# Principal and Teacher Leadership in Chicago:

**Early Evidence on Two Initiatives** 

March 2004

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Prepared for The Chicago Public Education Fund

The Chicago Public Education Fund



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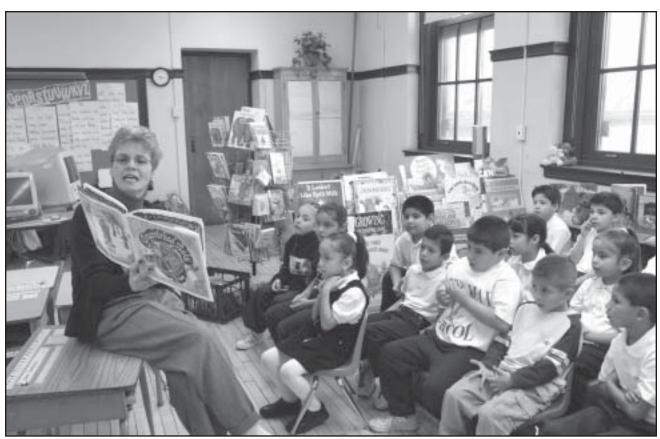
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John Booz

## **EXECUTIVE SUMMARY**

he purpose of this study was to gather initial evidence about the performance of LAUNCH principals and National Board Certified teachers, particularly whether they are building the capacity of their schools to improve student learning, and for LAUNCH principals, whether learning gains are larger in their schools than in others. The Chicago Public Education Fund invests in both programs. The results are based on data from the annual compilation of test scores and regular, biannual surveys conducted by the Consortium on Chicago School Research. This was a small-scale study designed to provide preliminary findings and a baseline for monitoring progress in the future. The results are somewhat encouraging, particularly for National Board Certified Teachers.

#### **LAUNCH**

LAUNCH has been able to recruit and place Latino principals, who traditionally have been underrepresented in CPS.

LAUNCH principals and the vast majority of other new and veteran principals received their advanced degrees and certification through Chicago-area universities, suggesting that these institutions could be fertile ground for strengthening principal preparation.

Most LAUNCH graduates had taught for 16 years or more before assuming the role of principal. They have been in their current positions about two years, and expect to stay for only another six and one-half years.

LAUNCH graduates appear to be more active than other new or veteran principals in obtaining professional development for themselves and their faculties.

Teachers did not rate LAUNCH principals any differently than other new principals or veteran principals with respect to leadership competence. Since LAUNCH principals are relatively new, this is not surprising.

Gains in student learning were slightly better for schools led by LAUNCH principals than schools led by other new principals, but the differences were very small. There were no differences in learning gains between LAUNCH principals and veteran principals. It is still early to expect substantial impact of LAUNCH on student outcomes.

LAUNCH principals reported several major roadblocks to improving student learning: lack of time for teacher planning and professional development; difficulty removing poor teachers; social problems in the school's community (poverty, gangs, drugs, etc.); parents who are apathetic or irresponsible about their children; and problem students (apathetic, hostile, etc.).

#### **National Board Certified Teachers**

The vast majority of board-certified teachers work in regular, low-income Chicago public schools—not magnet and charter schools. This is in stark contrast to the rest of the country, where such teachers work in mostly affluent communities that have strong schools.

Although there was variation between elementary schoolsand high schools, candidates and board-certified teachers were often more likely than other teachers to be actively involved in professional development and to show more intense commitment to their school.

Principals often rated board-certified teachers as extraordinary with respect to their competence in teaching, diagnosing students' needs, setting high standards, pacing instruction, and helping other teachers.

Board-certified teachers were twice as likely as other teachers to hold leadership roles, such as Local School Council representative, reading specialist or facilitator, lead teacher, or union delegate. Principals stated that about two-thirds of these teachers led professional development activities.

Schools with clusters of candidates and/or board-certified teachers showed more intense involvement of teachers in schoolwide decisions, a stronger orientation toward innovation, and a slightly stronger sense of teacher responsibility for the entire school.

In conclusion, the Chicago Public Education Fund has invested in programs that show promise. The evidence for LAUNCH was more neutral, but it is early in the new principals' tenure to expect differences in teachers' ratings and student outcomes. The Fund's investment in board-certified teachers is helping the city's school system provide high-caliber teachers for schools that may not otherwise be able to attract them.

## INTRODUCTION

he Chicago Public Education Fund (the Fund) requested assistance from the Consortium on Chicago School Research to analyze standardized test score results and data from the spring 2003 principal and teacher surveys. The intent of the analysis was to examine evidence of professional performance of principals and teachers who participated in leadership development programs. The principal leadership programs include Leadership and Urban Network for Chicago (LAUNCH) and New Leaders for New Schools (NLNS). The teacher development program is the National Board of Professional Teaching Standards (NBPTS). Since these are new programs, it was acknowledged that the sample sizes would be small in 2003, but could serve as a baseline upon which to build further information in the future. Furthermore, analysis of extant data would be a cost-effective way to gather useful information.

#### **LAUNCH**

Begun in 1998, LAUNCH is a professional development program created to accelerate, intensify, and deepen the knowledge, skills, and experience of principal candidates. LAUNCH is designed to enhance the quality of potential principal candidates by recruiting, identifying, preparing, and supporting promising individuals who aspire to be principals in the Chicago Public Schools (CPS). According to Fund reports, 160 individuals have completed the program, 55 currently serve as principals, 60 are assistant principals, and 13 graduates have retired or left CPS. Since 1999, CPS has invested \$4,800,000 in LAUNCH, and since 2000, the Fund has invested \$545,000.

At the time of the survey, there were three principals who had graduated from NLNS, and they had served less than one year as principals. Only one of the three participated in the survey. Consequently, the program was too new and too small to include in this report.

#### **Data Sources**

We draw on three broad sources of data—the Consortium's 2003 survey results, Iowa Tests of Basic Skills (ITBS) scores, and in a few cases, CPS personnel records. Because the Consortium surveyed Chicago principals in spring 2003, our focus was LAUNCH graduates who were the principal of their school by at least February 2003. This included 38 principals—32 from elementary schools and six from high schools. Of these 38 LAUNCH principals, 21 elementary and three high school principals completed the 2003 principal survey, yielding an overall response rate of 63 percent. While more LAUNCH graduates have served as principals, some did so in years prior to 2002-2003 and then went into other positions or left the system; a large group was appointed after February 2003.

