



# **CLOSING THE TEACHER QUALITY GAP IN PHILADELPHIA:** **New Hope and Old Hurdles**

The Third Study of Teacher Quality in Philadelphia  
A report from *Learning from Philadelphia's School Reform*

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## **New Hope and Old Hurdles**

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*2007*



The Third Study of Teacher Quality in Philadelphia

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Research for Action (RFA) is a Philadelphia-based, non-profit organization engaged in education research and evaluation. Founded in 1992, RFA works with public school districts, educational institutions, and community organizations to improve the educational opportunities for those traditionally disadvantaged by race/ethnicity, class, gender, language/cultural difference, and ability/disability.

**Learning from Philadelphia’s School Reform**

Research for Action (RFA) is leading *Learning from Philadelphia’s School Reform*, a comprehensive, multi-year study of Philadelphia’s complex and radical school reform effort. RFA researchers are working with colleagues from the University of Pennsylvania, Montclair State University, Swarthmore College, and the Consortium on Chicago School Research to examine the impact of state takeover, the efficacy of a diverse provider model, the success of district-level leadership in managing a complex set of reforms, the engagement of civic and community groups with district policy and school improvement, and the key factors influencing student outcomes under various school conditions and school management models.

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## I. A Highly Qualified Teacher in Every Classroom

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Good teaching lies at the heart of all education reforms. Urban districts like Philadelphia, whose 174,000 students are largely poor and minority, have long struggled to recruit and keep qualified teachers. Even more challenging is the fact that, within these large districts, the children who have less—those in high-poverty, low-achieving schools—are most likely the ones whose teachers also have less—less experience and fewer qualifications. In an effort to remedy this well-documented “teacher quality gap” the U.S. Congress included a requirement that *all* children be taught by a “highly qualified” teacher in the core academic subjects, when it passed the *No Child Left Behind* (NCLB) law in 2001. Citing a growing body of studies showing that students learn more from skilled and experienced teachers,<sup>1</sup> policy-makers and researchers are increasingly calling for meaningful enforcement of the NCLB teacher quality provision. The *New York Times* editorialized that the teacher quality requirement was “far and away the most crucial provision of the law.”<sup>2</sup>

Following passage of NCLB, the School District of Philadelphia moved aggressively to put qualified teachers in every classroom by June 2006, the deadline set by Congress for meeting the teacher quality objective. Responding both to NCLB’s requirement that students be taught by “highly qualified” teachers, and to local reform efforts launched in 2002, the district slashed the number of teachers with emergency certifications, substantially reduced classroom vacancies, and raised the certification rate for the teaching workforce, especially among new teachers. Further, the district’s arcane and cumbersome hiring process was updated in the 2004 contract with the Philadelphia Federation of Teachers (PFT), making it possible to align the interests and skills of new teachers with the needs of their schools.

Despite significant progress in some areas, persistent hurdles remain. While it improved teacher quality overall, the district has had less success with the equitable distribution of experienced and certified teachers across all types of schools, and it struggles to attract teachers of color in a district where 85 percent of students are African American, Hispanic or Asian/Pacific Islander. The pool of qualified candidates in certain areas, particularly special education, continues to be inadequate. While retention of teachers during their first year improved, the district’s long-term retention rates are still alarmingly low; six years after they are hired, only 30 percent of teachers remain.

Important improvements in teacher recruitment and retention occurred during the administration of Superintendent David W. Hornbeck (1994-2000), but the reform agenda around teacher quality in Philadelphia rapidly accelerated after two key and nearly simultaneous events—the passage of NCLB by the U.S. Congress in November 2001 and Pennsylvania’s takeover of the school district a few weeks later for fiscal and academic “distress.” The state entrusted the direction of the district to a School Reform Commission (SRC), a five-member group that put high priority on upgrading the teacher workforce. Paul Vallas, the Chief Executive Officer appointed by the SRC in July 2002, was also determined to move quickly on teacher workforce

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issues. Believing that a stable and qualified teacher workforce is fundamental to school improvement, both the SRC and Vallas embraced the spirit of NCLB.

The task facing the district in 2002 was daunting. Philadelphia had a small and under-qualified hiring pool; a declining percentage of certified teachers; high proportions of emergency-certified teachers; astonishingly high rates of teacher turnover, particularly among first-year teachers; elevated vacancy rates; antiquated hiring processes and technologies; and contractual provisions that abetted the migration of experienced and credentialed teachers to schools serving more advantaged students and that discouraged school-based hiring of teachers. Students in middle schools, those in special education classes, or those in schools with high poverty rates were much less likely to have access to qualified and experienced teachers.

In two previous reports we noted rapid improvement in some of these indicators, particularly in recruitment and retention.<sup>3</sup> In this report, we update those trends with new data from the 2004-05 and 2005-06 school years. We also revisit the issue of the qualifications of new teachers and the equitable distribution of qualified and experienced teachers across all types of schools. Our discussion includes an examination of new pieces of the teacher staffing puzzle—the expansion of school-based hiring procedures and the reduction in seniority-based transfer opportunities, both of which were included in the 2004 contract between the school district and the PFT. We also lay out the difficulties that still beset the district in its efforts to hire, place, and retain qualified teachers for all the system’s children.

The specific questions that guide the analyses that follow include:

- 1.** To what degree has the School District of Philadelphia upgraded the teaching credentials of its teachers?
- 2.** How well has the district succeeded in reducing teacher attrition and increasing the experience level of its workforce?
- 3.** Have district efforts since the state takeover of the system and the passage of NCLB had the effect of reducing the “teacher quality gap” between schools with the highest percentages of poor and minority students and others in the district?

In pursuing the answers to these questions, we analyzed data from a district-wide longitudinal data set of teachers provided by the School District of Philadelphia. In addition, we used a range of qualitative research methods: interviews with central office administrators and partner organizations, participant observation in four sets of ongoing meetings related to teacher workforce issues, and documents and press accounts. Our methods are described in more detail in Appendix I.

Our research on the teacher workforce issue is one strand of a larger study, *Learning from Philadelphia’s School Reform*, a research and public awareness project led by Research for Action that is assessing the effectiveness of school improvement in Philadelphia. Our understanding of the context of the reforms in teacher quality is informed by our work in the larger project.

## II. Trends in Teachers' Credentials

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Between January 2002 and June 2006, the Philadelphia public school system made substantial progress toward the NCLB requirement that a “highly qualified” teacher be placed in every core-subject classroom. By November 2006, 92 percent of the system’s nearly 10,000 teachers met that designation.<sup>4</sup> While this figure fell short of the 100 percent required by NCLB, the district came close to meeting the federal goal. Similarly, the percentage of new and experienced teachers who were certified improved and the number of teachers with emergency certifications plummeted.<sup>5</sup> The district’s Office of Human Resources (HR), led by Senior Vice President Tomás Hanna, spearheaded multiple initiatives to meet the NCLB goal.

In Pennsylvania, “highly qualified” teachers must 1) have a four-year college degree; 2) possess either full teacher certification or an Intern certificate in the academic subject(s) they teach; and 3) demonstrate subject matter competency for the core content area they teach. The Intern certificate, good for three years, requires its holders to have a bachelor’s degree, to have passed the PRAXIS licensure examinations in basic skills and in their subject area, and to be enrolled in a state-approved teacher certification program in a college or university. Although the Intern certificate has been available for decades in Pennsylvania as a certification option, its use increased dramatically after the passage of NCLB and subsequent state regulations specifying that Intern-certified teachers were “highly qualified” under that law. Emergency-certified teachers, who are to be phased out, did not have to pass the PRAXIS exams prior to entering the classroom and their enrollment and progress in a teacher certification program was not always strictly monitored.

NCLB and related state rules on subject matter competency require that, in order to be considered “highly qualified,” 7<sup>th</sup> and 8<sup>th</sup> grade teachers of core academic subjects as well as special education teachers and English as a second language (ESL) teachers (who provide core academic instruction) must demonstrate proficiency in their subject area.<sup>6</sup> Teachers can show this mastery by having a college major in their field, or by passing a subject matter PRAXIS licensure test, or by completing a state-designed HOUSSE (Highly Objective Uniform State Standard of Evaluation) option requiring some combination of teaching experience, course work, professional development activities, and other proof of credentials in the field.<sup>7</sup>

We are aware that the requirements for being “highly qualified” constitute a floor on teaching quality and do not guarantee a competent teacher. We do not, for example, have measures of teachers’ effectiveness in the classroom, an area of research that has accelerated with new tools that can measure the degree to which teachers “add value” to their students’ achievement levels. Still, we think that Philadelphia’s success in upgrading the credentials of its teachers improves the odds that more of them will be proficient in the classroom.

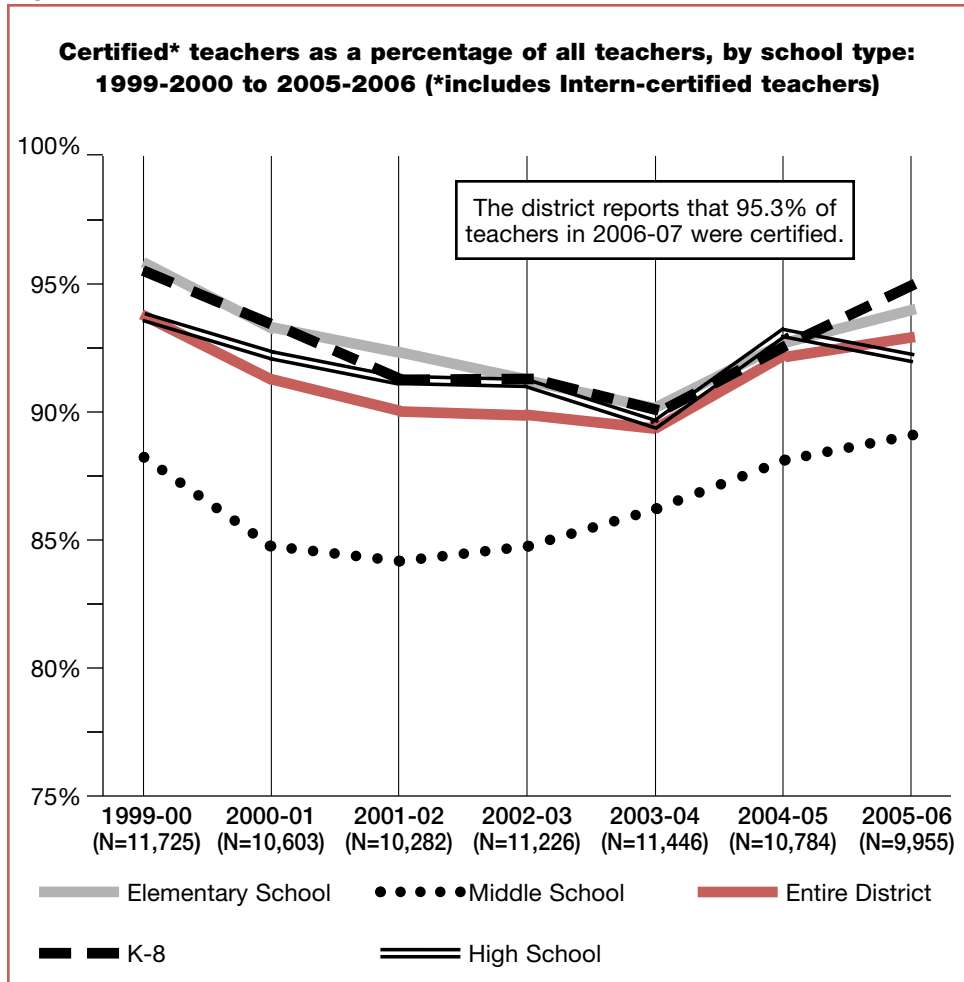
### Certification Trends among All Teachers in the District

In the analyses that follow, we look more specifically at certification trends.<sup>8</sup> As we wrote in one of our earlier reports in this series, we think that certification, particularly full certification, means something in Philadelphia since so many of the

**...the Philadelphia public school system made substantial progress toward the NCLB requirement that a “highly qualified” teacher be placed in every core-subject classroom.**



Figure 1



system’s teachers were not certified in the recent past. We have documented the low passage rates of emergency-certified teachers on PRAXIS licensure tests of basic skills.<sup>9</sup> Pennsylvania has reasonably high standards for certification, including completion of a state-approved teacher education program that requires student teaching; a 3.0 grade point average for entry into and exit from a teacher education program; six hours each of college-level math and English; and passing scores on licensure tests in academic skills, content knowledge, and understanding of how children learn. Yet, many teachers in Philadelphia’s recent past were not certified. To fill vacancies, the district hired large numbers of teachers on an “emergency permit” basis—regularly accounting for about half of the state’s emergency permits.

The percentage of all teachers in the district who were either fully certified or Intern- certified dipped between fall 1999 and fall 2003 to 89.6 percent, but rose steadily after that to 93.3 percent in the fall of 2005 (Figure 1). The district reports that the rate has continued to go up for 2006-07, rising to 95.3 percent certified. Rates of certification varied by type of school with teachers in K-8 and elementary schools in 2005 having the highest proportion of certified teachers (95.6 percent and 94.4 percent respectively) followed by high school teachers (92.8 percent) and middle

schools (89.2 percent). Figure 1 shows that middle schools have always lagged other school types in their percentage of certified teachers.<sup>10</sup>

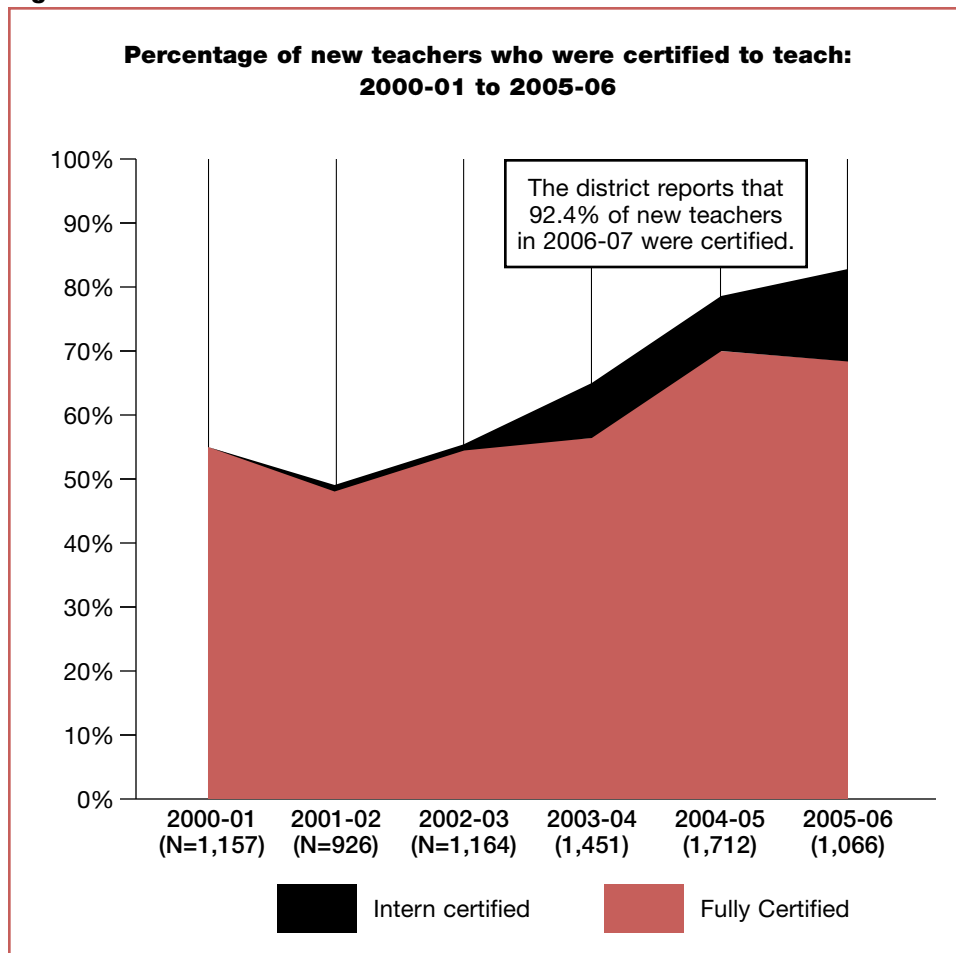
The district has worked hard to reduce the number of teachers on emergency permits. As recently as 2002-03, the first year of the district's sweeping reforms, 2,597 teachers in the district had emergency permits.<sup>11</sup> By fall 2006, the number of such permits plummeted to 423.<sup>12</sup> In our view, these changes were a direct result of concerted efforts by the district to improve teacher credentials.

