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Leaving Schools or Leaving the Profession: Setting Illinois' Record Straight on New Teacher Attrition

Karen J. DeAngelis and Jennifer B. Presley

Executive Summary

For some years now, and in most discussions of new teacher attrition, there has been a general belief that half of all new teachers flee the profession within five years. Policy makers and practitioners are concerned about this apparent "crisis" in the teaching profession because they hear that (a) teachers' skills improve during their first two to three years of practice, and it seems a waste to lose so many entrants early in their careers, (b) the poorest and highest minority schools uniformly are more likely to have high turnover of new teachers, and (c) the production pipeline from teacher preparation programs is grossly inefficient in meeting the supply needs of our schools. This latter concern takes on added significance because of an anticipated increase in demand for teachers stemming from high retirement rates among an aging teaching force in the United States. But the national evidence backing up some of these claims stems from sample data that are not representative of new teachers at the state level, and which cannot account for teachers who return to teaching after a gap in service.

The success of policies aimed at lowering new teacher attrition or minimizing the impact of attrition on educational inequities depends on accurate information about, and a solid understanding of, the problem itself. Fortunately, Illinois' State Board of Education has maintained a longitudinal database on who is teaching in Illinois' public schools since the early 1970s. Through shared data agreements that assure individual confidentiality, the Illinois Education Research Council has analyzed 35 years of teacher data to test whether the nationally received wisdom on new teachers accurately applies to Illinois.

In this report, we show that the story is actually very different in Illinois.

- Our results refute the notion of a profession in crisis—overall, only 27 percent of new teachers leave teaching in Illinois public schools (IPS) and do not return. Furthermore, we cite evidence that new teacher attrition compares favorably with losses from other similar professions. In addition, Chicago Public Schools and other urban areas are recruiting new teachers with stronger academic qualifications than in the past—now on par with other Illinois locales and regions.

- We do find that new teachers leave their initial schools at significantly higher rates and that attrition differs somewhat across schools based on their locale and the characteristics of their students. Overall, more than two out of five (44%) of new entrants leave their initial school within their first two years, and 67 percent leave their initial school within five years. While this average five year attrition rate may seem high, other research indicates that many new college graduates move to a job in a different organization within their first five years, suggesting than teachers' job mobility is probably not atypical.

- We also find much higher attrition rates in some schools, but contrary to conventional wisdom we show that high-attrition schools exist within every school type category, which suggests that conditions in schools in addition to those related to student body characteristics greatly influence teachers' decisions to stay or leave.

Implications Of The Study

1. **The teaching profession in Illinois is not in crisis.** Much like the case in other professions that employ people with similar educational backgrounds, some individuals who try teaching opt to leave within the first few years and do not return. In Illinois, such individuals constitute roughly a quarter of new teachers. Our longitudinal evidence shows that average annual new teacher attrition rates from the profession in Illinois have been fairly constant since the late 1980s, which suggests that across-the-board policies aimed at lowering these rates even further may not have a significant effect.

   Given the evidence presented in this study, as well as mounting evidence from other states, *we believe it is misleading and probably harmful to the profession to continue to portray teaching as an occupation from which half of its newcomers flee.* As teacher retirements and more stringent accountability policies increase the demand for high-quality teachers in the coming years, providing accurate information about the profession to administrators and prospective teachers would seem to be a critical first step in a sound recruitment and retention strategy.

2. **It may be difficult to substantially reduce overall new teacher attrition.** Teachers have lives, too. For a large percentage of teachers, it appears that life circumstances and/or personal choices interrupt their careers or prompt them to make transitions within the profession. For those who leave and return, it is not clear that much can be done in the policy arena to prevent such interruptions. Depending on the length of their break in service, though, some returners likely find the transition back to the classroom challenging. This may be particularly true in recent years given the impact of No Child Left Behind on policies related to student testing, school accountability, and teacher quality. Districts and schools should create programs to encourage and smooth teacher returns to the profession and the classroom.

3. Although we do not see large differences in new teacher attrition across school types, we do find that teachers with strong academic backgrounds are more likely to leave disadvantaged schools within five years. Because such teachers have constituted a small fraction of new teachers in these schools during our study period, their higher school leaving rates do not currently have much impact on the comparative rates that we show across school types. However, **as more academically strong teachers are recruited to disadvantaged schools, we can expect attrition rates in such schools to increase unless other conditions for working and learning also improve.**

4. **New teacher attrition rates are alarmingly high in some schools in each school type.** State and/or district policies need to focus on specific schools, not just categories of schools based on student characteristics. That is, rather than the oft-used, across-the-board blanket approach to policy solutions, the state and/or districts need(s) to identify individual schools with high levels of new teacher attrition and develop targeted intervention strategies to address those schools' problems.

5. Given that large differences in new teacher attrition occur among schools with similar student characteristics, **school conditions other than those we consider in this study appear to strongly influence new teachers' decisions to stay in a particular school.** Unfortunately, we do not have statewide school-level indicators with which to examine the effects of other aspects of school environments on new teacher attrition in Illinois. Others' research on teacher attrition suggests that salary levels, supportive leadership, student discipline, basic working conditions (including class size, facilities, and availability of textbooks), and teachers' relationships with each other and their principal are important factors influencing teachers' decisions to stay in a school. We suggest conducting a working conditions survey in Illinois to begin to assess teachers' views on school environments.

Key Findings

New Teacher Characteristics

The demographics of new teachers are changing. Recent new Chicago Public Schools (CPS) teachers are increasingly younger, less racially/ethnically diverse and have stronger academic qualifications than earlier cohorts. But in comparison to other locales, they are still less likely to be 25 or younger (30% compared to 40% or more in 2006) and more likely to be non-white (36% compared to 13% or less). Academically, recent CPS recruits are on par with non-CPS new teachers. Between 1997 and 2006, average ACT composite scores among new CPS teachers increased from 19.8 to 22.1, and the proportion with scores of 25 or more almost doubled, from 16 percent to 30 percent. These findings provide evidence that CPS' efforts to improve the academic qualifications of its new hires are having an impact.

Attrition From The Profession Of Teaching

New teachers' commitment to the teaching profession in Illinois has improved substantially since the 1970s and is stronger than conventional wisdom would suggest. During the 1970s, an average of 56 percent of new teachers from each cohort exited teaching in IPS at some point during their first five years. More recently, we show that an average of 40 percent of new teachers from each cohort leave teaching during the same timeframe. Thus, while the 50 percent new teacher attrition figure that is routinely cited in policy reports and media accounts reflects conditions in teaching in Illinois in the 1970s, it overstates recent patterns of new teacher attrition in the state.

Five-year attrition rates from the profession of teaching exaggerate the degree to which new teachers abandon the profession during their early years because a significant percentage of those who stop out for a year or more eventually return. In this study, we show that about one-third of teachers who leave during their first five years return to teaching in IPS. Once these returners are taken into account, the average net loss of new teachers shrinks to 27 percent. And because we are unable with our data to track IPS teachers into teaching jobs in private schools and schools in other states, even this 27 percent figure somewhat overstates total attrition from the profession of new teachers in Illinois. Nonetheless, roughly one in four individuals who enter public school teaching in Illinois leaves the profession of teaching during the first five years and does not return to Illinois public schools, not one in two as is commonly believed.

Perhaps most surprising in our analysis of new teacher attrition from the profession is how little the average five-year and return-adjusted attrition rates vary across school type. We find that between 25 and 30 percent of new teachers leave and do not return to teaching in IPS, regardless of the locale of the school or the characteristics of the students in the school in which they started teaching.

Some have used the oft-cited 50 percent new teacher attrition rate to portray teaching as a profession in crisis. Notwithstanding that the 50 percent number does not account for teacher returns, comparisons of attrition in teaching versus other occupations indicate that **the teaching profession (along with health occupations) tends to be more stable than other occupations employing people with similar educational backgrounds.**

Attrition From Schools

For administrators and others concerned about the impact of new teacher attrition on individual schools, attrition from the profession is only one part of the story. At the school level, new teacher attrition rates are substantially higher due to the fact that nearly as many new teachers move to other schools, either within the same district or in other Illinois districts, as leave the profession during their first five years following entry. Although movers have no effect on the teaching profession in the aggregate, they influence schools in exactly the same way as leavers. **Overall, more than two out of five (44%) of new entrants leave their initial school within the first two years, and 67 percent leave their initial school within five years.** While this average

five year attrition rate may seem high, other research indicates that many new college graduates move to a job in a different organization within their first five years, suggesting that teachers' job mobility is probably not atypical.

In addition to the overall attrition rates for Illinois schools, **we find some differences in initial school attrition rates by school type, although they are surprisingly modest given the categorical labeling of disadvantaged schools (i.e., schools with relatively high percentages of minority, low-income, and/or low performing students) as "hard to staff."** For example, among teachers who start in high minority/high low-income schools, 30 percent remain in their initial school after five years versus 37 percent stayers among teachers who begin their careers in low minority/low low-income schools. The largest school-type differences are found across schools with varying student performance levels where 36 percent of new teachers remain in the highest achieving schools through their first five years compared to only 22 percent of new teachers in the lowest performing schools. With the exception of these lowest performing schools, public schools in Illinois retain, on average, about 30 to 35 percent of their new teachers into the sixth year following entry, regardless of where the schools are located or the background characteristics of their students.

The most striking finding in our analysis of new teacher attrition from schools is the tremendous variation in retention rates within each school type, including those that are commonly viewed as providing attractive places for teachers to work. For Illinois as a whole, 10 percent of its schools retain one third or less of their new teachers after two years, and 8 percent or less of their new teachers by their sixth year following entry into the schools. Another 10 percent of Illinois schools retain 79 percent and 57 percent of their new teachers over the same timeframes. Within nearly every school type, at least 10 percent of schools retain a majority of their new teachers over time, whereas another 10 percent of schools are able to retain very few, if any, of their new teachers. Again, Illinois' lowest performing schools prove to be the exception since even their 90th percentile schools retain less than half of their new hires for more than five years. These results suggest that other conditions in schools apart from readily available indicators like those used in this study have a substantial impact on new teacher attrition from schools.

We show that new Illinois teachers with stronger academic qualifications are more likely to leave their initial schools, especially those who start in disadvantaged schools. But because such teachers have historically constituted a small fraction of new teachers in disadvantaged schools, their higher school leaving rates do not currently have much impact on comparative rates across school types. However, **as more academically strong teachers are recruited to disadvantaged schools, we can expect attrition rates to increase unless other conditions for working and learning also improve.**

New Teacher Movement

When we compare the academic characteristics of new teachers who leave their initial school to those of new teachers who stay, we show that new Illinois teachers with stronger academic qualifications are more likely to leave the profession, independent of initial school type, or move out of district to what are commonly considered more attractive schools (i.e., schools with lower percentages of low-income, minority, and/or low performing students). New teachers who move to other schools within district tend to have similar or somewhat weaker academic qualifications than those who stay in their initial schools. **It appears, therefore, that out-of-district moves facilitate a sorting process where more academically skilled new teachers who opt to stay in the profession improve their job situations by moving to seemingly more attractive schools in other districts. In contrast, teacher movement within districts appears to create more of a shuffling process, where teachers with similar or lower academic qualifications transition to schools with similar or slightly better characteristics.**

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Introduction

For some years now, and in most discussions of new teacher attrition, there has been a general belief that half of all new teachers flee the profession within five years. Policy makers and practitioners are concerned about this apparent "crisis" in the teaching profession because they hear that (a) teachers' skills improve during their first two to three years of practice, and it seems a waste to lose so many entrants early in their careers, (b) the poorest and highest minority schools uniformly are more likely to have high turnover of new teachers, and (c) the production pipeline from teacher preparation programs is grossly inefficient in meeting the supply needs of our schools. This latter concern takes on added significance because of an anticipated increase in demand for teachers stemming from high retirement rates among an aging teaching force in the United States. But the national evidence backing up some of these claims stems from sample data that are not representative of new teachers at the state level, and which cannot account for teachers who return to teaching after a gap in service. The success of policies aimed at lowering new teacher attrition or minimizing the impact of attrition on educational inequities depends on accurate information about, and a solid understanding of, the problem itself. Fortunately, Illinois' State Board of Education has maintained a longitudinal database on who is teaching in Illinois' public schools since the early 1970s. Through shared data agreements that assure individual confidentiality, the Illinois Education Research Council has analyzed 35 years of teacher data to test whether the nationally received wisdom on new teachers accurately applies to Illinois.

Using over 30 years of new teacher data for Illinois public schools (IPS) spanning the 1971 to 2006 period, we follow entire cohorts of new teachers through their first five years after entry into teaching to examine their movements within and out of teaching in IPS. We focus on new teacher attrition from the profession and from schools to assess its impact at those levels. In contrast to the single-year sample datasets on which all of the national estimates of new teacher attrition are based, our longitudinal population data enable us to track returns of our cohorts for up to thirty-five years, thereby allowing us to calculate exact attrition figures, rather than just probabilities of attrition, and to account for teachers who return to teaching in IPS after a year or more absence.

After describing the changing demographics of Illinois' new teachers over the past 20 years, we examine new teacher attrition from the profession since 1971, and then we look at the rates at which new teachers leave their initial schools to get a sense of the magnitude and impact of new teacher attrition in the state. Analyses are provided by teacher and school characteristics and regions across the state, as well as Chicago Public Schools (CPS). In the final section, we consider how teachers' movements during the early years impact the academic qualifications of new teachers in schools.

Methodology

Defining Attrition

At the level of the profession, attrition refers to the departure of teachers from teaching altogether. Because we are unable to track teachers who leave IPS for teaching jobs in private schools or in public schools outside of Illinois, attrition from the profession in this study refers to the exit of teachers from teaching in IPS.[1] At the school level, attrition includes not only the departure of teachers from the profession, but also the departure of teachers for teaching positions in other schools within or outside of the district and for non-teaching positions in IPS. Unfortunately, we are unable to distinguish between voluntary and involuntary attrition in this study.

We present the attrition rates of new teachers from teaching in the Illinois public schools in two ways. First, we report five-year attrition rates for each cohort, which represent the percentage of new teachers that left teaching in IPS sometime during their first five years. Teachers are tracked into their sixth year following initial entry to determine their movements through year five, and are tagged as having left the profession if they appear in the Teacher Service Record (TSR) as teachers in one year but do not appear as teachers in the subsequent TSR year. New teachers who switch to non-teaching positions but remain in IPS are counted in the attrition rates as well so that the results for Illinois can be compared to others' findings. Second, we report return-adjusted attrition rates, which account for the fact that a significant proportion of new teachers who leave during their first five years eventually return to teaching in IPS. To calculate the return-adjusted rate for each cohort, we subtracted the percentage of new teachers that returned to teaching in IPS after a year or more absence from the corresponding five-year attrition rate.

At the school level, new teacher attrition from the profession is only one part of the story. In addition to those who leave IPS altogether during their first years following entry into the classroom (referred to as "leavers"), some new teachers move to teaching positions in other Illinois public schools within or outside of their district ("movers") or accept non-teaching positions in IPS ("changers"). In our examination of attrition from the profession, changers are included in the leavers group so that attrition rates for Illinois can be compared to the oft-cited 50 percent attrition figure. At the school level, we distinguish changers from leavers to provide additional information about teachers' movements during their early years.

Data

Data for this study were compiled from a number of sources. TSR data collected and maintained by the Illinois State Board of Education (ISBE) served as the primary source.[2] Each TSR data file contains rich, individual-level information about all public school teachers employed in Illinois in a given academic year, such as their years of teaching experience both within and outside of the state, the identity of the teacher's school, number of hours and months worked, position held, highest degree earned, and main teaching assignment(s). More than thirty years of TSR data spanning the 1971 to 2006 period were pieced together to

create a longitudinal TSR file of 160,295 new teachers for this study. These TSR data were supplemented with information regarding teachers' baccalaureate college and personal characteristics (i.e., race/ethnicity, gender, and age) taken from the Teacher Certification Information System (TCIS), which is also maintained by ISBE. Teachers' individual ACT scores were provided by ACT, Inc.[3] Barron's *Profiles of American Colleges* provided the competitive rankings of teachers' baccalaureate colleges. Finally, information on the characteristics of schools was gathered from public-use data files from the National Center for Education Statistics' Common Core of Data (CCD) and the Illinois School Report Cards. Both sources provided annual school information beginning with the 1986-87 academic year. CCD data from 2004-05 were used again in 2005-06 due to the unavailability of 2005-06 information. We round all percentages throughout the paper, so in some cases the numbers in charts and tables may not total 100 percent.