The principal survey provides information about principals' backgrounds, their plans for the future, their efforts to recruit teachers, their own professional development and that of their staff, and the roadblocks they confront as they try to improve their schools. In addition, in order to capture teachers' views of principal leadership, we draw on the survey responses of teachers in the same schools. Finally, using ITBS scores from 1997 to 2003, we calculate the average learning gains made by students in the elementary schools led by LAUNCH principals and compare these average gains with those of other new principals and veteran principals.

#### Who are the LAUNCH principals?

- Thirty-nine percent of LAUNCH elementary school principals are men, and this proportion is similar to other new principals (up to five years of experience) and veteran principals (more than five years of experience).
- Compared to other principals, twice as many LAUNCH elementary school principals are Latino (28 percent), and relatively fewer are white.
- Similar to new and veteran principals, the vast majority of LAUNCH elementary principals hold a Master's degree.
- LAUNCH elementary and high school principals earned their highest degree and principal certification exclusively from universities in the Chicago area.
- All LAUNCH elementary school principals had at least five years of teaching experience before becoming a principal, with the majority having 16 or more years. In this regard, they were similar to other new principals but had somewhat more teaching experience than did veteran principals.

#### **About Consortium Surveys**

The Consortium on Chicago School Research has been surveying Chicago Public School teachers, students, and principals on a regular basis since the early 1990s. Recently, these surveys have been conducted every two years in the late winter or spring. About half of the survey items measure the Essential Supports for Student Learning, a set of organizational characteristics that are evident in improving schools. These include school leadership, parent and community partnerships, student-centered learning climate, professional capacity, and quality of instruction. Results from the survey are reported back to schools to assist them in planning and evaluating their programs. A second half of the survey contains special topic questions. Recently, these have included questions about external partners, the use of technology, and in 2003, questions about National Board Certification for teachers. In 2003, a total of 12,541 teachers completed the survey, for a response rate of 49 percent. Three hundred twenty-six principals, or 56 percent of the total, also participated in the Consortium survey.

- On average, LAUNCH principals have been in their position for two years.
- On average, LAUNCH elementary school principals anticipate serving for another 6.5 years as a principal, most of this at their current school.
   LAUNCH high school principals planned to leave their current school a little sooner but remain a principal about the same number of years.

Tables 1-6 document these summary statements about LAUNCH principals' characteristics and plans for the future, and how they compare with new principals and veteran principals. It is worth noting that about half the elementary school principals have five or fewer years of experience. Since we have survey data for only three high school principals, for confidentiality reasons, we do not report the results.

Table 1
Gender and Race/Ethnicity of Elementary School Principals

	Percent of Principals		
	LAUNCH	Other New Principals (0-5 yrs)	Veteran Principals (>5 yrs)
	n=32	n=206	n=238
Male	39	42	40
African-American	44	56	43
Latino	28	11	14
White	28	33	42

Source: CPS personnel records

Table 2
Academic Degrees of Elementary School Principals

	Percent of Principals			
	LAUNCH Other New Vetera Principals Principals (0-5 yrs) (>5 yrs)			
	n=32	n=206	n=238	
Bachelor's degree	3	4	6	
Master's degree	88	88	79	
Doctorate	9	8	15	

Source: CPS personnel records

Table 3
Universities Granting LAUNCH Principals
Certification and Highest Degrees

n=23

Chicago State University	
DePaul University	
Governors State University	
Loyola University	
National Louis University	
Northeastern Illinois University	
Roosevelt University	
University of Illinois at Chicago	
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Source: CCSR 2003 principal survey.

Results were similar for other new and veteran principals.

Table 4
Years of Teaching Prior to Becoming Elementary School Principal

	Percent of Principals			
Years of Teaching	LAUNCH Other New Veter Principals Principals (0-5yrs) (>5 y			
	n=21	n=112	n=127	
0-5	0	2	5	
6-15	43	32	46	
16 or more	57	66	50	

Source: CCSR 2003 principal survey

Table 5
Tenure as Elementary School Principal

Average Number of Years			
LAUNCH	New Principals	Veteran Principals	
n=32	( <b>0-5 yrs)</b> n=206	<b>(&gt;5 yrs)</b> n=238	
2.1	2.4	10.6	

Source: CPS personnel records.

Table 6
Future Plans of Elementary School Principals

	Average Number of Years		
How many more years do you expect	LAUNCH	Other New Principals (0-5 yrs)	Veteran Principals (>5 yrs)
to:	n=21	n=114	n=124
serve as principal of this school?	5.4	5.9	4.5
work as a principal?	6.5	6.1	4.3
work in education?	7.3	7.5	5.3

Source: CCSR 2003 principal survey

Do LAUNCH principals regularly obtain professional development for themselves?

 Yes, the LAUNCH elementary school principals report spending twice as much time as veteran principals and almost twice as much time as other new principals on professional development. This is consistent with the LAUNCH Doctrine, a set of performance standards and benchmarks for school leadership (see Table 7). Have LAUNCH principals tried to reshape their faculties?

Yes, to some extent.

There are three ways principals can strengthen their faculties—through staff development, hiring new teachers, and encouraging nonperformers to leave. LAUNCH elementary school principals reported spending more time on staff development than did either new or veteran principals (see Table 8).

Table 7
Time Spent on Principal Professional Development (Elementary)

Average Hours Spent Each Week			
LAUNCH Other New Principals Veteran Principals (0-5 yrs) (>5 yrs)			
n=21	n=115	n=129	
4.1	2.3	1.9	

Source: CCSR 2003 principal survey.

Table 8
Time Spent on Planning and Conducting Staff Development
(Elementary)

Average Hours Spent Each Week			
LAUNCH n=21	Other New Principals (0-5 yrs) n=115	Veteran Principals (>5 yrs) n=129	
11-21	11-115	11-129	
5.5	3.8	3.3	

Source: CCSR 2003 principal survey

On average, LAUNCH principals also reported selecting and hiring eight teachers during the previous two years. This compares with six teachers for new principals and six among veteran principals (typical schools have about 35 teachers). In addition, on average, LAUNCH principals stated that they had encouraged two teachers to leave during the previous two years (new and veteran principals reported similarly). Thus, most of the hiring probably was to replace teachers who had left for various reasons or to add more staff if enrollment increased. While we do not know the details about why teachers were hired, it is significant that in the course of two years, most principals, regardless of whether they were LAUNCH graduates, have had considerable opportunities to shape their faculty through new hires.

How do teachers in their schools rate LAUNCH principals as leaders?