**Credentials of New Teachers**

The certification trends for *new* teachers in Figure 2 show a similar and more striking pattern of improvement. In October 2001, just before the state takeover of the system and the passage of NCLB, only 46.6 percent of new teachers were either fully certified or Intern-certified. By October 2005, the most recent year in our data set, almost 83 percent had either full or Intern certification. The district reported that 92.4 percent of new teachers hired by the opening of school in September 2006 were certified, continuing the positive trend. Much of the improvement came from adding

**...the first year of the district's sweeping reforms, 2,597 teachers in the district had emergency permits. By fall 2006, the number of such permits plummeted to 423.**

**Figure 2**



new teachers who were Intern certified, primarily from alternate certification route programs such as Teach For America or New Teacher Project Teaching Fellows. Unlike teachers on emergency permits, these Intern-certified teachers had passed tests of basic academic skills and a test of their subject-area knowledge, an important improvement in credentials.

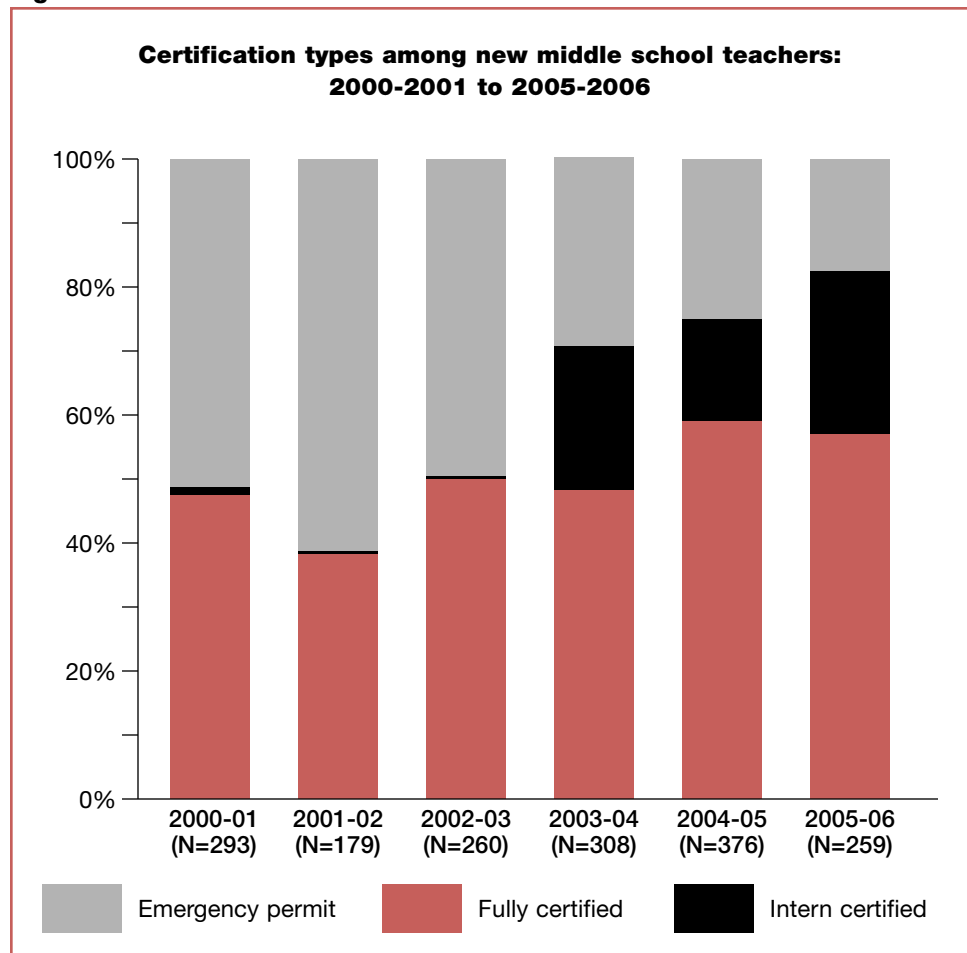
**...middle schools have the lowest certification rates of all school types.**

**Certification among Middle School Teachers and Special Education Teachers**

Here we look at two chronically problematic “hot spots”—the staffing of middle school classrooms and special education classrooms with qualified teachers.

In the two reports that preceded this one, we highlighted the low certification rates among middle school teachers, particularly among *new* teachers. The data in Figure 1 show clearly that middle schools have the lowest certification rates of all school types.<sup>13</sup> Looking at the data in Figure 3, the biggest change among new middle school teachers is that the percentage of emergency-certified teachers dropped from 61.5 percent in fall 2001 to 17.2 percent in fall 2005. The percentage of new middle

**Figure 3**



school teachers who were fully certified in some field (usually elementary-certified) increased during that same period (38.5 percent to 56.6 percent).

Further, in the certification data we have for middle school teachers, we know only whether they are certified in *any* field (usually an elementary certificate, which in Pennsylvania covers K-6<sup>th</sup> grade). We do not know whether the 7<sup>th</sup> and 8<sup>th</sup> grade teachers in the data are “highly qualified” by NCLB standards, which means they must have a secondary or middle-level certificate to teach in one of the core content areas. Historically, the vast majority of middle grades teachers in the district, both in middle and K-8 schools, have had only an elementary certificate.<sup>14</sup> The district began enforcing the more stringent NCLB rules for 7<sup>th</sup> and 8<sup>th</sup> grade teachers in the 2006-07 school year.<sup>15</sup> The number of “highly qualified” teachers in those grades for the 2006-07 year is not yet available.

Among new middle school teachers, the percentage of Intern-certified teachers jumped from zero prior to fall 2003 to more than a quarter (26.2 percent) in fall 2005. Nearly all of these teachers were also “highly qualified” in that most were getting certified in a secondary subject area, good for grades 7-12. Counting the Intern-certified teachers, the overall certification rate in middle schools went from 38.5 percent in fall 2001 to nearly 83 percent in fall 2005.

In our 2005 report, we noted that the district’s certification rate for all special education teachers had been declining since we first started collecting data in 1999. As certified special education teachers left the system, they were being replaced by teachers who were not certified in special education, and the great majority of them were teaching on emergency permits. As Table 1 shows, in fall 1999, as many as 92.5 percent of special education teachers were fully certified in that field, a percentage that dropped steadily to 82.5 percent in fall 2004 and then stabilized in fall 2005.

Certification trends among *new* special education teachers have improved in recent years. As with middle school teachers, the big change in certification among new special education teachers was the addition of Intern-certified teachers who filled many of the vacancies that previously had been occupied by teachers who were not certified in special education. In fall 2000, for example, 62.9 percent of all new special education teachers were not certified in that field, but that percentage dropped dramatically to 39.4 percent by fall 2005. Many of these positions were filled instead by Intern-certified teachers, whose numbers went from zero to about 15 percent. The percentage of new special education teachers who were fully

Counting the Intern-certified teachers, the overall certification rate in middle schools went from 38.5 percent in fall 2001 to nearly 83 percent in fall 2005.

**Table 1**

<b>Percent of fully certified special education teachers: 1999-2000 to 2005-2006</b>							
<b>Special Education Teachers</b>	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
New Teachers	NA	36.3%	41.9%	44.0%	49.6%	41.4%	45.7%
All Teachers	92.5%	89.5%	87.4%	85.9%	85.5%	82.5%	82.5%

**The district's use  
of emergency permits  
for new teachers  
declined across the  
board...**

certified in their field increased from 36.3 percent during that same period to 45.7 percent in fall 2005.

The addition of the Intern-certified teachers raised the total percentage of all certified special education teachers by the fall 2005 to 87.1 percent, higher than that of the three previous years, but still lower than that recorded between 1999 and 2001. It appears that credentials of new special education teachers are continuing to improve: according to district reports, very few were hired on emergency permits for fall 2006.<sup>16</sup>

### **Emergency Permits**

The district also tried to comply with the June 2006 NCLB deadline by terminating many existing teachers on emergency permits—163 teachers in 2004, 191 in 2005, and 285 in 2006. Overall, by terminating these teachers and by giving many fewer emergency permits to new teachers, the number of the district's emergency-permit teachers was cut in half—from 841 to 423—between fall 2005 and fall 2006 alone, just as the NCLB rule became operational. As noted earlier, a little more than 2500 teachers were emergency certified in 2002-03.

The district's use of emergency permits for *new* teachers declined across the board, a measure of the system's seriousness about meeting the NCLB deadline for employing only highly qualified teachers. Only 36 of the district's more than 600 new teachers hired by the opening of school in September 2006 were teaching on emergency permits, and these were only in shortage areas such as special education.<sup>17</sup> This compares with 100 emergency permits among new teachers in the fall 2005 and 245 in fall 2004.

### **Vacancies**

Another measure of the district's concerted efforts to find and keep qualified teachers is the decline in teacher vacancies. Out of the more than 10,000 classrooms opening in September 2006, the district reported only 51 teacher vacancies compared to around 250 in the years before the reform began. These low vacancy rates, a reflection of improved teacher retention during the school year, likely improved both student instruction and school climates.<sup>18</sup> In a worrisome new development, however, vacancies rose as the 2006-07 year progressed, with the number of vacancies in January 2007 more than double that of January 2006. PFT officials, among others, attribute this to a rise in verbal and physical assaults on teachers and to the impact of system-wide budget cuts that reduce the number of adults in some school buildings.<sup>19</sup>

## **Termination for Poor Performance**

The wave of reforms related to teaching qualifications since the passage of NCLB and the state's takeover of the school district have not included changes in rules regarding the dismissal of poorly performing experienced teachers. A minuscule number of teachers are terminated by the district each year for "poor performance"—eight during 2005-06 and just two in each of the previous school years.<sup>20</sup> In a 2006 district survey, nearly 60 percent of principals reported that "difficulty removing poor teachers" was a serious "roadblock" to school improvement, and another 31 percent cited that factor as "somewhat" of an impediment.<sup>21</sup> Principals find it easier to facilitate transfers of weak teachers to other schools rather than go through the lengthy process of terminating them from the system. An "exit ramp" for poorly performing teachers barely exists.

**Principals find it easier to facilitate transfers of weak teachers to other schools rather than go through the lengthy process of terminating them from the system.**

### **III. Teacher Qualifications: Solutions and Challenges**

**According to college teacher educators, some applicants were surprised that getting a job teaching in a Philadelphia elementary school was no longer a “slam dunk.”**

The district undertook a series of efforts beginning in 2002 to increase the percentage of certified and “highly qualified” teachers in Philadelphia’s public schools, and these efforts accelerated during the 2005-06 school year as the June 2006 NCLB deadline loomed. These initiatives included: 1) enhanced recruitment; 2) the implementation of a school-based hiring process (site selection); 3) the use of alternate route teacher certification programs for high-need areas; and 4) the training of veteran certified and uncertified teachers to become certified in the subjects they were teaching or were going to teach, thus meeting new requirements laid down by NCLB.

#### **Marketing the District: Attracting Teaching Candidates**

Since 2002, HR administrators have carried out a variety of initiatives to enlarge the pool of candidates to fill the 1,200 to 1,500 vacancies created by retirements and resignations each year, about 10 to 13 percent of the system’s teacher labor force. Applications have grown since 2002, when just 2,847 people applied for teaching jobs. Between the 2005-06 and 2006-07 school years, the number of applicants grew from 3,102 to 3,426 and the number of candidates who passed the initial HR screening rose from 1,346 to 1,997. The district’s successful recruiting efforts meant that it did not have a shortage of elementary-certified teachers and could therefore be more selective in hiring and in terminating elementary teachers who were still teaching on emergency permits. According to college teacher educators, some applicants were surprised that getting a job teaching in a Philadelphia elementary school was no longer a “slam dunk.”

Four “Roll Out the Red Carpet” days designed to introduce college education majors and career changers to Philadelphia schools attracted 550 attendees during 2005-06 and about 500 the previous year. More than a thousand prospective teachers attended the district’s job fairs, events where they could participate in job interviews with school principals. The district refined its online application system so that applicants could attach their resumes. HR worked to upgrade the capacity of its recruiters and administrative staff, including taking them on “field trips” to schools to see first-hand the urgency of filling teacher vacancies.

In an effort to attract new and transferring teachers to poorly performing, hard-to-staff schools, the 2004 contract between the district and the Philadelphia Federation of Teachers designated 24 schools as “incentive schools.” Teachers at these schools received tuition reimbursement of up to \$2,400 a year for advanced coursework; three additional personal leave days in a leave bank for experienced teachers who did not need the extra courses; no loss of “building seniority”<sup>22</sup> for those choosing to transfer to these schools; and professional development in managing disruptive pupils.

At the same time, the district took a hard look at the cost and effectiveness of its existing recruitment incentives and decided to discontinue some of them, including

the hiring bonus that was introduced in the 1990s (\$1,500 after five months and another \$3,000 after 37 months on the job) on the grounds that it did not work. Other incentives that were dropped included tuition reimbursement for advanced coursework for already-certified teachers,<sup>23</sup> \$2,000 bonuses for teachers in 19 hard-to-staff schools (replaced by the incentive school provision in the 2004 contract described above),<sup>24</sup> stipends for all student teachers and their cooperating teachers, and a \$1,000 “finder’s fee” for current teachers who successfully recruited others to become teachers in Philadelphia (the “teacher ambassadors” program). The district retained the \$1,500 annual bonus for teachers in critical shortage areas.

The district has made a concerted effort to attract more teacher education students to do their practicum classes and student teaching in the system, partly to attract them to teaching in Philadelphia and partly to provide more helping hands in the classroom. The number of such students increased from 535 in 2002-03 to more than 1,100 in 2005-06 and 2006-07. The Philadelphia Education Fund (PEF) has teamed up with HR in an ambitious effort, dubbed “Pipeline to the Future,” to train student teachers in district-specific curricula and policies and to attract them to teaching careers in the district.<sup>25</sup> Student teachers who participate in the training get a stipend of \$100 a training session, totaling \$600 if they attend all six sessions. If they student teach in a “target school”—hard-to-staff schools selected by the district—they get an additional \$1,000. PEF hosts celebratory galas for student teachers and gives them backpacks of supplies and gift certificates for supplies. Students in practicum education courses can earn up to \$300 if they participate in the trainings, an option added for 2006-07. PEF is also publishing a handbook for student teachers in the district and has put out a document that graphically displays the steps in navigating the district’s hiring process.

**The district has made a concerted effort to attract more teacher education students to do their practicum classes and student teaching in the system...**

### Rolling Out Site Selection

The “big new thing” in the Office of Human Resources during 2005 and 2006 was implementing an expanded system of site selection (i.e., school-based hiring) that was negotiated in the 2004 contract between the district and the PFT. This new hiring and school placement system was a major change for Philadelphia and brought its policies closer to those of other districts.<sup>26</sup>

Under the decades-old system, senior teachers who were transferring received their school assignments first, and then new teachers (rank ordered on an eligibility list) chose schools from a central list of remaining vacancies. New teachers were not interviewed by personnel at schools where they would be assigned. This system led to late hiring of new teachers—which meant that many applicants took jobs in other districts—and frequent mismatches between the interests and skills of new teachers and the needs of their schools. This bureaucratic and anonymous process contributed to higher turnover among new teachers.<sup>27</sup>

An exception to this system, written into the PFT-district contract in 2000 and again in 2004, was the option of being a “**full site selection**” school. In these schools, *all* vacancies were slated to be filled using a school-based interview process. In all, 49 schools used full site selection in 2005 and 63 did so in 2006, a little less than a quarter of the district’s schools.<sup>28</sup> Faculties had the option to vote to become full site selection schools; a two-thirds majority was required, and the vote must be taken



The “big new thing” in the Office of Human Resources ...was implementing an expanded system of site selection that was negotiated in the 2004 contract between the district and the PFT.

annually. The district also designated hard-to-staff schools as full site selection schools. In addition, site selection was to be used to fill all positions in schools that were new or for positions in grades that were added to existing schools. Principals and a school site selection committee<sup>29</sup> interviewed and selected teachers from a pool of recruits whose applications had passed an initial screening by HR. This pool included experienced teachers wishing to transfer as well as new recruits.