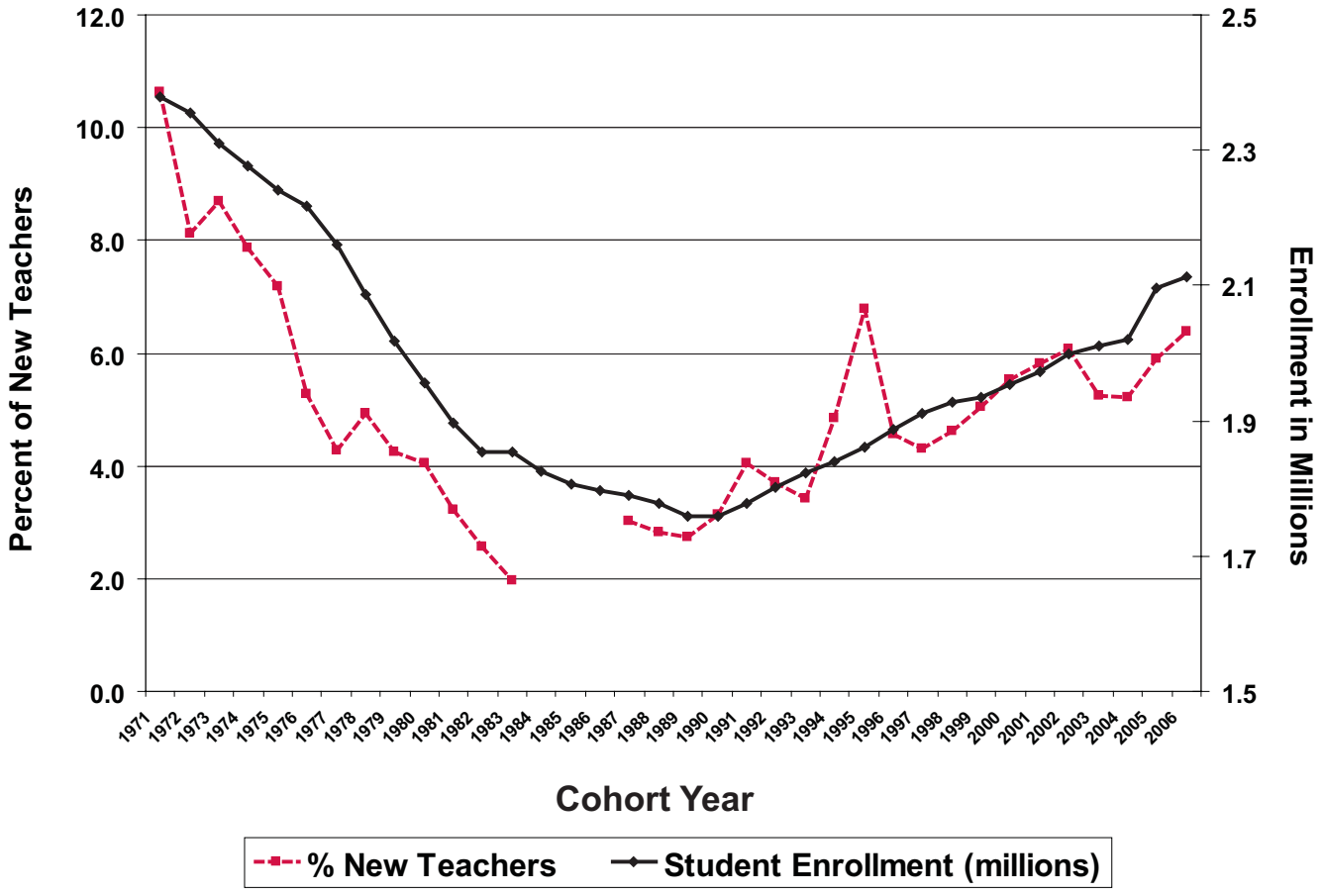
In this study, we follow cohorts of new teachers, defined as teachers with one or fewer years of total teaching experience, to examine their movements within and out of teaching in IPS. The in-state and out-of-state experience variables contained in the TSR files provided the primary means for creating the new teacher cohorts. Prior years of TSR data, as well as teacher certification dates, also were examined in an effort to insure that teachers identified through the experience variables as belonging to a new teacher cohort were in fact new to the teaching profession in that year. Both full- and part-time teachers are included in the analyses because CPS' definition of a full-time teacher changed during the study period. Full-time teachers constitute 89 percent of each cohort on average. Our new teacher cohorts span the period 1971 to 2006, although we do not have cohort data for 1984 through 1986 due to nonexistent and/or incomplete TSR data. While we focus on teachers' movements during their first six years in teaching, we are able to track the cohorts up to thirty-five years, thereby allowing us to account for teachers who return to teaching in IPS after a year or more absence. We restrict our analyses to teachers new to the profession due to their high mobility rates compared to more experienced teachers and the need for empirically-based information about these teachers that can be used to inform policy discussions in Illinois.[4]

Characteristics of New Teacher Cohorts

New teacher hiring closely mimicked the trend in public school student enrollment levels during the thirty-five year period (1971 - 2006).

While we were able to construct new teacher cohorts from the TSR data extending back to 1971 (i.e., the 1970-71 academic year), complete information regarding the characteristics of those teachers and the schools in which they worked were not available until 1987. As a result, much of the descriptive information in this section is restricted to selected cohorts from 1987 through 2006. Figure 1 shows the trend of new teacher hires as a percentage of all teachers (red broken line) versus total public school student enrollment (black solid line) in Illinois for the 1971 to 2006 period. The gap in the trend line reflects the missing TSR data for 1984 through 1986. New teachers in Illinois constituted a decreasing share of all teachers throughout the 1970s and into the early eighties,[5] declining from over 10 percent of the total teaching force in 1971 to about 2 percent in 1983. The share of new teachers increased to about 3 percent of all teachers in 1987, and has risen fairly steadily since then. In 2006, new teachers comprised over 6 percent of the teaching force. The large spike in new teacher hiring in 1995 stemmed from heightened demand created by an early retirement incentive offered to late-career teachers at that time. Figure 1 shows that new teacher hiring closely mimicked the trend in public school student enrollment levels during the thirty-five year period.

Figure 1. New Teachers as a Percentage of All Teachers in IPS vs. Illinois Public School Student Enrollment (1971 - 2006)



Descriptive information for selected new teacher cohorts between 1987 and 2006 are presented in Tables 1 and 2. The figures are reported for all schools, as well as by locale, in Table 1 to highlight the differences that exist in the characteristics of new teachers hired across locale types in Illinois (i.e., CPS versus Non-CPS urban, suburban, town and rural areas). Similarly, the characteristics of new elementary/middle school teachers and high school teachers are shown in Table 2. The school-level category "Other" in Table 1 refers to schools in Illinois that are not classified as elementary, middle, or high schools. This category includes schools with such designations as special, area vocational, regional, and alternative. New teachers hired into this "Other" school category are not broken out in Table 2 due to their small numbers.

Gender

Overall, just over three-quarters of new teacher hires in Illinois are female (Table 1), just like the gender mix of all teachers in Illinois (75% female during the years 1987 through 2006). While this ratio of female to male new teachers is similar across locales, Table 2 shows that females comprise a greater share (84% on average) of new teacher cohorts in elementary/middle schools than in high schools (59% on average). Again, this difference in gender makeup by school level mirrors that of all teachers in Illinois where 84 percent of elementary/middle school teachers and 52 percent of high school teachers between 1987 and 2006 were female.

Race/Ethnicity

The race/ethnicity of new teachers, in contrast, differs much more across locales than across school levels. Whereas elementary/middle school new teachers overall tend to be slightly more diverse in terms of the percentages of non-white teachers than their high school counterparts (Table 2), new teacher cohorts in the Chicago Public Schools are much more racially/ethnically diverse than the cohorts in all of the Non-CPS locale types, including Non-CPS urban schools (Table 1). For example, about 40 percent of new teachers in the 1987 cohort in CPS were white compared to at least 93 percent of teachers in each of the Non-CPS locales in that year. Over the 1987 to 2006 period, however, all but the rural Non-CPS locales increased the proportions of minority teachers in their new cohorts, while the new teacher cohorts in CPS became markedly less diverse. In 1987, 40 percent of new teacher hires in CPS were white compared to 64 percent in 2006.

Over the 1987 to 2006 period, all but rural schools in Non-CPS locales increased the proportions of minority teachers in their new cohorts, while the new teacher cohorts in CPS became markedly less racially/ethnically diverse.

Age and Education Level

Between 40 percent and 50 percent or so of both elementary/middle and high school new teachers are "traditional" in the sense that their age of entry (25 years old or younger) indicates that they entered teaching either directly after or shortly after graduating from college. Another third or so enter the public school teaching profession in Illinois between the ages of 26 and 34, and about 20 percent enter at age 35 or older. The age distribution of new hires, though, has shifted over time toward older entrants in Non-CPS locales and younger ones in CPS (Table 1).

The age distribution of new entrants has shifted over time toward older entrants in Non-CPS locales and younger ones in CPS.

Table 1. Characteristics of New Teacher Cohorts in the Illinois Public Schools by Locale and Selected Cohort Years

	All Schools					Chicago Public Schools					Non-CPS Urban					Suburban					Town					Rural				
	1987	1992	1997	2001	2006	1987	1992	1997	2001	2006	1987	1992	1997	2001	2006	1987	1992	1997	2001	2006	1987	1992	1997	2001	2006	1987	1992	1997	2001	2006
Gender																														
Female	77.6	77.1	74.8	78.1	76.8	70.7	73.8	77.0	79.3	75.5	80.8	79.8	75.0	77.8	77.2	81.3	80.2	74.7	78.3	77.5	76.5	75.4	71.7	75.7	72.2	70.2	70.2	69.8	75.5	76.2
Male	22.4	22.9	25.2	21.9	23.2	29.3	26.2	23.0	20.7	24.5	19.2	20.2	25.0	22.2	22.8	18.7	19.8	25.3	21.7	22.5	23.5	24.6	28.3	24.3	27.8	29.8	29.8	30.2	24.5	23.8
Race/Ethnicity																														
African American	7.0	7.7	7.7	6.9	6.2	41.0	29.8	27.8	24.2	17.3	5.0	6.4	8.0	6.8	5.7	3.7	2.6	3.3	3.5	5.0	0.6	0.6	1.5	1.8	2.1	1.0	0.7	0.3	0.4	0.6
Asian/Pacific Islander	0.7	1.3	1.2	1.6	1.6	4.0	3.2	3.9	4.4	3.7	0.5	1.8	0.7	1.5	2.1	0.4	1.0	1.0	1.3	1.4	0.0	0.2	0.0	0.5	0.5	0.2	0.0	0.0	0.4	0.1
Hispanic	2.3	5.2	5.8	5.9	5.0	15.4	18.7	20.1	18.1	12.2	1.5	6.0	4.2	3.9	4.7	0.8	2.3	3.3	4.5	4.6	0.0	0.3	0.9	0.7	0.7	0.3	0.3	0.5	0.5	1.1
Native American	0.0	0.1	0.1	0.2	0.5	0.0	0.1	0.3	0.7	2.9	0.0	0.0	0.2	0.2	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0
White	89.9	85.7	85.2	85.5	86.6	39.6	48.2	48.0	52.6	63.9	93.0	85.8	86.9	87.6	87.3	95.1	94.0	92.4	90.6	88.9	99.4	98.9	97.6	96.8	96.5	98.5	99.0	99.2	98.7	98.2
Age at Entry																														
≤ 25	51.1	44.6	44.6	44.5	42.2	20.7	17.5	29.6	36.1	30.0	52.7	44.0	43.4	42.5	42.1	53.9	50.2	47.2	45.8	45.0	57.1	54.0	50.3	49.8	43.9	55.3	53.2	50.8	49.5	46.5
26 - 34	31.1	30.7	35.9	35.6	35.4	41.2	39.2	44.2	44.6	47.1	33.6	30.3	34.5	35.4	34.4	30.1	29.6	36.2	34.2	34.0	26.7	25.8	31.2	32.9	34.9	29.3	28.6	30.7	31.6	30.2
≥ 35	17.8	24.8	19.5	19.8	22.4	38.0	43.3	26.2	19.3	22.9	13.7	25.7	22.1	22.1	23.6	16.0	20.2	16.6	20.0	21.0	16.2	20.2	18.5	17.3	21.2	15.4	18.2	18.5	18.9	23.3
Advanced Degree																														
	10.9	12.3	13.3	13.8	19.0	14.4	14.7	14.0	13.1	26.4	10.4	11.0	15.1	14.0	20.3	13.1	15.0	15.2	16.6	19.1	7.6	8.2	5.9	6.4	11.3	6.0	4.3	6.1	5.5	10.9
School Level																														
Elementary/Middle	60.6	70.5	66.5	67.9	60.6	64.1	83.5	76.2	64.9	63.4	72.1	74.8	71.1	72.0	67.7	66.8	71.3	70.9	72.2	68.0	55.5	66.1	57.9	58.9	63.7	57.8	67.8	57.6	68.6	65.3
High	30.8	23.8	27.0	26.9	35.0	33.8	15.6	22.5	34.6	35.1	22.4	20.6	22.7	23.0	29.1	26.5	24.2	25.5	24.4	29.6	39.1	31.4	38.6	38.2	32.5	41.9	31.2	40.9	28.5	32.1
Other	8.6	5.7	6.5	5.3	4.4	2.1	0.9	1.3	0.5	1.5	5.5	4.6	6.2	5.0	3.2	6.7	4.5	3.6	3.4	2.4	5.4	2.5	3.5	2.9	3.8	0.3	1.0	1.5	2.9	2.6
ACT Composite Score																														
≤ 18	—	—	21.8	22.4	17.6	—	—	41.7	33.6	23.3	—	—	20.1	24.3	13.5	—	—	16.4	20.0	15.7	—	—	16.7	14.2	23.3	—	—	20.9	21.3	16.9
19 - 21	—	—	28.8	29.7	27.9	—	—	26.8	27.1	26.2	—	—	29.5	29.6	27.8	—	—	28.1	29.5	26.6	—	—	32.5	33.4	25.0	—	—	28.9	30.0	33.8
22 - 24	—	—	22.6	23.1	25.0	—	—	15.8	18.4	20.4	—	—	25.0	21.8	26.0	—	—	24.3	23.8	26.0	—	—	23.9	27.6	23.6	—	—	21.9	24.9	25.2
≥ 25	—	—	26.8	24.9	29.5	—	—	15.7	20.9	30.1	—	—	25.5	24.3	32.7	—	—	31.2	26.7	31.7	—	—	26.9	24.8	28.1	—	—	28.3	23.8	24.1
Mean ACT Composite	—	—	21.8	21.7	22.3	—	—	19.8	20.8	22.1	—	—	21.9	21.6	22.7	—	—	22.4	22.0	22.6	—	—	22.0	22.1	22.0	—	—	21.9	21.7	21.9
College Selectivity [a]																														
High	9.8	11.3	12.1	10.1	11.5	6.4	7.4	11.6	13.2	15.6	10.7	13.0	12.2	10.2	13.3	12.6	17.0	15.1	11.3	12.8	7.8	7.3	7.9	5.0	3.9	10.1	6.2	8.0	5.6	5.6
Medium	77.5	73.6	73.6	74.6	75.9	69.8	65.2	66.3	66.8	67.0	76.2	72.4	76.6	78.5	80.4	75.3	68.6	70.2	72.1	74.0	81.5	81.9	83.1	86.5	86.2	82.1	85.2	83.0	81.4	83.0
Low	12.7	15.1	14.3	15.3	12.6	23.8	27.4	22.1	20.0	17.4	13.1	14.6	11.2	11.3	6.3	12.1	14.4	14.7	16.6	13.1	10.7	10.8	9.9	8.5	9.9	7.8	8.7	9.0	13.0	11.4

NOTE: All figures are percentages unless otherwise noted.

[a] Based on Barron's rankings of college competitiveness, where High includes rankings 1 (most competitive) and 2 (highly competitive), Medium includes rankings 3 (very competitive) and 4 (competitive), and Low includes rankings 5 (less competitive) and 6 (non-competitive).

