percentage of economically disadvantaged students, percentage of limited English proficient students, percentage of special education students, percentage of gifted and talented students, percentage of students by race/ethnicity, and level (elementary school, middle school, high school, or mixed grade configuration). All models control for TEEG program effects for Cycle 1 and Cycle 2 (2006-07 and 2007-08 school year, respectively). Student-level controls include indicators for economically disadvantaged status, limited English proficient status, and moving to a school in the same district or a different one.

Table 3a. Estimated Effect of GEEG Program on Mathematics and Reading Achievement Gains when Accounting for Pre-GEEG Time Trend

	Sample: All Texas Schools			
	Panel A: Mathematics		*Panel B: Reading*	
(model)	(1)	(2)	(3)	(4)
Ever-GEEG	0.2038***	0.2044***	0.1280***	0.1279***
	(0.0048)	(0.0048)	(0.0058)	(0.0058)
GEEG	-0.0704***		-0.0327***	
	(0.0057)		(0.0069)	
Comparable Improvement		-0.0479***		-0.0180***
		(0.0066)		(0.0081)
Accountability Rating		-0.0988***		-0.0499***
		(0.0072)		(0.0087)
Sample Size				
All students	8579308	8579308	8543079	8543079
GEEG students	67647	69239	67367	67196
R^2	0.1304	0.1304	0.1165	0.1165

*, **, *** Estimates statistically significant from zero at the 10%, 5%, and 1% levels, respectively.

Notes: All models include student fixed effects and grade*year fixed effects. All models control for school-level covariates including, percentage of economically disadvantaged students, percentage of limited English proficient students, percentage of special education students, percentage of gifted and talented students, percentage of students by race/ethnicity, and level (elementary school, middle school, high school, or mixed grade configuration). All models control for TEEG program effects for Cycle 1 and Cycle 2 (2006-07 and 2007-08 school year, respectively) and pre-TEEG time trend. Student-level controls include indicators for economically disadvantaged status, limited English proficient status, and moving to a school in the same district or a different one.

Table 4. Estimated Effect of GEEG Program on Mathematics and Reading Achievement Gains by Year of GEEG Participation when Accounting for Pre-GEEG Time Trend

Sample: All Texas Schools

(GEEG schools)	Panel A: Mathematics			Panel B: Reading		
	All	CI	AR	All	CI	AR
(model)	(1)	(2)		(3)	(4)	
Ever-GEEG	0.1554*** (0.0048)	0.1557*** (0.0048)		0.0968*** (0.0058)	0.0969*** (0.0058)	
GEEG Year 1	-0.0343*** (0.0069)	-0.0262*** (0.0084)	0.0427*** (0.0097)	-0.0115 (0.0084)	0.0061 (0.0102)	-0.0329** (0.0118)
GEEG Year 2	-0.0647*** (0.0073)	-0.0326*** (0.0089)	0.1051*** (0.0098)	-0.0241*** (0.0088)	-0.0076 (0.0108)	0.0448*** (0.0119)
GEEG Year 3	-0.134*** (0.0077)	-0.0969*** (0.0096)	0.1785*** (0.0102)	-0.0759*** (0.0094)	0.0638*** (0.0116)	0.0897*** (0.0124)
Sample Size						
All students	8579308	8579308		8543079	8543079	

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GEEG students	67647	37798	29674	67367	37639	29557
R^2	0.1294	0.1294		0.1162	0.1162	

*, **, *** Estimates statistically significant from zero at the 10%, 5%, and 1% levels, respectively.

Notes: All models include student fixed effects and grade*year fixed effects. All models control for school-level covariates including, percentage of economically disadvantaged students, percentage of limited English proficient students, percentage of special education students, percentage of gifted and talented students, percentage of students by race/ethnicity, and level (elementary school, middle school, high school, or mixed grade configuration). All models control for TEEG program effects for Cycle 1 and Cycle 2 (2006-07 and 2007-08 school year, respectively). Student-level controls include indicators for economically disadvantaged status, limited English proficient status, and moving to a school in the same district or a different one.

