

## **DISPELLING THE MYTHS AND CONFIRMING THE TRUTHS OF THE IMMINENT SHORTAGE OF PRINCIPALS: THE CASE OF NEW YORK STATE**

### **Introduction and Background**

Recently, there have been numerous accounts of the increasingly large number of available school leadership positions, many of them principalships (e.g., Jordan, 1994; Moore, 1999; Adams, 1999; ERS, 2000; O'Connell, 2001). At the same time, anecdotal reports from many practitioners indicate that the applicant pools for these positions have been small and filled with under-qualified individuals, which makes policy-makers increasingly concerned about an imminent shortage of school leaders.<sup>1</sup> Unfortunately, there are not enough studies providing systematic, policy-relevant information about the career choices of school leaders and prospective school leaders on which to base some important policy decisions. For example, we do not know the number of individuals who are certified to be principals and who are currently employed in our schools, nor do we know much about their attributes and qualifications as compared with current principals. Consequently, we do not know whether there is likely to be a shortage of principals—we only know that there is an increased demand for school principals.

If there are certified individuals able to fill vacant principalships, why are there reports of small and under-qualified applicant pools for these positions? Some practitioners suggest that the baby-boomers have effectively clogged the pipeline leading to school leadership positions, thus impeding the advancement of younger, certified individuals. This could mean that many of these younger individuals have not yet had an opportunity to gain experience in lower-level administrative positions and, as a result, they are not interested in nor prepared for a principalship.

At the same time, many researchers (e.g., Whitaker, 1998; Moore, 1999; Fennell, 1999; Adams, 1999; ERS, 2000; Lankford, O'Connell, & Wyckoff, 2003) point to increased responsibilities, stress, and longer hours without compensatory pay as a likely cause of the small and under-qualified applicant pools—i.e., because of these demands, fewer apply, and those who do apply are less likely to be highly qualified individuals because such individuals are more likely to have other, more attractive options. In other words, many individuals who are certified to be school administrators consider the current incentive structures for these positions to be inadequate, and as a result they are not entering leadership positions.

Unfortunately, schools may have reasons to oppose efforts aimed at changing the incentive structures. Because it is difficult to disentangle the relative impact of the factors relating to student outcomes and other measures of school effectiveness, it is very difficult for schools to quantify the cost-effectiveness of these factors. As a result, the changes needed to induce more and higher-quality individuals into administrative positions may not be seen as cost-effective.

Yet, the need for qualified principals is imperative. Many studies (Bossert, Dwyer, Rowan, & Lee, 1982; Hallinger & Murphy, 1986; Andrews & Sober, 1987; Zigarelli, 1996) indicate that school principals affect student outcomes. Also, much of the recent literature on school reform has focused on gaining a better understanding of the organizational behavior of schools and the ways in which school leaders can affect student performance (Hanushek, 1997; Hoy & Miskel, 2001; Owens, 2001). Results strongly suggest that school-level change in the ways schools are led and managed provides the greatest likelihood of success in improving the effectiveness of schools. An increased focus on the ways in which schools are led and managed amplifies the importance of attracting and retaining high quality principals, especially in low-performing schools.

In all likelihood, increased resources are required to change the current incentive structures associated with entering and remaining in the principalship ranks. For example, increased salaries for principals might be an effective means with which more, high quality individuals could be induced into a principalship. Lankford, O'Connell, and Wyckoff (2003) report that it would take an additional \$10,000 or more to induce individuals certified to be principals to move into administration, even though 85 percent report that they pursued administrative certification because they planned to serve as administrators.

As another alternative, several California school districts utilized additional support staff in an effort to reduce the stress and work load associated with school administrative positions. For example, the Oxnard school district has placed a co-administrator in elementary schools that reach an enrollment of 900, and the Conejo United School District has authorized vice-principalships for three elementary schools with enrollments greater than 700 (Adams, 1999). The Ojai Unified School District has established a fund that allocates "principal support money" to elementary school principals. Schools with enrollments of 550 or more receive \$10,000 annually, and those with fewer than 550 students receive \$5,000.

A review of previous research indicates that we know far more about the increased demand for principals than we do about the quantity and qualifications of the individuals who are certified to assume the soon-to-be vacant principalships. Also, it is clear there is little policy-relevant information regarding the impact of current incentive structures on the attraction and retention of principals. This study provides information on these issues by analyzing a panel data set of New York State public school employees that includes information on teachers, administrators, and their schools. In particular, this study addresses the following commonly held beliefs:

1. There is an imminent shortage of principals.
2. Prospective principals are less qualified than their predecessors.
3. Low salaries are related to the supply of principals.