Table 2. Characteristics of New Teacher Cohorts in the Illinois Public Schools by School Level and Selected Cohort Years

	Elementary / Middle Schools					High Schools				
	1987	1992	1997	2001	2006	1987	1992	1997	2001	2006
Gender										
Female	86.0	83.5	81.6	85.0	84.4	58.2	57.2	56.5	60.1	63.4
Male	14.0	16.5	18.4	15.0	15.6	41.8	42.8	43.5	39.9	36.6
Race/Ethnicity										
African American	8.1	9.2	8.3	7.1	6.8	5.9	4.3	7.1	6.5	5.6
Asian/Pacific Islander	0.8	1.1	1.3	1.5	1.4	0.7	2.0	1.4	2.0	2.1
Hispanic	3.1	6.6	7.4	6.7	5.8	1.4	2.3	3.1	4.6	4.1
Native American	0.0	0.1	0.1	0.2	0.4	0.0	0.0	0.1	0.3	0.8
White	87.9	83.1	82.9	84.5	85.6	91.9	91.3	88.4	86.6	87.4
Age at Entry										
≤ 25	50.2	43.5	44.4	45.2	42.0	51.3	46.5	44.2	43.2	43.0
26 - 34	30.6	29.5	35.7	35.3	35.5	32.9	34.9	38.4	37.4	35.9
≥ 35	19.1	27.0	19.9	19.5	22.4	15.8	18.5	17.4	19.4	21.1
Advanced Degree										
	9.4	10.6	11.8	12.0	18.2	12.1	14.3	15.0	16.6	20.3
ACT Composite Score										
≤ 18	—	—	25.3	25.6	20.2	—	—	13.5	15.3	12.4
19 - 21	—	—	30.7	31.1	30.9	—	—	23.1	24.0	22.5
22 - 24	—	—	22.6	23.0	23.9	—	—	22.5	23.6	26.9
≥ 25	—	—	21.4	20.2	25.0	—	—	40.9	37.1	38.3
Mean ACT Composite	—	—	21.2	21.2	21.8	—	—	23.3	23.0	23.3
College Selectivity[a]										
High	8.4	9.9	10.6	8.0	9.6	14.8	17.1	17.7	16.1	15.5
Medium	77.3	73.0	73.5	74.9	76.9	76.3	73.3	71.7	73.0	73.7
Low	14.4	17.1	15.9	17.1	13.5	8.9	9.6	10.6	10.9	10.8
Locale of School										
Urban	27.1	34.1	32.5	29.1	28.0	21.6	22.0	24.3	30.6	29.5
Suburban	40.3	38.0	48.6	51.5	53.0	31.8	38.7	43.4	45.4	50.0
Town	14.2	14.5	7.7	5.0	5.3	20.0	20.7	12.7	8.4	5.8
Rural	18.3	13.4	11.2	14.4	13.7	26.6	18.6	19.6	15.7	14.7

NOTE: All figures are percentages unless otherwise noted.
[a] Based on Barron's rankings of college competitiveness, where High includes rankings 1 (most competitive) and 2 (highly competitive), Medium includes rankings 3 (very competitive) and 4 (competitive), and Low includes rankings 5 (less competitive) and 6 (non-competitive).

Teacher Academic Qualifications

The education levels of new teachers as indicated by the percentages of new teachers with advanced degrees (i.e., M.A. degrees or higher) have risen regardless of locale or school level. In general, about twice the percentage of new teachers in suburban and urban schools enter teaching with advanced degrees (19% to 26%) than those in town and rural schools (11%) in 2006. The difference by school level is less pronounced with high school new teachers having a slight edge in advanced degrees compared to elementary/middle school new teachers.

With regard to new teachers' other academic qualifications, high school teachers have higher average ACT composite scores than elementary teachers (23.3 vs 21.8 in 2006), and are more likely to have graduated from baccalaureate colleges ranked "most competitive" and "highly competitive" (i.e., the "high" college selectivity category in Table 2) by Barron's than elementary/middle school teachers (16% vs 10% in 2006).[6] Illinois' elementary/middle and high school teachers' qualifications

overall, however, have changed little over time. For example, the average ACT composite score of new high school teachers in 2006 was 23.3, the same as it was in 1997.[7] Across locales, Non-CPS urban and suburban teachers are more likely to graduate from colleges in the high selectivity category compared to teachers in town and rural schools (13% vs 4% and 6% in 2006). Since teachers choose jobs close to the institution from which they graduated, locales in Illinois that are not home to highly competitive colleges, such as small towns and rural areas, are less likely to have new teachers from such institutions. The ACT profile of new teachers, however, is very similar across all Non-CPS locales, suggesting that ACT better captures new teachers' academic qualifications than their college attended.

The academic qualifications of recent CPS new teachers have increased, and are now on par with Non-CPS entrants.

The most noteworthy finding with regard to new teachers' academic qualifications is the change in both the distribution of new teachers by college selectivity and new teachers' average ACT scores in CPS (Table 1). The percentage of new CPS teachers who graduated from the most selective colleges rose steadily from 6 percent in 1987 to 16 percent in 2006. Between 1997 and 2006, average ACT composite scores among new CPS teachers increased from 19.8 to 22.1, and the proportion with scores of 25 or more almost doubled, from 16 percent to 30 percent. These findings provide evidence that CPS' efforts to improve the academic qualifications of its new hires are having an impact.

Key Findings: Characteristics of New Teacher Cohorts

The demographics of new teachers are changing. Recent new CPS teachers are increasingly younger, less racially/ethnically diverse and have stronger academic qualifications than earlier cohorts. But in comparison to other locales, they are still less likely to be 25 or younger (30% compared to 40% or more in 2006) and more likely to be non-white (36% compared to 13% or less) in 2006. Academically, recent CPS recruits are on par with Non-CPS new teachers.

Attrition from the Profession of Teaching

Policy reports and media accounts in recent years have led to the common belief that upwards of 50 percent of new teachers leave the profession during their first five years.[8] Words like "fleeing", "abandoning", and "national crisis" have been used time and again to describe attrition from the teaching profession in the United States. While such descriptors may create interesting headlines and garner policymakers' attention, Illinois data, as well as data from a number of other states,[9] show that new teacher attrition from the profession is lower, and in some states considerably lower, than the oft-cited 50 percent figure.

In this section, we present the attrition rates of new teachers from teaching in the Illinois public schools in two ways. First, we report five-year attrition rates for each cohort, which represent the percentage of new teachers that left teaching in IPS sometime during their first five years. Teachers are tracked into their sixth year following initial entry to determine their movements through year five, and are tagged as having left the profession if they appear in the TSR as teachers in one year but do not appear as teachers in the subsequent TSR year. New teachers who switch to non-teaching positions but remain in IPS are counted in the attrition rates as well so that the results for Illinois can be compared to others' findings.

In addition to the five-year rates, we report return-adjusted attrition rates, which account for the fact that a significant proportion of new teachers who leave during their first five years eventually return to teaching in IPS.[10] To calculate the return-adjusted rate for each cohort, we subtracted the percentage of new teachers that returned to teaching in IPS after a year or more absence from the corresponding five-year attrition rate. While we recognize that teachers who stop out for any period of time pose a problem for schools and districts that need to replace exiting teachers in order to staff their schools, we believe these return-adjusted attrition rates are a better reflection than the five-year rates of new teachers' views of, and long-term commitment to, the profession.

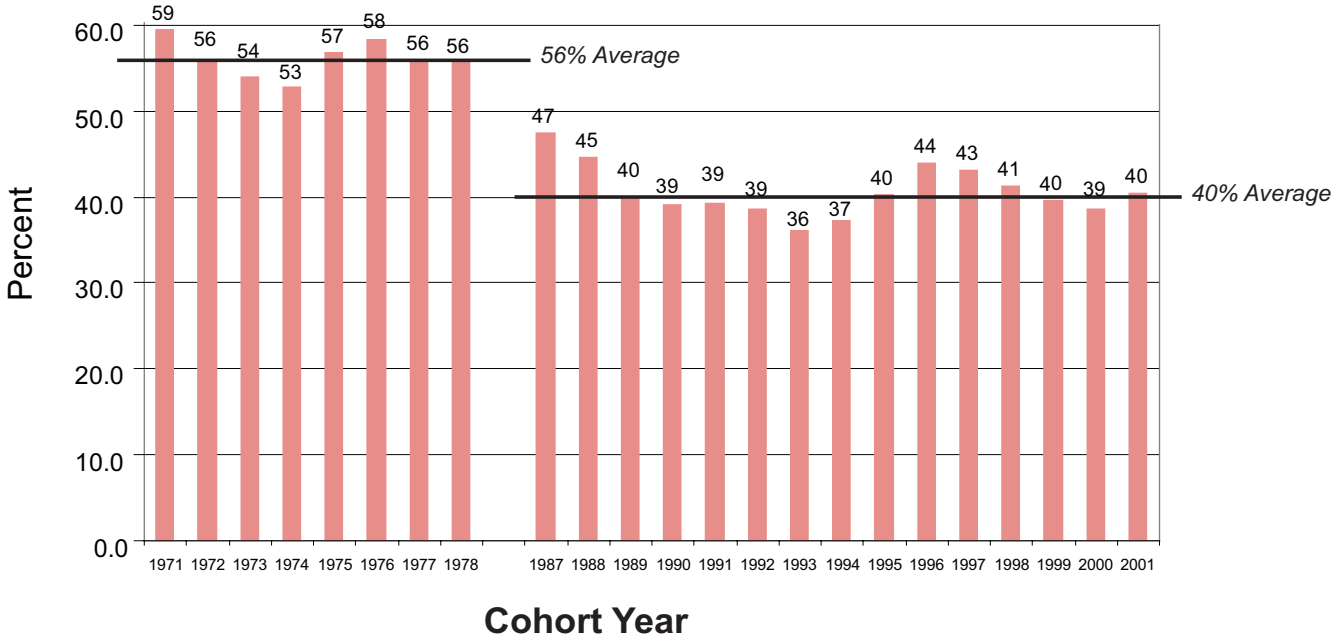
Return-adjusted attrition rates are a better reflection than the five-year rates of new teachers' views of, and long-term commitment to, the profession.

Five-Year Attrition Rates

Figure 2 shows the five-year attrition rates of new teacher cohorts from 1971 to 1978 and from 1987 to 2001. Only cohorts that could be tracked into the sixth year following initial entry into teaching are included in the chart. Because we are unable to track teachers who leave IPS for teaching positions in private schools and out-of-state public schools, attrition from the teaching profession altogether is somewhat overstated in this study.[11]

As shown in Figure 2, the attrition rates of new teachers declined substantially between the 1970s cohorts and the more recent ones. During the 1970s, an average of 56 percent of new teachers from each cohort exited teaching in IPS at some point during their first five years. By the 1990s, attrition rates fell, with about four in ten (40% average) new Illinois teachers from each cohort leaving during their first five years. This marked decline in attrition rates in Illinois over time mirrors that reported for Indiana teachers during the 1965 to 1987 period,[12] the only other state-level study of which we are aware that tracks new teacher cohorts

Figure 2. Five-Year Attrition Rates of New Teachers from Teaching in IPS



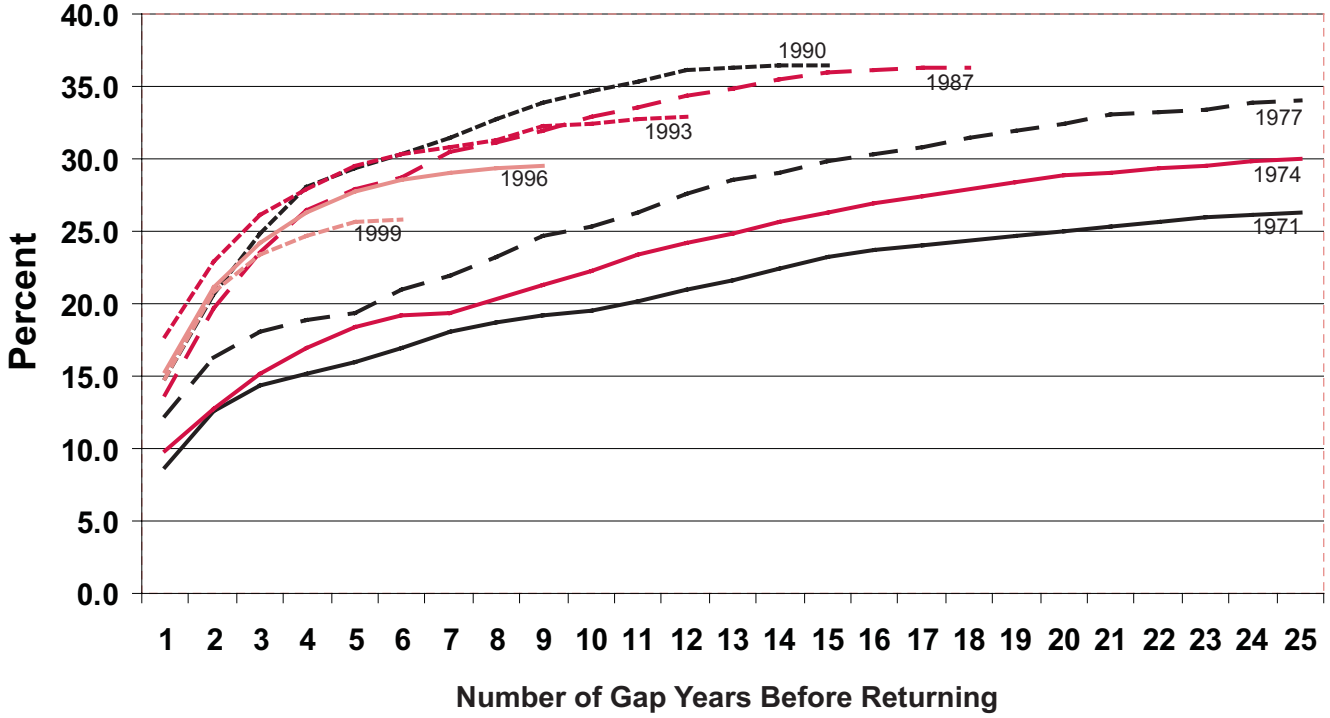
While the 50% new teacher attrition rate that is widely cited reflects conditions in teaching in Illinois in the 1970s, it overstates more recent attrition (40%) in Illinois, even before returning teachers are taken into account.

for more than two decades. Thus, while the 50 percent new teacher attrition rate that has been widely cited reflects conditions in teaching in Illinois in the 1970s, it overstates more recent patterns of new teacher attrition in Illinois, even before returning teachers are taken into account.

Return-Adjusted Rates

From the perspective of the profession, the five-year attrition rates exaggerate the degree to which new teachers abandon the profession during their first few years. We know from our own and others' work that a considerable proportion of teachers who leave early in their careers do so for family responsibilities, rather than dissatisfaction with teaching.[13] Using our cohort data, we find that one-quarter to more than a third of new teachers that leave eventually (1970s cohorts were tracked for up to 35 years) return to teaching in IPS, as shown by the return trajectories of selected cohorts presented in Figure 3.[14] Similar return rates have been reported in studies of other states.[15] In addition, Figure 3 shows that a substantial percentage of leavers from IPS (between 8 percent and 17 percent depending on the cohort) return after just a one-year gap in service. And based on the return trajectories of these cohorts, teachers from the more recent cohorts (i.e., those from the late eighties and nineties) who leave and return exhibit shorter breaks in service and higher return rates, on average, than similar teachers from the seventies. This difference in return patterns across decades most likely reflects the broader changes in females' commitment to the labor market that occurred during the period. Finally, the early return patterns of new teachers from the 1996 and 1999 cohorts suggest that the long-run return rates of new teachers may be on the decline, although it is still too soon to determine their long-term return percentage. Even so, more than 25 percent had returned within six years.

Figure 3. Cumulative Percentages of Leavers Who Return to IPS as Teachers by Selected Cohort Years.