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Table 4a. Estimated Effect of GEEG Program on Mathematics and Reading Achievement Gains by Year of GEEG Participation when Accounting for Pre-GEEG Time Trend

Sample: All Texas Schools

(GEEG schools)	Panel A: Mathematics			Panel B: Reading		
	All	CI	AR	All	CI	AR
(model)	(1)	(2)		(3)	(4)	
Ever-GEEG	0.2092*** (0.0048)	0.2093*** (0.0048)		0.1314*** (0.0058)	0.1314*** (0.0058)	
GEEG Year 1	-0.0337*** (0.0069)	-0.0255*** (0.0084)	0.0424*** (0.0097)	-0.0111 (0.0084)	0.0064 (0.0102)	-0.0324** (0.0118)
GEEG Year 2	-0.0679*** (0.0073)	-0.0389*** (0.0089)	0.1039*** (0.0098)	-0.0262*** (0.0088)	-0.01169 (0.0108)	0.0441*** (0.0119)
GEEG Year 3	-0.1350*** (0.0077)	-0.1026*** (0.0096)	0.1730*** (0.0102)	-0.0769*** (0.0094)	-0.0678*** (0.0116)	0.0868*** (0.0124)
Sample Size						
All students	8579308	8579308		8543079	8543079	

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GEEG students	67647	37798	29674	67367	37639	29557
R^2	0.1305	0.1305		0.1165	0.1165	

*, **, *** Estimates statistically significant from zero at the 10%, 5%, and 1% levels, respectively.

Notes: All models include student fixed effects and grade*year fixed effects. All models control for school-level covariates including, percentage of economically disadvantaged students, percentage of limited English proficient students, percentage of special education students, percentage of gifted and talented students, percentage of students by race/ethnicity, and level (elementary school, middle school, high school, or mixed grade configuration). All models control for TEEG program effects for Cycle 1 and Cycle 2 (2006-07 and 2007-08 school year, respectively) and pre–TEEG time trend. Student-level controls include indicators for economically disadvantaged status, limited English proficient status, and moving to a school in the same district or a different one.

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Table 5. Estimated Effect of GEEG Program on Mathematics and Reading Achievement Gains (with school fixed effects)

		Sample: All Texas Schools			
		Panel A: Mathematics		*Panel B: Reading*	
	(model)	(1)	(2)	(3)	(4)
GEEG		-0.0858*** (0.0096)		-0.0416*** (0.0118)	
Comparable Improvement			-0.0486*** (0.0119)		-0.0301** (0.0147)
Accountability Rating			-0.1532*** (0.0160)		-0.0597*** (0.0198)
Sample Size					
All students		8579308	8579308	8543079	8543079
GEEG students		67647	69239	67367	67196
R^2		0.4292	0.4292	0.3976	0.3976

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*, **, *** Estimates statistically significant from zero at the 10%, 5%, and 1% levels, respectively.

Notes: All models include student fixed effects and grade*year fixed effects. All models control for school-level covariates including, percentage of economically disadvantaged students, percentage of limited English proficient students, percentage of special education students, percentage of gifted and talented students, percentage of students by race/ethnicity, and level (elementary school, middle school, high school, or mixed grade configuration). All models control for TEEG program effects for Cycle 1 and Cycle 2 (2006-07 and 2007-08 school year, respectively). Student-level controls include indicators for economically disadvantaged status, limited English proficient status, and moving to a school in the same district or a different one.

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Table 5a. Estimated Effect of GEEG Program on Mathematics and Reading Achievement Gains (with school fixed effects)

	Sample: All Texas Schools			
	Panel A: Mathematics		*Panel B: Reading*	
(model)	(1)	(2)	(3)	(4)
GEEG	-0.0604*** (0.0062)		-0.0341*** (0.0076)	
Comparable Improvement		-0.0358*** (0.0081)		-0.0319*** (0.0099)
Accountability Rating		-0.0941*** (0.0096)		-0.0359*** (0.0117)
Sample Size				
All students	8579308	8579308	8543079	8543079
GEEG students	67647	69239	67367	67196
R^2	0.1440	0.1440	0.1212	0.1212

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*, **, *** Estimates statistically significant from zero at the 10%, 5%, and 1% levels, respectively.