The results of this study help us to distinguish the truth from the myths entailed in these beliefs with respect to New York, the third largest state school system in the nation. Each analysis focuses on providing policy-relevant information that is critical to the development of efficient and effective ways to respond to the increased demand for principals. Findings from this study help us to (a) increase our understanding of the extent to which there is a need for alternative means of attracting first-time principals, and (b) identify productive strategies with which we can address this need wherever it is felt.

### **Data and Research Methods**

The database used in this study includes annual information for every teacher and administrator employed by a New York State public school from 1969/70 through 1999/2000 (these data were taken from the New York State Education Department Personnel Master File) and annual information associated with the schools in which they work (these data were taken from the New York State Education Department Institution Master File). The annual records are linked through time for each employee, yielding detailed data characterizing the career history of each individual, i.e., information specific to each year within an individual's career.

The database includes the individual's gender, age, position, total experience, district experience, experience within a position, certification status (permanently certified to be a principal, or not), the Barron's rank of the college or university from which the teacher or administrator received his or her bachelor degree, and salary, as well as the grade level (high school, middle school, or elementary school) and urbanicity (urban, suburban, or rural) of the school in which the employee works. In addition, the database includes each school's total student enrollment, the percentage of students with limited English proficiency (LEP), and the percentage of students who received a level 1 (lowest) score on the mandatory English, Language, and Arts exam, given to 4th and 8th grade students.

These data allow for an extensive descriptive investigation of past, current, and prospective principals. This study uses cross-sectional analysis (based upon school and district-level characteristics such as geographic region, urbanicity, grade level, and student performance) and cohort analysis (based upon calendar years) to (a) examine the number of principals approaching retirement and the number of existing employees certified to fill these positions, (b) compare the attributes, qualifications, and career paths of the prospective principals to those of current and past principals, and (c) examine principal salaries and the differential between principal and teacher salaries.

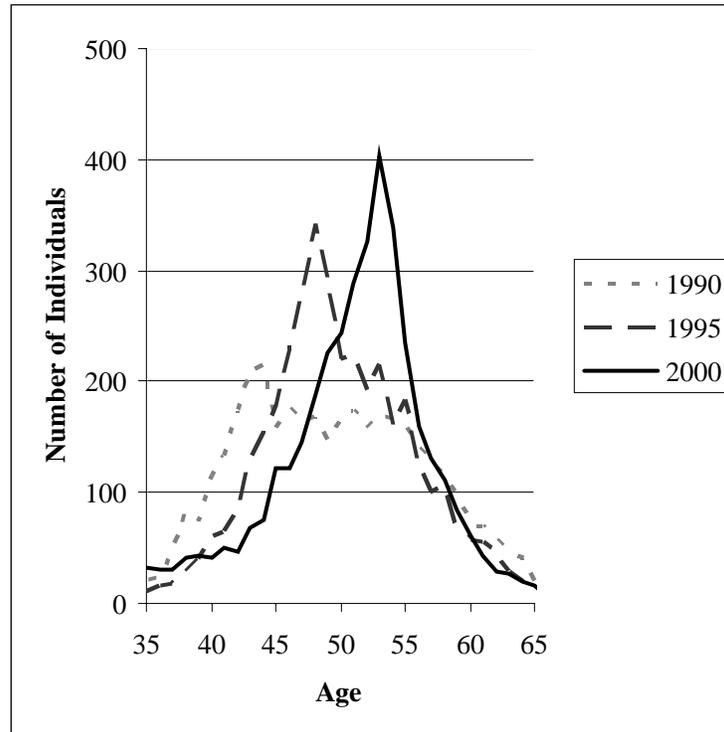
Throughout this article, imperfect measures are employed to proxy the qualifications of principals: experience in lower-level administrative positions, experience as a principal, and the Barron's rank of the college or university from which the individual received her bachelor degree. Because principal certification in NY requires that an individual obtain a graduate degree, there is little advantage, within the analysis, to

utilizing “highest degree attained” (this requirement has not changed dating back to, at least, 1971 and because almost all of the principals within the state are certified, there is essentially no variance in this measure). Although a more exhaustive list of quality/qualification measures is desirable, these data are not available.