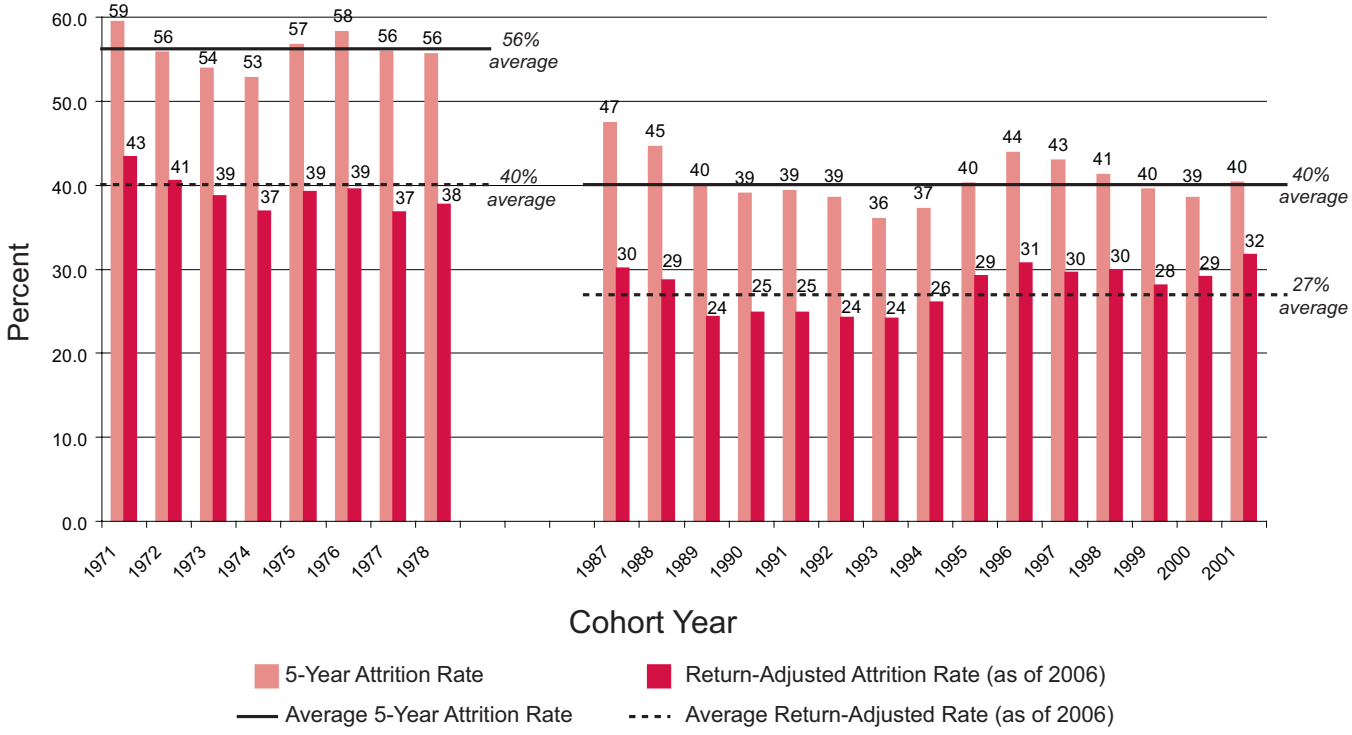


Both five-year attrition rates and return-adjusted attrition rates of new teacher cohorts are presented in Figure 4. We extrapolated the return rates of new teachers from the 1998 through 2001 cohorts for up to 10 years based on the return patterns of teacher cohorts from the early nineties. The return-adjusted rates for all of the 1980s and 1990s cohorts, however, are still biased upwards due to the fact that an unknown additional number of leavers from each cohort will return at some point following the 2005-06 academic year.[16] Notwithstanding this bias, the chart shows that in the 1970s, return-adjusted attrition rates averaged about 40 percent. By the 1990s, this net exit rate had shrunk to an average of 27 percent. During the seventies, about two out of five teachers (37% to 43%) who began their teaching careers in the Illinois public schools left at some point during their first five years and did not return. More recently, approximately 25 percent to 30 percent of new teachers from the late 1980s and 1990s cohorts left and have not yet returned.[17] Whilst we expect the return-adjusted rates of these recent cohorts to decline even further as teachers return to IPS in future years, even these current return-adjusted attrition figures are nearly one-half lower than the oft-cited 50 percent figure.

In the 1970s, return-adjusted attrition rates averaged about 40%. By the 1990s, this net exit rate had shrunk to an average of 27%.

Comparisons of attrition in teaching versus other occupations indicate that the teaching profession (along with health occupations) tends to be more stable than other occupations employing people with similar educational backgrounds. For example, two studies using the same national longitudinal database show that the three-year occupational stability of recent college graduates in teaching is higher than that in other occupational categories, and is similar only to health occupations.[18] Another study compares attrition from the teaching profession to attrition from the nursing, social work, and accounting professions among those aged 30 and

Figure 4. Five-Year and Return-Adjusted Attrition Rates of New Teachers from IPS



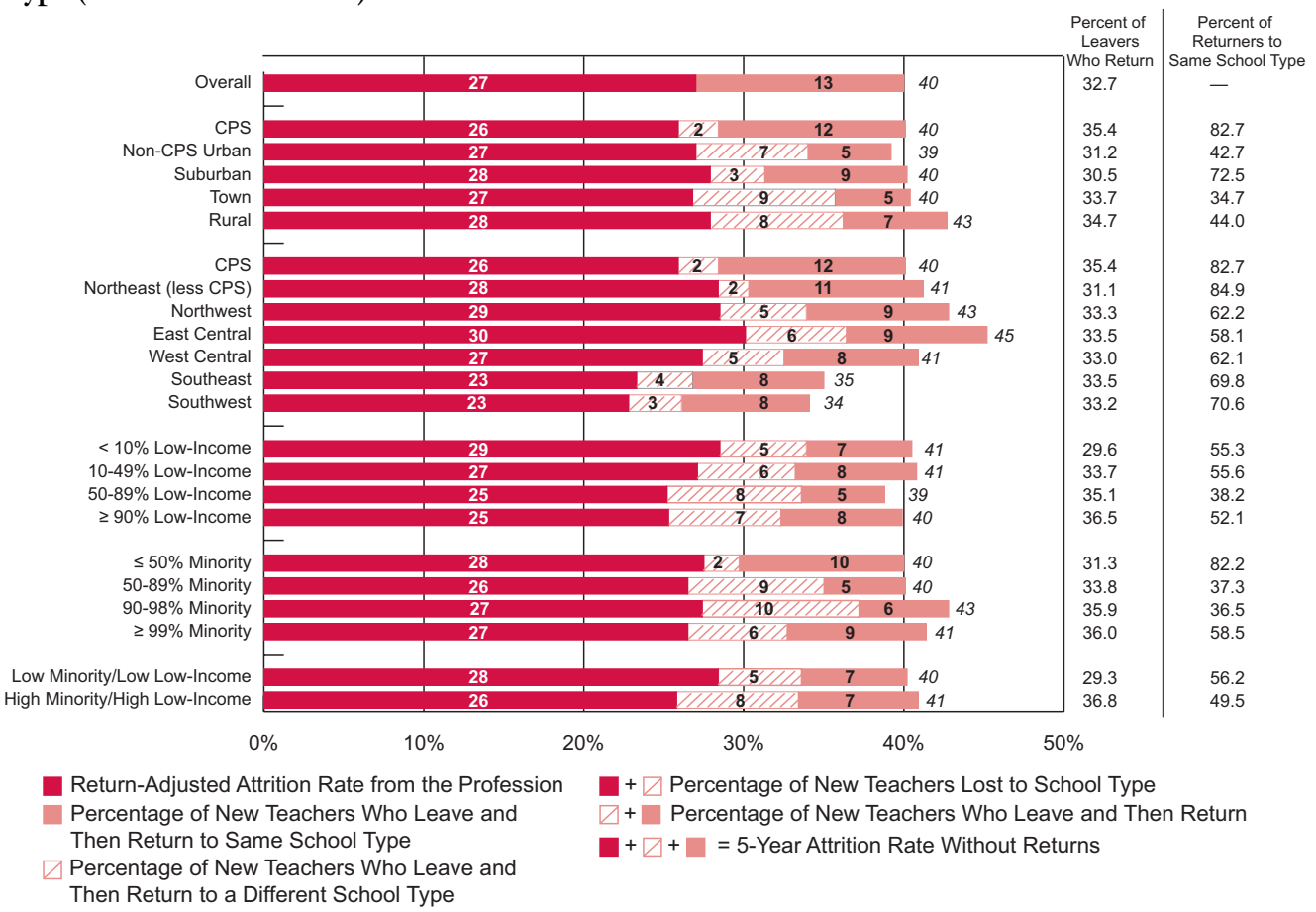
younger and finds teachers' attrition rates to be slightly higher than nurses', similar to accountants', and lower than social workers' rates.[19]

Attrition from the Profession by School Characteristics

Overall attrition rates can mask important differences in attrition rates for types of teachers and schools. Occupational choice theory from economics posits that individuals will make decisions about whether to enter, stay, or leave an occupation (or position) depending on the pecuniary and non-pecuniary benefits of a particular job relative to the benefits associated with alternative opportunities available to that person. Pecuniary benefits include monetary-based rewards, such salary, retirement and health benefits, opportunities for promotion, and job security, whereas non-pecuniary benefits include such things as working conditions, work schedule, and the availability of job-related resources.[20] To the extent that teachers with different personal characteristics value the benefits associated with teaching differently and/or face diverse opportunities outside of teaching, and schools with different characteristics offer varying levels of non-pecuniary benefits, the attrition rates of new teachers will vary across teachers and schools. Notably missing from this study is an analysis of the impact of teachers' salaries on attrition. Because we include both full- and part-time teachers in our analyses and district-level salary schedule data were only available beginning in 2003, we opted not to examine the impact of salaries in this study. Several existing studies show that higher salaries are associated with lower rates of attrition from the profession.[21]

Figure 5 presents both the five-year and return-adjusted attrition rates of new teachers in Illinois by the characteristics of the teachers' initial school (i.e., the

Figure 5. Five-Year and Return-Adjusted Attrition Rates Accounting for Returners to Same School Type (1987-1997 Cohorts)



school in which a teacher began his/her career). The entire length of the bars in Figure 5 represents the unadjusted five-year attrition rates, and the initial red segments show the attrition rates from the profession after being adjusted for teacher returns. The attrition rates for all of the school characteristics are based on combined data from the 1987 through 1997 cohorts. Overall, we see that an average of 40 percent of new entrants leave teaching in Illinois public schools within five years, and that 33 percent of those leavers return to IPS teaching, for a return-adjusted attrition rate of 27 percent. The fact that about one-third (on average) of teachers who leave during their first five years eventually return to teaching in IPS is a positive indication of new teachers' views of the profession. Figure 5 also shows whether those who return to teaching come back to schools that are similar to those in which they started (i.e., schools in the same school-type category) or if they return to schools of a different type. From the standpoint of the teaching profession as a whole in Illinois, the type of school to which a teacher returns is inconsequential. However, such information is important for schools and districts to consider because if, for example, most of the teachers in CPS who leave and eventually return come back to schools outside of CPS, then new teacher attrition from the profession poses a greater long-term staffing problem for CPS than the return-adjusted attrition rate would suggest. As Figure 5 shows, however, this is not the case. Next, we describe attrition from school types by locale and region, and by school characteristics.

Locale and Region

Existing evidence regarding new teacher attrition rates in urban schools versus schools in other locale types is mixed.[22] We find that, compared to Illinois teachers who began their careers in CPS, only teachers who started in rural schools in Illinois register a statistically higher attrition rate, although the practical difference is small (Figure 5). On average, 40 percent of new teachers in CPS leave during their first five years compared to 43 percent of new teachers in rural schools. Once teacher returns are taken into account the differences in attrition rates by locale from the perspective of the profession are trivial. Teachers who start in CPS show a slightly lower return-adjusted attrition rate (26%) than teachers who start in Non-CPS suburban and rural schools (28% in both locales). The return-adjusted rates for teachers in Non-CPS urban and town schools are not statistically different from that of teachers in CPS. After accounting for returners to the same school locale, however, CPS has the lowest attrition (28% versus 36% for town and rural locales).

After accounting for returns to the same school region, the East Central region has the highest attrition at 36%.

Geographic regions in Illinois exhibit greater differences in five-year attrition rates than those found across locale types. Compared to new teachers in CPS, new teachers in the Northwest and East Central regions in Illinois leave teaching at somewhat higher rates, whereas teachers in the Southern two regions exit at lower rates. Across all geographic regions in Illinois, the return-adjusted attrition rates of new teachers range from about 23 percent in the two Southern regions to 30 percent in the East Central region. After accounting for returns to the same school region, the East Central region has the highest attrition at 36 percent. It is important to remember that these adjusted rates are still somewhat high because additional teachers will return to teaching in the coming academic years.

School Characteristics

The characteristics of students in schools often are used in attrition studies as rough indicators of the working conditions teachers face.[23] In Illinois, teachers who start their careers in schools with 90 percent or more low-income students are no more likely to leave teaching in IPS during their first five years than teachers who start in schools with lower percentages of poor students (low-income students are those who qualify for free- or reduced-price lunch). However, they are somewhat more likely than teachers whose initial schools served less than 50 percent low-income students to return to teaching after a break in service. Thus, the return-adjusted attrition rate of teachers in the highest poverty schools is 25 percent versus 29 percent for teachers in the lowest poverty schools. After accounting for returns to the same school poverty type, there is very little difference in attrition from the profession by school poverty.

School minority status appears to be more strongly related to attrition from school type. After accounting for returns to the same school minority type, lowest minority schools show the lowest attrition (30%), while 90 percent to 98 percent minority schools average a loss of 37 percent. What is more telling, however, is the proportion of returning teachers who return to similar schools. Eighty-two percent of teachers who start in low-minority schools (≤ 50%) return to a similar school, compared to 37 percent of those starting in 50 percent to 98 percent minority schools, and 58 percent of those starting in fully-minority schools (≥ 99%).

Given the high correlation (r=.747) that exists between percent minority and percent low-income students in schools, we also compare attrition rates in high minority/high low-income schools versus low minority/low low-income schools. High minority/high low-income schools are those with 90 percent or more minority and low-income students. Low minority/low low-income schools are those with less than 50 percent minority students and less than 10 percent low-income students. As shown in Figure 5, the five-year attrition rates of teachers in these schools are similar, but the return-adjusted attrition rate is actually slightly higher for the low minority/low low-income new school teachers (28% vs 26%), and are almost identical when adjusted for return to same school type (about 33%). These results seemed counterintuitive until we considered teachers' own characteristics, which we do in the next sections.

Overall, the results in Figure 5 show that some differences exist in the five-year attrition rates of new teachers based on the characteristics of the teachers' initial school. Once the attrition rates are adjusted for returners, the rates still exhibit statistically significant differences across school type, although the magnitudes of the differences tend to be quite small. Thus, it appears that the characteristics of new teachers' first schools do not have a large differential impact on teachers' decisions to abandon the teaching profession in Illinois. In general, between 25 percent and 30 percent of new Illinois teachers leave the profession and do not return, regardless of the type of school in which they started teaching. When we account for returners to same school type, though, we find that some school types (e.g., town and rural schools, schools with 90% - 98% minority students) are more affected by new teacher attrition from the profession than the simple return-adjusted rates would suggest.

Attrition from the Profession by Teacher Characteristics

We have just shown that school demographics were only weakly related to new teacher attrition for those entering between 1987 and 1997, with the exception of those who started in low-minority schools (< 50%), who were much more likely to return to a similar school in comparison to those who started at higher-minority schools (who were more likely to return to different types of schools). This similarity in attrition rates may be related to teachers with different characteristics sorting into schools with different characteristics (we address this in more detail shortly). In this section, we examine directly whether new teacher attrition rates are similar based on teacher characteristics alone. In Figure 6, we show the five-year and return-adjusted attrition rates by teachers' personal characteristics. The rates are based on combined data from the 1987 through 1997 cohorts only, due to the restricted amount of return rate information that we have for the 1998 through 2001 cohorts.

Gender

Previous studies that examine beginning teacher cohorts from the 1970s and early 1980s report significantly higher attrition rates for female teachers than male teachers.[24] Using our more recent data, we find no significant difference in the five-year attrition rates of female and male new teachers in Illinois (Figure 6). But because female teachers who leave return to teaching in IPS at a higher rate (34%) than male teachers who leave (29%), the return-adjusted attrition rate for these recent cohorts of female teachers (27%) is slightly lower than that for males (29%).

Race/Ethnicity

African American and Hispanic new teachers in Illinois are less likely to leave.

Attrition rates vary by the different racial/ethnic subgroups within the minority category.[25] Compared to white teachers, African American and Hispanic new teachers in Illinois show significantly lower five-year and return-adjusted attrition rates—that is, they are less likely to leave—whereas those of Asian and Native American new teachers are not significantly different from their white colleagues (Figure 6). After accounting for those who return to teaching in IPS following a break in service, approximately 22 percent and 24 percent of African American and Hispanic new teachers, respectively, leave at some point during their first five years and do not return. A greater percentage of white teachers (28%) leaves and does not return.