Notes: All models include student fixed effects and grade*year fixed effects. All models control for school-level covariates including, percentage of economically disadvantaged students, percentage of limited English proficient students, percentage of special education students, percentage of gifted and talented students, percentage of students by race/ethnicity, and level (elementary school, middle school, high school, or mixed grade configuration). All models control for TEEG program effects for Cycle 1 and Cycle 2 (2006-07 and 2007-08 school year, respectively) and pre-TEEG time trend. Student-level controls include indicators for economically disadvantaged status, limited English proficient status, and moving to a school in the same district or a different one.

Table 6. Estimated Effect of GEEG Program on Mathematics and Reading Achievement Gains

		Sample: All Texas Schools		
	Panel A: Mathematics		*Panel B: Reading*	
(model)	(1)	(2)	(3)	(4)
GEEG	0.0340***		0.0384***	
	(0.0130)		(0.0108)	
	89		89	
Comparable Improvement		0.0230		0.0299**
		(0.0174)		(0.0144)
		46		46
Accountability Rating		0.0482***		0.0506***
		(0.0192)		(0.0159)
		42		42
Sample Size				
All students	8580774	8580774	8544543	8544543
GEEG students	67647	67472	67367	67196
R^2	0.3424	0.3425	0.2214	0.2215

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*, **, *** Estimates statistically significant from zero at the 10%, 5%, and 1% levels, respectively.

Notes: All models control for school-level covariates including, percentage of limited English proficient students, percentage of special education students, percentage of gifted and talented students, percentage of bilingual students, percentage of students by race/ethnicity, and level (elementary school, middle school, high school, or mixed grade configuration). Models also include year fixed effect and TEEG effects in Cycle 1 and Cycle 2 (2006-07 and 2007-08 school years, respectively). Student-level covariates were included in the first-stage regression model.

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Table 7. Estimated Effect of GEEG Program on Mathematics and Reading Achievement Gains when Accounting for Pre-GEEG Time Trend

	Sample: All Texas Schools			
	Panel A: Mathematics		*Panel B: Reading*	
(model)	(1)	(2)	(3)	(4)
Ever-GEEG	0.1267*** (0.0154)	0.1254*** (0.0153)	0.0815*** (0.0128)	0.0800*** (0.0128)
GEEG	-0.0906*** (0.0199)		-0.0418*** (0.0166)	
Comparable Improvement		0.1003*** (0.0230)		-0.0487*** (0.0191)
Accountability Rating		-0.0752*** (0.0244)		-0.0281 (0.0203)
Sample Size				
All students	8580774	8580774	8544543	8544543
GEEG students	67647	67472	67367	67196
R^2	0.3438	0.3438	0.2224	0.2224

*, **, *** Estimates statistically significant from zero at the 10%, 5%, and 1% levels, respectively.

Notes: All models control for school-level covariates including, percentage of limited English proficient students, percentage of special education students, percentage of gifted and talented students, percentage of bilingual students, percentage of students by race/ethnicity, and level (elementary school, middle school, high school, or mixed grade configuration). Models also include year fixed effect and TEEG effects in Cycle 1 and Cycle 2 (2006-07 and 2007-08 school years, respectively). Student-level covariates were included in the first-stage regression model.

Table 7a. Estimated Effect of GEEG Program on Mathematics and Reading Achievement Gains when Accounting for Pre-GEEG Time Trend

Sample: All Texas Schools

(model)	Panel A: Mathematics		Panel B: Reading	
	(1)	(2)	(3)	(4)
EVER GEEG	0.16120***	0.1605***	0.1035***	0.1018***
	(0.0154)	(0.0153)	(0.0129)	(0.0128)
GEEG	-0.0971***		-0.04580***	
	(0.0198)		(0.0165)	
Comparable Improvement		-0.1057***		-0.0521***
		(0.0228)		(0.0191)
Accountability Rating		-0.0822***		-0.0325
		(0.0242)		(0.0202)
Sample Size				
All students	8580774	8580774	8544543	8544543
GEEG students	67647	67472	67367	67196
R^2	0.3525	0.3525	0.2284	0.2284

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*, **, *** Estimates statistically significant from zero at the 10%, 5%, and 1% levels, respectively.