## Results

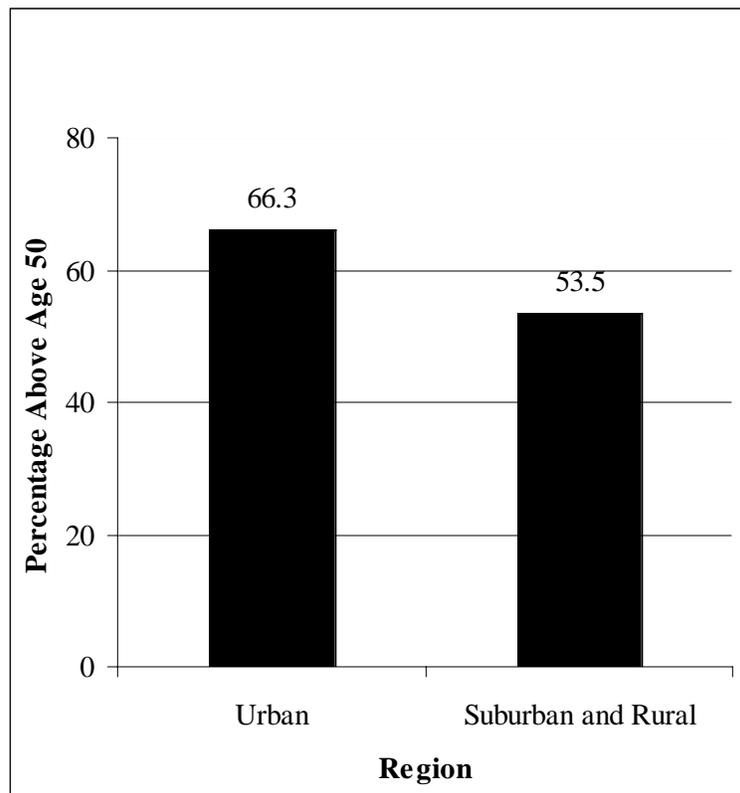
### *Is There an Imminent Shortage of Principals?*

Public school principals in New York State are getting older. For example, the most common age of principals increased from 44 years in 1990 to 53 years in 2000 (Figure 1).



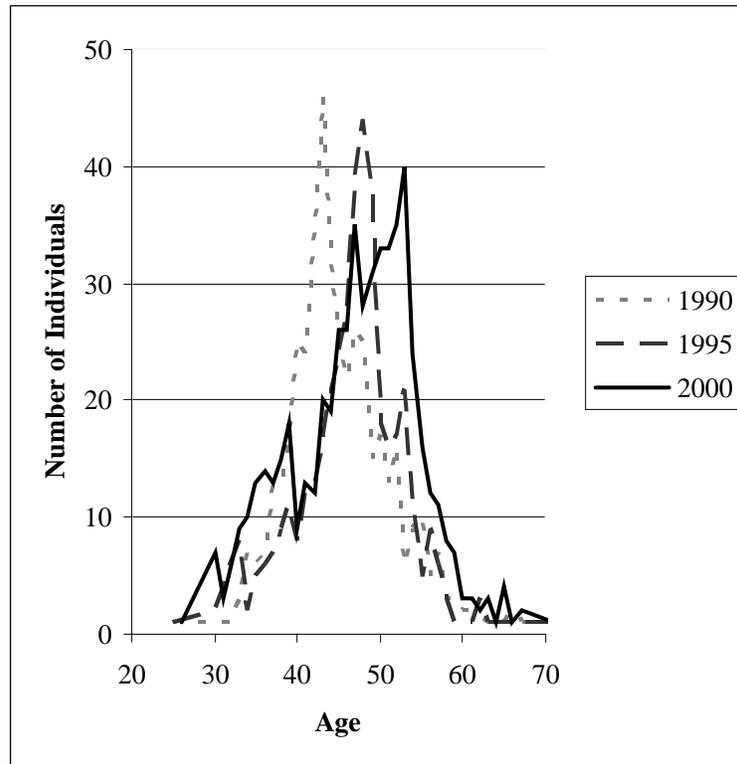
**Figure 1.** Age distribution of principals for select years.

Moreover, in 2000, approximately 66 percent of the principals in urban districts and 54 percent of the principals in non-urban districts are above 50 years of age and thereby nearing retirement (Figure 2). As such, during the time period from 2005 until 2010, there will be a remarkable increase in the need for new principals.



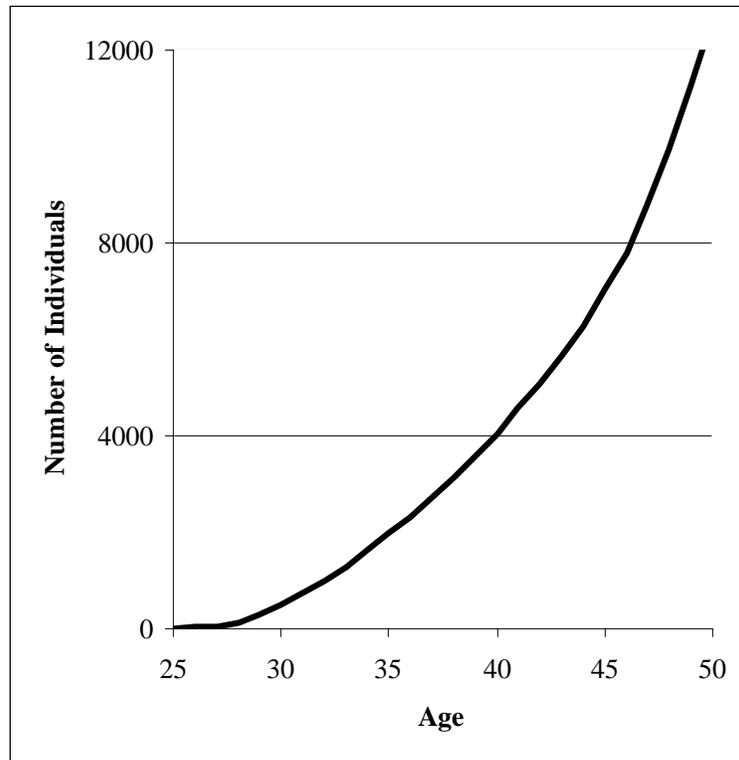
**Figure 2.** Percentage of principals nearing retirement, 2000.