Age

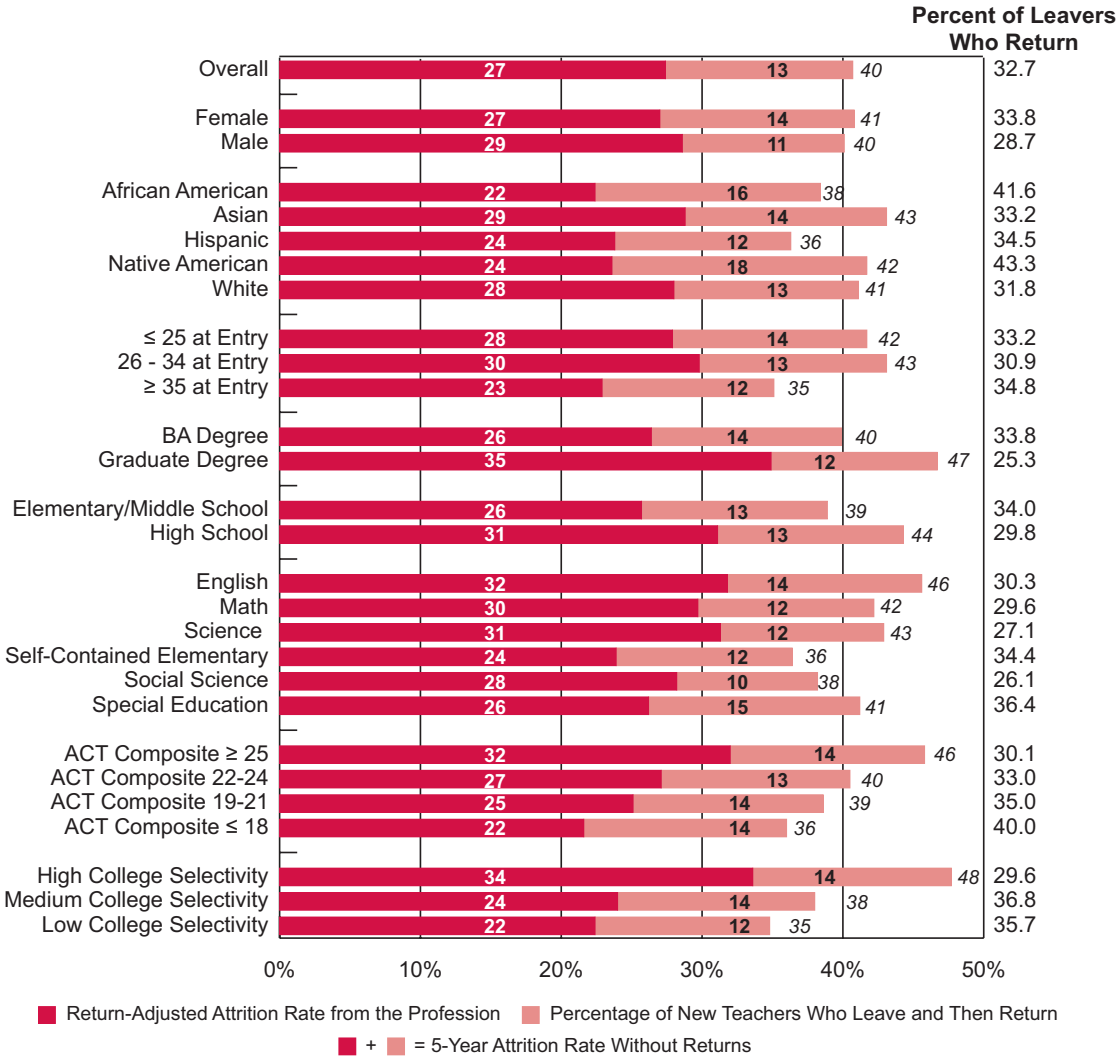
Older entrants (35+) are most likely to stay (23% return-adjusted attrition), while 26-34 year-old new teachers are least likely to stay (30% return-adjusted attrition).

The age at which individuals enter the teaching profession has been found in some studies to be related to their decisions to leave.[26] Given the predominance of females in teaching, life cycle-related events, such as childbearing, are typically cited as reasons for age-related differences in attrition rates.[27] Although we employ different age ranges than those used in others' studies, we too find that younger teachers in general are more likely to leave teaching in IPS than older teachers. However, our results indicate that those who enter teaching between the ages of 26 and 34 are the most likely to leave during their first five years (43%), even compared to those who enter at a younger age (42% for those aged 25 and younger). Teachers who enter at age 35 or older register the lowest five-year attrition rate (35%). Because the percentages of teachers who return after a break in service are similar in magnitude across the three age categories, the pattern of return-adjusted attrition rates follows that of the five-year rates, i.e., teachers aged 26 to 34 at entry have the highest return-adjusted attrition rate (30%), followed by teachers aged 25 and younger (28%), and then teachers aged 35 and older at entry (23%).

Education Level

New teachers who enter IPS with graduate degrees (including all postbaccalaureate degrees regardless of subject matter) have significantly higher five-year and return-adjusted attrition rates than teachers who enter the profession with only a bachelor's degree (47% and 35%, versus 40% and 26%, respectively).[28] (We show later in this report that more entrants with graduate degrees move to non-teaching positions during their first five years with IPS. These "changers" are counted in the attrition statistics in this section.)

Figure 6. Five-Year and Return-Adjusted Attrition Rates by Teacher Characteristics (1987 - 1997 Cohorts)



Teaching Level and Subject Taught

New high school teachers in Illinois are more likely to leave the profession early in their careers (44%) than new elementary/middle school teachers (39%). Moreover, once the high school teachers leave, they are less likely to return to teaching in IPS (30% return rate versus 34% for elementary/middle school teachers). Some of the difference in attrition and return rates between high school and elementary/middle school teachers likely stems from differences in the demographic characteristics of the two groups (see Table 2). Teachers' opportunities outside of the teaching profession likely play a role in their exit decisions as well, as evidenced by the fact that teachers of subject specialties (determined by teachers' main assignment in their entry teaching position) that are in relatively high demand outside of teaching, such as math, science, and English, leave IPS at higher rates than social science teachers and teachers in self-contained elementary classrooms. Others have found similar differences by subject specialty, with science teachers most often registering the highest attrition rates.[29]

Academic Qualifications

Finally, others have found that teachers' academic qualifications influence new teachers' decisions to leave the profession.[30] On the basis of teachers' own ACT scores and the selectivity of their baccalaureate institutions, we find the same holds true for new teachers in Illinois (Figure 6). New teachers who score in the highest ACT quartile[31] (i.e., those with an ACT composite score of 25 or greater) leave teaching in IPS during their first five years at a higher rate (46%) than teachers with lower ACT scores. And because they are less likely to return to teaching in IPS after having left, the highest ACT-scoring teachers register a higher return-adjusted attrition rate (32%) than their lower-scoring peers. New teachers with ACT composite scores of 18 or lower have the lowest five-year (36%) and return-adjusted attrition rates (22%) of all. Similarly, the five-year attrition rate of new IPS teachers who graduated from highly selective colleges is significantly higher (48%) than that of teachers who graduated from less selective colleges (38% and 35% five-year attrition rates for teachers in the medium and low college selectivity categories, respectively). In addition to being more likely to leave, teachers with stronger academic qualifications (as measured here by ACT and college selectivity) are less likely to return to teaching in IPS. Specifically, 30 percent of leavers from the high college selectivity group returned compared to 37 percent and 36 percent of those from the medium and low college selectivity categories, respectively. Though these differences by teachers' academic qualifications seem large and are statistically significant, from a practical standpoint they indicate that about two out of 10 of Illinois' least academically prepared new teachers leave the profession and do not return versus three out of 10 of Illinois' most academically prepared new teachers.

Three out of 10 of Illinois' most academically prepared new teachers versus 2 out of 10 of Illinois' least prepared new teachers leave and do not return to teaching in IPS.

Key Findings: Attrition from the Profession

New teachers' commitment to the teaching profession in Illinois has improved substantially since the 1970s and is stronger than conventional wisdom would suggest. During the 1970s, an average of 56 percent of new teachers from each cohort exited teaching in IPS at some point during their first five years. More recently, we show that an average of 40 percent of new teachers from each cohort leave teaching during the same timeframe. Thus, while the 50 percent new teacher attrition figure that is routinely cited in policy reports and media accounts reflects conditions in teaching in Illinois in the 1970s, it overstates recent patterns of new teacher attrition in the state.

Five-year attrition rates from the profession of teaching exaggerate the degree to which new teachers abandon the profession during their early years because a significant percentage of those who stop out for a year or more eventually return. In this study, we show that about one-third of teachers who leave during their first five years return to teaching in IPS. Once these returners are taken into account, the average net loss of new teachers shrinks to 27 percent. And because we are unable with our data to track IPS teachers into teaching jobs in private schools and schools in other states, even this 27 percent figure somewhat overstates total attrition from the profession of new teachers in Illinois. Nonetheless, roughly one in four individuals who enter public school teaching in Illinois leave the profession

Return-adjusted new teacher attrition from the profession in Illinois is 27% after five years.

of teaching during their first five years and do not return to Illinois public schools, not one in two as is commonly believed.

Perhaps most surprising in our analysis of new teacher attrition from the profession is how little the average five-year and return-adjusted attrition rates vary across school type. We find that between 25 and 30 percent of new teachers leave and do not return to teaching in IPS, regardless of the locale of the school or the characteristics of the students in the school in which they started teaching.

Some have used the oft-cited 50 percent new teacher attrition rate to portray teaching as a profession in crisis. Notwithstanding that the 50 percent number does not account for teacher returns, comparisons of attrition in teaching versus other occupations indicate that ***the teaching profession (along with health occupations) tends to be more stable than other occupations employing people with similar educational backgrounds.***

Attrition from Schools

In the previous section, we presented data on new teacher attrition from the profession in Illinois. Such an aggregate perspective is important to our understanding of new teachers' views of, and commitment to, the teaching profession in Illinois, and provides valuable information for policymakers and others who are concerned about the condition of teaching as a profession in the state. For administrators and others concerned about the impact of attrition on individual schools, however, new teacher attrition from the profession is only one part of the story. In addition to those who leave IPS altogether during their first years following entry into the classroom (hereafter referred to as "leavers"), some new teachers move to teaching positions in other Illinois public schools within or outside of their district ("movers") or accept non-teaching positions in IPS ("changers"). In our examination of attrition from the profession, changers were included in the leavers group so that attrition rates for Illinois could be compared to the oft-cited 50 percent attrition figure. In this section, we distinguish changers from leavers to provide additional information about teachers' movements during their early years.

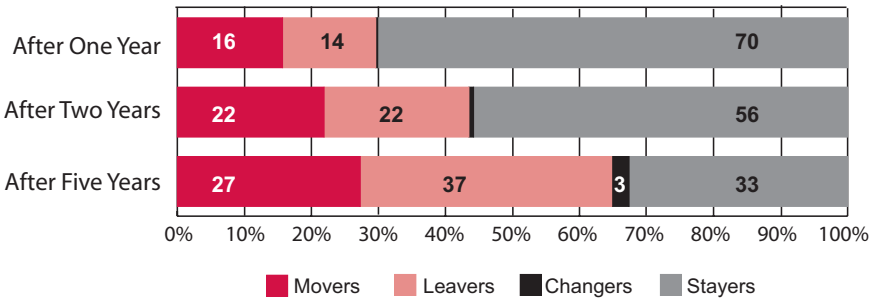
The proportions of movers, leavers, and changers together constitute the total loss of new teachers from individual Illinois schools. Here we examine the status of new teachers at three points in time—after their first year, after their first two years, and after their first five years following entry into the profession—to provide snapshots of the impact of new teachers' movements on schools over time. Because the departure of a teacher typically has an immediate (or at least near-term) effect on a school's operations (i.e., the school needs to hire a replacement teacher or change its programming or class sizes to accommodate the loss), we present data to show the immediate impact of teacher departures and ignore the longer-term effects of teacher returns on attrition and mobility rates in this section. Our calculations are based on the fifteen recent cohorts—1987 through 2001—that could be followed through the first five years following teachers' entry into the profession in Illinois.* We use the term "stayers" in this section to describe those who remain in their initial school as teachers during the entire time period under consideration.

We use the term "stayers" in this section to describe those who remain in their initial school as teachers.

Figure 7 shows the proportions of movers, leavers, changers, and stayers for new teachers overall after one, two, and five years of entry into the profession. After their first year in the classroom, 70 percent of new teachers return to the same school to teach for a second year. Among the 30 percent of new teachers who leave their initial school after only one year, just over half (16 percent overall) move to other schools within IPS to teach, while the other half (14 percent overall) exit IPS altogether. A negligible percentage of new teachers (0.3 percent) switch to non-teaching jobs within IPS after just one year in the classroom. Over time, the percentage of stayers decreases as the percentages of movers, leavers, and changers increase. After two

* Our attrition rates in this section differ slightly from those reported in the previous section on account of our using different cohorts in the calculations. We employ data from the 1987 through 2001 cohorts in this section versus the 1987 through 1997 cohorts in the previous section. We restricted our calculations to earlier cohorts in the previous section to obtain more accurate estimates of long-term return rates. Because we do not consider return rates in this section, we utilize all of the cohorts that could be followed through their first five years.

Figure 7. Status of New Teachers After One, Two and Five Years of Entry to the Profession (1987 - 2001 Cohorts)



years, the period typically needed to gain the on-the-job expertise to hone their teaching skills, 44 percent of new teachers have left their initial school. Again, half of those who do not stay have moved to another school while half have exited IPS. By the sixth year following entry (i.e., after five years), only about one-third (33%) of new teachers in Illinois remain in the same school in which they started teaching. Another 40 percent leave teaching in IPS altogether (although they may later return to IPS teaching), though a small percentage of them (3%) continue to work in IPS in some non-teaching capacity. And 27 percent of new teachers move to other schools within IPS during their first five years in the classroom.[32]

As these data show, the impact of new teacher attrition on schools is substantially greater than the impact of new teacher attrition on the teaching profession as a whole in Illinois or even for different school types. On average, forty to fifty percent of schools' total loss of new teachers each year is due to teachers moving to teaching positions in other Illinois public schools.[33] Although movers have no effect on the teaching profession in the aggregate, they affect schools in exactly the same way as leavers. Thus, regardless of whether their new teachers exit the profession either permanently or temporarily or move to other schools, schools in Illinois face the challenge of replacing about two-thirds of their new teachers within six years of hiring them. While this average five-year attrition rate seems high, the limited research that has been conducted on job changers indicates that many new college graduates move to a job in a different organization within their first five years. For example, research from the 1980s on individuals with similar levels of college education indicates that the average woman held 3.6 different jobs between the ages of 22 and 25, 3.0 jobs between the ages of 26 and 30, 2.2 jobs between the ages of 31 and 35, and 1.9 jobs between the ages of 36 and 40.[34] A more recent survey of the Class of 2001 from Duke University revealed that 36 percent of survey respondents changed jobs in their first year out of college, and 83 percent moved to a job in a different organization within their first five years.[35]

On the average, individual schools in Illinois face the challenge of replacing 44% of their new teachers within three years of hiring them.

It is interesting to note that movers in IPS constitute larger shares of total new teacher attrition from individual schools after the first (53%) and second (50%) years than after the fifth year (40%), perhaps because new teachers are more likely to change schools in search of a "good fit" during their first couple of years in teaching before making a longer-term commitment to a school or deciding to leave the profession altogether. Teacher tenure rules and teacher dismissals likely contribute to these patterns of teachers' movements during their first years as well.

Unfortunately, we are unable to distinguish between voluntary and involuntary attrition in this study.

Attrition from Schools By School Characteristics

As in our examination of new teacher attrition from the profession, we consider in this section the impact of school characteristics on teachers' movements during their first few years following entry into the profession. Figure 8 presents the proportions of new teachers who stay in their initial schools after one, two, and five years, by locale and region and the characteristics of students in their initial school, as well as school performance (1999 - 2001 cohorts only for schools serving grades 3, 4, 5, 7 and 8, due to data availability). To the extent that schools with different characteristics offer diverse working environments and varying levels of other non-pecuniary benefits to teachers, we would expect to see differences in teachers' behaviors across school types.

By Locale and Region

After teachers' first year in the classroom, we find some differences in the stay rate of teachers across schools by locale and region. For example, 73 percent of CPS teachers remain in their initial school following the first year compared to 66 percent of teachers who start in schools in the Northwest region.