The 2004 contract specified that schools not choosing full site selection were, in effect, to be “**partial site selection**” schools, whereby half of their teacher vacancies were to be filled by a school-based process with new and/or transferring teachers. The other half of these schools’ vacancies were filled by veteran teachers exercising their seniority-based right to transfer to other schools or by teachers who were being “forced transferred” from one school to another for a variety of reasons including enrollment shifts. All *new* teachers are supposed to be hired through site selection; in reality, some new teachers hired in August and beyond are placed in schools through the traditional centralized process. The designation of schools as “incentive schools,” described earlier, was not affected by their site selection status.

**Provisions of Agreement between the School District of Philadelphia and the Philadelphia Federation of Teachers with Regard to Teacher Hiring and School Placement (2004 to 2008)**

All new teachers are to be hired through a school-based site selection process.

A staff-section committee at each school, composed of two teachers, a parent, an assistant principal (where applicable), and the principal, will screen and recommend candidates. The principal will make the final selection.

Schools can choose (through a two-thirds vote of teachers supervised by the PFT) to become **full site-selection schools**, filling all their vacancies with new and/or transferring teachers through a school-based interview process with no preference to transferring teachers. Ten of the 24 schools designated as “incentive schools” will also use site selection, along with all vacancies in “transition schools” that are adding new grades. A five or six-member personnel committee will screen and recommend candidates.

Remaining schools are **partial site selection schools**. Half of the vacancies (“traditional vacancies”) in these schools must be filled through the seniority process with transferring veteran teachers. The other half are to be filled by new and/or transferring teachers through the site selection process.

Principals at new high schools can fill all of their positions through site selection for the first two years; thereafter, half of the vacant positions can be filled through the seniority-transfer process.

For both the 2005 and 2006 recruiting seasons, the district reported about 70 percent of all vacancies were filled through the site selection process,<sup>30</sup> a figure that represented real progress in developing a school-based teacher selection system, but also disappointed district officials who had hoped for a higher “fill rate” through site selection. A number of principals failed to use site selection or used it poorly. Some of them chose not to implement site selection, leaving it to HR to fill their vacancies after the July 31 “early fill” deadline.<sup>31</sup> Many applicants complained that when they applied to a school, they never heard back from the school; some of those interviewed said no one from the school responded in a timely way. This was especially true in some of the higher-performing schools that received hundreds of applications. (Some lower-performing schools received almost no applications.) Unfortunately, some principals mistakenly offered jobs that later had to be rescinded by HR because the candidate was slotted into a position that was not designated for site selection or that violated court-ordered requirements for racial balance in staffing.

The expanded system of site selection meant that veteran teachers could try to change school assignments, not only through the traditional system of voluntary transfers but also by applying for the site-based openings in other schools, a phenomenon that HR officials referred to as a kind of “free agency” among teachers. Likewise, the new rules offered principals with an entrepreneurial bent the chance to seek out and scoop up proficient teachers. Indeed, almost two-thirds of the teachers in 2005 and 2006 who site selected by July 31 were veteran teachers who were seeking out new school placements.<sup>32</sup> The other third of these “early fill” positions were taken by new teachers. For them, the opportunity to site select meant that they could fill openings prior to the assignment of 600-700 “forced transfer” teachers in August.

Officials are working to improve the site selection process by putting pressure on principals to attend district job fairs and to be diligent in their execution of the new hiring policy. Regional superintendents will review principals’ performance in this aspect of their work, although actual measures of performance remain vague. HR is also pressing ahead with the design of an automated applicant tracking system that will allow both principals and applicants to view applications and to follow progress of the application. This technology promises to improve the efficiency of the site selection process. External funding would expedite the adoption of such tools but, in the meantime, the district is crafting its own systems.

HR officials credited site selection for the dramatic drop in the number of “no shows” among new teachers when children arrived at school in fall 2006. According to HR, only seven new teachers—instead of the usual 50 to 100 or more—dropped from sight between the first “teacher day” in September and the first “student day.” These new teachers had gone through school-based interviews as opposed to the old system of just blindly choosing a school. In addition, HR staff made phone calls to newly hired teachers in late summer to make sure they were coming. If a teacher was not planning to show up, HR moved quickly to fill the vacancy.

Given the complexity of the new PFT contract rules, the first two years of the expanded site selection process unfolded in a reasonably orderly way. Much of this can be attributed to the dedication of HR and PFT staffers who worked out myriad technical details together. The teamwork that developed among them was extraordinary, particularly given the backdrop of prior adversarial relationships and exclu-

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sion of PFT staff from consultation and participation in teacher hiring and placement in the years before 2002. The introduction of site selection and the trimming of seniority-based automatic transfer rights of veteran teachers had long been points of contention between district administrators and the PFT. The 2004 contract represented a compromise for both sides: the district failed to get full site selection for all schools, and the PFT had to accept a certain degree of site selection, which meant putting limits on the number of vacancies available to transferring teachers based purely on seniority. That the two sides came together to cooperate on the rollout of site selection was key to its relative success and a tribute to leaders and staff members of both teams. They also teamed up to represent the district in negotiations with the Pennsylvania Department of Education over compliance with NCLB rules.

### **Using Alternate Route Certification Programs**

Although HR has been successful in increasing the pool of teacher applicants, the district still struggles to attract teachers certified in hard-to-staff subject areas—particularly special education, math, and the physical sciences—and to schools with high poverty rates and low student achievement. Since 2002, the district has relied heavily on alternate route certification programs whose participants have Intern Certificates (and are thus “highly qualified” in Pennsylvania). About a third of the approximately 800 new teachers hired by mid-October 2006 were enrolled in alternate route programs. The district’s use of the alternate route programs with higher education and non-profit groups (all of which are connected to college and university teacher education programs) are not stop-gap efforts. The perennial shortages of candidates in certain subject areas will require the district to rely on these programs for the indefinite future.

The relatively rapid and smooth development of these programs is due in part to concerted efforts by HR officials to reach out to Philadelphia-area institutions of higher education and to non-profit organizations that specialize in alternate route programs. Deans and program directors meet regularly with HR in half-day University Partner meetings (five a year) in addition to numerous individual meetings. The collaborative culture that has been developed and the intensity, scope, and duration of the partnerships between the district and these institutions is unusual for a large urban district.

The biggest alternate route programs in Philadelphia are Teach For America (TFA) and the Philadelphia Teaching Fellows, an initiative of The New Teacher Project (TNTP, a TFA offshoot), both national organizations based in New York City. During 2005-06, 111 new TFA teachers were hired in Philadelphia, followed by another 147 a year later. The TNTP recruited 47 Teaching Fellows during the 2005-06 year and 135 for 2006-07. The district expects to have a long-term relationship with both organizations. The candidates in both programs are chosen after a rigorous and competitive selection process, receive intensive short-term pre-service training before becoming classroom teachers, and sign on to teach in the hardest-to-staff schools and subject areas—usually in middle and high schools—for a minimum of two years. (These and other alternate route programs are described in more detail in Appendix II.) Should the district devote increased resources to scrutinizing all its teacher applicants, the careful method established by TFA and TNTP should serve as a model.

## **Retooling Veteran Teachers to Add a Certification**

Hundreds of veteran teachers passed the relevant licensure examinations or signed up for appropriate coursework and professional development activities in order to meet the “highly qualified” designation for the subjects they were teaching or were planning to teach. More than 700 already-certified teachers signed up for the state’s HOUSSE option (High Objective Uniform State Standard of Evaluation), also known as the Bridge certificate, so that they could become certified to teach special education, 7<sup>th</sup> or 8<sup>th</sup> grade core subjects, or English as a Second Language.

During 2006, approximately 100 elementary-certified teachers added a certification in a high-need subject (such as special education or a 7<sup>th</sup>/8<sup>th</sup> grade core subject) through a district “add a cert” program funded by the Philadelphia Workforce Development Corporation. Attracting elementary-certified teachers into 7<sup>th</sup> and 8<sup>th</sup> grades was helped by an agreement between the PFT and the district that such teachers would keep their elementary “grade seniority,” meaning they would have priority over less senior teachers should they apply to teach again in elementary grades. Although this retooling effort first encountered high rates of program dropouts and “no shows,” HR officials have added requirements to enhance teacher commitment to completing the training.

Many teachers and administrators had predicted that substantial numbers of experienced teachers who were teaching on emergency permits would fail to become certified and would be laid off. Another fear was that newer elementary grade teachers would get “bumped” by teachers with more seniority who, under NCLB rules, were no longer qualified to teach core subjects to 7<sup>th</sup> or 8<sup>th</sup> graders, but who were qualified to teach grades K-6. As it turned out, while the district did terminate several hundred teachers on emergency permits, hundreds of others became certified, often through district-funded or state-funded programs. Bumping did not occur.

## **A Remaining Challenge: The Slow and Convoluted Hiring Process**

The positive steps taken to decentralize and modernize the teacher hiring process in Philadelphia represent significant progress, but the process is still mind-numbingly complex and slow. Provisions of the 2004 PFT-district contract essentially mapped a new site selection process onto the existing teacher selection system, putting two systems into play simultaneously. In partial site selection schools, the division of vacancies into “site selection” and “traditional,” for example, confuses candidates and principals alike.

Longtime complexities in hiring remain as well. Principals have to comply with racial and ethnic designations of positions in order to remain in compliance with earlier court orders, and candidates need to be alert to these designations. Most importantly, hiring is held hostage to budgetary timelines. The district and state budgets are not finalized until early June and early July, respectively, which delays decisions about the numbers of teachers who can be hired. This situation bedevils urban districts around the country.<sup>33</sup>

Under current (2004 contract) rules, the district must follow three separate timelines with regard to newly hired teachers and those whose transfers are voluntary or

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forced. Each batch of teachers is sizable; about 700 teachers, for example, were forced transfers in 2006. The hiring and school placement timeline looks like this:

- Principals in full site selection schools—i.e., the school-based process—identify vacancies and post the positions beginning in mid-to-late February. School site selection committees start interviewing “pre-qualified” applicants (those meeting minimum hiring requirements) in February. Hiring offers for the first round of site selection (“early fills”) may be made from May 1 to July 31.
- Principals in schools following a partial site selection process must identify which of their vacancies are “site selection” and which are “traditional” by April 28. Interviews for the site selection vacancies are held in May, June, and July and hiring offers may be made until July 31.
- Teachers who want to leave their current positions must apply for a voluntary transfer by May 1. Those with more than five years’ seniority are granted transfers as vacancies occur. This process proceeds independently from site selection. Voluntary transfers can also go through the site selection process, but a voluntary transfer placement (should the teacher prefer it) trumps the site selection offer.
- Veteran teachers facing “forced transfers” (usually caused by position changes in the schools, enrollment declines, or school closures) can choose their schools starting in May, following the same time frame as the voluntary transfers who have more than five years’ seniority. Forced transfers with less seniority select a school during the third week of August; voluntary transfers with less than five years’ seniority then select schools from remaining vacancies. Finally, forced transfers who are uncertified or only provisionally certified get their school placements.
- New recruits who were not hired through site selection before July 31 are supposed to be placed via site selection during the last week of August after the forced and voluntary transfers have been processed (or earlier if forced transfers are placed earlier). The pressures of last-minute hiring, however, often mean that new candidates “select” a school sight unseen from among remaining vacancies.
- All teachers assigned to a school after July 31 are on “special assignment” to that school, which means that principals are not required to keep them beyond one year, and teachers have the right to leave as well. This applies both to new teachers and to those who are forced transfers.

In short, the school placement process is full of twists and turns and proceeds over many months, making it difficult to move fast in hiring “the best and brightest” in a timely way.

## The Other Big Challenge: Hiring More Teachers of Color

The district also undertook a Teacher Diversity Campaign in spring 2006 to develop strategies and resources to increase the percentage of teachers of color in the system. According to district figures, 85 percent of Philadelphia's students were either African American (65 percent), Hispanic (15 percent), or Asian/Pacific Islander (5 percent), in 2005-06 compared with 38 percent of their teachers. These numbers reflect a statewide under-representation of minorities in teaching. According to the 2006 report from Governor Ed Rendell's Commission on the Preparation of American Teachers, students of color make up a quarter of all public school students in Pennsylvania, but only 6 percent of faculty are teachers of color.<sup>34</sup> Most disturbing, the percentage of teachers who were people of color among *new* hires in Philadelphia in 2005-06 declined from 28 percent in 2002 to 23 percent in 2005. For fall 2006, the number of African American teachers increased to just 19 percent, up one percentage point from the previous year.

The Teacher Diversity Campaign, co-chaired by SRC Commissioner Sandra Dungee Glenn, CEO Paul Vallas, and city Secretary of Education Jacqueline Barnett, engaged the efforts of more than 100 people from higher education, the business community, the civic and advocacy community, government, the media, and the school district itself.

The Campaign's six different task forces recommend a five-year effort to double the percentage of people of color among new hires and to increase their retention rate by taking the following steps: 1) creating, in partnership with Temple University, an urban teaching institute to recruit 100 student teachers, half of them people of color, from around the country and give them a multi-faceted student teaching experience in the city; 2) expanding "grow your own" programs that train district paraprofessionals to become fully certified teachers;<sup>35</sup> 3) cultivating prospective recruits through the Academies of Urban Education in four district high schools and through the creation of a new high school for future teachers; 4) reaching out aggressively to recruit graduates of historically African American and Latino colleges; 5) assisting teacher candidates to pass licensure examinations; 6) providing induction support for new teachers for up to three years rather than just one year; 7) working to improve the quality of alternative certification programs; and 8) adopting standards that require teachers to become "culturally proficient."

Holy Family University in Philadelphia announced in December 2006 that it was starting a new program to boost the number of Latino and bilingual teachers in the district. Assisted by Aspira, a Latino advocacy organization, the program will recruit and mentor 25 seniors in district high schools who will then enroll for two years at the Pontifical Catholic University in Puerto Rico followed by two years in the teacher education program at Holy Family. They will be guaranteed jobs as teachers in the district following completion of their certification program.

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## IV. Teacher Retention

... while there has been progress in the retention of first-year teachers, longer term retention remains a huge problem.

Since 2002, the district has tried to stem the rapid outflow of teachers that has bedeviled the system for many years, focusing especially on efforts to retain new teachers. Our data show that while there has been progress in the retention of first-year teachers, longer term retention remains a huge problem. Of those teachers hired in 1999-2000, about 70 percent had left the system by fall 2005.

### New Teacher Retention

In 2002-03, the year before new district retention reforms were introduced, the district reported that only 73 percent of new teachers stayed through their first year (counting all teachers who were hired, even for a day). Since then, new teachers have been much more likely to remain on the job through their first year. Since fall 2003, according to district figures, more than 90 percent of new teachers stayed until June of the year in which they were hired, a significant change from the early and abrupt departures that had been common in the past.

The percentage of new teachers returning for a second year in the district, while still low, has also improved. Table 2 shows that of those hired between fall 1999 and fall 2003, roughly three-fourths returned to the district for a second year in four of those five years. That percentage rose to a little over 81 percent among those hired in fall 2004 and returned in fall 2005. Fewer teachers returned to their same school as returned to the district, but that figure improved, too. Of those hired in fall 2004, about 68 percent came back to their same school in fall 2005, compared to approximately 57 to 63 percent in four of the five previous years.