Interestingly, the increase in the need for new principals is, to some extent, self-imposed. The most common age of first-time principals increased from 43 years in 1990 to 53 years in 2000 (Figure 3). Thus, many of the first-time principals hired in 2000 are as likely to retire during the time period from 2005 through 2010 as are the principals hired in 1990. If instead, younger first-time principals were hired during the late 1990s, the impending increase in the need for new principals would have been diminished.



**Figure 3.** Age distribution of first-time principals for select years.

Nevertheless, the increase in the need for new principals will not necessarily result in a shortage of principals. Although there are approximately 4,400 principalships throughout the state, there are more than 7,000 New York State public school employees below 45 years of age who are certified to be principals, as of the year 2000 (Figure 4). More than 4,000 of the 7,000 individuals are currently employed within the New York State public school system, almost 2,000 as lower-level administrators and more than 2,200 as teachers (Table 1). Although the ratio of the number of principal-certified individuals who are currently employed and under 45 to the number of principalships differs across regions, even in the regions where this ratio is the lowest (i.e., non-urban areas outside the New York City region), it equals approximately 65 percent.



**Figure 4.** Total number of existing employees who are certified to be principals, by age, in 2000.

**Table 1**

*Individuals Who Are Certified to be Principals and Under 45 Years of Age by Select Positions and by Region, 2000*

	NYC/Yonkers		Buffalo/Rochester /Syracuse		Rest of state			Total
	Urban	Suburb	Urban	Suburb	Urban	Suburb	Rural	
	Assistant principal	345	170	49	124	8	36	
Subject administrator	170	111	25	46	4	27	63	446
Other building administration	102	39	27	33	4	7	31	243
Special services	55	71	13	43	2	14	46	244
Multiple administrative categories	82	40	6	29	2	10	29	198
Total in administration	754	431	120	275	20	94	277	1971
Teacher	807	751	64	210	39	88	278	2237
Total over all positions	1561	1182	184	485	59	182	555	4208
Total number of schools in state	1228	1008	198	670	78	282	930	4394

These individuals may form a pool from which future principals can be recruited. The extent to which this is true is likely to depend upon the attributes and qualifications of these individuals. The extent to which recruitment efforts will be successful is likely to depend upon the incentive structures that are used to induce these individuals into the principalship. These issues are examined in the next two sections.

In addition to the individuals who are already certified to be principals, there are non-traditional pools from which future principals might be drawn via alternative certification programs. Moreover, school-level leadership can originate from structured efforts toward teacher leadership and distributed leadership. Unfortunately, analysis of these non-traditional approaches is beyond the scope of this study. Nevertheless, because of the highly specialized and ever-changing skill set that is required to be a successful principal (at a particular school and within a particular context), it is imperative that future recruitment efforts utilize a strategy which integrates the traditional and non-traditional approaches.

*Are Prospective Principals Less Qualified Than Their Predecessors?*

Results indicate that current principals are more likely to have received a bachelor degree from a college or university ranked highly competitive, and less likely to have received a bachelor degree from a college or university ranked not competitive, than are the individuals who are certified to be principals, but who have not yet accepted a principalship (Table 2).

**Table 2**

*Attributes and Qualifications of Leaders and Non-Leaders, 2000*

	Certified to be principals			Overall
	Currently principals	Not currently principals	Not certified to be principals	
Number of individuals	4379	16287	224160	244826
Percent under 45	12.0	26.9	46.4	41.2
Percent female	41.9	57.6	73.1	68.7
Percent with a bachelor degree from				
school ranked highly competitive	11.5	10.4	11.1	11.1
school ranked not competitive	12.7	15.8	13.4	13.6

Moreover, individuals who are certified to be principals, but who have not yet accepted a principalship, are less likely to have received a bachelor degree from a college or university ranked highly competitive and more likely to have received a bachelor degree from a college or university ranked not competitive, than are the individuals who are not certified to be principals. These results are very similar across geographic regions within the state.