 Results, on average, showed that teachers did not provide different ratings of leadership for LAUNCH principals, other new principals, or veteran principals. Since LAUNCH principals are new to their roles, this is not surprising. In their surveys, teachers answered a series of questions about their principal with respect to four different aspects of leadership: instructional leadership, opportunity for teacher leadership, promoting program coherence, and teacher-principal trust. For each topic, there are eight to ten related questions that form a coherent measure or scale. Historically, we have found that Chicago elementary schools with the highest ratings on leadership are much more likely than other schools to show substantial learning gains in reading and math, as measured by the ITBS. The converse is also true: schools with very low ratings on leadership are much more likely to be stagnant, i.e., show flat or declining test scores. See the box for a description of each scale.

We examined whether, on average, there were any differences in the way that elementary school teachers rated LAUNCH principals, other new principals, and veteran principals on four measures of leadership. We conducted the analysis in a way that controlled for other factors that might influence teachers' ratings.<sup>3</sup> There was no evidence that teachers rated the LAUNCH principals any higher than other new principals or experienced principals. Since it generally takes at least three years for a new principal to

#### Measures of How Teachers Perceive Their Principals as Leaders

Principal Instructional Leadership measures whether teachers view their principal as an instructional leader with respect to teaching and learning standards, communication of a clear vision for the school, and tracking academic progress.

Teacher Influence measures the extent of teachers' involvement in school decision-making. It assesses teachers' influence on selecting instructional materials, setting school policy, planning in-service programs, allocating discretionary funds, and hiring professional staff.

PROGRAM COHERENCE reflects the degree to which teachers feel the programs at their school are coordinated with each other and with the school's mission. Teachers are asked if instructional materials are consistent within and across grades, and if there is sustained attention to the quality of program implementation.

Teacher-Principal Trust indicates the extent to which teachers feel their principal respects and supports them. Teachers responded to questions about whether the principal looks out for their welfare, has confidence in their expertise, and if they respect the principal as an educator.

be fully integrated into the role, it may be too early to identify potential differences, and we should view these results primarily as a baseline for judging future measures.

Have LAUNCH elementary school principals been able to produce higher learning gains on the ITBS than new or veteran principals?

 The LAUNCH principals showed a very small advantage in reading learning gains over other new principals, and LAUNCH gains looked very similar to the average for veteran elementary school principals.

To estimate learning gains in reading, for each year that a principal led his or her school, we compared the learning gains on the ITBS for each grade level with average gains in Chicago for that grade level for that year. This allowed us to calculate whether students in each school were making larger or smaller gains than expected. We then analyzed whether there were any differences in the learning gains between schools led by LAUNCH principals, other new principals (who were in their position in 1999 or later), and veteran principals. We also conducted the analysis in such a

way that we could control for other factors that usually influence learning gains.<sup>4</sup>

The results showed that schools with new principals had slightly lower learning gains on average than schools with veteran leaders. However, schools led by LAUNCH principals did not show the slightly smaller learning gains that were evident in schools led by other new principals. Although the difference was statistically significant, in practical terms it was very small—only about 1.5 percent per year. (There were too few LAUNCH high school principals to conduct a similar analysis.)

How should we interpret these results? First, since LAUNCH principals were in their positions on average only two years, it is unrealistic to expect that their schools would make higher-than-average gains. The fact that they performed slightly better than other new principals is encouraging, and we should continue to monitor results in the coming years to confirm that this is a trend. Second, although we introduced statistical controls for the characteristics of student and community populations into the analysis, clearly there are still other factors that can influence student outcomes. For example, a new principal entering a school with a stable, qualified faculty will have a much better chance of leading a successful improvement effort than would

a new principal who had many unqualified teachers or a great deal of staff turnover. We know that in the long run, effective leadership pays off. But in the short run, leaders will confront different kinds of challenges that ultimately affect student outcomes, and for this study we were unable to measure or control for these challenges.

# What do LAUNCH principals identify as the main roadblocks that impede school improvement?

• They said: lack of time for teacher planning and professional development; difficulty removing poor teachers; social problems in the school's community (poverty, gangs, drugs, etc.); parents who are apathetic or irresponsible about their children; pressure to get test scores up quickly; and problem students (apathetic, hostile, etc.).

In general, there was agreement among LAUNCH, new, and veteran principals about the most serious factors. One exception was that relatively fewer LAUNCH principals reported that pressure to raise test scores was a serious roadblock. More importantly, all principals pointed to problems both within the school and out in the community that impede progress.

These results are based on principals' responses to the following question: "Below are several factors which could be considered as 'roadblocks' that prevent a school from improving. Please indicate the extent to which each may be a factor in preventing your school from improving." From a list of 25 possible roadblocks, principals identified six as the most common. Two-thirds to three-quarters of them considered these roadblocks as a serious factor or somewhat of a factor. Table 9 shows the results.

Table 9
Roadblocks That Prevent the School from Improving

	Percent of Principals		
Roadblocks	LAUNCH	Other New Principals (0-5 yrs) n=114	Veteran Principals (>5 yrs) n=127
Lack of time for teacher planning and	11-21	11-11-	11-121
professional development			
Serious factor	38	31	39
Somewhat a factor	29	46	43
Difficulty removing poor teachers		<del></del>	
Serious factor	35	43	24
Somewhat a factor	30	24	45
Social problems in the school's community (poverty, gangs, drugs, etc.)			
Serious factor	33	33	31
Somewhat a factor	38	35	43
Parents apathetic or irresponsible about their children			
Serious factor	33	30	27
Somewhat a factor	29	53	54
Pressure to get test scores up quickly			
Serious factor	29	44	42
Somewhat a factor	43	45	38
Problem students (apathetic, hostile, etc.)			
Serious factor	24	24	19
Somewhat of a factor	48	56	56

Note that principals could also mark, "not a factor," which is not shown.

Source: CCSR 2003 principal survey

### NATIONAL BOARD CERTIFIED TEACHERS

he National Board for Professional Teaching Standards (NBPTS) was established to elevate the teaching profession by providing an advanced, rigorous level of certification. NBPTS began certifying teachers in 1995. Since that time, the federal government and private sources have provided over \$200 million to support NBPTS, and states and districts have also spent substantial amounts on application fees and incentives. Nationwide, about 24,000 teachers have obtained National Board Certification.<sup>5</sup>

The process of becoming a National Board Certified teacher involves completing an extensive portfolio that includes unedited videotapes of the candidate's work in the classroom, analysis of student work, and evidence of the effectiveness of instructional strategies. In addition, teachers provide evidence of their successful work with students' families, the community, and with their professional colleagues. Candidates also sit for a series of six examinations at an assessment center. The prompts are designed to elicit knowledge of subject-matter content for the area of specialization. Candidates must demonstrate a knowledge base that meets the rigorous standards of the NBPTS.