Notes: All models control for school-level covariates including, percentage of limited English proficient students, percentage of special education students, percentage of gifted and talented students, percentage of bilingual students, percentage of students by race/ethnicity, and level (elementary school, middle school, high school, or mixed grade configuration). Models also include year fixed effect and TEEG effects in Cycle 1 and Cycle 2 (2006-07 and 2007-08 school years, respectively) and pre-TEEG time trend. Student-level covariates were included in the first-stage regression model.

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Table 8. Estimated Effect of GEEG Program on Mathematics and Reading Achievement Gains by Year of GEEG Participation when Accounting for Pre-GEEG Time Trend

Sample: All Texas Schools

(GEEG schools)	Panel A: Mathematics			Panel B: Reading		
	All	*CI*	*AR*	*All*	*CI*	*AR*
(model)	(1)	(2)		(3)	(4)	
Ever-GEEG	0.1267***	0.1254***		0.0815***	0.0800***	
	(0.0154)	(0.0153)		(0.0128)	(0.0128)	
	89	89		89	89	
GEEG Y1	-0.0583	-0.0812***	-0.0254***	-0.0258***	-0.0220***	-0.0225***
	(0.0263)	(0.0326)	(0.0354)	(0.0220)	(0.0272)	(0.0296)
	89	46	42	89	46	42
GEEG Y2	-0.0825***	-0.0727***	-0.0915***	0.0027	-0.0050	0.0141
	(0.0269)	(0.0337)	(0.0362)	(0.0223)	(0.0279)	(0.0300)
	88	45	42	88	45	42
GEEG Y3	-0.1364***	-0.1513***	-0.1147***	-0.1073***	-0.1253***	-0.0807***
	(0.0275)	(0.0344)	(0.0375)	(0.0229)	(0.0285)	(0.0311)
	83	45	37	83	45	37

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Sample Size				
All students	8580774	8580774	8544543	8544543
GEEG students	67647	37798	67367	37639
		29674		29557
R^2	0.3439	0.3440	0.2228	0.2229

*, **, *** Estimates statistically significant from zero at the 10%, 5%, and 1% levels, respectively.

Notes: All models control for school-level covariates including, percentage of limited English proficient students, percentage of special education students, percentage of gifted and talented students, percentage of bilingual students, percentage of students by race/ethnicity, and level (elementary school, middle school, high school, or mixed grade configuration). Models also include year fixed effect and TEEG effects in Cycle 1 and Cycle 2 (2006-07 and 2007-08 school years, respectively). Student-level covariates were included in the first-stage regression model.

Table 8a. Estimated Effect of GEEG Program on Mathematics and Reading Achievement Gains by Year of GEEG Participation when Accounting for Pre-GEEG Time Trend

Sample: All Texas Schools

(GEEG schools)	Panel A: Mathematics			Panel B: Reading		
	All	*CI*	*AR*	*All*	*CI*	*AR*
(model)	(1)	(2)		(3)	(4)	
Ever-GEEG	0.1620***	0.1605***		0.1035***	0.1019***	
	(0.0153)	0.0153		(0.0129)	(0.0128)	
	89	89		89	89	
GEEG Y1	-0.0592***	-0.0810***	-0.0270	-0.0264	-0.0218	-0.0235
	(0.0261)	(0.0323)	(0.0352)	(0.0219)	(0.0271)	(0.0295)
	89	46	42	89	46	42
GEEG Y2	-0.0920***	-0.0811***	-0.1015***	-0.0025	-0.0096	0.0085
	(0.0268)	(0.0335)	(0.0360)	(0.0223)	(0.0278)	(0.0299)
	88	45	42	88	45	42
GEEG Y3	-0.1460***	-0.1599***	-0.1248***	-0.1139***	-0.1313***	-0.0876***
	(0.0273)	(0.0342)	(0.0372)	(0.0228)	(0.0284)	(0.0310)
	83	45	37	83	45	37

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Sample Size						
All students	8580774	8580774		8544543	8544543	
GEEG students	67647	37798	29674	67367	37639	29557
R^2	0.3527	0.3527		0.2288	0.2288	

*, **, *** Estimates statistically significant from zero at the 10%, 5%, and 1% levels, respectively.