**Table 2**

<b>Second-year teacher retention for teachers hired in 1999-2000 to 2004-2005</b>						
<b>New Teachers</b>	<b>Hired in 1999-2000</b>	<b>Hired in 2000-2001</b>	<b>Hired in 2001-2002</b>	<b>Hired in 2002-2003</b>	<b>Hired in 2003-2004</b>	<b>Hired in 2004-2005</b>
Returning to district for 2nd year	73.2%	77.6%	76.8%	76.9%	69.3%	81.1%
Returning to same school for 2nd year*	60.8%	69.5%	63.2%	62.2%	56.6%	67.9%

\*The calculation of the percentage of first-year teachers returning for a 2nd year is highly sensitive to the time interval being used. Our figure of returning teachers counts only those who were on the payroll as of October of their first year and October of their second year. Teachers hired who came or went between those two dates are not counted.



Although we do not have overall second-year retention figures for teachers hired in 2005-06, one indicator of retention of new teachers in their *same school* improved for fall of 2006. According to HR officials, the amount of “churn” caused by movement of teachers on “special assignment” (i.e., teachers who were hired or transferred after July 31, 2005, and thus free to move or be moved to another school) was substantially reduced. Approximately two-thirds of the teachers who were on “special assignment” during 2005-06 remained in their schools for the 2006-07 year, indicating that principals wanted the teacher to remain and that the teacher also preferred to stay.

District officials and partner organizations attribute improved retention among new teachers to several continuing district initiatives, including enhanced support for new teachers, better hiring processes, and a core curriculum that provides direction and materials. In the area of support, the district provided New Teacher Coaches to mentor new teachers beginning in 2003-04 but ended the initiative in January 2007 as a result of budget cuts.<sup>36</sup> These coaches traveled to school sites to assist new teachers. Although they often carried heavy “caseloads” of 20 or more new teachers in an average of eight different schools and were not always matched by subject area with their new teachers, district officials believed their impact on retention was key. Data from surveys and interviews with new teachers in 2003 and 2004 indicated that most new teachers felt that the coaches had provided important assistance.<sup>37</sup>

The District’s Office of Organizational Development redesigned the coaching of new teachers for 2006-07. The functions of the New Teacher Coaches were taken over by School Growth Teachers (SGT’s) in the 129 schools that did not make Adequate Yearly Progress (AYP), the NCLB measure of school performance. These teachers, who are fully released from teaching, have been supporting new teachers as part of their overall responsibility for improving academic performance in the school. During the first semester of 2006-2007, prior to the elimination of their positions, a cadre of 26 New Teacher Coaches assisted first-year teachers in schools that had been successful in meeting their AYP targets, and they provided help to the new teachers in the 129 non-AYP schools that had particularly large numbers of new teachers.

A state-required (but unfunded) induction effort has evolved since the state takeover of the district in 2001 and the hiring of CEO Vallas in 2002 may also be contributing to retention. During the summers of 2003 and 2004, new teachers attended two weeks of summer orientation (four weeks if they were uncertified) and then attended more than a dozen after-school induction sessions during the school year run by a group from Teachers College, Columbia University. The district has reduced summer orientation to four days, two of which are spent at the school site, and it runs five three-hour after-school induction sessions from October through December. District administrators reduced the number of after-school induction sessions because they realized that the time pressures on new teachers, many of whom were still taking courses for full certification or for their Instructional II certificate, were already excessive. New teachers must also do 15 hours of reading or distance learning on assigned topics. Absent new evaluation data, it is hard to say how well the district’s teacher induction program is contributing to new teacher retention.

Another factor that may have boosted new teacher retention during 2005-06 and for fall 2006 is the growing use of site selection in the hiring of new teachers. The site selection process enables a prospective teacher and a school’s hiring committee and

**... most new teachers felt that the coaches had provided important assistance.**



**District administrators believe that retention efforts are helped by the availability of the district's common curriculum in the core subjects at all grade levels.**

principal to meet and choose one another. Before 2005, teachers who “chose” a school from a list of vacancies knew very little about the school. In our survey of new teachers hired for the 2003-04 school year under the old system, only 14 to 16 percent said they knew about the degree of staff collegiality at the school, or its educational approach, or its special projects and programs, and only 21 percent knew of the principal’s reputation.<sup>38</sup> Under the new system requiring site selection for new teachers, they could apply to a wider pool of schools with vacancies and thus were not restricted to the “leftover” vacancies in hard-to-staff schools (often middle schools) as was the case in the past. They also had a chance to get to know their new school prior to the start of classes.

Two indicators suggest that site selection may be helping to reduce staffing turmoil: the high percentage of teachers on “special assignment” returning to their schools for a second year, and the reduced number of “no shows” among new teachers at school opening in September 2006. Perhaps, as hoped, the site selection process led to more satisfactory matches between teachers and their schools.

Going forward, the district’s enforcement of the new NCLB rules requiring middle-level certification in core subjects in the middle grades means that new elementary-certified (K-6) teachers will no longer have to fear being placed in 7<sup>th</sup> and 8<sup>th</sup> grade classes, a much-dreaded and frequent occurrence in earlier years. Indeed, it is possible that the conversion of most of the district’s middle schools to K-8 schools will increase new teacher retention in the coming years. Our earlier reports showed that turnover rates for both new and veteran teachers were highest in middle schools.<sup>39</sup>

District administrators believe that retention efforts are helped by the availability of the district’s common curriculum in the core subjects at all grade levels. The curriculum provides new teachers with direction and materials. In addition, new teacher retention numbers are bolstered by the two-year commitment expected of teachers in several of the alternate route programs, notably Teach For America.

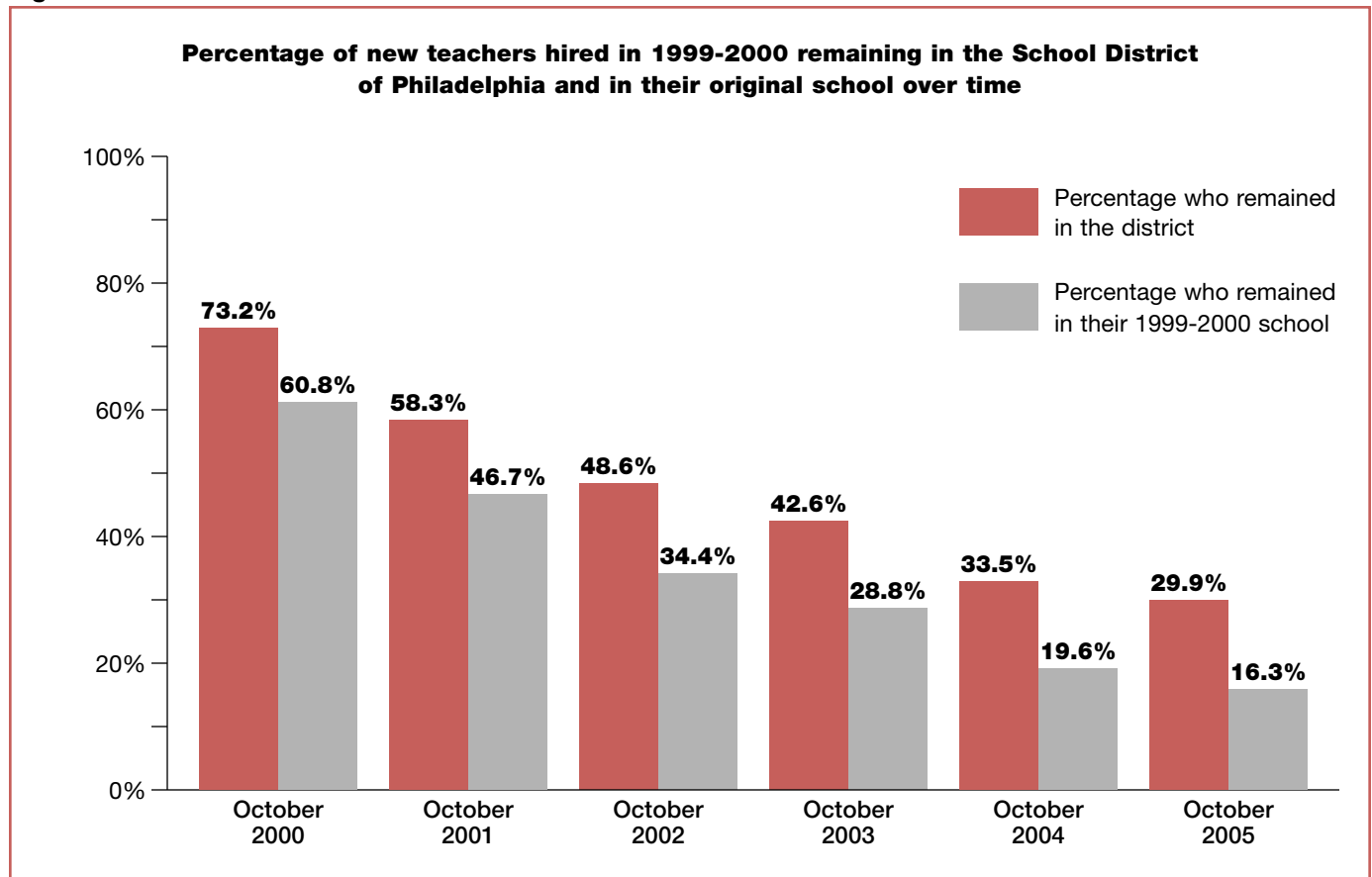
The fact that the district is leaning more heavily on principals to participate energetically in site selection, to assist with new teacher orientation and induction, and to increase retention efforts among both new recruits and veterans, may be playing a role in rising retention rates of new teachers. Regional superintendents discuss recruitment, induction and retention efforts with principals in their performance evaluations, although no specific measures of their performance are in place at this time. Using the adage “what gets measured matters and gets done,” HR and PFT officials have been pushing for the establishment of more systematic metrics to evaluate principals’ performance in recruitment and retention.

## **Overall Teacher Retention**

Although the district has made progress in reducing attrition among its new teachers, longer-term turnover remains shockingly high. The data in Figure 4 show retention figures for the cohort of teachers who were hired in fall 1999. Six years after they came to the district, only 29.9 percent remained in the system, and a mere 16.3 percent were still in their same schools.

In one of our earlier reports, we noted the huge problems incurred by such high rates of attrition: the time and money needed to recruit and induct new teachers; the loss of vital information about a school and its students that a departing teacher takes with him or her; and the greater difficulty faced by schools in creating and sustaining a coherent educational program, institutional memory, and staff cohesion.<sup>40</sup> With the cost of recruiting and training new teachers averaging more than \$11,000,<sup>41</sup> it seems obvious that Philadelphia should consider taking that same money and investing it in greater supports for new teachers.

**Figure 4**



While some aspects of life in Philadelphia schools have improved since the current wave of reform began in 2002—more materials, a core curriculum, more interventions for struggling students, smaller middle and high schools, greater ease in transferring unruly students to disciplinary schools, access to data on students—the classic factors that propel teachers out of urban classrooms and the profession remain. These include comparatively low pay, chaotic climates in some schools, student disciplinary problems, large classes, the city wage tax, and principals in some schools who provide too little support or whose authoritarian styles give teachers limited opportunities to influence school policies.<sup>42</sup>

**For those who want to stay in teaching, the lure of jobs in suburban districts with higher salaries, smaller classes, and better facilities is strong.**

For those who want to stay in teaching, the lure of jobs in suburban districts with higher salaries, smaller classes, and better facilities is strong. While Philadelphia ranked 36<sup>th</sup> out of 64 neighboring suburban districts in Pennsylvania in *starting* salary in 2005-06, it dropped to 61<sup>st</sup> among these districts in the *top* salary offered.<sup>43</sup> In 52 of the districts, a quarter or more of the teachers made more than \$75,000 a year during 2004-05 compared to zero percent of Philadelphia's classroom teachers. In some districts, more than half of their teachers were compensated at that level.

Clearly, teachers leave the district or the profession for personal reasons such as childrearing or family moves.<sup>44</sup> In addition, the current generation of young teachers, like their peers in other jobs, are interested in trying careers in different fields and not committing themselves to decades of classroom teaching.<sup>45</sup>

These data on retention are stark evidence that efforts to retain teachers in the city's schools and classrooms for at least a five- to ten-year period will surely have to be a major component of the district's reform agenda for the foreseeable future.

## V. Trends in the Equitable Distribution of Qualified Teachers

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In our previous reports, we documented how schools serving the highest percentages of lower income, lower achieving, and minority students were more likely than others to have inexperienced and less qualified teachers.<sup>46</sup> Other studies continue to find disparities in teacher qualifications according to the poverty level of schools.<sup>47</sup> Since NCLB requires that there be an equitable distribution of “highly qualified” teachers among schools, national attention is turning to this form of inequality.

In the analyses that follow, we continue to find substantial inequities within the Philadelphia school district. In 2005-06, for example, in schools where more than 90 percent of students were low income, teachers averaged 10.4 years of experience and comparatively new teachers (3 years experience or less) accounted for almost 41 percent of faculty. By contrast, the picture was brighter in schools where fewer than 80 percent of students were low income: teachers averaged 14 years of experience and about 31.3 percent of their faculties were composed of teachers with three or fewer years of experience. Further, we found that while average experience levels of teachers district-wide improved slightly in fall 2005 following several years of decline, the improvement did not reach the higher-poverty schools, especially at the elementary school level.

Teachers’ experience levels were related to schools’ racial composition as well. In 2005-06, about two fifths of the teachers (40.7 percent) in schools that were more than 90 percent minority, for example, had three years experience or less compared to about a quarter (25.7 percent) in schools where fewer than 90 percent of the students were minorities.

In this examination of teacher equity, our primary measure of teacher qualifications is years of experience.<sup>48</sup> A new body of research has documented the importance of teacher experience on students’ learning growth<sup>49</sup> and has, in particular shown the negative impact on students of having a *new or relatively new teacher*. Students’ learning gains tend to be lower if they have teachers with three or fewer years of experience.<sup>50</sup> Moreover, schools that have substantial numbers of new teachers year after year find it difficult to launch and sustain school improvement efforts. This phenomenon adds urgency to the enforcement of the NCLB requirement on teacher quality.

For this analysis, we used district staffing data from October 2005, the most recent year for which data were available. The 2005-06 school year was also the first year that staffing could have been affected by the 2004 contract, the first year following the full implementation of the district’s core curriculum, and the second year following the district’s implementation of new teacher retention policies. We examine teacher experience levels by school type, by poverty level and by percentage of minority students in a school. We examine as well the impact of having site selection (school-based hiring) at some schools, an option introduced in the 2000 PFT contract and continued in the 2004 contract, and the universal implementation of “partial site selection” at the remaining schools. We also explore the extent to which the

**... while average experience levels of teachers district-wide improved slightly ...the improvement did not reach the higher-poverty schools, especially at the elementary school level.**

creation of "incentive schools" and district initiatives in teacher retention and other reforms might have affected the distribution of experienced teachers across schools for the 2005-06 school year.

**Schools that have substantial numbers of new teachers year after year find it difficult to launch and sustain school improvement efforts.**

**Teacher Experience Levels: 2002-2005**

As we looked at changes in teacher experience levels, we first described how average years of experience district-wide had changed between 2002 and 2005. We then used a statistical technique, Hierarchical Linear Modeling (HLM),<sup>51</sup> to help assess whether the experience levels in fall 2005 were in line with recent trends for schools, or whether the 2005 data showed some departure from earlier patterns. If teacher experience levels by school were different from what might have been expected based on previous trends, we could surmise that the district’s teacher retention efforts and changes in the 2004 PFT-district contract may have had some effect on experience levels at schools. Our methods are described in more detail in Appendix I.

**Experience Levels by School Type**

Table 3 shows the average number of years that teachers had been teaching in the School District of Philadelphia from fall 2002 through fall 2005, broken down by school level. We found that the teachers’ average years of experience declined each year from fall 2002 to fall 2004 in all types of schools—elementary/K-8, middle and high schools. In fall 2005, there was a reversal of that trend among teachers in elementary/K-8 schools. In middle schools the decline in average teacher experience came to a halt; in high schools the decline continued, but at a much slower rate.