Portfolios and content examinations are scored by highly trained classroom teachers (many, but not all, are National Board Certified teachers). The scorers receive extensive training to avoid bias and achieve reliability in scoring. Educational Testing Service created and administers the assessments.

By the end of 2003, the Fund had invested \$2.2 million, and CPS had provided \$4.7 million. The Fund's investment supported preparation programs and a monetary "giveback" incentive for teachers who achieve certification.

In its 2003 teacher survey, the Consortium included a series of questions for teachers who were in the process of obtaining or had already received certification by NBPTS. This permitted us to compare National Board Certification candidates and certificate holders with other similar teachers on questions of interest, such as the amount and quality of professional development they receive, the level of professional community (teamwork) in the school, their personal commitment to the school, their orientation to innovation, and whether they had assumed leadership roles in their school. In addition, we inserted a new page of questions on the principal questionnaire, which asked principals to rate the effectiveness of National Board Certified teachers compared to other experienced teachers.

#### Survey Respondents

In spring 2003, when the Consortium conducted its biannual survey of elementary and high school teachers, Dorothy Pandel, the Chicago Coordinator of NBPTS, reported that there were 149 teachers who had obtained National Board Certification. Another six individuals were also board certified, but they had left the classroom to become administrators or work at other institutions.

Although the vast majority of the 12,541 teachers who responded to the survey provided accurate information on the questions regarding National Board Certification, about 430 teachers appeared to confuse the National Board Certification program with basic certification, and indicated that they were board certified when they were not. Since the surveys are confidential and respondents do not supply their names,

Consortium researchers had to go through a painstaking process to eliminate the faulty survey responses. Survey respondents were eliminated if they provided contradictory responses, if they were from schools where we know there are no National Board Certified teachers, or if they did not match known records on race and ethnicity, gender, and subject taught. This process resulted in a survey sample of 65 board-certified teachers—55 who taught in elementary schools and 10 who taught in high schools, or 44 percent of the board-certified teachers in CPS.<sup>7</sup>

With respect to candidates who are in the process of obtaining National Board Certification, we had to go through a similar process of eliminating faulty responses. This resulted in a survey sample of 124 teachers, or about 40 percent of the candidates in CPS. (Some candidates had submitted portfolios and taken examinations but did not pass all the components and were in the process of retaking some parts.) Ninety-four were elementary school teachers, and 30 were high school teachers.<sup>8</sup>

While there was some confusion about the National Board Certification program, it amounted to less than 5 percent of the teachers who participated in the survey.

# Who are the board-certified teachers and candidates in Chicago?

- Board-certified teachers are primarily white women. However, candidates are more similar to the overall teacher population with respect to gender and race/ethnicity. This difference could mean that in recent years, CPS and the Chicago Teachers Union (CTU) have been able to recruit relatively more men, African-American, and Latino teachers to the program.
- In elementary schools, a much higher percentage of board-certified teachers have Master's degrees and additional academic credits than candidates

and other teachers, and more candidates have advanced degrees than other teachers. In high schools, this is not the case, but because we have data on so few board-certified and candidate high school teachers, these data may not be representative.

- The majority of board-certified teachers and candidates in elementary schools have two to 15 years of experience. Relatively fewer elementary-school candidates have more than 15 years of experience, compared to the other two groups.
- In general, the vast majority of board-certified teachers work in regular schools, and the percentage teaching at elementary and high schools is similar to that for all CPS teachers. But boardcertified teachers are more likely than other teach-

ers to work at magnet schools (15 percent versus 8 percent).

A recent study of North Carolina certificate holders also showed that they were more likely to be white women. More importantly, board-certified teachers were most likely to be in schools with fewer children in poverty, fewer minority children, higher performance according to state accountability standards, and more college-educated residents and higher median housing values. Hence, the Chicago initiative to encourage teachers to obtain the credential is critical for recognizing and providing incentives for highly qualified teachers to serve low-income communities.

Tables 10 to 13 document these summary statements about the characteristics of board-certified teachers and candidates and how they compare to elementary and high school teachers overall.

Table 10
Teachers' Gender, Race, and Ethnicity

	Percent of Teachers			
	Board Certified (n=50)	Candidates (n=76)	Other (n=6560)	
Elementary				
Male	10	14	15	
African-American	19	30	30	
Latino	4	21	15	
White	77	39	45	
Other	0	10	9	
	Board	Candidates	Other	
	Certified			
	(n=9)	(n=30)	(n=2148)	
High School				
Male	22	46	43	
African-American	12	33	28	
Latino	0	7	8	
White	88	48	50	
Other	0	11	15	

Source: CCSR 2003 teacher survey

Table 11
Teachers' Academic Degrees

	Percent of Teachers		
	Board Certified (n=48)	Candidates (n=86)	<b>Other</b> (n=7548)
Elementary School			
Bachelors' degree	17	36	47
Master's degree (plus credits)	83	64	52
Doctorate	0	0	1
	Board Certified (n=10)	Candidates (n=28)	<b>Other</b> (n=2879)
High School			
Bachelors' Degree	50	32	34
Master's degree (plus credits)	40	68	63
Doctorate	10	0	3

Source: CCSR 2003 teacher survey

Table 12
Teachers' Years of Experience

	Percent of Teachers			
	Board Certified (n=49)	Candidates (n=86)	<b>Other</b> (n=7412)	
Elementary				
First year teacher	0	0	5	
2-15 years	61	71	58	
> 15 years	39	29	37	
	Board Certified	Candidates	Other	
	(n=8)	(n=29)	(n=2620)	
High School				
First year teacher	0	0	5	
2-15 years	50	59	54	
>15 years	50	41	41	

Source: CCSR 2003 teacher survey

Table 13
Where Board-Certified Teachers Work

	Percent of Teachers		
Level	Board Certified	Other	
	(n=149)	(n=26,045)	
Elementary	79	72	
High School	16	22	
Combo elementary-high school	4	5	
Туре			
Regular	79	90	
Preschool	<1	<1	
Magnet	15	8	
Charter	2	2	
Special	4	<1	

Source: Chicago Office of NBPTS and CPS administrative records

Are National Board Certified teachers and candidates more likely than other teachers to demonstrate practices that are essential to the improvement of student learning?