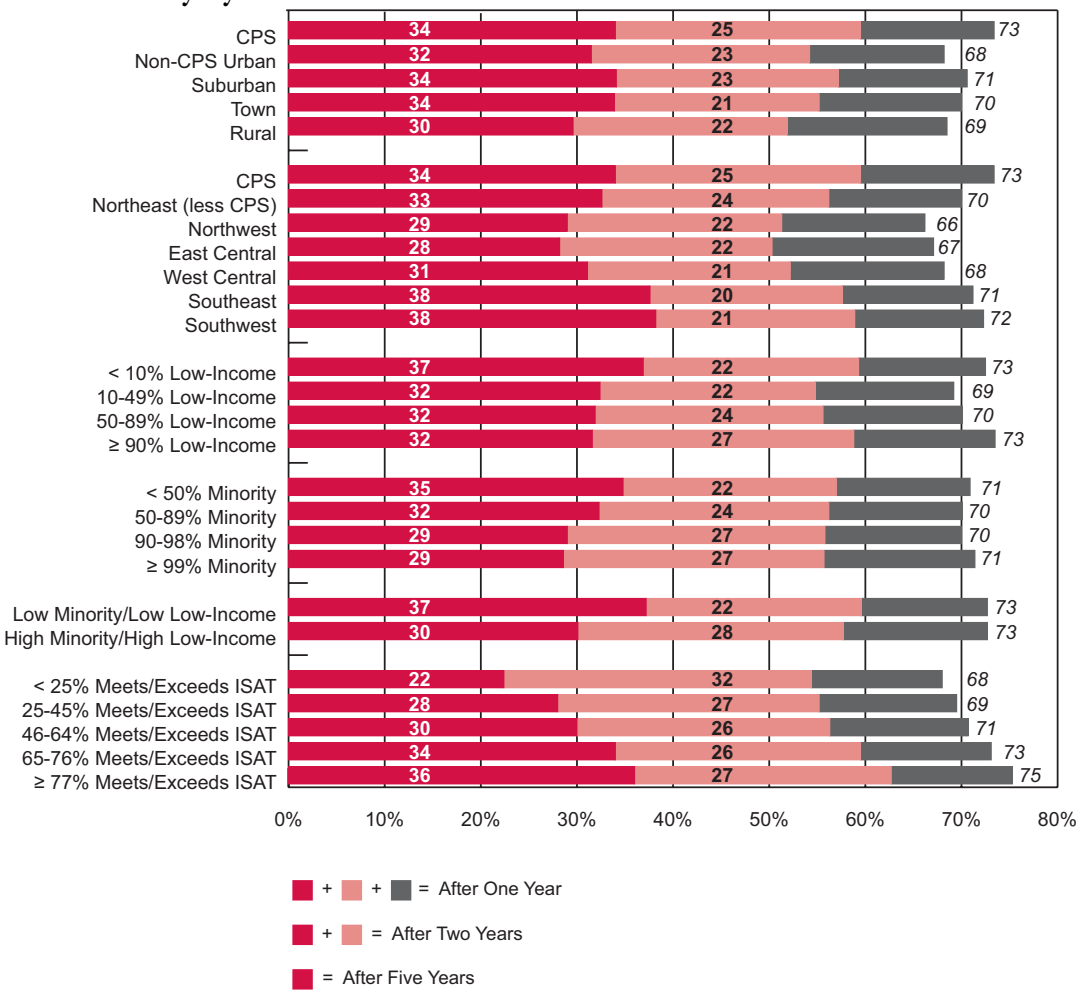
After two and five years following entry, we find somewhat larger differences in the percentages of stayers across school types. For the most part, though, the differences are smaller than what conventional wisdom would suggest. The variation for teachers who remain in their initial school after five years is 30 percent to 34 percent across locales. Across the various geographic regions in Illinois, new teachers in the Southern regions of the state are the most likely to stay in their first school throughout their first five years (about 38%). But, CPS teachers are more likely to stay in their initial school (34%) compared to teachers who start in the Northwest and Central regions of the state (28% to 31%).

By Schools' Student Characteristics and Performance

The characteristics of students in schools also appear to affect teachers' behaviors (Figure 8). New teachers in Illinois who start in schools with relatively low percentages of minority and/or low-income students are more likely to remain in their initial schools than teachers who begin their careers in relatively high minority and/or high poverty schools, although the differences are quite small. As shown in Figure 8, among teachers who start in high minority/high low-income schools, 30 percent stay in their initial school after five years versus 37 percent stayers among teachers who begin their careers in low minority/low low-income schools. Similarly, across schools with varying achievement levels, teachers who begin in the lowest performing schools are much less likely to stay in their first school (22%) than teachers who start in the highest performing schools (36%).[36]

In summary, we find some differences in the percentages of stayers across school types. With the exception of the results by student achievement level, though, the average differences across school type are surprisingly quite moderate, particularly considering these differences reflect the results of 15 cohorts of new teachers

Figure 8. Stay Rates of New Teachers in Initial School After One, Two, and Five Years of Entry by School Characteristics



Note: All calculations, except for ISAT categories, are based on data from the 1987 through 2001 new teacher cohorts. The ISAT results are based on data from the 1999 through 2001 cohorts.

spanning the 1987 to 2001 period. Public schools in Illinois retain on average between 29 percent and 38 percent of their new teacher cohorts into the sixth year following entry, depending on where the schools are located or the background characteristics of their students.

Public schools in Illinois retain on average between 29% and 38% of their new teachers into the sixth year following entry, depending on where the schools are located or the background characteristics of their students.

Within School Type

The average differences across school type that we have just described mask considerable variation in schools' new teacher attrition within school type. We show in Table 3 school-level percentages of new teachers retained in the same school (i.e., stayers) after two and five years following entry by school type. We report retention rates for schools at the 10th, 50th, and 90th percentiles of new teacher retention within each school type. The rates reflect the total (not average) percentage of new teachers from the 1987 through 2001 cohorts (1999 through 2001 for the ISAT categories) that were retained by the school. Schools that hired fewer than five new entrants to teaching across all of the cohorts are excluded from the calculations. (Recall that this study only considers teachers who are new to

the teaching profession. In addition to these beginning teachers, schools will hire teachers with prior teaching experience to fill their staffing needs each year. Schools that favor experienced teachers over new teachers in their hiring processes, as well as those that have very little teacher turnover or shrinking student enrollments, and therefore less need for new teachers, are underrepresented in Table 3.)

For Illinois as a whole, 10 percent of its schools retain one third or less of their new teachers after two years, and 8 percent or less of their new teachers by their sixth year following entry into the schools. Another 10 percent of Illinois schools retain 79 percent and 57 percent of their new teachers over the same timeframes. The

Table 3. School-Level Percentages of New Teachers Who Stay in Their Initial School After Two and Five Years Following Entry into Teaching, By School Characteristics

School Type	Percent of New Teacher Stayers By School Type After Two Years			Percent of New Teacher Stayers By School Type After Five Years		
	10th Percentile Schools	50th Percentile Schools	90th Percentile Schools	10th Percentile Schools	50th Percentile Schools	90th Percentile Schools
Overall	33.3	56.7	78.6	8.3	32.1	56.5
CPS	40.0	61.1	80.0	15.0	33.3	56.3
Non-CPS Urban	30.0	53.8	77.3	6.5	30.5	54.5
Suburban	33.3	58.3	80.0	10.0	33.3	57.1
Town	33.3	57.1	83.3	9.1	33.3	60.0
Rural	27.8	52.4	77.8	5.6	30.0	55.6
CPS	40.0	61.1	80.0	15.0	33.3	56.3
Northeast (less CPS)	33.3	57.1	78.3	9.1	31.3	54.4
Northwest	25.0	53.3	75.5	0.0	28.6	50.0
East Central	27.8	50.0	75.0	0.0	27.3	50.0
West Central	29.4	52.2	75.4	7.4	30.4	55.6
Southeast	38.9	60.0	83.3	13.3	40.0	63.2
Southwest	33.3	60.0	82.3	12.5	37.8	62.5
< 10% Low-Income	36.4	60.0	80.6	13.3	36.1	59.5
10 – 49% Low-Income	30.8	55.6	80.0	9.1	31.8	57.5
50 – 89% Low-Income	26.3	57.1	80.0	0.0	30.0	58.6
≥ 90% Low-Income	36.4	60.0	80.0	12.1	30.8	53.8
< 50% Minority	33.3	57.1	80.0	10.0	33.3	58.3
50 – 89% Minority	30.8	57.3	80.0	5.6	32.4	57.1
90 – 98% Minority	29.4	57.1	80.0	0.0	28.6	52.2
≥ 99% Minority	33.3	56.6	76.9	12.5	28.6	50.0
Low Minority/Low Low-Income	36.4	60.0	81.3	13.3	36.4	60.0
High Minority/High Low-Income	35.7	58.8	80.0	11.5	29.1	50.0
< 25% Meets/Exceeds ISAT	20.0	54.5	80.0	0.0	18.8	42.9
25 – 45% Meets/Exceeds ISAT	27.3	57.1	80.0	0.0	25.0	57.1
46 – 64% Meets/Exceeds ISAT	31.3	60.0	83.3	0.0	30.8	60.0
65 – 76% Meets/Exceeds ISAT	33.3	60.0	86.7	0.0	33.3	60.0
≥ 77% Meets/Exceeds ISAT	35.7	60.0	100.0	11.1	37.5	63.6

Note: All calculations, except for ISAT categories, are based on data from the 1987 through 2001 new teacher cohorts. The ISAT results are based on data from the 1999 through 2001 cohorts.

median school in Illinois retains more than half of their new teachers for more than two years, and about one-third (32%) for more than five years. These 10th, 50th, and 90th percentile figures vary across schools with different characteristics, and tend to be somewhat lower at each percentile for schools with greater percentages of low-income, minority, and low performing students. Most striking about the results in Table 3, though, is the amount of variation in retention rates *within* each school type, including those that are commonly viewed as providing attractive places to work (e.g., low poverty schools, low minority schools, and schools with high student performance levels). Within nearly every school type, at least 10 percent of schools retain a majority of their new teachers over time, whereas another 10 percent of schools are able to retain very few, if any, of their new teachers. The one exception is Illinois' lowest performing schools, in which even the 90th percentile schools retain less than half (43%) of their new teachers for more than five years.

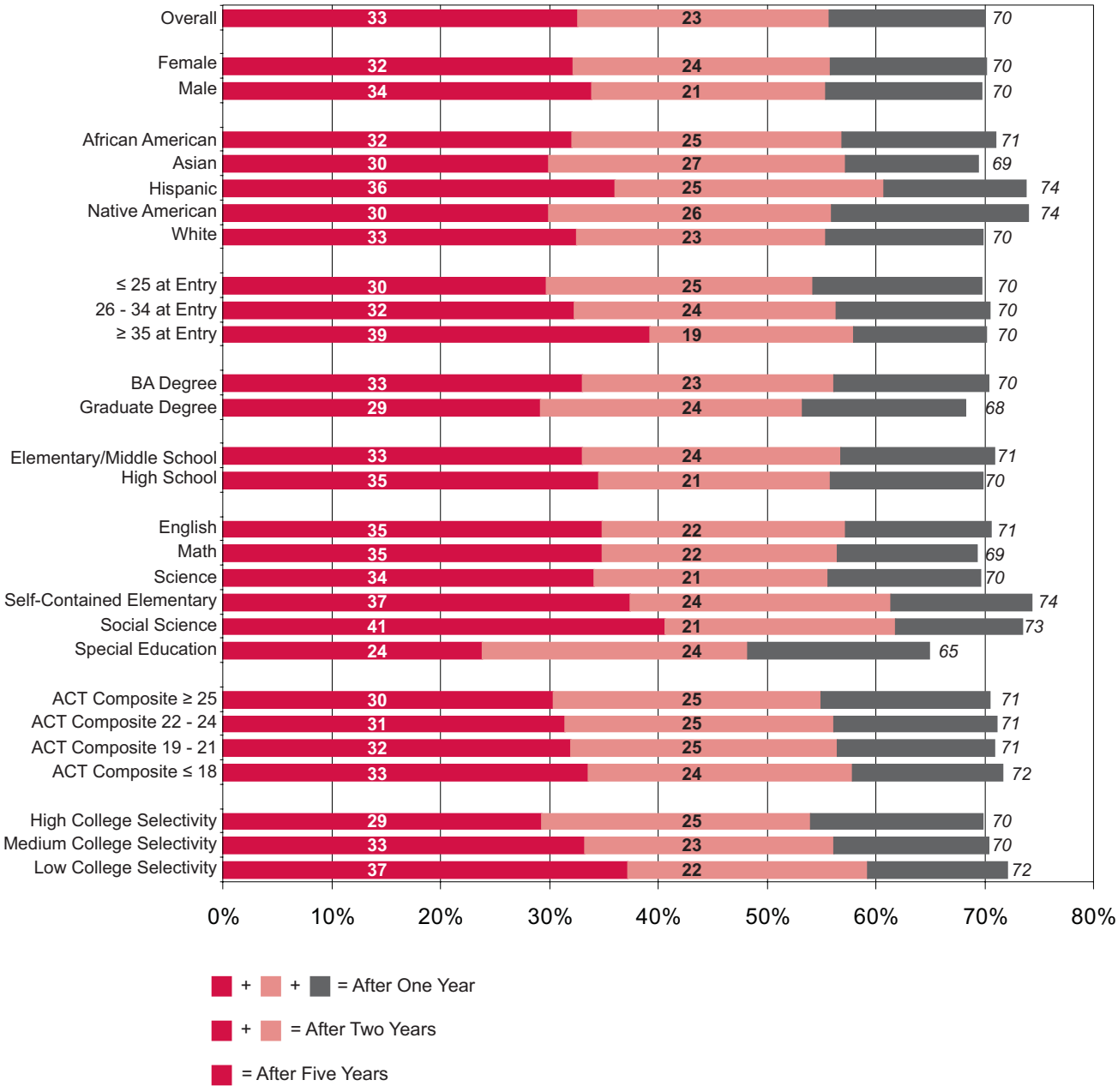
Most striking is the amount of variation in retention rates within each school type, including those that are commonly viewed as providing attractive places to work.

It is commonly believed that the characteristics of students in schools are a primary determinant of new teachers' movements during their first years in the classroom. The differences in attrition rates by school type reported in this section show that student characteristics and school locale do appear to have some impact on teachers' decisions, although their independent effects are modest at best. Differences in new teacher retention rates are much greater across schools within school type, suggesting that other conditions in schools, and perhaps even in teachers' lives, have a substantial impact on new teacher attrition from schools. Unfortunately, we do not have statewide school-level indicators of school environments, such as principal leadership quality, teachers' professional communities, and community/school relations, with which to examine the effects of these other school conditions.

Attrition from Schools by Teacher Characteristics

In Figure 9, we show how teachers' own characteristics influence their decisions to remain in their initial school after one, two, and five years in the profession. After the first year, the stay rates of teachers are remarkably similar, with the exception of special education teachers who are somewhat less likely (65%) than teachers of other subject assignments (69% to 74%) to stay in their initial school for a second year. By the sixth year following entry (i.e., after five years), special education teachers again stand out amongst their peers in their rate of staying in the same school. Only 24 percent of special education teachers remain in the same school for at least five years compared to 34 to 41 percent of new teachers of other subjects.[37] In addition, we find some differences in stay rates by teachers' race/ethnicity (Hispanic teachers are more likely to remain in the same school), age at entry (those who enter the profession at age 35 or older have higher stay rates than younger new teachers), and the selectivity of their baccalaureate college (new teachers from high selectivity colleges are less likely than teachers from less selective colleges to stay in their initial school). It is interesting to note that differences in stay rates vary less by teachers' own ACT composite scores (30% to 33%) than by their college selectivity (29% to 37%).