**Table 3**

<b>Trends in Faculty Experience by School Type: Fall 2002-Fall 2005</b>			
<b>School Year</b>	<b>Average faculty years of experience by school level</b>		
Pre-reform/ Pre-contract	Elementary & K-8 schools	Middle schools	High schools
2002	12.959	11.168	16.406
2003	12.478	10.854	15.991
2004	11.699	10.001	14.562
<hr/>			
Post-reform/ Post-contract			
2005	11.989	10.094	14.456

We used our HLM analyses to determine whether the 2005 results were significant enough to suggest that the new policy instruments had had their intended effect. For all school faculties between fall 2002 and fall 2004, we established three-year historical trends relating the average years of teacher experience at each school each year to information teachers could have used when considering whether to change schools—the minority, poverty and reading proficiency data of the previous year.

We used each school’s 2004-05 student minority, poverty, and reading proficiency data to estimate what a faculty’s expected level of experience would have been in fall 2005 if trends continued and the new contract provisions and retention reforms had had no effect. We compared the *actual experience* of a school’s faculty to the *predicted* value to determine the size of the differences, if any. For example, when the elementary/K-8 prediction function (described in Appendix I) was applied to one elementary school’s 2004-05 data, it estimated that the average experience of teachers at the school would be 9.2 years in fall 2005 (if trends had continued). However, the actual average experience of teachers at that elementary school was 12.1 years, a positive difference of 2.9 years.

As Table 4 shows, we found that the difference between actual and expected teacher experience levels was statistically and substantively significant in the elementary and K-8 schools and in the middle schools, and nearly significant in the high schools. The sizes of the difference between the 2005 findings and their predicted values were noteworthy, ranging from nine months to a little more than one year.

**...the degree of inequity in the distribution of qualified teachers in Philadelphia's public schools remains sizable.**

**Table 4**

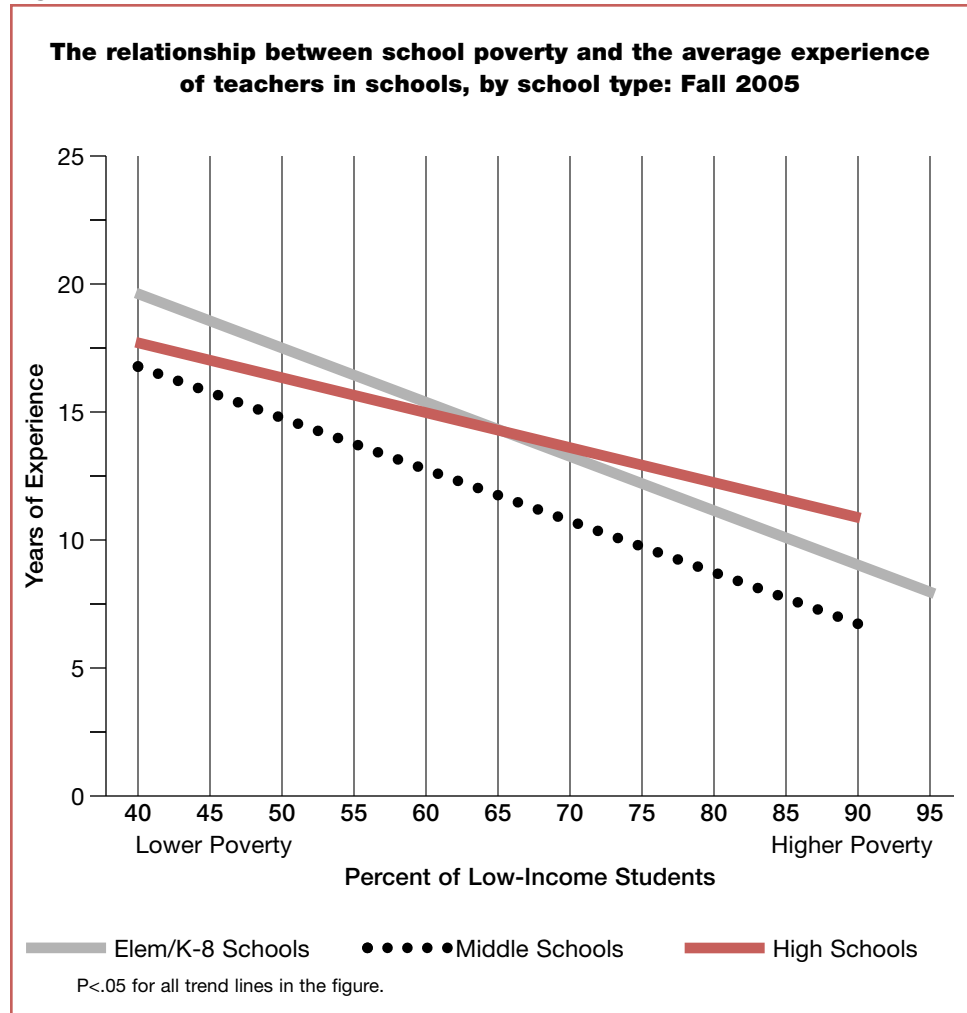
<b>Difference between actual and predicted teacher experience in Fall 2005 compared to experience levels between 2002-2004</b>					
<b>School Type</b>	<b>Teacher experience difference (years)</b>		<b>No. of Schools</b>	<b>t</b>	<b>p&lt;</b>
	<b>Mean</b>	<b>S.D.</b>			
Elementary & K-8	1.135	3.083	173	4.840	.001
Middle	1.121	2.453	38	2.853	.007
High*	0.755	2.951	40	1.617	.114

\*Includes two high schools begun in 2004-2005.

### **Teacher Experience by Poverty Level of School**

Philadelphia’s school assignment and teacher transfer processes have historically resulted in inexperienced teachers being concentrated in lower-achieving schools serving higher-minority and higher-poverty student bodies, while their more experienced colleagues tended to be concentrated in schools serving populations that had

Figure 5



lower percentages of poor and minority students and higher levels of achievement.<sup>52</sup> We were especially interested in how the changes in experience levels just described might have affected the balance of experience between lower-poverty and higher-poverty schools.

Our data showed that the degree of inequity in the distribution of teachers in Philadelphia’s public schools remains sizable. In fall 2005, teachers in lower-poverty schools had significantly more experienced faculties than those in the highest-poverty schools, a relationship that is plotted in Figure 5. This relationship is stronger at the elementary/K-8 and middle school levels (where the correlations between poverty and experience are both .71) than it is at the high school level (where it is .56). Teachers at the very lowest poverty elementary and middle schools have, on average, about twice the experience of those at the very highest poverty schools.

District officials and education reformers hoped that the retention efforts and staffing rules in the 2004 PFT-district contract would reduce imbalances in teacher experience across the system’s schools. Prior to acceptance of the new contract, new

teachers were not hired until after veteran teacher transfers (both voluntary and “forced”) had been processed. Both voluntary and forced transfers tended to move to schools whose student bodies had higher percentages of higher-achieving and white students and a lower percentage of low-income students.<sup>53</sup> Under the new contract, schools could fill “site selection” vacancies with new or transferring teachers without waiting for the traditional transfer process to unfold, meaning more new teachers were likely to be hired in schools they preferred—often the more advantaged schools—rather than being clustered in the highest-poverty schools (often middle schools). At the same time, the hard-to-staff schools, including the incentive schools, could actively seek out strong new candidates or veterans from other schools. With this in mind, we thought we might be able to detect a trend by fall 2005 toward a more equitable experience balance across schools.

The trend lines in Figure 6 indicate that the experience balance by poverty level of school did not improve by fall 2005 and, in fact, appears to have gotten worse. Our analysis compared 2005 results to predicted values derived from 2002-04, as described earlier. Each trend line in Figure 6 relates the *difference* between actual and expected experience of teachers to the schools’ poverty indexes. If the differences between actual and expected teacher experience at schools were unrelated to poverty, the lines of this figure would be horizontal. The trend lines would have been higher at the right if teacher experience levels were greater than expected at high-poverty schools, a sign of greater equity. However, what we see in Figure 6 is the reverse: the trend lines are higher on the left, suggesting that the distribution of teachers became even more inequitable.

For the elementary and K-8 school group, teacher experience improved mostly at low, not high, poverty schools. For example, at one of the highest-poverty elementary schools, the actual average teacher experience level and its predicted level were both about the same—9 years. Compare this with an elementary school where the poverty level is low: the actual teacher experience average was about 18 years, while its predicted value was about 14 years.

At the middle and high school levels, the trends were similar but much weaker and not statistically significant. For reasons we cannot yet explain, changes in teacher seniority in middle and high schools are less related to the prevalence of low-income students attending them.

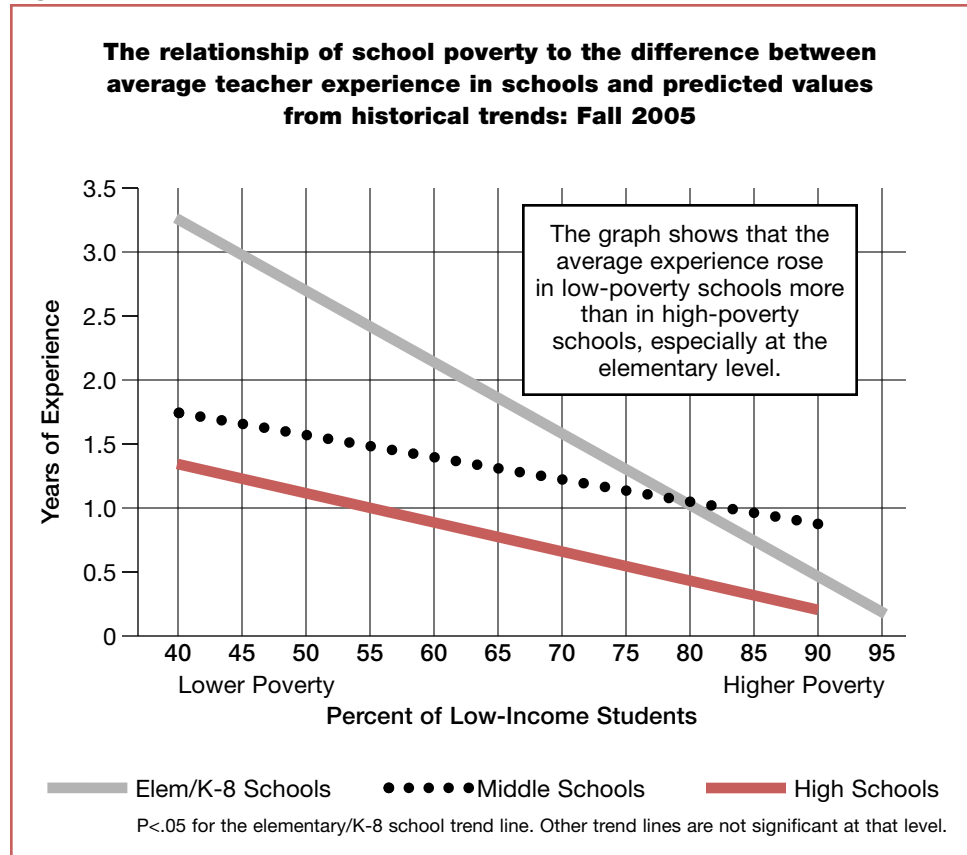
Thus, at least in the first year of the new contract and into the fourth year of retention reforms, the “teacher quality gap” in teacher experience between the poorest and the least-poor schools did not narrow. Indeed, by fall 2005, schools that were the most successful in attracting and keeping more experienced teachers than expected were the lower-poverty schools.

**For the elementary and K-8 school group, teacher experience improved mostly at low, not high, poverty schools.**



...schools with more minority students were significantly more likely to have less experienced faculties.

Figure 6



### Teacher Experience by Percentage of Minority Students in a School

We also investigated a second dimension of inequity in the distribution of experienced teachers—the degree to which the percentage of experienced teachers was related to the percentage of minority students at a school (Figure 7).<sup>54</sup> As with school poverty levels, we found that schools with more minority students were significantly more likely to have less experienced faculties.<sup>55</sup> The size of the relationship was less strong but was still statistically significant.<sup>56</sup>

Figure 7

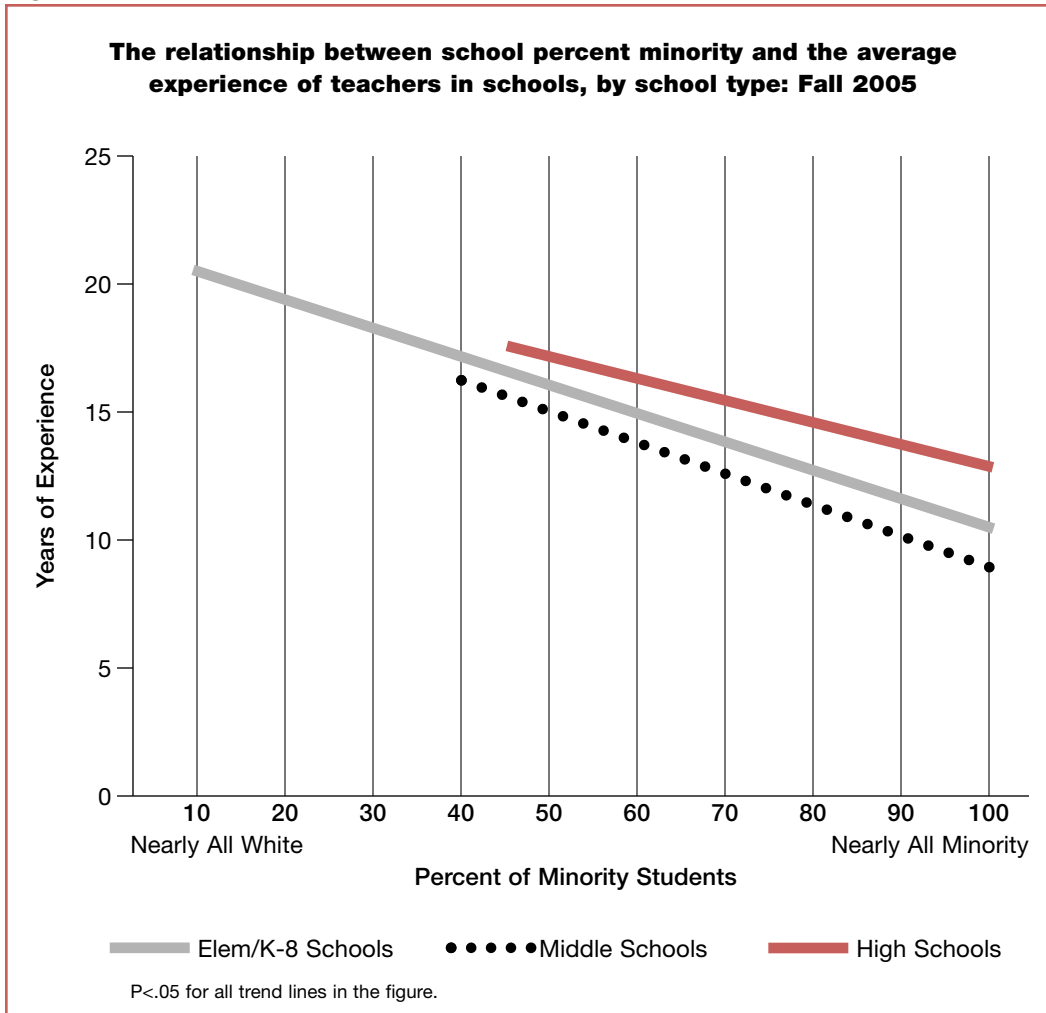
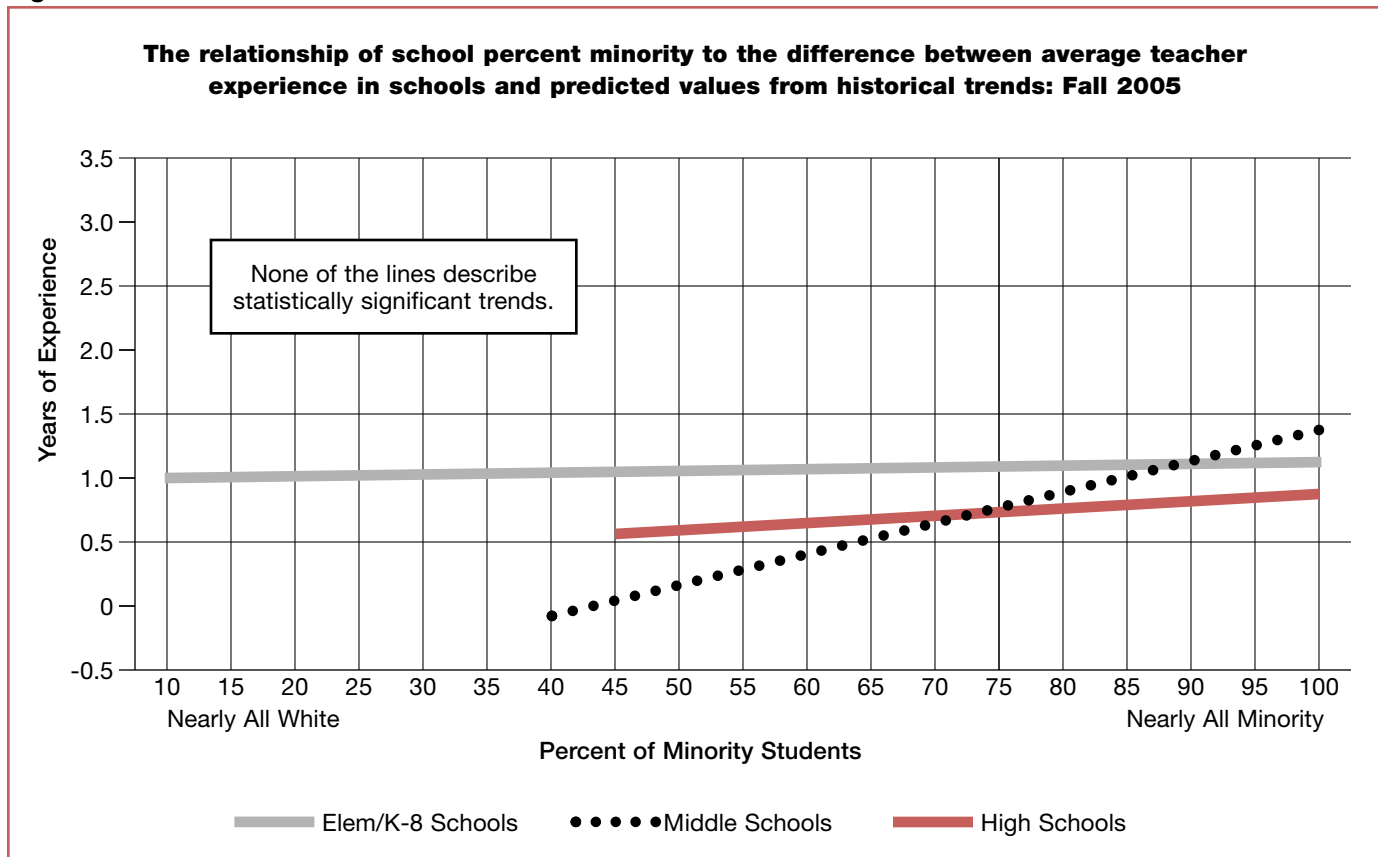