 At the elementary level, candidates reported higher quality and more professional development than did other teachers. Both board-certified teachers and candidates indicated stronger commitment to their school. In high schools, both board-certified teachers and candidates reported more professional development than other teachers.

In this part of the analysis, we focused on three aspects of professional capacity, one of the organizational supports that is evident in improving schools. We asked teachers a series of questions about the amount of professional development they had obtained, the quality of their professional development, and their degree of personal commitment to the school. Most of these questions have been used for over a decade and have been shown to tap critical behaviors that differentiate high-performing schools from stagnant schools.

Regarding the amount of professional development, teachers indicated how often they attended professional development activities sponsored by the school, district, or union; took continuing education courses at a college or university; and networked with teachers from other schools. Among elementary schools, we found that candidates, but not board-certified teachers, attended these training programs and activities more frequently than did other teachers. Candidates' attendance at these events is not a surprise because they regularly participate in extensive preparation programs for meeting the standards of the NBPTS. Once teachers become board certified, this particular activity appears to diminish. At high schools, however, both board-certified teachers and candidates reported spending more time in training than other similar teachers.<sup>10</sup> (See Table 14.)

Similarly, with respect to the quality of professional development, we asked teachers to assess the degree to which professional development had influenced their teaching, helped them understand students better, and provided them with opportunities to work with colleagues and teachers from other schools. At elementary schools, we found that candidates, but not board-certified teachers, were more likely to be engaged

Table 14

How Board-Certified Teachers and Candidates Compare to Other Teachers on Professional Development and Commitment

	Board Certified	Candidates
Amount of Professional Development		
Elementary	0	+
High School	+	+
Quality of Professional Development		
Elementary	0	+
High School	0	0
Teacher Commitment to School		
Elementary	+	+
High School	0	0

Note: 0=no statistically significant difference from other teachers; +=statistically significantly higher level than other teachers.

Source: CCSR 2003 teacher survey

in high-quality professional development than other similar teachers. At high schools, there was no difference between board-certified teachers, candidates, and other similar teachers on this scale.<sup>11</sup>

Teacher Commitment to School was measured by whether teachers reported feeling loyal to their school, looked forward to going to work, would prefer to work elsewhere, and would recommend the school to parents. In elementary schools, board-certified teachers and candidates scored significantly higher than other similar teachers on this measure. In high schools, however, no differences were found.<sup>12</sup>

In summary, as expected, candidates participated in more professional development than other teach-

TEACHER INFLUENCE (leadership) measures the extent of teachers' involvement in school decision making. It assesses teachers' influence on selecting instructional materials, setting school policy, planning in-service programs, allocating discretionary funds, and hiring professional staff.

**PEER COLLABORATION** reflects responses about the quality of the relationships among faculty, whether staff coordinates teaching and learning across grades, and whether teachers collaborate in the design of new instructional programs.

**REFLECTIVE DIALOGUE** assesses how often teachers talk with one another about curriculum and instruction, the school's goals, and the best ways to help students learn and to manage classroom behavior.

COLLECTIVE RESPONSIBILITY measures the strength of teachers' shared commitment to improve the whole school. Questions ask teachers how many colleagues feel responsible for students' academic and social development, set high standards for professional practice, and take responsibility for school improvement.

Innovation captures the extent to which teachers feel they are continually learning and seeking new ideas, have a "can-do" attitude, and are encouraged to try new ideas in their teaching.

ers, and at the elementary level, the quality of that professional development was especially high. Since candidates probably were reporting on the preparation program in which they were enrolled, this suggests that those programs have provided valuable professional training and support. Once teachers achieved certification, however, they were no more likely than other teachers to obtain professional development. These results suggest two possibilities: that these teachers may have completed the rigorous certification process recently and were taking a break from professional development, or that board-certified teachers may be interested in establishing (with support from the school system and/or external organizations) some form of ongoing professional development. Currently, no systematic initiative exists. Finally, at least at the elementary level, both board-certified teachers and candidates showed higher levels of commitment to their school. This is not surprising, since the process of obtaining National Board Certification is grueling; at the same time, the process, and particularly the award of certification, may deepen teachers' commitment to their school.

Are schools with clusters of board-certified teachers and candidates more likely to show higher levels of professional capacity than other similar schools?

 Yes, we found teachers in schools with clusters of board-certified teachers and candidates exerted more influence on school decisions, showed a stronger orientation to innovation, and demonstrated a slightly higher level of collective responsibility.

We examined elementary schools and high schools with four or more teachers who were board certified and/or candidates for National Board Certification to see whether these schools appeared stronger overall with respect to measures of professional capacity than schools without clusters of such teachers. In other words, is there any evidence that a cluster of board-certified teachers and/or candidates helps to raise the overall performance of the faculty?

Specifically, we conducted an analysis that compared schools with clusters of National Board Certified teachers and candidates to other schools without such teachers on one measure of leadership and four measures of professional capacity. See sidebar for a description of the measures.

In addition, to ensure that our estimates were not confounded by other extraneous differences between schools, the analysis also held constant the size and type of school and the demographic characteristics of the students and neighborhood.<sup>13</sup>

There were 18 elementary schools and six high schools with clusters of four or more teachers who were board certified and/or candidates for certification (and who participated in the survey). The elementary schools with clusters of board-certified teachers and candidates showed higher levels of teacher influence and innovation and slightly higher levels of collective responsibility. Thus, in schools with board-certified teachers and candidates, there is evidence that all teachers (not only board-certified teachers and candidates) have more say in selecting instructional materials, setting policy for the school, and influencing decisions about budget and hiring. Similarly, schools with clusters of board-certified teachers and candidates overall show a stronger orientation toward innovation. The faculty is more likely to have a "can-do" attitude and is willing to try new ideas. Finally, the faculty in these schools shows a slightly stronger tendency to take responsibility for the betterment of the whole school and not only for their classroom.

We did not find differences among elementary schools with respect to peer collaboration and reflective dialogue, and with only six high schools, we did not find differences on any of the measures.

One other finding was notable. Among both elementary schools and high schools (even though there were only six), we found that schools designed to be small showed significantly higher levels of teacher influence and all four measures of professional capacity. (This analysis distinguished schools that are small by design from other schools with small populations due to declining enrollment.) Small elementary schools have no more than 350 students, and small high schools have up to 525 students. This may be of interest to the Fund, should it consider supporting small-school initiatives.

The results indicating more intense levels of teacher influence, innovation, and collective responsibility in elementary schools with clusters of board-certified teachers and candidates is encouraging. Past research has shown that teacher influence in school decisions, a sense of collective responsibility, and an orientation toward innovation are more evident among faculties of improving schools. Thus, it appears that schools with board-certified teachers and candidates are moving in a productive direction. On the other hand, schools that have strong faculty leadership may be more likely to encourage teachers to seek National Board Certification.