Notes: All models control for school-level covariates including, percentage of limited English proficient students, percentage of special education students, percentage of gifted and talented students, percentage of bilingual students, percentage of students by race/ethnicity, and level (elementary school, middle school, high school, or mixed grade configuration). Models also include year fixed effect and TEEG effects in Cycle 1 and Cycle 2 (2006-07 and 2007-08 school years, respectively) and pre-TEEG time trend. Student-level covariates were included in the first-stage regression model.

Table 9. Estimated Effect of GEEG Program on Mathematics and Reading Achievement Gains

		Sample: All Texas Schools			
		Panel A: Mathematics		*Panel B: Reading*	
	(model)	(1)	(2)	(3)	(4)
GEEG		0.0949*** (0.0195)		-0.0449*** (0.0171)	
		89		89	
Comparable Improvement			-0.0811*** (0.0259)		-0.0483 (0.0227)
			45		45
Accountability Rating			-0.1136*** (0.0295)		-0.0385 (0.0258)
			42		42
Sample Size					
All students		8580774	8580774	8544543	8544543
GEEG students		67647	67472	67367	67196

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R²	0.5165	0.5165	0.5165	0.3705	0.3705	0.3705

*, **, *** Estimates statistically significant from zero at the 10%, 5%, and 1% levels, respectively.

Notes: All models control for school-level covariates including, percentage of limited English proficient students, percentage of special education students, percentage of gifted and talented students, percentage of bilingual students, percentage of students by race/ethnicity, and level (elementary school, middle school, high school, or mixed grade configuration). Models also include year fixed effect and TEEG effects in Cycle 1 and Cycle 2 (2006-07 and 2007-08 school years, respectively). Student-level covariates were included in the first-stage regression model.

Table 10. Estimated Effect of GEEG Program on Mathematics and Reading Achievement Gains by Maximum Proposed Bonus Award

(model)	Sample: GEEG Schools Only			
	Panel A: Mathematics		*Panel B: Reading*	
	(1)	(2)	(3)	(4)
Proposed Maximum Bonus	0.0067 (0.0096)	0.0387 (0.0365)	-0.0017 (0.0088)	0.0343 (0.0335)
	85	85	85	85
Proposed Maximum Bonus (squared)		-0.0033 (0.0036)		-0.0037 (0.0033)
		85		85
Sample Size				
All students	8580774	8580774	8544543	8544543
GEEG students	67647	67647	67367	67367
R^2	0.3504	0.3517	0.1877	0.1902

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*, **, *** Estimates statistically significant from zero at the 10%, 5%, and 1% levels, respectively.

Notes: All models control for school-level covariates including, percentage of limited English proficient students, percentage of special education students, percentage of gifted and talented students, percentage of bilingual students, percentage of students by race/ethnicity, and level (elementary school, middle school, high school, or mixed grade configuration). Models also include year fixed effect and TEEG effects in Cycle 1 and Cycle 2 (2006-07 and 2007-08 school years, respectively). Student-level covariates were included in the first-stage regression model.

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Table 11. Estimated Effect of GEEG Program on Mathematics and Reading Achievement Gains by Type of Student Performance Analysis

	Sample: **GEEG Schools Only**	
	Panel A: Mathematics	*Panel B: Reading*
(model)	(1)	(2)
Attainment Only	0.0148 (0.0339)	-0.0278 (0.0310)
	54	54
Growth Only	0.0197 (0.0535)	0.0206 (0.0490)
	11	11
Growth + Attainment	⋯ ⋯	⋯ ⋯
	23	23
Sample Size		
All students	8580774	8544543
GEEG students	67647	67367

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R² 0.3539 0.1779

*, **, *** Estimates statistically significant from zero at the 10%, 5%, and 1% levels, respectively.

Notes: All models control for school-level covariates including, percentage of limited English proficient students, percentage of special education students, percentage of gifted and talented students, percentage of bilingual students, percentage of students by race/ethnicity, and level (elementary school, middle school, high school, or mixed grade configuration). Models also include year fixed effect and TEEG effects in Cycle 1 and Cycle 2 (2006-07 and 2007-08 school years, respectively). Student-level covariates were included in the first-stage regression model.