Figure 8 shows the trend lines relating schools' percent minority students to the *difference* between actual and expected experience of teachers at schools in fall 2005. The trend lines all slope upward but are closer to horizontal than those found for poverty, and none of the slopes is significant. Thus the tendency for less experienced teachers to be in schools with higher minority enrollments became less pronounced, but we cannot say for sure that this positive trend was more than a chance occurrence or whether it might have been influenced by changes in the 2004 contract and the district's retention reforms.

Figure 8



### Teacher Experience in Incentive Schools and Full Site Selection Schools

We also used our analyses of trends in teacher experience to evaluate the effects of the contract on schools designated as “incentive” in the 2004 contract and on schools where faculties had voted for full site selection (school-based hiring) during 2005. The 2004 contract designated 24 schools as incentive schools, where teachers were given financial and other incentives to move to or remain at the schools. The new contract also maintained full site selection, established in the 2000 contract, enabling teachers to choose schools earlier in the hiring season. In 2005, 49 schools out of 260+ district schools were designated as full site selection; seven of those were also incentive schools.<sup>57</sup> As discussed in Section II, all other district schools became partial site selection schools after 2004, able to fill half of their vacancies through a school-based teacher selection process.

Overall, the results from the first year of implementation of incentive schools and the continuation of full site selection schools indicate that these schools were not able to improve faculty experience levels. In fact, except at middle schools that were full site selection but were not incentive schools, they were less able to do so than other schools.

The data in Table 5 show whether the average experience of teachers at incentive and/or site selection schools were at better-than-expected levels in fall 2005.<sup>58</sup> Among those we called “regular” schools—meaning they were neither full site selection nor incentive schools—about 31 to 40 percent, depending on the school level, were able to attract and/or retain more experienced teachers than predicted by our models.<sup>59</sup>

**Table 5**

**The extent that the relationship between teacher experience and the student population of schools was changed in 2005 compared to 2002-2004 by site selection status and incentive status.**

Percent of schools where the difference between expected, actual and predicted teacher experience was:

	No. of schools	Percent of schools where the difference between expected, actual and predicted teacher experience was:			Total
		More than expected (One or more standard deviations above expected)	Expected (Within one standard deviation of expected)	Fewer than expected (One or more standard deviations below expected)	
<b>Elementary &amp; K-8</b>					
“Regular”	131	32.8%	64.9%	2.3%	100
Incentive*	15	0.0%	66.7%	33.3%	100
Full site selection**	26	7.7%	88.5%	3.8%	100
Both Incentive and Full Site Selection	1	0.0%	100.0%	0.0%	100
<b>Middle</b>					
“Regular”	20	40.0%	60.0%	0.0%	100
Incentive*	2	50.0%	50.0%	0.0%	100
Full site selection**	11	45.5%	36.4%	18.2%	100
Both Incentive and Full Site Selection	6	0.0%	83.3%	16.7%	100
<b>High</b>					
“Regular”	35	31.4%	57.1%	11.4%	100
Full site selection	5	0.0%	60.0%	40.0%	100

\*Incentive schools that were not full site selection schools; and \*\*Full site selection schools that were not incentive schools

Only among middle schools did we find groups of incentive and full site selection schools that approached the “regular” schools’ rate of success in increasing teachers’ experience levels, and even then the results were inconsistent. In elementary/K-8 and high schools, neither the full site selection nor the incentive schools were as successful as partial site selection district schools in improving teachers’ average years of experience.<sup>60</sup> The most notable middle school finding was that among the 11 middle schools that were full site selection schools but not incentive schools, almost half (45.5 percent) had more experienced faculties than expected. Less trustworthy, because it comes from a group of only two schools, is the finding that one of

**Schools with high percentages of low-income and minority students not only have less experienced teachers, they also are more likely to have teachers who are not fully certified.**

the two incentive schools met this criterion. Six of the middle schools were both incentive and full site selection, but none had faculties whose seniority exceeded its expectation.

At the elementary/K-8 level, all the 15 incentive schools were within the expected range of teacher experience or below that range; and all but two of the 27 full site selected schools were in the expected range or below it. The one elementary school that was a member of both groups did not appear to benefit from being in either of these two categories.

The incentive school results are actually not that surprising since the package of incentives offered was not robust, a feeling that was widely shared among district staffers and education reform advocates from the start. It is also possible that the “incentive school” label might have served as a red-flag warning that these were troubled schools. The inconsistent results for full site selection schools are hard to explain. Qualitative studies that probe teachers’ attitudes and actions about school selection are needed to elucidate this finding.

### **Teacher Certification Rates by School Poverty Level and Percent Minority**

Schools with high percentages of low-income and minority students not only have less experienced teachers, they also are more likely to have teachers who are not fully certified. In fact, Tables 6 and 7 show that the percentage of fully certified teachers, when broken down by the racial and socioeconomic composition of schools, changed hardly at all in the three-year period between fall 2002 and fall 2005. For example, in schools with the highest levels of poverty, about 86 percent of the teachers were fully certified; in schools where children had more advantages (less than 80 percent low income), 93 percent of the teachers were fully certified.

What *did* change is that during that same three-year period, the number of teachers with emergency permits dropped, from 10.1 percent to 6.6 percent (and, according to district reports, has decreased even more in 2006-07) (Tables 6 and 7). They were replaced by teachers with Intern certifications whose percentage rose from almost none (0.2 percent) to 3 percent. Since the Intern-certified teachers, such as those in the Teach For America or the Philadelphia Teaching Fellows programs, were concentrated in high-poverty, high-minority schools, the “total certified” (which includes Intern-certified teachers) increased in those schools, narrowing the “teacher quality gap.” Thus, for the 2005-06 school year, 91.2 percent of the teachers in the highest-poverty school category were certified compared to 94.9 percent in the lowest-poverty category, a difference of only 3.7 percentage points compared to a difference of 7.5 percentage points between the two categories in 2002-03.

The substitution of Intern-certified teachers for some of the emergency-certified teachers in the schools with the highest numbers of poor and minority students represents an improvement in teacher quality. The Interns, unlike the emergency-certified teachers, had to pass proficiency examinations (the PRAXIS tests) and had to be enrolled in a teacher preparation program. Some of these programs had rigorous screening measures. Still, having an Intern-certified teacher versus a fully certified

**Table 6**

<b>Distribution of teacher certification status in schools, by percentage of minority students: 2002-2003 and 2005-2006</b>										
Teacher Certification Status	Number of teachers	2002-2003				2005-2006				
		Less than 50% minority	50-89% minority	90%+ minority	Entire district	Number of teachers	Less than 50% minority	50-89% minority	90%+ minority	Entire district
Fully certified	10,441	96.6%	92.4%	87.5%	89.7%	9,459	96.7%	94.3%	87.7%	90.4%
Intern certified	21	0.1%	0.1%	0.2%	0.2%	309	0.8%	1.6%	3.9%	3.0%
Emergency permit	1,179	3.3%	7.4%	12.3%	10.1%	694	2.5%	4.1%	8.4%	6.6%
<b>Total certified (Full and Intern)</b>	<b>10,462</b>	<b>96.7%</b>	<b>92.5%</b>	<b>87.7%</b>	<b>89.9%</b>	<b>9,768</b>	<b>97.5%</b>	<b>95.9%</b>	<b>91.6%</b>	<b>93.4%</b>

**Table 7**

<b>Distribution of teacher certification status in schools, by school poverty level: 2002-2003 and 2005-2006</b>										
Teacher Certification Status	Number of teachers	2002-2003				2005-2006				
		Less than 80% low income	80-90% low income	90%+ low income	Entire district	Number of teachers	Less than 80% low income	80-90% low income	90%+ low income	Entire district
Fully certified	10,441	92.9%	88.9%	86.3%	89.7%	9,459	93.0%	90.7%	86.6%	90.4%
Intern certified	21	0.2%	0.2%	0.1%	0.2%	309	1.9%	2.7%	4.6%	3.0%
Emergency permit	1,179	6.9%	10.9%	13.6%	10.1%	694	5.2%	6.6%	8.7%	6.6%
<b>Total certified (Full and Intern)</b>	<b>10,462</b>	<b>93.1%</b>	<b>89.1%</b>	<b>85.6%</b>	<b>89.9%</b>	<b>9,768</b>	<b>94.9%</b>	<b>93.4%</b>	<b>91.2%</b>	<b>93.4%</b>

teacher means that students are being taught by those who are still novices in their work. And it should be noted that, even with the increased numbers of Intern-certified teachers, a little more than 8 percent of the teachers in the highest-minority and highest-poverty schools were emergency-certified for the 2005-06 school year, a higher percentage than in schools with fewer minorities and low-income students.

**...it is fair to say that NCLB's mandate to have highly qualified teachers in all classrooms has not been matched by the funds needed for full compliance.**

### **Equity: Summing Up**

It is still the case, then, that schools with the highest percentages of poor and minority students are more likely to have faculties composed of less-experienced and less-credentialed teachers. The district's reforms to improve teacher satisfaction and retention have not altered this gap in qualifications, nor have new provisions in the 2004 PFT contract that expand site selection and that create incentive schools, at least not during the contract's first year of the contract's operation. If anything, the reverse was true.

Progress on some fronts, however, has been made since 2002. Intern-certified teachers, most of them participating in alternate certification route programs, have filled some of the positions in the neediest schools that would previously have been taken by less-qualified, emergency-certified teachers.

District efforts to implement a strong set of incentives to attract and keep experienced and qualified teachers in the most difficult and lowest-performing schools, however, have been hampered by the system's chronic fiscal struggles, a situation that worsened after 2005. Recognizing the great difficulty that under-funded districts have in finding the money for adequate incentives, reformers in this field nationally have called for substantial federal aid to tackle the problem.<sup>61</sup> Some federal funds are flowing to Philadelphia through a \$20.5 million federal Teacher Incentive Fund grant awarded in 2006. If federal funding for it continues (which is in question as of this writing), the five-year initiative will provide the money to boost teacher incentives in 20 struggling schools with grades 3-8 where two-thirds of the teachers have voted to participate in the pilot program.<sup>62</sup> But overall, it is fair to say that NCLB's mandate to have highly qualified teachers in all classrooms has not been matched by the funds needed for full compliance.

## VI. Conclusion: New Hope and Old Hurdles

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The School District of Philadelphia, responding to the requirements of NCLB and its own reform efforts that began in 2002, has made significant progress in upgrading the qualifications of its teachers. This is no small feat given that the district *as a system* is largely made up of poor and minority students. Where it has made little progress, however, is in reducing the teacher quality gap *inside the system* between schools whose students are overwhelmingly poor and minority versus schools with somewhat lower percentages of low-income and minority pupils.

In the area of qualifications, Philadelphia has raised the certification rate for the entire teaching workforce and, most dramatically, among *new* teachers, especially those in middle schools. The district worked strenuously to meet the NCLB mandate that all students be taught by “highly qualified” teachers and, while falling short of 100 percent compliance, made substantial progress toward the goal. As part of that effort, hundreds of teachers on emergency permits have either been terminated or have become certified. No longer will Philadelphia be known as a system that relies heavily on emergency-certified teachers to fill vacancies. The Human Resources office took steps to dramatically increase the percentage of 7<sup>th</sup> and 8<sup>th</sup> grade teachers who were proficient in their content area as specified by NCLB. The fact that large numbers of 7<sup>th</sup> and 8<sup>th</sup> grade teachers became middle-level certified defied dire predictions that they would retreat to lower grades and bump elementary teachers with less seniority.

The percentage of new special education teachers meeting NCLB standards has also increased substantially although, as with middle-level teachers, the district has relied heavily on recruits in alternate route Intern certification programs such as Teach For America and the New Teacher Project Teaching Fellows. Overall, the district has yet to rebuild the cadre of fully certified special education teachers that was in place in the late 1990s, but at least the steady decline in these ranks appeared to have halted by 2005. Nonetheless, too many special education students are being taught by novices who are in the process of receiving full certification.

The district has replaced its overly centralized and dysfunctional system of hiring and school placement of new teachers with a school-based hiring process, and it has trimmed the role that seniority plays in teacher transfers among schools. Philadelphia’s aggressive recruitment efforts have led to an increase in applications, particularly for elementary-level positions. The growing capacity in data collection and reporting in the Office of Human Resources has enabled its staff to better target recruitment efforts. Administrators in that office also worked to improve the implementation of the site selection hiring process in its second year and continue to make improvement in school-based hiring a priority. The success of many of these initiatives can be attributed to the close collaboration that the Office of Human Resources has developed with staff of the Philadelphia Federation of Teachers, with external teacher preparation groups such as Teach For America and The New Teacher Project, and with deans and department heads of teacher education programs at local colleges and universities.