Figure 9. Percentage of New Teachers Who Stay in Their Initial School After One, Two and Five Years by Teacher Characteristics (1987 - 2001 Cohorts)



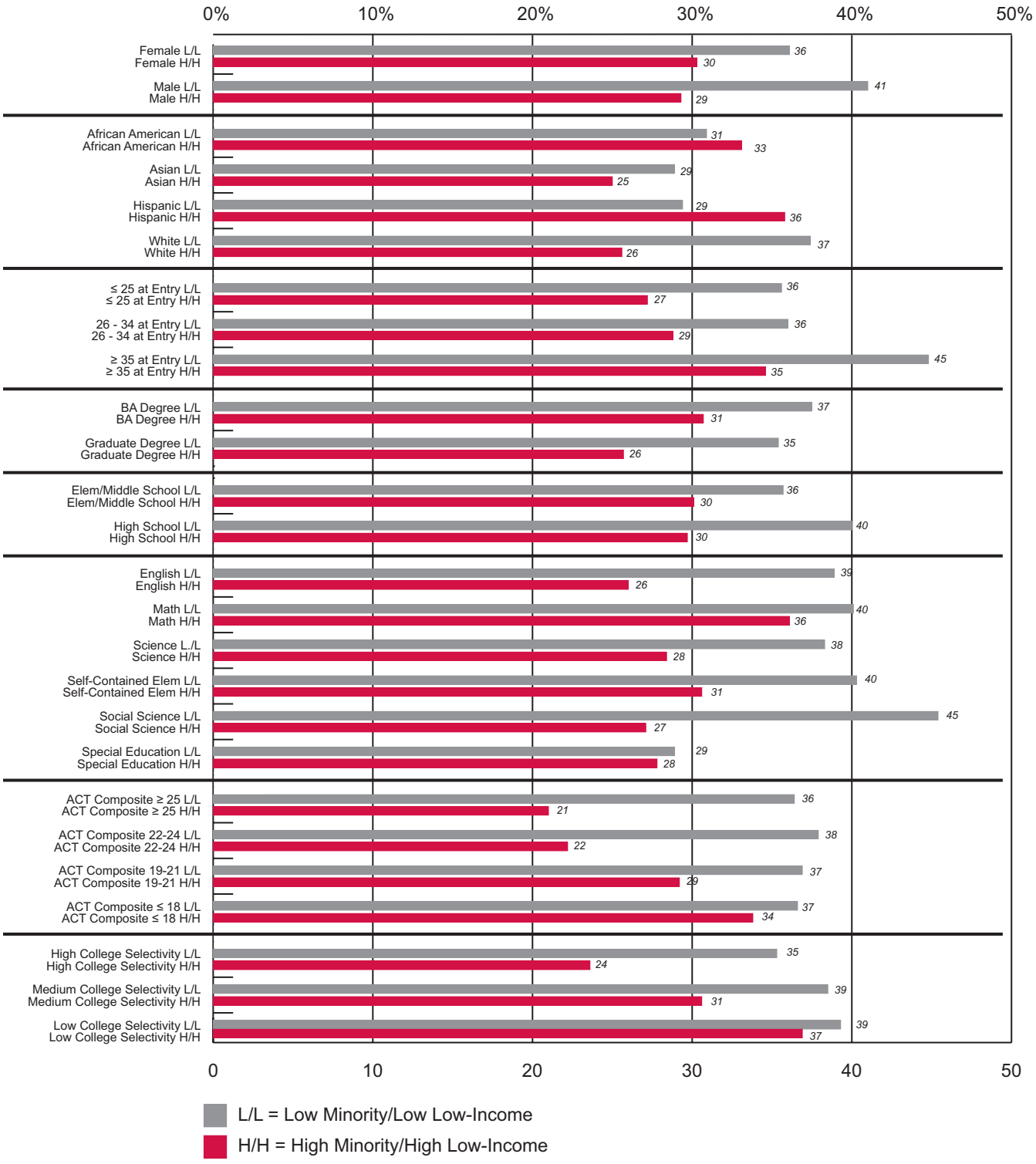
Up to this point, we have examined the influences of teacher characteristics and school characteristics on new teacher attrition separately. However, the average differences in stay rates shown in Figures 8 and 9 mask how teachers with certain characteristics behave in different types of schools. In Figure 10, we combine information about the characteristics of teachers and schools to show how the five-year stay rates of new teachers differ between those who start in low minority/low low-income schools and those who start in high minority/high low-income schools. While new teachers who start in low minority/low low-income schools are generally more likely to remain in the same school after five years than those who start in high minority/high low-income schools, we find a few exceptions. For example, Hispanic new teachers are more likely to remain in high minority/high low-income schools (36%) than low minority/low low-income schools (29%). The exact opposite result is found for new white teachers. In contrast, African American teachers, special education teachers, and teachers with relatively low academic qualifications (i.e., teachers with ACT composite scores of 18 or lower and those who graduated from the least selective colleges) register similar stay rates, regardless of whether they start teaching in low minority/low low-income schools or high minority/high low-income schools.

New teachers with relatively strong academic qualifications are much less likely to stay in high minority/high low-income schools than in low minority/low low-income schools.

The most interesting finding in Figure 10 is the relationship between teachers' academic characteristics and their stay rates in these school types. Across the ACT and college selectivity categories, we show that new teachers with relatively strong academic qualifications (i.e., ACT composite scores of 22 or higher and high college selectivity) are much less likely to stay in high minority/high low-income schools than in low minority/low low-income schools. Moreover, these differences in stay rates by teachers' academic qualifications remain even after teachers' other personal characteristics are taken into account, as shown in the logistic regression results reported in Appendix Table 1.

During this study period, disadvantaged schools in Illinois (i.e., schools with relatively high percentages of minority, low-income, and/or low performing students) hired beginning teachers with somewhat different personal characteristics than those hired by more advantaged schools (see Appendix Table 2). In addition to being more racially and ethnically diverse, new teachers in disadvantaged schools tended to be older at entry and to have lower academic qualifications than new teacher hires in more advantaged schools. Given the results presented in Figure 10 and Appendix Table 1, this sorting of teachers by school type helps explain why we see only modest differences in attrition rates across school types (Figure 9). But as disadvantaged schools in the state attract new teachers with higher levels of academic qualifications (recall from Table 1 that changes in new teachers' characteristics are already occurring in CPS and other urban areas), attrition rates in such schools will rise unless other conditions are altered to make these schools more attractive to more academically skilled teachers.

Figure 10. Teachers' Personal Characteristics and Their Initial School Stay Rates in Low Minority/Low Low-Income (L/L) versus High Minority/High Low-Income (H/H) Schools



Key Findings: Attrition from Schools

For administrators and others concerned about the impact of new teacher attrition on individual schools, attrition from the profession is only one part of the story. At the school level, new teacher attrition rates are substantially higher due to the fact that nearly as many new teachers move to other schools either within the same district or in other Illinois districts as leave the profession during their first five years following entry. Although movers have no effect on the teaching profession in the aggregate, they influence schools in exactly the same way as leavers. **Overall, more than two out of five (44%) of new entrants leave their initial school within two years, and 67 percent leave their initial school within five years.** While this average five-year attrition rate may seem high, other research indicates that many new college graduates move to a job in a different organization within their first five years, suggesting that teachers' job mobility is probably not atypical.

In addition to the overall attrition rates for Illinois schools, **we find some differences in initial school attrition rates by school type, although they are surprisingly modest given the categorical labeling of disadvantaged schools as "hard to staff."** For example, among teachers who start in high minority/high low-income schools, 30 percent remain in their initial school after five years versus 37 percent stayers among teachers who begin their careers in low minority/low low-income schools. The largest school-type differences are found across schools with varying student performance levels, where 36 percent of new teachers remain in the highest achieving schools through their first five years compared to only 22 percent of new teachers in the lowest performing schools. With the exception of these lowest performing schools, public schools in Illinois retain, on average, about 30 to 35 percent of their new teachers into the sixth year following entry, regardless of where the schools are located or the background characteristics of their students.

The most striking finding in our analysis of new teacher attrition from schools is the tremendous variation in retention rates within each school type, including those that are commonly viewed as providing attractive places for teachers to work. For Illinois as a whole, 10 percent of its schools retain one-third or less of their new teachers after two years, and 8 percent or less of their new teachers by their sixth year following entry into the schools. Another 10 percent of Illinois schools retain 79 percent and 57 percent of their new teachers over the same timeframes. The median school in Illinois retains more than half of their new teachers for more than two years, and about one-third (32%) for more than five years. Within nearly every school type, at least 10 percent of schools retain a majority of their new teachers over time, whereas another 10 percent of schools are able to retain very few, if any, of their new teachers. Again, Illinois' lowest performing schools prove to be the exception since even their 90th percentile schools retain less than half of their new hires for more than five years. These results suggest that other conditions in schools, apart from readily available indicators like those used in this study, have a substantial impact on new teacher attrition from schools.

We show that new Illinois teachers who bring stronger academic qualifications are more likely to leave their initial schools, especially those who start in disadvantaged schools. But because such teachers have historically constituted a small fraction of new teachers in disadvantaged schools, their higher school leaving rates do not currently have much impact on comparative rates across school types. However, **as more academically strong teachers are recruited to disadvantaged schools, we can expect attrition rates to increase unless other conditions for working and learning also improve.**

Teacher Movement and the Academic Characteristics of New Teachers in Schools

We know from our own and others' research that teacher quality is distributed unevenly across schools; more specifically, schools with relatively high percentages of low-income, minority, and/or low performing students tend to have teachers with lower levels of academic qualifications, as measured by such things as teachers' own ACT scores, the competitiveness of teachers' baccalaureate institutions, teachers' failure rates on certification tests, etc., than schools with relatively low percentages of such students.[38] In Table 4, we show how attrition from schools during new teachers' first five years affects the academic qualifications of teachers in schools by comparing the average academic characteristics of new teachers who leave the profession (leavers), change to non-teaching positions (changers), and move to other schools (movers within district and movers out of district) to the average characteristics of those who remain in the same school (stayers). We focus on three indicators of academic qualifications—teachers' average ACT composite score, the percentage of teachers who graduated from baccalaureate institutions rated "most competitive" and "highly competitive" by Barron's *Profiles of American Colleges*, and the percentage of teachers who held an advanced degree upon entry into teaching. We remind the reader that this analysis only includes new teachers through 2001 since we need to follow them for five years.

Leavers have consistently higher average levels of academic qualifications than stayers, regardless of school type.

As shown in Table 4, leavers have consistently higher average levels of all three indicators of academic qualifications than stayers, regardless of school type. For example, the average ACT score of new teachers who leave the highest poverty schools (schools with 90 percent or more low-income students) during their first five years is 20.5 compared to 19.0 for teachers who stay in those schools. The magnitude of the differences in academic qualifications between leavers and stayers, though, varies by school type. In general, the average differences between leavers and stayers are greater for high poverty, high minority, and/or low performing schools than for schools with lower percentages of such students.

New teachers who change to non-teaching positions in IPS are consistently more likely than stayers to hold advanced degrees, although they tend to look quite similar to stayers on the other characteristics. We suspect that many of these changers hold advanced degrees in educational administration and transition to administrative positions during their early years in the profession, although additional analyses would be needed to confirm this hypothesis.

Among movers, new teachers who move out of district tend to have higher average ACT scores and come from more highly selective colleges than their peers who remain in the same school, although the differences are not entirely consistent across school type. Teachers who move to schools within district, in contrast, typically have similar or lower levels of academic qualifications than their colleagues who remain in the same school (Table 4).

Common sense suggests that teachers change schools in order to improve their working environments. It is not clear from existing research, though, that this

Table 4. Movement of New Teachers After First Five Years by Their Average Academic Qualifications and School Characteristics

	Average ACT Composite Score						% from High College Selectivity						% Advanced Degrees					
	Overall	Stayers	Leavers	Changers	Movers Within District	Movers Out of District	Overall	Stayers	Leavers	Changers	Movers Within District	Movers Out of District	Overall	Stayers	Leavers	Changers	Movers Within District	Movers Out of District
Overall	21.7	21.6	22.1	21.4	20.7	21.9	11.0	9.6	13.8	9.7	7.8	10.2	12.1	10.9	13.8	23.0	10.1	10.6
By Locale																		
CPS	20.0	19.4	20.8	19.8	19.2	21.5	10.1	7.5	14.0	9.9	8.1	12.1	13.3	11.2	15.2	21.4	11.5	14.1
Non-CPS Urban	21.9	21.7	22.3	21.3	21.1	22.0	12.5	11.1	16.8	14.5	6.8	12.3	12.0	11.5	13.6	23.1	8.7	10.3
Suburban	22.2	22.3	22.5	21.8	21.3	22.0	13.5	12.6	16.4	10.5	9.2	12.4	14.6	13.6	16.4	25.1	12.0	12.7
Town	22.0	21.7	22.5	22.2	21.1	21.8	7.5	5.2	10.1	7.6	3.6	8.4	6.8	5.8	8.3	12.1	4.4	6.4
Rural	21.8	21.4	22.2	22.0	21.4	21.7	7.6	5.9	9.2	6.0	6.7	7.6	5.8	4.1	7.1	15.0	5.0	5.2
By Region																		
CPS	20.0	19.4	20.8	19.8	19.2	21.5	10.1	7.5	14.0	9.9	8.1	12.1	13.3	11.2	15.2	21.4	11.5	14.1
Northeast	22.2	22.3	22.5	22.0	21.5	22.1	13.9	13.4	16.7	10.8	9.6	12.3	15.6	14.6	17.3	27.8	12.5	13.7
Northwest	21.9	21.7	22.4	21.3	21.0	21.6	6.7	5.8	8.1	7.9	4.3	6.5	7.0	6.8	7.2	19.1	6.8	5.8
East Central	22.2	21.8	22.6	22.3	21.6	22.2	16.5	14.2	19.7	14.3	13.6	14.7	9.8	8.6	10.6	17.3	9.1	9.2
West Central	21.8	21.5	22.1	21.5	21.1	21.7	6.2	4.8	8.0	6.7	3.9	6.3	6.4	4.3	8.6	17.2	5.4	5.2
Southeast	21.2	20.9	21.7	21.1	20.6	21.2	2.7	1.9	4.3	1.4	2.3	2.0	6.2	4.4	9.3	11.8	1.6	5.8
Southwest	21.3	21.3	21.7	21.6	20.1	21.4	4.0	2.9	5.0	5.5	3.0	5.0	6.3	4.7	8.4	17.5	4.6	5.6
Low Income																		
<10%	22.6	22.6	22.9	22.6	21.9	22.5	15.4	14.3	18.3	14.1	11.8	13.9	14.0	13.3	15.6	26.2	11.5	11.9
10-49%	21.9	21.6	22.3	21.7	21.0	21.9	9.8	8.0	12.6	8.8	5.8	10.0	9.7	8.6	11.2	18.3	8.2	8.1
50-89%	20.5	19.9	21.1	19.3	20.0	21.1	8.4	6.2	12.0	7.6	6.4	7.7	11.6	10.0	13.8	16.6	10.2	10.3
≥90%	19.7	19.0	20.5	19.5	19.0	20.5	8.1	6.1	11.0	6.0	7.7	6.0	10.6	9.1	12.5	11.3	9.4	9.8
Minority																		
<50%	22.2	22.1	22.5	22.1	21.4	22.1	12.0	10.7	14.8	11.4	8.1	11.4	11.5	10.7	13.2	22.8	9.2	9.7
50-89%	21.1	20.7	21.6	20.8	20.2	21.3	9.8	7.9	12.6	6.0	7.3	10.2	13.4	12.1	15.2	15.7	11.4	13.0
90-98%	20.2	19.6	20.8	19.5	19.5	20.9	8.3	6.7	10.9	7.9	8.1	5.1	12.8	12.2	15.2	16.2	10.4	8.6
≥99%	19.5	18.6	20.5	18.6	19.0	20.4	9.0	6.5	13.0	7.4	7.3	5.4	11.0	9.2	12.2	16.7	10.7	9.5
Low Minority/Low Low-Income	22.6	22.6	22.9	22.6	21.9	22.5	15.6	14.4	18.4	14.4	12.0	14.2	14.2	13.5	15.8	26.0	11.5	11.9
High Minority/ High Low-Income	19.5	18.8	20.5	19.2	18.9	20.4	8.2	6.1	11.3	6.5	7.5	5.5	10.7	9.2	12.8	10.9	9.7	9.4
Meets / Exceeds ISAT																		
<25% [a]	19.7	19.1	20.4	18.3	18.7	22.1	8.3	12.2	8.9	4.0	6.1	2.4	10.4	5.9	12.9	3.6	11.2	11.3
25-45%	20.1	19.6	20.7	18.7	19.8	20.7	6.4	4.3	10.0	4.5	5.6	3.2	12.3	9.6	15.0	15.2	11.7	10.8
46-64%	21.2	20.9	21.5	21.3	20.5	21.5	7.5	5.7	10.4	6.1	2.9	8.9	9.0	8.0	10.8	18.1	7.5	6.3
65-76%	21.4	21.2	21.6	21.6	21.1	21.8	7.4	5.0	9.9	7.3	4.6	9.4	10.9	9.2	12.6	32.0	7.4	9.0
≥77%	21.9	21.6	22.4	22.7	21.7	21.8	12.4	9.9	16.0	16.0	7.6	13.9	15.4	13.1	17.0	43.4	13.8	11.4

[a] The ISAT calculations are based on data from the 1999 through 2001 cohorts.
NOTE: Significance tests reflect differences between stayers and other groups.