Do principals rate board-certified teachers more highly than other teachers with similar years of experience?

 Yes, in general, principals rated board-certified teachers more highly than other experienced teachers on instructional competence, managing classroom behavior, diagnosing students' needs, setting high standards, pacing instruction, enacting strategies learned from professional development, and helping other teachers.

Before discussing these results, it is worth noting that principals showed some confusion about the

Table 15
Principals' Ratings of National Board Certified Teachers
and Other Experienced Teachers

	Percent Elementary School Principals Rating (n=39)		Percent High School Principals Rating (n=11)	
	Board- Certified	Other Teachers w/ Similar	Board- Certified	Other Teachers w/ Similar
	Teachers	Experience	Teachers	Experience
Knowing the subject they teach and how to teach it				
Poor	0	0	0	9
Adequate	16	6	9	0
Very good	38	71	36	73
Extraordinary	47	23	55	18
Managing classroom behavior				
Poor	2	0	0	9
Adequate	26	17	18	18
Very good	31	63	36	55
Extraordinary	41	20	45	18
Diagnosing students' needs				
Poor	2	0	0	18
Adequate	21	17	18	18
Very good	39	66	36	45
Extraordinary	39	17	45	18
Setting high standards for student performance				
Poor	2	0	0	9
Adequate	17	9	9	27
Very good	35	57	36	27
Extraordinary	47	34	55	36
Pacing instruction so students meet grade-level expectations				
Poor	3	0	0	18
Adequate	20	20	9	18
Very good	23	63	45	36
Extraordinary	54	17	45	27
Implementing strategies learned in professional development				
Poor	3	0	0	9
Adequate	20	17	9	18
Very good	20	60	36	45
Extraordinary	57	23	55	27
Helping other teachers do their				
best				
Poor	6	0	0	9
Adequate	26	17	9	18
Very good	31	63	36	45
Extraordinary	37	20	55	27

Source: CCSR 2003 principal survey

National Board Certification program. Four principals said they did not have board-certified teachers when they did. Thirty-two principals answered the questions on National Board Certified teachers but did not have any board-certified teachers; 13 of these principals had teachers who were candidates for National Board Certification. Thus about 11 percent of the principals participating in the survey were unclear about the National Board Certification program and whether they had any teachers who were fully board certified. Considering the extensive efforts required for teachers to obtain certification, it is puzzling that school leaders would be unaware of their board-certified teachers, and it suggests that more work should be done to orient principals to the program and its benefits. This is particularly important if CPS wants to increase its cadre of National Board Certified teachers.

Turning to our results, we asked principals to rate board-certified teachers and teachers in their school with comparable years of experience on seven areas of competence. The questions asked, "Overall, how would you rate National Board Certified teacher(s) in your school on the following?" A second series of questions asked, "How would you rate other teachers in your school with comparable years of experience to the National Board Certified teacher(s) on the following?" These questions were derived from the tenets established by the NBPTS.<sup>14</sup> After removing the responses of principals who did not have board-certified teachers in their schools, there were 39 elementary school principals and 11 high school principals who provided responses to this series of questions. Table 15 displays the results.

In general, principals rated board-certified teachers as "extraordinary" and other experienced teachers as "very good." For example, regarding whether teachers know the subject and how to teach it, 47 percent of the elementary principals rated board-certified teachers as "extraordinary," versus only 23 percent of other

experienced teachers. Seventy-one percent of the principals indicated that other experienced teachers were "very good." The same pattern holds true for most of the seven professional attributes. Between 39 and 55 percent of all the principals who responded rated their board-certified teachers as "extraordinary," while 45 to 73 percent rated other experienced teachers as "very good."

Two exceptions to this pattern were that high school principals rated their other experienced teachers somewhat higher on setting standards for student performance and on pacing of instruction.

Overall, most principals expressed considerable respect for experienced teachers, but they generally gave "superior" ratings to their board-certified teachers. Elementary school principals gave the highest ratings to board-certified teachers for implementing strategies learned through professional development—57 percent rated board-certified teachers as "extraordinary" in this regard. The lowest ratings were for "helping other teachers do their best"—only 37 percent of principals considered the board-certified teachers "extraordinary" in this ability.

Are board-certified teachers more likely to assume leadership roles?

 Yes, in elementary schools, higher proportions of both board-certified teachers and candidates reported holding leadership roles.

Teachers were asked if they held a leadership position in their school, such as Local School Council (LSC) representative, Professional Personnel Advisory Committee (PPAC) chair, union delegate, curriculum coordinator or facilitator, reading specialist, lead teacher, or other leadership role. Fifty-three percent of elementary board-certified teachers and 36 percent

	Percent of Principals	
How frequently do board-certified teachers lead	Elementary	High School
professional development activities?	n=35	n=11
Rarely	34	18
Sometimes	31	55
Often	14	18
Regularly	20	9

Table 16
How Frequently Board-Certified Teachers Lead Professional Development

Source: CCSR 2003 principal survey

of candidates reported that they held one of these roles. This compares to 25 percent of other teachers.<sup>15</sup> Due to the small number of board-certified teachers in the high schools in this sample, the pattern is not quite as clear. Only one board-certified teacher out of nine reported a leadership role, compared to one out of four other teachers, and one out of three candidates reported leadership roles.

We also asked principals whether their board-certified teachers were "more likely than other teachers in your school with similar years of experience to hold leadership roles?" (For example, LSC representative, PPAC chair, union delegate, curriculum coordinator or facilitator, reading specialist, or lead teacher.)" The principals' responses were very similar in both elementary and high schools: 37 percent and 36 percent, respec-

tively, said yes.<sup>16</sup> While this is not as high as what the board-certified teachers and candidates reported for themselves, it is still higher than 25 percent, the proportion of other teachers who reported holding leadership positions.<sup>17</sup>

Finally, we asked principals how frequently board-certified teachers lead professional development activities. Principals generally reported that most board-certified teachers led professional development activities "sometimes, often, or regularly." Relatively few marked "rarely." Table 16 shows the results. Thus, many board-certified teachers appear to have been working with and training other teachers, and this is consistent with the vision the Fund has had for these teachers.