Thus, to the extent that the rank of the college or university from which an individual received a bachelor degree is related to effectiveness as a principal, the group of individuals who are certified to be principals,

but who have not yet accepted a principalship, are less qualified to be principals than are the individuals who are not certified to be principals (all else equal). This measure may not be a strong indicator of success as a principal. Nevertheless, on average, the culture at a highly competitive college or university (e.g., increased rigor and resources) creates better opportunities for receiving a higher quality education. Also, on average, students attending a highly competitive college or university come from higher performing high schools, i.e., high schools with better opportunities for a higher quality education. Given these factors, it is not unreasonable to consider a degree from a highly competitive university to indicate an increased likelihood of a higher quality education and, as a result, better preparation. Clearly this is not always true. Accessibility factors, such as the availability of financial resources, have an impact on an individual's choice of college or university. Thus, many individuals graduating from less prestigious colleges and universities are equally as bright and as prepared. Nevertheless, because the population sizes are large and because only the highest and lowest ranked colleges and universities are considered within the analysis, these results suggest that the current incentive structures for principals and teachers have not induced the most highly qualified individuals to pursue a principalship.

Most would agree that leadership experience is a crucial component of effectiveness because experience creates unique opportunities to learn and to grow. In addition, time on-the-job leads to specific information by which to judge an individual's leadership ability. Thus, it can act as a screening process. In the end, the good leaders become better leaders and the poor leaders can be replaced. However, because principals have become increasingly older at the time of their first principalship, recent first-time principals have fewer years to gain experience as a principal. Even if you are willing to believe that additional experience in lower-level non-principal leadership positions can help to compensate for fewer years of experience as a principal, these individuals will have far less leadership experience because they have less experience in lower-level leadership positions, as well.

In 1990, 73 percent of first-time principals followed a pathway to the principalship in which they gained prior school administration experience, i.e., as an assistant principal, a subject administrator, or both (Table 3). In 2000, only 67 percent of first-time principals gained lower-level administrative experience prior to becoming a principal. Put another way (Table 4), comparing 2000 data to 1990 data, almost four percent fewer individuals gained experience as an assistant principal, and more than five percent fewer individuals gained experience as a subject administrator, prior to becoming principals. (The percentage associated with each of these two administrative categories in Table 4 is greater than the sum of the percentages associated with these two categories in Table 3 because the percentages in Table 4 include individuals who followed a non-teaching career path and who gained experience as a subject administrator, an assistant principal, or both.)

**Table 3**

*Career Paths by Cohort of First Time Principals (percentages)*

	1990 (n = 402)	2000 (n = 541)
Teacher, Subject Administrator, Assistant Principal, Principal	24.8	21.5
Teacher, Assistant Principal, Principal	34.0	33.8
Teacher, Subject Administrator, Principal	14.2	11.7
Subtotal—paths that include lower-level leadership	73.0	67.0
Teacher, Principal	13.8	17.9
Non-teaching paths	13.2	15.1
Overall	100.0	100.0

**Table 4**

*Prior Administrative Experience by Cohort of First Time Principals (percentages)*

	1990 (n = 402)	2000 (n = 541)
Assistant Principal	64.4	60.6
Subject Administrator	38.6	33.3

Conversely, a growing percentage of first-time principals follow career paths in which they move directly from classroom teaching to the principalship; the percentage increases from 13.8 percent in 1990 to 17.9 percent in 2000 (Table 3). With fewer years of school administration experience, and fewer years available to gain experience as a principal, it may be that the principals hired more recently face greater obstacles if they are to be as effective as their predecessors (all else equal). Why then, are there so few individuals gaining prior administrative experience? And, why are individuals accepting their first principalship so late in their career?

Some observers postulate that the baby-boomers have effectively clogged the pipeline to the principalship. Others argue that the current incentive structures that exist for principals and teachers are not sufficient to attract younger individuals into leadership positions. It is likely that both notions are contributing factors. Clearly, not much can be done at this point to compensate for the impact of the baby-boomers. Nevertheless, the incentive structures can and should be examined carefully so that informed policy recommendations can be made. In addition, these results magnify the importance of alternative approaches to school leadership. That is, because the current pool of principal-certified individuals has, on average, so little administrative experience in schools, effective planning strategies must include alternative certification and distributed leadership programs.