**...Philadelphia has raised the certification rate for the entire teaching workforce and, most dramatically, among new teachers, especially those in middle schools.**



**The task before [the district] is to sustain and improve upon those ever-fragile gains while simultaneously taking on the significant challenges in equity, diversity, long-term retention, and improved methods of teacher selection.**

When it comes to retaining new teachers, the district has succeeded for three years in keeping more than 90 percent through their first year, a substantial improvement over prior years. The percentage of teachers returning for a second year to the district *and* to the same school has improved modestly. This is one reason why average teacher experience appears to be rising in the elementary and K-8 schools and halting its decline in middle and high schools. Still, longer-term retention is abysmal, with only about 30 percent of teachers remaining in the district after six years. These data are a startling reminder of the need for school districts such as Philadelphia to invest resources in new teacher support over at least a two-year period. Yet, the district’s initiative to provide such support—the New Teacher Coach—was terminated in 2007 because of budget constraints. As it is now, the district spends substantial sums recruiting new teachers each year to take the place of the ones who have left, money that could more wisely be spent on supporting the new teachers it has.

Closing the “teacher quality gap” within the district remains a challenge. Except for reducing the number of teachers on emergency permits in schools and replacing them with Intern-certified teachers, the district has not been able to attract more qualified and experienced teachers to the hardest-to-staff schools. Our data showed a very strong relationship between school poverty rates and teacher experience, especially at the elementary school level. The small improvement in teacher experience district-wide in 2005 turned out, on closer inspection, to have occurred mostly at schools where students already have more advantages. Further, following approval of a new contract in 2004 between the district and PFT schools, schools designated as “incentive schools” failed to attract or keep more experienced teachers than predicted by historical trends the following year. Middle schools (that were not also incentive schools) that voted to fill *all* of their vacancies through site selection had higher teacher experience levels than predicted, although this positive trend was not found at elementary and high school levels.

## **Recommendations**

The School District of Philadelphia has made important strides since 2002 in improving its hiring and school placement process, upgrading the credentials in its teacher workforce, improving retention among new teachers, and halting the decline in teacher experience levels. The task before it is to sustain and improve upon those ever-fragile gains while simultaneously taking on the significant challenges in equity, diversity, long-term retention, and improved methods of teacher selection. We realize that central office administrators have been making efforts in these areas for some time, a daunting assignment in a resource-poor system. Still, we believe that the district needs to become even more aggressive in tackling teacher staffing issues because, in the end, improvement in student achievement will depend on the quality of the teacher in the classroom.

As we conclude our multi-year research on trends in teacher workforce issues in the School District of Philadelphia, we recommend that the district place high priority on the following actions:

### **To improve equity:**

- Create a package of robust incentives (e.g. smaller classes, strong school leaders who promote collegial work, extra pay) to attract and retain teachers in hard-to-staff schools. This will require the district to re-configure existing funds and to continue its efforts to obtain external funds from private and public sources.
- Establish specific targets and timelines for achieving greater equity in measures of teacher quality across schools.

### **To improve recruitment and school placement:**

- Redesign the teacher hiring and school assignment process so that it is less cumbersome and complex, a process that will require changes in the district's contract with the PFT.
- Strengthen implementation of the school-based hiring process by holding principals accountable in a formal way for their ability to recruit qualified teachers and by providing them with the technological tools they need to conduct the process efficiently.
- Find resources to pay for “grow-your-own” and other programs to recruit and train minority teachers.
- Work with and put pressure on teacher education programs to prepare more people to teach in subject areas experiencing shortages, such as special education, mathematics, and science.

### **To improve retention:**

- Expand and deepen high-quality mentoring and induction programs for new teachers.
- Continue to intensify leadership training programs for school administrators and school behavioral climate initiatives in order to improve working conditions for school staff.

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# Appendix I

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## Data and Methods

As in our earlier reports, we draw on both qualitative and quantitative data.

The School District of Philadelphia continued to provide us with an updated data set of the district's more than 11,000 teachers for the years beginning October 1999 through October 2005. These data include teachers' school placement, years of experience in the School District of Philadelphia, certification status, and demographic background variables. We used these data in our descriptions of trends in teacher certification and in cross-tabular analyses showing the relationship between school poverty levels and racial composition with teacher certification status.

We also drew on these data to examine trends in the equity of the distribution of experienced teachers among schools, and how the distribution changed in 2005, the first year the new teacher staffing provisions of the 2004 PFT-district contract were in effect and a year by which the district's teacher retention reforms were firmly in place. To develop the findings on trends in equity, we used the relationship of the race, poverty, and achievement level of the student body of each school to the experience of the school's faculty that we found each year from 2002 to 2004 to predict what would have occurred in 2005 if the new contract and other reforms had no effect. We then compared what actually happened to these "no-effect" predictions in order to investigate district-wide changes in the average experience of teachers, and to evaluate the changes that school-specific provisions of the contract and other reforms were expected to produce. As discussed in detail below, we used a multivariate statistical approach, Hierarchical Linear Modeling, to derive the 2002-2004 trends and make the 2005 predictions.

In addition, during 2005 and 2006, we were participant observers in four sets of meetings:

- University Partners Meetings held five times a year by the Office of Human Resources;
- The Teacher Diversity Campaign meetings held by the Office of Human Resources during the spring of 2006;
- The Philadelphia Education First Compact meetings, convened monthly by the Philadelphia Education Fund, and attended by civic and educational leaders with the goal of monitoring Philadelphia's school reform efforts;
- The monthly meetings of the Pennsylvania Governor's Commission on the Preparation of America's Teachers held during 2005-06.<sup>63</sup>

We also conducted a total of seven formal interviews with the following: administrators in the Office of Human Resources, a PFT official, and personnel from non-profit organizations that work in partnership with the Office of Human Resources. These interviews were supplemented by phone calls and emails to more than a dozen

district officials and partner organizations to gain additional information when necessary. In addition, in our role in a related project as evaluators of an alternate route teacher certification program, we attended quarterly meetings with Human Resources managers and administrators of teacher education programs in the Philadelphia area.<sup>64</sup> As part of that project, we conducted interviews and surveys of the teachers as well as interviews with faculty and administrators in that program during 2005 and 2006. Finally, we collected relevant documents and press clippings throughout the period of the study.

### Definition of Variables

*School poverty rates:* In our quantitative analyses, we use two different indices of school poverty. For tables that updated trends we had reported on in our two earlier studies, we continued to use the percentage of students who were receiving free or reduced-price lunch as our measure of poverty. In our analyses that relied on hierarchical linear modeling to look at teacher experience, we use what is called the “Yancey index,” a more comprehensive measure of poverty developed for Philadelphia by sociologist William Yancey at Temple University. According to the School District of Philadelphia Office of Research and Evaluation, this index includes the percentage of students in a school who receive free or reduced-price lunch but also includes an adjustment based on estimates of eligibility derived from follow up phone calls and interviews with a sample of families who did not return school questionnaires on eligibility for the lunch program. The correlation between the Yancey index and the free and reduced-price lunch index ranges from .69 to .75 depending on the year of the comparison.

*School percent minority:* The “percent minority” by school is defined as the percentage of “non-white” students (African American, Hispanic, Asian, and “Other”) in the school.

*Teacher experience:* Teachers’ years of experience was defined as their total years of teaching in the School District of Philadelphia. It did not include years of teaching in other districts.

### HLM Analysis of Trends in Teacher Experience

The aim of this analysis of trends in the distribution of experienced teachers in schools, conducted by Robert Offenberg, was to find results that might be attributable to the 2004 PFT-district contract and district teacher retention reforms. We knew from prior research that veteran teachers tend to transfer to schools in the district that have comparatively lower percentages of low-achieving, low-income, and minority students. School data on these and other variables are easily available to teachers. We also knew that there were district-wide trends in the rate that experienced teachers leave the system and are replaced by less-experienced teachers that were likely to continue unless the contract changed the appeal of working in the district. In order to validly assess the impact of new policies, it was necessary to control, to the extent possible, the impact of these factors, so that the effects of the new PFT contract policies and district teacher retention reforms could be seen. To do that, we used Hierarchical Linear Modeling, a statistical approach that allowed us to relate,

in a time series, three years of information about every school to the experience of its faculty. We then used our results to predict what the experience of the faculty of every school would have been in a fourth year, fall 2005, if there were no school staffing components in the new PFT teacher contract and if the district's retention reforms had no effect. By comparing the actual amount of faculty experience at each school to its predicted value, we were then able to estimate and evaluate the differences in teacher experience of schools that were associated with components of the contract and the reforms.

*Pre-Reform/Pre-Contract Predictive Analysis.* When the district's contract with the Philadelphia Federation of Teachers (PFT) was re-negotiated in 2004, all parties realized that less experienced teachers tended to be concentrated in schools serving more minority, lower-income and lower-achieving students. Examination of trends also showed that the teachers of the district were becoming less experienced because of many veteran teachers exiting and their being replaced with less-experienced staff. The goal of the Hierarchical Linear Model (HLM) analysis was to determine whether these trends were changed when the new school staffing provisions of the contract were implemented in fall 2005 and when a series of teacher retention reforms were implemented by the district beginning in 2002-03.

In this analysis, we created a time series based on three years of student and teacher data, and used the time series to project what the teachers' experience levels would have been at each school in fall 2005 if pre-contract and pre-reform trends had merely continued. It then compared the projected experience levels to the actual experience levels to determine whether the contract provisions and retention reforms were successful in these initial stages.

Pre-contract teacher hiring and transfer policies of the school district often gave teachers opportunities to transfer from one school to another. The HLM analysis used information about the student body of each school that teachers might consider if they were thinking about transferring—the racial background, income level, and standardized test scores of the previous year's enrollees of the school—and the annual changes in average experience of teachers in the district to create a family of functions relating the experience of the teachers at each school to the student body the school had served the year before. Because we believed that the staffing patterns might be different, we analyzed the data for elementary/K-8, middle and high schools separately.

These functions, which are shown in Table A, were derived from fall teacher records of 2002 through 2004, and proved to be valid<sup>65</sup> ways to describe the relationship between faculty experience and school factors that the contract sought to change. The values shown in the table, called weights, quantified the factors that led to the new contract provisions. The weights for the "Proportion of Enrollment" variables quantified the extent to which student characteristics of a school during one year were associated with the teacher experience level of the school the next year. The significant, positive values for "White" reflected the extent that faculties of schools serving non-minority students were more experienced. The significant, negative values for "Low Income" reflected the tendency of faculties at schools with more low-income students to be less experienced. The weights for "Reading Proficient" describe a slightly more complex situation. The significant positive values for the elementary/K-8 schools and the middle schools reflected trends of more experienced

teachers being at schools where students had higher test scores. However, the smaller, insignificant high school value shows that, at these schools, students' reading test scores might not be related to faculty experience. The significant, negative weights for the last variable, "Annual Trend," showed that faculties tended to become less experienced from fall 2002 to fall 2004.

**Table A**

<b>Average Years of Experience of Teachers at Schools as a Function of Student Characteristics and the Annual Trend: 2002-2004 School Years</b>			
Predictor	School Type		
	Elementary & K-8	Middle	High
Intercept (in years)	14.671***	12.540***	19.588**
Portion of enrollment that is:			
White	6.658***	8.040**	4.915*
Low Income	-5.544***	-4.944*	-6.781***
Reading Proficient	4.902***	5.866**	0.427
Annual Trend	-0.658***	-0.886***	-0.890***
***p<.001, **p<.01, *p<.05			

*Post-Reform / Post-Contract (Fall 2005) Findings.* Table 3 of the main text shows how the average teacher experience declined between 2002 and 2004 in all three types of schools, elementary/K-8, middle, and high. These trends, however, appeared to change in 2005. In the elementary/K-8 group there was an increase in teacher experience, in the middle school the decline in experience appeared to come to a halt, and in the high schools the decline in experience appeared to slow down. The HLM analysis answered the question, "Were these changes in the trends statistically reliable, or were some of them mere chance?"

The three 2002 to 2004 functions in Table A, relating the experience of schools' faculties in the fall to their previous years' student data, were applied to the 2004-05 student data of each school to obtain an estimate of what the experience level of each school's faculty *would have been if the teacher retention reforms and 2004 PFT contract provisions had had no effect*, that is if the 2002 through 2004 patterns had continued. The difference between a school's actual teacher experience value in 2005 and its predicted value, called a residual, was found for each school and then analyzed in ways that answered key questions about the success of the contract.

If the contract provisions and retention reforms had no effect, the average residual—the difference between a school’s actual teacher experience level and its predicted value—would be about “0”. If they had an effect, t-tests comparing the mean residuals of groups of school to “0” would provide evidence that the average teacher experience values had changed in fall 2005 in a significant way when the staffing components of the contract were implemented.

Table 4 in the main text shows this type of analysis for the elementary/K-8, middle, and high schools of the district. It shows that the average levels of teacher experience were higher than the predicted values in all three types of schools, and that the elementary/K-8 and middle school increases were statistically significant. The high school value missed significance by a small amount and might be due to chance.

One of the goals of the contract was to reduce the faculty experience discrepancies that had existed between higher and lower-poverty schools, a pattern that continued into 2005, as shown in Figure 5. To see whether this reduction occurred, best-fitting trend lines relating the faculty experience residuals to schools’ poverty index values were developed. They are shown in Figure 6. If the high-poverty schools had more experienced faculties as a result of the contract, as had been hoped, the lines in this figure would have sloped upward as the poverty index increased. In fact they all sloped downwards, showing that the schools with lower rates of poverty were the ones that typically acquired and/or retained more experienced faculties. For the elementary/K-8 school group, this trend was statistically significant. Thus, while implementation of the staffing component resulted in more experienced teachers in the district, the low-poverty schools, not high-poverty schools, tended to be the principal beneficiaries.

Figure 7 shows that in 2005 the historical pattern of low-minority schools having more experienced faculties than high-minority schools continued. One of the goals of the contract and of the district’s retention reforms was to decrease the difference between high- and low-minority schools. To see whether there had been a change, the best-fitting trend lines relating the residuals or differences between actual and predicted faculty experience to minority (1 – white) enrollment proportions were computed. The trend lines are shown in Figure 8. These results look more promising than those for poverty, as all three lines slope upward, the direction indicating more equity. But the slopes are not steep, and none represents a statistically significant trend, so we must conclude that in 2005 schools with large minority populations tended to have more experienced faculties than expected, but these trends do not reflect statistically reliable changes toward improved equity.

We discuss in the report how the PFT contract attempted to improve the equity of the distribution of teachers. Two special groups of schools that were to use more flexible recruitment procedures were specified: “full site selection” schools, an option that was continued from the previous contract, and “incentive schools,” which were new to this contract (and sometimes were also full site selection schools). Schools that had not elected to be full site selection schools could now be partial site selection schools, filling up to half of their vacancies through the school-based method. Incentive schools had a smattering of inducements for teachers to come to or remain at those schools and full site selection could fill all of their teaching vacancies through a school-based selection process.

Table 5 in the text indicates the effectiveness of the site selection and incentive designations in reducing inequities in teacher experience across schools. In this table, schools were categorized by grade-range type and then were identified “regular” (meaning they were neither incentive nor full site selection schools), incentive, full site selection, or both incentive and full site selection, depending upon the teacher recruitment and retention strategies they were allowed to use. They were then assigned to one of three success categories, More Experienced Teachers than Expected, Expected Number of Experienced Teachers, or Fewer Experienced Teachers than Expected in Fall 2005. The Expected Number of Teachers category of schools had a residual showing it was within one standard deviation of its predicted value. The “More” and “Fewer” groups were more extreme, and were considered schools that were especially successful or especially unsuccessful in acquiring and maintaining experienced teachers.

As Table 5 shows, in fall 2005, the “regular” school group did well in all three grade ranges—the percentage of schools classified as having More Experienced Teachers than Expected was always substantial and much greater than the percentage of schools classified as having Fewer Experienced Teachers than Expected. As the table and the main text show, the results for incentive and full site selection schools were never better than for “regular” schools and were often worse. These findings suggest that provisions in the contract for full site selection and incentive schools did not, in their first year of implementation, ameliorate the inequitable distribution of experienced teachers.