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Table 12. Estimated Effect of GEEG Program on Mathematics and Reading Achievement Gains by Unit of Accountability

	Sample: GEEG Schools Only	
	Panel A: Mathematics	*Panel B: Reading*
(model)	(1)	(2)
Individual	-0.0109	-0.0011
	(0.0383)	(0.0354)
	43	43
Campus	-0.0559	-0.0232
	(0.0427)	(0.0394)
	30	30
Combination	…	…
	…	…
	15	15
Sample Size		
All students	8580774	8544543
GEEG students	67647	67367
R^2	0.3722	0.1855

*, **, *** Estimates statistically significant from zero at the 10%, 5%, and 1% levels, respectively.

Notes: All models control for school-level covariates including, percentage of limited English proficient students, percentage of special education students, percentage of gifted and talented students, percentage of bilingual students, percentage of students by race/ethnicity, and level (elementary school, middle school, high school, or mixed grade configuration). Models also include year fixed effect and TEEG effects in Cycle 1 and Cycle 2 (2006-07 and 2007-08 school years, respectively). Student-level covariates were included in the first-stage regression model.

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APPENDIX K: Distribution of Percent Proficient in Schools, GEEEG v. Non-GEEEG

Table 1: Percentage of Students Passing TAKS in GEEG and Non-GEEG Schools by Subject and Year*

	Mathematics						Reading					
	2003	2004	2005	2006	2007	2008	2003	2004	2005	2006	2007	2008
GEEG												
Total	50.32%	62.43%	69.89%	73.68%	74.84%	72.11%	63.83%	72.91%	79.25%	82.18%	84.02%	80.25%
3	68.12%	78.89%	78.51%	79.61%	78.35%	78.47%	70.96%	82.43%	84.29%	86.72%	85.62%	81.60%
4	57.61%	72.62%	80.62%	81.20%	85.25%	78.91%	64.39%	71.26%	75.63%	79.54%	81.13%	74.56%
5	58.18%	65.72%	77.10%	79.24%	81.06%	77.34%	59.79%	60.17%	66.32%	74.83%	79.00%	73.67%
6	55.57%	64.68%	71.71%	79.26%	81.51%	78.43%	62.79%	71.31%	81.76%	87.23%	88.54%	83.83%
7	46.24%	60.42%	67.22%	68.41%	73.82%	73.67%	65.83%	70.49%	78.30%	73.92%	79.30%	76.19%
8	44.48%	57.30%	66.08%	73.79%	73.01%	68.95%	74.13%	79.46%	80.64%	81.04%	87.14%	84.12%
9	42.60%	49.90%	60.28%	60.96%	61.52%	58.78%	63.59%	75.98%	83.18%	87.73%	83.66%	80.38%
10	24.64%	36.48%	55.24%	57.32%	57.63%	54.01%	46.72%	66.12%	73.66%	84.93%	83.46%	80.25%
11	27.75%	53.53%	61.30%	70.55%	72.86%	73.44%	46.02%	74.56%	81.19%	83.24%	84.40%	86.19%
Non-GEEG												
Total	57.68%	67.66%	71.74%	74.86%	77.07%	75.02%	70.25%	79.63%	81.53%	85.31%	86.77%	84.65%
3	74.75%	83.78%	83.14%	82.41%	81.99%	80.50%	81.18%	88.15%	88.81%	88.81%	88.31%	84.84%
4	69.67%	78.89%	82.17%	84.00%	85.27%	81.60%	74.75%	80.56%	79.93%	82.51%	83.20%	79.88%
5	66.04%	72.35%	78.97%	82.35%	85.40%	80.39%	67.51%	72.43%	74.66%	81.07%	82.87%	80.37%
6	64.52%	71.17%	73.35%	80.44%	80.48%	78.45%	74.35%	80.97%	85.27%	90.91%	91.83%	88.13%
7	54.68%	64.78%	67.14%	70.82%	76.14%	75.17%	74.54%	78.22%	82.46%	78.76%	84.79%	82.46%
8	54.06%	61.21%	64.39%	69.75%	71.80%	73.60%	78.25%	84.57%	84.28%	84.95%	88.49%	88.64%
9	45.98%	56.61%	63.21%	63.22%	66.02%	63.00%	66.22%	79.31%	84.49%	88.65%	87.23%	84.69%
10	46.13%	52.65%	60.61%	63.05%	66.13%	62.87%	61.60%	72.39%	68.55%	85.86%	85.50%	84.38%
11	39.40%	64.78%	70.11%	75.91%	78.87%	78.41%	51.01%	80.36%	84.95%	86.84%	89.15%	89.94%