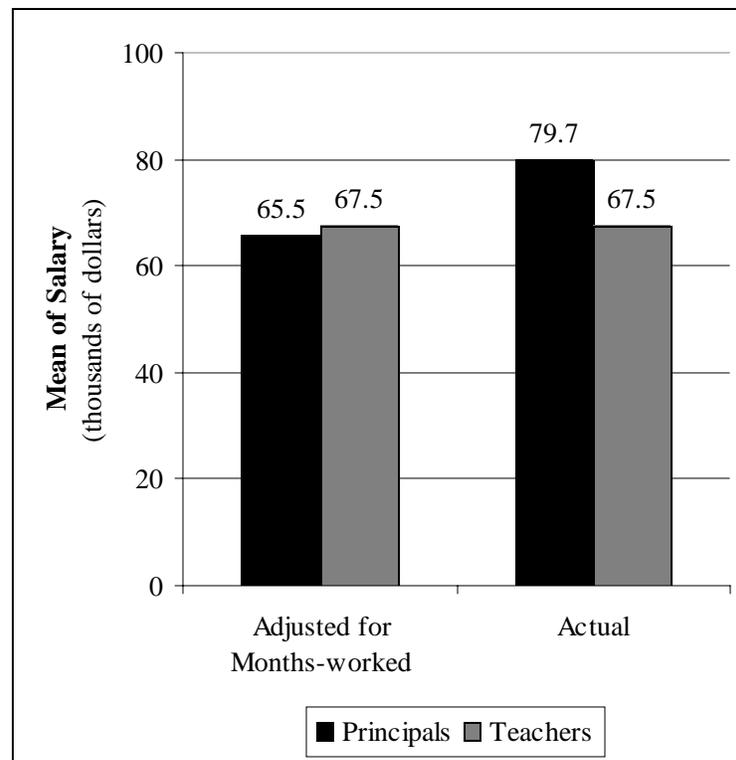
*In What Ways are Salaries Related to the Supply of Principals?*

Results from this analysis show that there are a large number of young individuals certified to be principals who are not currently serving as principals. And yet, results also suggest that these prospective princi-

pals are less qualified than current principals and less qualified than the individuals who are not certified to be principals. Moreover, many practitioners suggest that there are small and under-qualified applicant pools for vacant principalships. Thus, we are left with a bit of a paradox. There is a relatively large pool of potential school leaders, and yet schools are finding it difficult to attract highly qualified individuals into principalships.

To explain this paradox, many observers argue that relative to readily available employment alternatives, the compensation of school leaders does not warrant the extraordinary demands placed upon them and that this is especially true in urban schools where working conditions are most difficult. An analysis of the salaries of principals and of teachers reveals two important patterns in this regard.

First, the average salary paid to principals with 6–10 years of experience is less than the average salary paid to teachers with 20 years of experience within their district, after accounting for the two additional months a principal works (Figure 5).

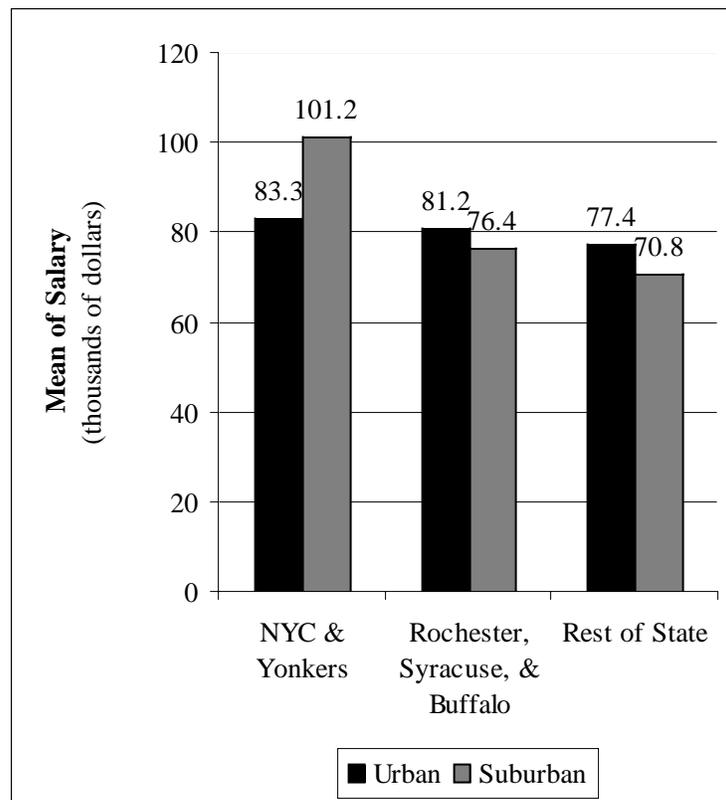


**Figure 5.** Salary comparison of experienced principals to experienced teachers (compares average sample of principals and teachers in the same district in any year from 1980-2000, in year 2000 dollars).

The average adjusted principal salary is \$65.5k, where as the average teacher salary is \$67.5k. The results are very similar across districts and regions within the state. The ratio of principal salaries to teacher salaries was found to be very consistent during the time period from 1980–2000. Thus, only the average salary over this time period is presented. All salaries are presented in year 2000 dollars.