## Appendix II

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### **Alternate Route Certification Programs in the School District of Philadelphia**

**Teach For America (TFA):** The School District of Philadelphia began placing teachers from TFA, a highly selective national program for new college graduates, for the 2003-04 school year. Most taught in shortage subject areas in hard-to-staff middle and high schools. During 2005-06, there were 111 “corps members” in their first year; 147 were in the 2006-07 cohort, some of whom were placed in Philadelphia’s public charter schools. The program is funded by the district and by substantial contributions from four private foundations. Participants are enrolled in a Master’s Degree program at the University of Pennsylvania except for special education students who enroll at Chestnut Hill College.

About a third of the first cohort of TFA teachers (who started in 2003-04) remained in district schools or in public charter schools in the city after completing their two-year commitment. For the second cohort, approximately 45 percent chose to stay in the city’s charter or regular public schools. Although no systematic data have been collected, TFA alumni appear to be clustering in certain hard-to-staff middle schools and some of the more successful charter schools.

Beginning in 2005, TFA strengthened its presence in Philadelphia by making the district’s summer schools the sites for pre-service training for all TFA corps members on the East Coast. Participants live at Temple University for five weeks, teaching in the morning in summer school programs and taking demanding courses in the afternoons and evenings. Two hundred Philadelphia teachers mentor them during the summer.

**The Philadelphia Teaching Fellows of The New Teacher Project (TNTP):**

Beginning in January 2005, The New Teacher Project began to supply new teachers to the district to fill mid-year vacancies, primarily at the middle and high school level in shortage subject areas such as special education, math, science, Spanish, and bilingual education. Participants, called Teaching Fellows, go through a rigorous and competitive hiring process modeled on that of Teach For America. They undergo a month of training in January before entering the classroom as full-time teachers. The first cohort included 60 Teaching Fellows. A second cohort of 47 Fellows began during the second semester of 2006 and a third cohort of 85 began in the fall semester of 2006. A fourth cohort of 50 began teaching in February 2007. Teaching Fellows enroll in teacher preparation programs at area colleges and universities.

Unlike the TFA teachers who come from all over the country, Teaching Fellows, most of them either career-changers or recent college graduates, tend to come from the Philadelphia region and are thus expected to have higher long-term retention rates. Although much of the tuition cost associated with the program was covered for the first cohort (who qualified for the state-funded Accelerated Certification for Teaching program), candidates in the other cohorts usually have had to pay their own way for the required coursework.

**Accelerated Certification for Teachers (ACT) program:** The ACT program, funded by federal grants, was the Commonwealth of Pennsylvania's first foray into an alternate route program. ACT served both new recruits teaching on emergency permits in high-need subject areas in Philadelphia and four other cities as well as experienced teachers who needed to get an initial certification or who wanted to add on a new certification in a shortage area, particularly special education. The program, funded from 2003-04 through 2005-06, aimed at attracting career-changers and minorities to teaching. Participants enrolled in an accelerated program customized for them at Eastern University, Cheyney University, Holy Family University or Chestnut Hill College. During 2005-06, ACT enrolled 84 Philadelphia teachers, some of whom were Philadelphia Teaching Fellows. About three quarters of the ACT teachers were getting certified in special education.

**Transition to Teaching (Drexel University):** Drexel University continued to prepare math, chemistry, and physics teachers through this federally funded program secondary certification program, and it added a program for elementary and middle grades positions. Like ACT, this streamlined certification program (much of it online) is targeted to minorities and career changers and includes both new teachers and those teaching on emergency permits who need certification. The program enrolled 80 teachers during 2005-06 and 2006-07 combined. Participants commit to teaching three years in the School District of Philadelphia. Some of the participants are Philadelphia Teaching Fellows who are able to take advantage of the funding provided by the Drexel program.

**Corporate to Classroom:** This program, part of a national model, prepares career changers for teaching. In 2005-06, 25 participants enrolled at Holy Family University. For 2006-07, all of the 12-14 participants were Philadelphia Teaching Fellows; half of the cost of their coursework is covered by funds from the Philadelphia Workforce Development Corporation.

Two alternate route programs have been dropped by the district since the 2004-05 school year—the Literacy Intern Program and Middle Grades Transition Support Tutors, both conceived and coordinated by the Philadelphia Education Fund in partnership with the district and area universities. The expense of these programs, both of which enabled college graduates who were teacher trainees to assume teaching responsibilities without being the primary teacher in the classroom, was a factor in their termination. The district has also stopped recruiting math and science teachers in India and Spanish teachers from Spain, partly because of the barriers to getting visas, but it still recruits teachers from Puerto Rico.

### Endnotes

<sup>1</sup> Clotfelter, Ladd & Vigdor (2007); Hanushek, Kain, O'Brien, & Rivkin (2005); Rivkin, Hanushek, & Kain (2005); Rockoff (2004); Rowan, Correnti, & Miller (2002); Sanders (1998); Wayne & Youngs (2003); Nye, Konstantopoulos, & Hedges (2004).

<sup>2</sup> *New York Times*. Editorial, "Why the achievement gap persists." December 8, 2006, p. A34.

<sup>3</sup> See Neild, Useem, Travers & Lesnick, *Once and For All: Placing a Highly Qualified Teacher in Every Philadelphia Classroom* (2003), and Neild, Useem & Farley, *The Quest for Quality: Recruiting and Retaining Teachers in Philadelphia* (2005). See also Useem & Neild (2005).

<sup>4</sup> The district collected information from teachers on the subjects they taught. This information was matched with data on their credentials in order to compute a district-wide "highly qualified" figure. Two hundred of the 10,047 teachers who were deemed highly qualified taught more than one subject and were highly qualified in at least one of those subjects but not necessarily in all subjects. The district's analysis included all classroom teachers, not just those in the four core academic subjects targeted by NCLB.

<sup>5</sup> We use the term "emergency certification" interchangeably with "emergency permits" or "uncertified."

<sup>6</sup> See [www.teaching.state.pa.us](http://www.teaching.state.pa.us) for details on Pennsylvania's rules regarding "highly qualified" teachers.

<sup>7</sup> Hess & Petrilli (2006).

<sup>8</sup> When we refer to certification here, we are referring to teachers who are certified in *any* subject, not just in the subject(s) they are teaching.

<sup>9</sup> Neild, Useem, Travers & Lesnick (2003).

<sup>10</sup> In Figure 1, schools are categorized by level depending on their grade configuration for the specific year listed.

<sup>11</sup> See Governor's Commission on Training America's Teachers (2006).

<sup>12</sup> As the NCLB deadline approached, the decline in emergency permits accelerated, dropping from 841 to 423 between fall 2005 and fall 2006.

<sup>13</sup> In our analyses of the teaching credentials of middle grades' teachers, we looked only at those teaching in the district's middle schools (typically grades 6-8 or 5-8) because, in our data set, those in K-8 schools were coded by the district as "elementary teachers." Although the district initiated a policy of converting middle schools to K-8 schools in 2002-03, the numbers of middle school teachers in our data set had only declined from 1,971 in fall 2002 to 1,708 in fall 2005, and thus we are confident that the trends in our middle school data still tell an important story about what is happening to teacher credentials in the middle level.

<sup>14</sup> More than 90 percent of middle school teachers, for example, were elementary certified in Philadelphia in 1999-2000. See Useem, Barends, & Lindermayer (1999); Useem (2001).

<sup>15</sup> The district reports that many middle grades teachers did indeed go about complying with the NCLB requirement that they demonstrate expertise in one of four core subject areas by taking the relevant PRAXIS subject examination or by signing up for an alternate method (HOUSSE) of adding a certification that included credit for years of experience, coursework and professional development. District officials say

that a total of 340 teachers met the deadline for signing up for participation in the HOUSSE program in order to add a middle-level certificate to their existing elementary certificate. According to the district, by January 2005, 519 teachers had at least one middle years certificate compared to only 238 the previous year.

<sup>16</sup> See Neild, Costelloe, Farley & Useem (2006a & 2006b). Our 2006 survey and interview data with special education teachers in the Accelerated Certification for Teachers (ACT) program indicated that turnover could be reduced if special education teachers, both new and veteran, got more assistance from administrators and other mentors. We interviewed 36 ACT teachers and surveyed 119 (56 percent of all those who completed or remained enrolled in the program) in four districts in Pennsylvania, the majority of whom were from Philadelphia. Many of the ACT teachers in special education said they were unprepared and under-supported. They were frequently assigned to coaches and mentors who had no expertise in special education.

<sup>17</sup> By late November 2006, 86 new teachers were teaching on emergency permits.

<sup>18</sup> For a first-hand description of the contribution of teacher vacancies to chaotic school climates, see Asquith (2006).

<sup>19</sup> Susan Snyder & Martha Woodall, "Showdown over unrest in schools." *Philadelphia Inquirer*, March 11, 2007, p. A1.

<sup>20</sup> Susan Snyder, "Teacher firings in Philadelphia are up." *Philadelphia Inquirer*, April 10, 2006, p. B1

<sup>21</sup> See Walters (2006) for a full summary of results of principal, teacher, and student surveys administered by the district's research office in May and June of 2006. Seventy-one percent of the principals responded to the survey.

<sup>22</sup> Teachers' seniority in a given school building gives them opportunities for extra pay for additional duties.

<sup>23</sup> Certified teachers with an Instructional I certificate received up to \$1,000 a year in tuition reimbursement after completing one year as a regularly appointed teacher, in order to pay for coursework required for the Level II ("permanent") certificate. This type of benefit is common in suburban schools and is one that is commonly cited among teachers as an important incentive to work in a district.

<sup>24</sup> These bonuses were a holdover from an agreement between the PFT and the administration of David W. Hornbeck (1994-2000). The "incentive school" provision in the 2004 contract, describe in Section V, replaced this particular bonus plan.

<sup>25</sup> The percentage of student teachers and practicum students accepting jobs in the district has been disappointingly low in recent years. Between 2002-03 and 2005-06, the district hired between 107 and 132 new teachers each year who had, at some point, done their student teaching or practicum work in the system.

<sup>26</sup> Useem & Farley (2004) describe the system that was in place prior to the 2004 PFT-district contract and compare it to that of suburban Philadelphia districts and of other large urban districts in the US.

<sup>27</sup> Useem (2003).

<sup>28</sup> For the 2006 hiring season, 50 schools voted to be full site selection, and the district mandated that 13 other high-need schools participate in full site selection as well. For 2007, a total of 74 schools will be full site selection, 59 of them by virtue of a faculty vote.

<sup>29</sup> The staff selection committees at each school include two teachers, a parent, an assistant principal (where applicable), and the principal.

<sup>30</sup> 555 vacancies were filled in 2005 by the July 31<sup>st</sup> “early fill” site selection date; 850 were filled by this same date in 2006.

<sup>31</sup> The district considers new and transferring teachers to be on “special assignment” if they are placed after July 31<sup>st</sup> of a hiring season which means that principals can choose not to retain them after their first year. In 2005 and 2006, some principals argued that it was better to let HR handle the hiring after July 31<sup>st</sup> since the late hiring gave principals a way to look over new teachers during the school year.

<sup>32</sup> 342 veteran teachers site selected by July 31 in 2005 (62 percent of the 555 who site selected by that date) and 550 did so in 2006 (65 percent of the 850 site selected teachers).

<sup>33</sup> For a description of the ways in which late hiring, seniority-driven practices, and overly bureaucratic policies hamper the recruitment of qualified teachers in urban districts, see Johnson & Liu (2004), Levin & Quinn (2003), and Levin, Mulhern & Schunck (2005).

<sup>34</sup> Governor’s Commission on Training America’s Teachers (2006).

<sup>35</sup> The PFT’s Career Development Program will help fund the training of district para-professionals for teacher certification in shortage subject areas. Participants must commit to accepting a teaching job (if offered) at the end of their training.

<sup>36</sup> There were 60+ New Teacher Coaches in 2003-04 and 2004-05 and 52 during 2005-06.

<sup>37</sup> Neild, Useem & Farley (2005); Useem & Costelloe (2004). See also Smith & Ingersoll (2004) for evidence nationally on the impact of mentoring.

<sup>38</sup> Neild, Useem & Farley (2005).

<sup>39</sup> Neild, Useem, Travers & Lesnick (2003); Neild, Useem & Farley (2005). Unfortunately, the district codes middle grades teachers in K-8 schools as elementary teachers so we are not able to compare their turnover rates with those of middle school teachers.

<sup>40</sup> Neild, Useem, Travers & Lesnick (2003).

<sup>41</sup> Benner (2000).

<sup>42</sup> See Useem’s (2003) findings from a three-year study of new teacher retention in Philadelphia’s high-poverty middle schools. See also Guarino, Santibanez & Daley (2006) for a review of factors leading to attrition.

<sup>43</sup> Salary figures are from *Report Card on the Schools, Philadelphia Inquirer*, April 2, 2006, p. S4. The article includes salary data from districts in five counties: Bucks, Chester, Delaware; Montgomery; and Philadelphia.

<sup>44</sup> Ingersoll (2002) and Ingersoll & Smith (2003).

<sup>45</sup> See Johnson & Peske (2004) for a discussion of this trend.

<sup>46</sup> Neild, Useem, Travers & Lesnick (2003); Neild, Useem & Farley (2005).

<sup>47</sup> Clotfelter, Ladd, Vigor & Wheeler (2007); Guarino, Santibañez & Daley (2006); Gula *et al.* (2006); Lankford, Loeb & Wyckoff (2002); Peske & Haycock (2006).

<sup>48</sup> We define “years of experience” as years teaching in the Philadelphia school district. Years of teaching in other systems were not counted.

<sup>49</sup> Clotfelter, Ladd & Vigdor (2007); Harris & Sass (2007); Rockoff (2004).

<sup>50</sup> Clotfelter, Ladd & Vigdor (2007); Hanushek, Kain, O'Brien & Rivkin (2005); Nye, Konstantopoulos & Hedges (2004); Powers, (2004).

<sup>51</sup> See Bryk & Raudenbush (1992) for an explanation of hierarchical linear modeling.

<sup>52</sup> Chester, Offenbergs & Xu (2001); Education Law Center (2004); Neild, Useem, Travers & Lesnick (2003); Neild, Useem & Farley (2005).

<sup>53</sup> Chester, Offenbergs & Xu (2001).

<sup>54</sup> For purposes of these analyses, we defined "minority" students as those who were "non-white." It should be noted that most of the district's schools have very high percentages of minority students: 71.1 percent of the elementary/K-8 schools, 71.3 percent of middle schools and 52.5 percent of the high schools had student bodies that were 90 percent to 100 percent minority, and, as the graphs show, except for elementary schools, there were no sites that were less than 40 percent minority.

<sup>55</sup> These relationships were significant at the .05 level or less.

<sup>56</sup> The correlation between the percentage of minority students with teachers' average years of experience was .55 and .54 for elementary/K-8 schools and middle schools respectively, and was .42 for high schools.

<sup>57</sup> Under the previous contract (2000-2004), 15 schools in 2002, 31 schools in 2003 and 45 schools in 2004 chose to be full site selection.

<sup>58</sup> The results in Table 5 compare the actual 2005 experience levels of faculty to expected values for them derived from our three-year HLM models.

<sup>59</sup> We set our criterion for a "meaningful experience difference" at one standard deviation of the difference between the HLM-based predictions and the actual experience of teachers at each school.

<sup>60</sup> At the high school level, there were no incentive schools, only full site selection, and those were an unusual group. Three had specialized student bodies and one was run by an external management group. Only one was a neighborhood comprehensive school. The experience of the faculties of three of these schools fell within the expected range, while the experience levels of two of the faculties were below it.

<sup>61</sup> Darling-Hammond & Berry (2006).

<sup>62</sup> See Bess Keller, "Teacher-Incentive Plans Geared to Bonuses for Individuals." *Education Week*, Nov. 15, 2006, p. 7.

<sup>63</sup> Governor's Commission on Training America's Teachers (2006).

<sup>64</sup> Between 2003 and 2006, we evaluated a federally funded alternate route teacher certification program, the Accelerated Certification for Teachers (ACT) Program, administered by the Pennsylvania Department of Education (Neild, Costelloe, Farley & Useem, 2006a & 2006b).

<sup>65</sup> Correlations of HLM-based estimates of the faculty experience and actual experience in the pre-contract years were .719 for the elementary/K-8, .778 for the middle, and .820 for the high schools.

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