*Note: * passing = 2100 for all grades, years, and subjects*

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Table 2: Percentage of Students Passing TAKS in GEEG and Non-GEEG Schools by Subject and Year, Restricted to Schools with 50% or more of students qualified for free and reduced priced lunch*

	Mathematics						Reading					
	2003	2004	2005	2006	2007	2008	2003	2004	2005	2006	2007	2008
GEEG												
Total	50.32%	62.43%	69.89%	73.68%	74.84%	72.11%	63.83%	72.91%	79.25%	82.18%	84.02%	80.25%
3	68.12%	78.89%	78.51%	79.61%	78.35%	78.47%	70.96%	82.43%	84.29%	86.72%	85.62%	81.60%
4	57.61%	72.62%	80.62%	81.20%	85.25%	78.91%	64.39%	71.26%	75.63%	79.54%	81.13%	74.56%
5	58.18%	65.72%	77.10%	79.24%	81.06%	77.34%	59.79%	60.17%	66.32%	74.83%	79.00%	73.67%
6	55.57%	64.68%	71.71%	79.26%	81.51%	78.43%	62.79%	71.31%	81.76%	87.23%	88.54%	83.83%
7	46.24%	60.42%	67.22%	68.41%	73.82%	73.67%	65.83%	70.49%	78.30%	73.92%	79.30%	76.19%
8	44.48%	57.30%	66.08%	73.79%	73.01%	68.95%	74.13%	79.46%	80.64%	81.04%	87.14%	84.12%
9	42.60%	49.90%	60.28%	60.96%	61.52%	58.78%	63.59%	75.98%	83.18%	87.73%	83.66%	80.38%
10	24.64%	36.48%	55.24%	57.32%	57.63%	54.01%	46.72%	66.12%	73.66%	84.93%	83.46%	80.25%
11	27.75%	53.53%	61.30%	70.55%	72.86%	73.44%	46.02%	74.56%	81.19%	83.24%	84.40%	86.19%
Non-GEEG												
Total	51.26%	61.60%	65.78%	69.66%	72.27%	69.87%	63.98%	73.48%	76.31%	80.38%	82.51%	79.63%
3	69.26%	79.79%	78.94%	78.21%	77.79%	76.38%	76.24%	85.43%	86.04%	86.02%	85.38%	81.02%
4	62.29%	73.91%	77.65%	80.07%	81.58%	77.42%	68.28%	76.01%	75.42%	78.35%	79.16%	74.90%
5	59.01%	65.76%	73.97%	77.71%	81.45%	75.86%	60.21%	64.70%	68.22%	75.79%	78.57%	75.28%
6	55.67%	63.15%	66.17%	75.19%	75.23%	72.99%	65.48%	74.33%	80.09%	87.92%	89.25%	84.61%
7	43.85%	55.18%	57.85%	62.85%	69.82%	68.33%	66.40%	70.95%	76.07%	72.34%	79.81%	77.30%
8	43.30%	51.48%	55.17%	61.94%	64.75%	66.55%	71.71%	78.91%	78.80%	79.75%	84.68%	84.95%
9	30.36%	41.85%	49.42%	49.83%	53.89%	51.07%	53.65%	69.36%	76.75%	83.12%	81.22%	77.55%
10	31.03%	38.53%	47.42%	52.13%	55.54%	52.41%	48.94%	61.34%	60.61%	79.87%	79.86%	79.43%
11	25.13%	52.05%	58.57%	67.25%	71.12%	70.78%	38.37%	72.12%	78.56%	81.08%	84.45%	85.31%

*Note: * passing = 2100 for all grades, years, and subjects*

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