## INTERPRETIVE SUMMARY

he purpose of this analysis was to gain an initial understanding of the performance of LAUNCH principals and National Board Certified teachers, particularly whether there was evidence that they were building school organizational elements that would lead to improvements in student learning. Although it is very early in the LAUNCH graduates' tenure, we also wanted to see whether learning gains appeared any stronger in LAUNCH schools, compared to other schools. To obtain information in a cost-effective way, we capitalized on the Consortium's annual compilation of test scores and its regular, biannual surveys, the most recent one occurring in 2003. It was necessary to add a few questions to the regular teacher and principal questionnaires. Since the LAUNCH and National Board Certification programs are fairly new, we anticipated that sample sizes would be small but sufficient to provide initial evidence about the performance of individuals who had participated in these programs.

#### LAUNCH

A noteworthy accomplishment is that LAUNCH has been able to recruit and place Latino principals, who traditionally have been underrepresented in CPS. With 37 percent of the elementary student population of Latino heritage, this is a significant step toward recruiting school leaders similar in cultural background to many Chicago communities.

All LAUNCH principals and the vast majority of other new and veteran principals received their advanced degrees and certification through Chicago-area universities. Clearly, the more rigorous and effective these institutions are in training principals, the stronger the candidate pool for CPS. Aside from LAUNCH, university preparation programs also appear to be fertile ground for innovation and strengthening principal preparation, and the Fund has begun to invest in a new principal preparation program at the University of Illinois at Chicago.

LAUNCH graduates come to their task with extensive classroom experience. Most of them had taught for 16 years or more before assuming the role of principal. As expected, LAUNCH graduates are relatively new in their principal role, with the 2002-2003 principals having an average of two years experience. With so many years in the classroom, it is not surprising that LAUNCH principals expect to stay in the role for only another six and one-half years. Hence, on average, LAUNCH principals will serve a total of roughly two contracts of four years each.

Veteran principals reported an even shorter horizon about four years. Considering that these principals make up about half of all principals in the system, the school

system and the Fund are wise to make recruitment and development of leadership a high priority. Our analysis also showed that half the elementary school principals have five years or less experience, point-

... LAUNCH graduates appear to be more active than other new or veteran principals in getting professional development for themselves and their faculties.

ing to the ongoing need for opportunities for highquality professional development and participation in professional networks.

It turns out that LAUNCH graduates appear to be more active than other new or veteran principals in getting professional development for themselves and their faculties. This is encouraging since continuous learning by the principal and faculty is critical to building a successful instructional team. In addition, LAUNCH principals, similar to other principals, had the opportunity during the last couple of years to hire a significant proportion of their faculty. Both professional development and hiring are key elements of shaping a talented faculty.

Elementary school LAUNCH principals did not receive higher ratings from teachers than did other new or veteran principals on four aspects of leadership. These included how the principal performed with respect to instructional leadership, whether he or she welcomed and encouraged teachers' involvement in making decisions about the school, whether the prin-

cipal took a strategic approach and fostered coherence in administering the school, and the extent of trust between the principal and teachers. Since LAUNCH principals have only served an average of two years, it is too early to fully assess teachers' perceptions of principal leadership. It would be important to examine these ratings again over time as principals gain more experience and as more LAUNCH graduates assume principal roles.

When we estimated the learning gains in elementary schools led by LAUNCH principals, we found that these schools performed slightly better than schools led by other new principals, and they performed about the same as schools led by veteran prin-

cipals. Again, given the short tenure of LAUNCH principals, it is too early to measure their students' performance, so it is logical that the differences were tiny. It will be important to continue to moni-

tor student learning gains in the future as LAUNCH principals acquire more experience and as more LAUNCH graduates become principals.

Finally, we asked LAUNCH principals (along with other new and veteran principals) to report on the chief roadblocks they faced in improving their schools. They pointed to a combination of internal and external factors. Internal factors included lack of time for teacher planning and professional development, difficulty removing poor teachers, and pressure to raise test scores quickly (in comparison to others, LAUNCH graduates were less concerned about the latter). Since professional development for teachers and removal of weak teachers are key elements in shaping and strengthening a school's faculty, these concerns deserve attention. Such concerns raise questions about how principals can address these roadblocks and what support they may need in doing so.

The external factors principals most commonly identified were social problems in the school's community, apathy among parents, and problem students.

Again, these are serious challenges that require the assistance of the administration, LSCs, and social and community agencies. There are schools that have successfully encouraged parent and community involvement, and LAUNCH principals as well as other principals need the time and resources to learn about such efforts and to initiate work in these areas.

#### **National Board Certified Teachers**

Initially, National Board Certified teachers were mostly white women, but the candidate pool suggests that in recent years, CPS and the Chicago Teachers Union have been able to recruit relatively more men, African-Americans, and Latinos. The most recent data on the 2003 teachers who achieved board certification in Chicago bear this out. Of the 82 teachers who obtained board certification, 23 were African-American and three were Latino.<sup>18</sup>

In general, although they are slightly more likely than other teachers to work in magnet schools, the vast majority of board-certified teachers work in regular Chicago public schools. That these highly trained and specialized teachers serve Chicago's regular schools is in stark contrast to the circumstances in other parts of the U.S. A recent Urban Institute report indicates that in North Carolina, which has 25 percent of all board certified teachers in the U.S., these teachers primarily work in low-poverty, low-minority schools that meet state requirements.

We looked for evidence that board-certified teachers and candidates working toward certification demonstrated practices that historically have been important for improving student achievement. Two key areas are professional development and teachers' commitment to the school. Although there was variation between elementary schools and high schools and between candidates and board-certified teachers, we found that these teachers often were more likely than other teachers to be actively involved in professional development and to show more intense commitment to their school. In particular, results suggest that Na-

tional Board Certification candidates valued the professional training they received. Once teachers became board certified, however, it appears that they found fewer opportunities for ongoing professional development.

Principals generally were very complimentary of their board-certified teachers, often rating them as extraordinary with respect to their competence in teaching, diagnosing students' needs, setting high standards, pacing instruction, and helping other teachers. Some principals were confused about whether they had board-certified teachers, suggesting the need to reinforce awareness of the program and its benefits.

A central argument for supporting National Board Certification is that it will equip and recognize the strongest teachers and enable them to assume leadership roles in their schools. The Consortium's survey data suggest that this is happening. Board-certified teachers were twice as likely as other teachers to hold leadership roles, such as LSC representative, reading specialist or facilitator, lead teacher, or union delegate. In addition, principals reported that about two-thirds of their board-certified teachers led professional development activities, ranging from sometimes to regularly.