It is important to note that these comparisons do not account for what many perceive as increasingly difficult working conditions such as increased responsibilities, higher stress, and the increased pressure for accountability in schools. Thus, it is very likely that principal salaries are not high enough to provide much incentive to become a principal.

Results also indicate a second important pattern—namely, that salaries paid to the principals in urban districts are typically less than or only slightly greater than the salaries paid to principals of schools in the surrounding suburbs (Figure 6).



**Figure 6.** Salary comparison of urban to suburban principals (average salary from 1980-2000, in year 2000 dollars).

The ratio of principal salaries in urban districts to principal salaries in suburban districts was found to be very consistent during the time period from 1980–2000. Thus, only the average salary over this time period is presented. All salaries are pro-rated to 12 months of work and are presented in year 2000 dollars.

These comparisons do not account for differentials in working conditions that typically exist between schools in urban and suburban districts. For example, schools in urban districts typically have a greater number of students and are far more likely to have a higher percentage of non-white students, low-performing students, students with LEP, and students receiving free lunch (Table 5). Thus, it is likely that the salaries that are currently paid to principals of urban schools are not sufficient to attract and retain principals who are as qualified as the principals of the schools in the surrounding suburbs.

**Table 5**

*Working Conditions by Region and Urbanicity, 2000*

	NYC/Yonkers		Buffalo/Rochester /Syracuse		Rest of state			Overall
	Urban	Suburb	Urban	Suburb	Urban	Suburb	Rural	
Number of schools	1041	854	168	568	66	239	788	3724
Average enrollment	927	671	630	643	651	576	546	707
Percentage of students								
non-white	84.7	29.4	69.6	6.9	42.0	5.0	11.1	38.6
with L.E.P.	18.5	4.9	6.1	1.0	4.7	0.5	1.3	3.0
receiving free lunch	59.0	14.8	68.4	15.0	52.1	15.2	25.0	22.6
with level 1 (lowest)								
score on ELA exam								
4th grade	17.5	3.2	19.0	3.3	10.2	2.4	4.3	8.8
8th grade	21.6	9.4	23.8	6.1	15.6	5.7	9.1	12.6
Percentage with all								
teachers certified	53.3	75.9	67.2	78.0	78.9	79.5	76.1	69.9

This claim is evidenced by the results of a comparison of the qualifications of principals across urbanicity categories and by a comparison of the attributes of the schools associated with first-time principals who move out of their original district within six years. The principals of schools in urban districts are, on average, less experienced in school administration than are their suburban counterparts (Table 6). Principals in urban districts have, on average, 6.0 years of experience as a principal whereas principals of schools in the suburbs have 8.0 years. In addition, the principals in urban districts are less likely to have earned a bachelor degree from a highly competitive school and far more likely to have graduated from a school that is not competitive. While 11.4 percent of the principals in suburban districts graduate from highly competitive schools, only 7.9 percent of the principals in urban districts do so. And, while only 13.6 percent of the principals in suburban districts graduate from schools that are not competitive, 20.1 percent of the principals in urban districts do so.

**Table 6**  
*Qualifications of Principals by Urbanicity, 2000*

	Urban	Suburb	Rural
Sample size	1275	1661	788
Years as a principal	6.0	8.0	7.1
Percentage of first-year principals (NYC only)	---	---	---
Percent with a bachelor degree from			
school ranked highly competitive	7.9	11.4	10.1
school ranked not competitive	20.1	13.6	6.4

When principals transfer, they move to schools with, on average, 109 (or 14.7 percent) fewer students, 19.7 percent fewer non-white students, 31.3 percent fewer students receiving free lunch, 27.6 percent fewer students with LEP, and 19.7 percent fewer low-performing students (Table 7). At the same time, they move to schools at which their salary is increased by 12.4 percent, on average.

**Table 7**  
*Working Conditions for First-Time Principals, Hired in 1992, 1993, and 1994, Who Moved to a New District Within Six Years.*

	Initial school	New school	Difference	Percentage difference
Percentage of students				
non-white	29.0	23.4	-5.7	-19.7
receiving free lunch	29.7	20.4	-9.3	-31.3
LEP	4.7	3.4	-1.3	-27.6
with level 1 (lowest) score on				
ELA exam in 4th or 8th grade	8.1	6.6	-1.6	-19.7
Number of students	742	633	-109	-14.7
Salary (dollars)	62979	70783	7804	12.4

## Conclusions and Implications

The analysis in this paper leads to many interesting conclusions that should be helpful in policy discussions, as state and local policymakers work to address the perceived imminent shortage of school principals and to increase the quality of school principals. The following discussion will identify the analyzed beliefs that were found to be either true or a myth.

### *There Is an Imminent Shortage of Principals*

Myth #1: There is a shortage of principals.

Truth #1: A large number of principals will retire within the next few years.

More than 60 percent of current principals will retire over the next five to ten years. The magnitude of the proportion is partly a result of recent hiring practices. First-time principals in 1990 were, most commonly, 43 years old. In 2000, they were 53 years old. Thus, many of the principals hired recently are as likely to retire, in the near future, as are principals hired in 1990. If retiring principals are replaced by individuals who are 53 years of age, the percentage of principals retiring within a few years will remain very high. Thus, younger individuals must assume the soon-to-be-vacant principal positions, and those that become available in the future. And while many new principals will be needed within the next few years, the number of New York public school employees who are certified to be principals and are 45 years of age or younger is almost equal to the total number of schools in the state. A planning strategy with an increased focus on alternative certification and distributed leadership programs will improve the likelihood of a successful response to the increased demand for school-level leadership.

*Prospective Principals Are Less Qualified Than Their Predecessors*

Myth #2: Today's applicant pool is less qualified.

Truth #2: Prospective principals tend to be graduates of less prestigious schools and have, on average, less experience in lower-level administration, as compared to current principals.

Admittedly, the short list of imperfect measures of principal quality and qualifications limits the study's ability to adequately address this issue. Moreover, the highly specialized and ever-changing skill set that is required to be a successful principal (at a particular school and within a particular context) makes it very difficult to access quality and qualifications across schools and districts and over time. Nevertheless, because prospective principals tend to be graduates of less-prestigious schools and have, on average, fewer years of lower-level administrative experience, this study suggests that there may be a problem with the current incentive structures for principals and for teachers. In addition, these results emphasize the need for planning strategies to include alternative certification and distributed leadership programs.

*Low Salaries Are Related to the Supply of Principals*

Myth #3: Principals salaries in urban areas are too low to attract high quality principals.

Truth #3: Urban principals are not paid more than their suburban and rural counterparts. Thus, there is no "salary premium" to account for what many describe as more difficult working conditions.

Myth #4: Principals are not paid enough to compensate them for the added responsibilities that are associated with being a principal.

Truth #4: Currently, the salaries of experienced principals, adjusted for months worked within a year, are, on average, less than the salaries of the experienced teachers in their district.

Results indicate that urban principals are not paid more than their suburban and rural counterparts. Also, when principals transfer, they move to schools with smaller percentages of students who are non-white, low-performing, receiving free lunch, and with LEP. At the same time, they move to schools at which they are paid much higher salaries. These results suggest that there may be a problem with the relative incentive structures for principals of schools in urban districts versus principals in suburban and rural districts. In addition, results indicate that the salaries of experienced principals, adjusted for months worked within a year, are, on average, less than the salaries of the experienced teachers in their district. This suggests that there may be a problem with the relative incentive structures for principals and teachers.

If the principal has a role in determining student performance, and if we hope to improve student performance, we must attract high quality individuals into the principalship. To do this, it may be necessary to increase the salaries paid to principals. Moreover, if we hope to close the achievement gaps between schools in urban districts and school in suburban districts, it may be necessary to further increase the salaries paid to principals of urban schools.

However, since the findings in this paper are descriptive, we cannot infer, for example, the likelihood that higher salaries will result in more highly qualified principals. Nor can we infer the relative impact of increasing salaries as compared to other possible policy initiatives, for example, increased support staff. This additional information will further clarify the strategies that are most likely to effectively address the impending need for many new highly qualified principals. To provide information in this regard, our current research uses measures of a wide array of variables, e.g., individual, school, district, and community characteristics, associated with all of the principal-certified individuals and with all of the schools seeking to hire a principal. These data are used to estimate conditional logit model, which utilizes aggregate alternatives, to estimate the impact of salary and of other relevant variables on the matching of principals with schools.

The information gathered in this study has several implications for policy and practice strategies relative to improving principal recruiting. Based on the results of this study, we conclude that:

1. Efforts should be made to target and screen the large pool of principal-certified individuals, who are currently employed within a New York State public school but not as principals, to fill vacant principalships and lower-level administrative positions (e.g., subject administrator).

2. Efforts should be made to create alternative certification and distributed leadership programs.
3. Efforts should be made to hire individuals who are younger than 50 years old, to fill vacant principalships and lower-level administrative positions.
4. Further analysis should investigate the relative impact of potential policy initiatives such as higher principal salaries and increased support staff, on the quantity and quality of the individuals who apply to be principals, especially in low-performing schools.

### **End Note**

1. This claim is based upon statements made by many upper-level administrators within the New York State Department of Education. Their statements were made to the authors during numerous face-to-face meetings that occurred between fall 2000 and fall 2002. Their statements were based upon their discussions and interactions with the (approximately) 700 school district superintendents within New York State, which suggests that the substance of this claim is considered to be common knowledge within the state. Subsequent references in this article to practitioner or observer impressions are also based on this anecdotal evidence.

### **Author Note**

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