Finally, we found evidence that, in general, schools with clusters of candidates and/or board-certified teachers showed more intense involvement of teachers in schoolwide decisions, a stronger orientation toward innovation, and a slightly stronger sense of teacher responsibility for the whole school and not only their classrooms. We do not know, however, whether the cluster of National Board Certified teachers and candidates influenced these attitudes or whether schools that were already strong encouraged their teachers to seek board certification.

The early evidence is encouraging about the benefits of National Board Certification. In the future, when the data become available, it would be valuable to examine trends in the learning gains of students in board-certified teachers' classrooms compared to students in other classrooms.

### ENDNOTES

<sup>1</sup> The measures contained in this report were derived through Rasch-rating-scale analysis. Survey items are used to define a measure based on the relative probability of a respondent choosing each category for each item. Individuals are then placed on this scale based on their particular responses to the items in the measure. The scale units—logits—constitute a linear measurement system and therefore are suitable for use in statistical procedures. See Wright, B. D. and G. N. Masters (1982).

*Rating scale analysis.* Chicago: Mesa Press. Details on Consortium measures are available at www.consortium-chicago.org/surveys/pdfs/surveymanual.pdf.

- <sup>2</sup> Bryk, Anthony S., Penny Bender Sebring, Elaine Allensworth, John Q. Easton, and Stuart Luppescu, 1999. Long-term academic productivity gains in Chicago elementary schools. A theory of five essential supports. Paper presented at the annual meeting of the American Sociological Association, Chicago. These authors are preparing a book manuscript on this topic as well, *Organizing schools for improvement* (forthcoming).
- <sup>3</sup> For this analysis we used hierarchical linear modeling (HLM), which permits us to simultaneously account for the characteristics of individual teachers within schools and the characteristics of schools. See Bryk, Anthony S. and Steven W. Raudenbush (1992). Hierarchical linear models: Applications and data analysis methods. Newbury Park, CA: Sage Publications. Our analysis held constant the characteristics of teachers' gender, race/ethnicity, and years of experience. We also controlled for school characteristics: size of school, whether it was a magnet school, whether the principal served for three or more years versus fewer than three years; and neighborhood demographic characteristics (using the 2000 census): proportion of managers and professionals, level of education in the neighborhood, and level of crime. The analysis was based on 26 schools with LAUNCH principals, and depending on the leadership measure, 318-319 non-LAUNCH schools.
- <sup>4</sup> Due to large percentages of students who change schools during the school year, the first step was to select only stable students, i.e., students who were in the school on October 1 and on the date of spring testing. We used HLM and held constant school characteristics: size of school, whether it was a magnet school, and the racial composition of the students; and neighborhood demographic characteristics (using the 2000 census): proportion of managers and professionals, level of education in the neighborhood, and level of crime. The analysis included 475 elementary schools, of which 31 were led by LAUNCH principals in 2003, 21 in 2002, 14 in 2001, seven in 2000, and one in 1999. Learning gains were calculated starting in 1997, so that we could compare each school to its prior performance. This was necessary because low-achieving schools could have had more principal turnover and thus bias the estimate of the effects of a new principal.

- <sup>5</sup> Urban Institute, Education Policy Center. (2003). Making the grade: Who applies for and earns advanced teacher certification? *Learning Curve*, Policy Brief No. 2. www.urban.org.
- <sup>6</sup> Subsequent to this analysis, NBPTS collapsed the number of examinations to four.
- <sup>7</sup> We suspect that survey responses from a few individuals may have been excluded or included in error and estimate that there was a 90 percent match between survey respondents and actual certificate holders. In addition, there were five more board-certified teachers who completed the survey—four counselors or librarians in elementary schools and one curriculum coordinator at a high school. Since the questionnaires were primarily designed for classroom teachers, we removed them from the analysis.
- <sup>8</sup> About 100 more teachers answered yes to this question than should have. To corroborate who the actual candidates were, we compared survey respondents to lists of candidates provided by CPS, the Quest Center at the Chicago Teachers Union, and the Chicago Public Education Fund. Since the survey is confidential, we could only match on school unit number and the individual's race or ethnicity and gender. We suspect that survey responses from a few individuals may have been excluded or included in error. We estimate that there was a 90 percent match between survey respondents and actual candidates. In addition, there were four additional candidates who completed the survey, who were in the following elementary school positions: curriculum coordinator, Elementary and Secondary Education Act (ESEA) Title 1 coordinator, counselor or librarian, and assistant principal.
- <sup>9</sup> Urban Institute, Education Policy Center (2003).
- <sup>10</sup> Using hierarchical linear modeling (HLM), we estimated the differences in professional development, while holding constant characteristics of teachers' gender, race/ethnicity, advanced degrees, years of experience, and tenure at their current school. We also controlled for the school characteristics, size and magnet school; and the neighborhood demographic characteristics (using the 2000 census): proportion of managers and professionals and level of education in the neighborhood, proportion of unemployed adults, and proportion of households below the poverty line.
- <sup>11</sup> The statistical model described in footnote 10 was used for this analysis.
- <sup>12</sup> The statistical model described in footnote 10 was used for this analysis.
- <sup>13</sup> We carried out an analysis of variance for each of the five measures among elementary schools and high schools, holding constant students' racial composition; size of school; whether the school was a magnet school; and neighborhood

demographic characteristics (using the 2000 census) that included proportion of managers and professionals and level of education in the neighborhood, proportion of unemployed adults, and proportion of households below the poverty line.

- <sup>14</sup> NBPTS sets forth the following propositions: (1) Teachers are committed to students and their learning. (2) Teachers know the subjects they teach and how to teach those subjects to students. (3) Teachers are responsible for managing and monitoring student learning. (4) Teachers think systematically about their practice and learn from experience. (5) Teachers are members of learning communities. See www.nbpts.org/.
- <sup>15</sup> Among elementary schools, the differences in leadership were statistically significant between board-certified teachers and other teachers, and between candidates and other teachers, while holding constant other characteristics: gender, race/ethnicity, advanced degrees, and years of experience. In other

words, among teachers who were average with respect to gender, race/ethnicity, academic degrees, and experience, board-certified teachers and candidates were more likely to be in leadership roles. Among high schools, the differences were not statistically significant, in part due to small numbers of board-certified teachers.

- $^{\rm 16}$  Thirty-five elementary school principals and 11 high school principals responded.
- <sup>17</sup> Since, on average, principals had only two or three board-certified teachers in their school, it may have been difficult to compare these few teachers to perhaps 20 other experienced teachers. In the future, we should consider revising this question.
- <sup>18</sup> Chicago Public Education Fund.