Average significantly higher than that of Stayers. Average significantly lower than that of Stayers.

New teachers with stronger academic qualifications who opt to stay in the profession improve their job situations by moving to seemingly more attractive schools in other districts.

is always the case, at least when improvement is measured by readily available characteristics of schools.[39] In Table 5, we show the characteristics of the schools to which these teachers move (the "receiving" schools). We find that those who move out of district on average transition to schools with significantly lower percentages of minority, low-income, and low performing students, whereas teachers who move within district tend to move to schools with student characteristics that are similar (or slightly better for CPS and Non-CPS urban teachers) to those found in their initial school.

Together, these results for movers suggest that moving out of district facilitates a sorting process, where new teachers with stronger academic qualifications who opt to stay in the profession improve their job situations by moving to seemingly more attractive schools in other districts. In contrast, moving within district is more like a shuffling process, where teachers with similar or lower levels of academic qualifications transition to schools with similar or slightly better characteristics.

Table 5. Average Characteristics of Initial and Receiving Schools for New Teachers Who Moved Schools During First Five Years, by Within District and Out-of-District Moves (1987 - 2001 Cohorts)

	% of Movers	% Minority Students		% Low-Income Students		% Meets/Exceeds Standards on ISAT	
		Initial	Receiving	Initial	Receiving	Initial	Receiving
Within District Moves							
Overall	42.4	47.8	47.0	44.7	43.9	58.0	61.2
CPS	83.4	92.4	89.7	84.4	82.6	34.3	41.2
Non-CPS Urban	55.4	44.2	40.9	46.0	41.6	56.9	61.6
Suburban	36.9	29.1	30.2	20.1	20.7	69.9	70.5
Town	34.9	10.5	10.6	31.1	32.6	65.7	67.5
Rural	20.8	5.1	6.9	19.4	19.8	73.8	73.0
Out-of-District Moves							
Overall	57.6	28.2	23.9	25.8	20.7	63.8	70.6
CPS	16.6	87.4	45.8	80.6	30.4	40.8	67.4
Non-CPS Urban	44.6	47.4	28.4	39.4	22.7	56.3	69.7
Suburban	63.1	34.0	30.1	20.9	19.3	65.3	71.0
Town	65.1	7.3	10.3	23.8	20.8	64.2	70.9
Rural	79.2	3.9	10.0	20.6	20.8	70.5	70.8

Significantly different from initial school.

Key Findings: Teacher Movement

When we compare the academic characteristics of new teachers who leave their initial school to those of new teachers who stay, we show that new Illinois teachers who bring stronger academic qualifications are more likely to leave the profession, independent of initial school type, or move out of district to what are commonly considered more attractive schools (i.e., schools with lower percentages of low-income, minority, and/or low performing students). New teachers who move to other schools within district tend to have similar or somewhat weaker academic qualifications than those who stay in their initial schools. **It appears, therefore, that out-of-district moves facilitate a sorting process where more academically skilled new teachers who opt to stay in the profession improve their job situations by moving to seemingly more attractive schools in other districts. In contrast, teacher movement within districts appears to create more of a shuffling process, where teachers with similar or lower levels of academic qualifications transition to schools with similar or slightly better characteristics.**

Implications of the Study

1. **The teaching profession in Illinois is not in crisis.** Much like the case in other professions that employ people with similar educational backgrounds, some individuals who try teaching opt to leave within the first few years and do not return. In Illinois, such individuals constitute roughly a quarter of new teachers. Our longitudinal evidence shows that average annual new teacher attrition rates from the profession in Illinois have been fairly constant since the late 1980s, which suggests that across-the-board policies aimed at lowering these rates even further may not have a significant effect.

   Given the evidence presented in this study, as well as mounting evidence from other states, *we believe it is misleading and probably harmful to the profession to continue to portray teaching as an occupation from which half of its newcomers flee.* As teacher retirements and more stringent accountability policies increase the demand for high-quality teachers in the coming years, providing accurate information about the profession to administrators and prospective teachers would seem to be a critical first step in a sound recruitment and retention strategy.

2. **It may be difficult to substantially reduce overall new teacher attrition.** Teachers have lives, too. For a large percentage of teachers, it appears that life circumstances and/or personal choices interrupt their careers or prompt them to make transitions within the profession. For those who leave and return, it is not clear that much can be done in the policy arena to prevent such interruptions. Depending on the length of their break in service, though, some returners likely find the transition back to the classroom challenging. This may be particularly true in recent years given the impact of No Child Left Behind on policies related to student testing, school accountability, and teacher quality. Districts and schools should create programs to encourage and smooth teacher returns to the profession and the classroom.

3. Although we do not see large differences in new teacher attrition across school types, we do find that teachers with strong academic backgrounds are more likely to leave disadvantaged schools within five years. Because such teachers have constituted a small fraction of new teachers in these schools during our study period, their higher school leaving rates do not currently have much impact on the comparative rates that we show across school types. However, **as more academically strong teachers are recruited to disadvantaged schools, we can expect attrition rates in such schools to increase unless other conditions for working and learning also improve.**

4. **New teacher attrition rates are alarmingly high in some schools in each school type.** State and/or district policies need to focus on specific schools, not just categories of schools based on student characteristics. That is, rather than the oft-used, across-the-board blanket approach to policy solutions, the state and/or districts need(s) to identify individual schools with high levels of new teacher attrition and develop targeted intervention strategies to address those schools' problems.

5. Given that large differences in new teacher attrition occur among schools with similar student characteristics, **school conditions other than those we consider in this study appear to strongly influence new teachers' decisions to stay in a particular school.** Unfortunately, we do not have statewide school-level indicators with which to examine the effects of other aspects of school environments on new teacher attrition in Illinois. Others' research on teacher attrition suggests that salary levels, supportive leadership, student discipline, basic working conditions (including class size, facilities, and availability of textbooks), and teachers' relationships with each other and their principal are important factors influencing teachers' decisions to stay in a school.[40] We suggest conducting a working conditions survey in Illinois to begin to assess teachers' views on school environments.

Appendices

Appendix Table 1. Logistic Regression Results for New Teacher Stay Rates in Low Minority/Low Low-Income Schools and High Minority/High Low-Income Schools (1987 to 2001 Cohorts)

	Low Minority/Low Low-Income Schools	High Minority/High Low-Income Schools
Male	1.144***	0.911
African American	0.805	1.195**
Hispanic	0.635***	1.429***
Other Minority	0.637***	0.920
26-34 at Entry	1.042	1.016
≥ 35 at Entry	1.641***	1.154
Advanced Degree	0.902**	0.915
High School	1.130***	0.877
English	1.060	1.013
Math	1.079	1.544
Science	0.985	0.901
Social Science	1.320***	0.987
Special Education	0.695***	0.905
ACT Composite ≥ 25	1.094*	0.723**
ACT Composite 22-24	1.198***	0.750**
ACT Composite 19-21	1.147***	0.978
High College Selectivity	0.874**	0.655***
Medium College Selectivity	1.000	0.818***

Note: Odds Ratios reported. An odds ratio that is significantly greater than 1.00 indicates a greater likelihood than the reference group of remaining in the same school for more than five years, whereas an odds ratio that is significantly less than 1.00 indicates a lower likelihood than the reference group of remaining in the same school. Reference categories are: female, white, ≤ 25 at entry, bachelor's degree, elementary/middle school, self-contained elementary school, ACT Composite ≤ 18, and Low college selectivity. Significant at *p ≤ 0.10, **p ≤ 0.05, ***p ≤ 0.01.

These logistic results show that male teachers, teachers who enter the profession at age 35 and above, high school teachers, social science teachers, and teachers with ACT scores above 18 are significantly more likely than teachers in the relevant referent category (e.g., female teachers are the referent group for male teachers) to remain in low minority/low low-income schools, all else being equal. In contrast, Hispanic and other minority teachers, teachers with advanced degrees, special education teachers, and teachers who graduated from highly selective baccalaureate colleges are significantly less likely to stay in such schools. Among new teachers who begin their careers in high minority/high low-income schools, African American and Hispanic teachers are significantly more likely than white teachers to stay, whereas teachers with relatively high academic qualifications (i.e., those with ACT scores of 22 or higher and those who graduated from colleges ranked as high or medium in terms of their selectivity) are significantly less likely than their peers with lower academic qualifications to stay.

Appendix Table 2. Average Characteristics of New Teachers by School Characteristics (1987 - 2001 Cohorts)

		Race/Ethnicity					Age at Entry				ACT Composite Score		B.A. College Selectivity	
	% Female	% African American	% Asian	% Hispanic	% Native American	% White	% ≤25	% 26-34	% ≥35	% Advanced Degree	% ≥ 25	% ≤ 18	% High	% Low
CPS	76.3	29.1	3.2	17.9	0.7	49.2	25.2	42.6	32.2	13.3	17.7	38.1	10.1	23.9
Non-CPS Urban	77.4	7.1	1.1	3.8	0.2	87.8	45.2	32.8	21.9	12.0	27.4	19.7	12.5	13.5
Suburban	78.8	3.3	1.1	2.7	0.1	92.9	47.7	33.9	18.4	14.6	29.0	17.2	13.5	15.8
Town	74.5	1.0	0.1	0.5	0.0	98.3	50.7	29.9	19.4	6.8	26.5	17.4	7.5	10.1
Rural	72.8	0.4	0.2	0.4	0.0	99.0	49.7	30.9	19.4	5.8	25.0	19.3	7.6	10.7
CPS	76.3	29.1	3.2	17.9	0.7	49.2	25.2	42.6	32.2	13.3	17.7	38.1	10.1	23.9
Northeast	79.2	3.3	1.1	3.2	0.1	92.3	48.5	33.7	17.8	15.6	29.6	16.8	13.9	13.8
Northwest	74.2	1.6	0.4	1.4	0.1	96.5	51.1	30.4	18.5	7.0	25.5	18.1	6.7	3.6
East Central	76.1	2.8	0.5	0.6	0.0	96.1	50.5	29.5	20.0	9.8	29.8	17.5	16.5	5.6
West Central	75.1	1.7	0.2	0.4	0.1	97.7	51.6	30.0	18.4	6.4	24.6	18.8	6.2	5.5
Southeast	75.7	1.7	0.1	0.4	0.0	97.7	40.6	33.6	25.8	6.2	18.9	22.3	2.7	7.6
Southwest	75.8	4.1	0.1	0.3	0.0	95.5	42.7	32.9	24.4	6.3	21.4	23.1	4.0	45.8
<10% Low-Income	76.4	0.9	0.9	0.8	0.0	97.3	50.8	32.5	16.6	14.0	32.6	14.4	15.4	11.1
10-49% Low-Income	76.1	3.5	0.9	2.3	0.1	93.2	47.3	32.6	20.1	9.7	26.0	19.0	9.8	14.7
50-89% Low-Income	77.8	18.9	2.4	12.2	0.5	66.1	33.0	38.6	28.5	11.6	17.7	31.3	8.4	21.6
≥90% Low-Income	79.6	30.8	1.7	20.2	0.5	46.8	26.8	42.3	30.9	10.6	15.7	41.2	8.1	24.5
<50% Minority	76.6	1.4	0.8	1.2	0.1	96.5	49.0	32.4	18.6	11.5	28.9	16.8	12.0	12.9
50-89% Minority	77.7	10.5	2.9	12.4	0.5	73.7	37.9	36.7	25.4	13.4	21.3	25.7	9.8	20.3
90-98% Minority	77.2	17.1	1.9	24.3	0.5	56.2	29.0	42.5	28.5	12.8	17.9	34.8	8.3	24.7
≥99% Minority	77.1	47.2	1.0	9.1	0.3	42.4	25.6	41.3	33.1	11.0	15.2	43.0	9.0	22.8
Low Minority/Low Low-Inc.	76.4	0.7	0.9	0.8	0.0	97.5	50.9	32.6	16.5	14.2	32.8	14.1	15.6	11.0
High Minority/High Low-Inc.	79.6	33.6	1.5	19.9	0.5	44.5	26.6	42.3	31.1	10.7	15.7	41.9	8.2	25.1
<25% Meets/Exceeds ISAT[a]	82.0	34.0	1.3	14.8	0.4	49.5	34.1	42.1	23.8	10.4	14.4	42.2	8.3	18.2
25-45% Meets/Exceeds ISAT	82.5	17.6	2.0	16.0	0.3	64.1	34.7	43.5	21.8	12.3	15.1	34.5	6.4	21.0
46-64% Meets/Exceeds ISAT	82.1	5.5	2.0	7.2	0.2	85.1	45.0	35.7	19.3	9.0	19.8	25.0	7.5	17.7
65-76% Meets/Exceeds ISAT	82.7	1.8	1.2	2.7	0.1	94.2	46.7	34.2	19.1	10.9	20.4	21.1	7.4	15.0
≥77% Meets/Exceeds ISAT	87.1	1.7	1.9	1.5	0.1	94.8	47.8	32.9	19.2	15.4	25.6	18.0	12.4	13.5

[a] The ISAT calculations are based on data from the 1999 through 2001 cohorts.

Endnotes

1. Individuals who are teaching in IPS in one year but do not appear in the subsequent year's Teacher Service Record data are considered leavers. Because of our inability to track teachers across education sectors and states, our attrition rates overstate the actual magnitude of new teacher attrition from the profession.

2. The Illinois Education Research Council has a shared data agreement with the Illinois State Board of Education to use TSR and Teacher Certification Information System data, and is required to follow strict protocols to protect individually identifiable information. All reporting is done only on groups that are large enough to avoid identification of individual information.

3. The Illinois Education Research Council also has a shared data agreement with the Illinois State Board of Education and ACT, Inc. to employ ACT information. As with the ISBE data, the IERC is required to follow strict protocols with the ACT data to protect individually identifiable information.

4. Late-career teachers also have relatively high attrition rates primarily due to retirement, making their exit decisions less subject to policy intervention.

5. Grissmer and Kirby (1992) found a similar trend for Indiana teachers during the 1965 to 1987 period.

6. This finding corresponds to that of Lee, Clery, and Presley (2001) in their study using a national sample of new teachers.

7. We have individual ACT composite scores for approximately 70 to 90 percent of new teachers in each cohort from 1997 onwards. Because we have scores for smaller percentages of teachers prior to 1997, we restrict our reporting of average ACT scores to the 1997 through 2006 cohorts. In an analysis of new teachers with and without ACT scores between 1988 and 2006, we find that new teachers outside of CPS for whom we do not have ACT scores are similar to new teachers for whom we do have scores in terms of their passage rates on the Basic Skills test. The same is true for new elementary/middle and high school teachers overall. Thus, we do not believe that our ACT results by school level and Non-CPS locale are biased due to missing ACT data. Among new teachers in CPS, in contrast, teachers without scores were significantly more likely than those with scores to have failed the Basic Skills test at least once. The fact that (1) basic skills test failure rates are highest among CPS teachers who score in the lowest two quartiles of ACT scores (and almost zero among teachers who score in the highest two quartiles of ACT scores) and (2) the percentage of missing ACT data for CPS teachers falls from about 32 percent in 1997 to about 24 percent in 2006 suggests that our estimate of change in ACT scores for CPS teachers between 1997 and 2006 is biased downwards due to missing ACT data (i.e., we expect that we would find a somewhat larger difference in ACT scores between 1997 and 2006 if we had ACT scores for all CPS teachers).

8. Alliance for Excellent Education, 2005; Lambert, 2006; National Commission on Teaching and America's Future (NCTAF), 2003; Riley, 2006.

9. Lankford et al., 2002; Plecki & Elfers, 2007; Theobald & Laine, 2003; Southern Regional Education Board (SREB), 2003.

10. Grissmer and Kirby (1992) employed a similar approach to reporting attrition rates in their study of Indiana teachers, although they referred to their return-adjusted rates as "permanent" attrition.

11. Elfers, Plecki, and Knapp (2006) report that less than one percent of new teachers in the state of Washington leave public school teaching for private school positions. In a previous study of Illinois teachers with one to five years of teaching experience, we found that about one-fifth of leavers went to work in private and non-IPS schools, although not necessarily as teachers (DeAngelis, Peddle, Trott, & Bergeron, 2002).

12. Grissmer & Kirby, 1992.

13. DeAngelis et al., 2002; Ingersoll & Smith, 2003; Stinebrickner, 2002.

14. The number of gap years refers to the length of time (in years) the teachers were absent from teaching in IPS before returning. The 1970s cohorts were followed for up to 35 years (the first 25 are shown in Figure 3), while the more recent cohorts were followed until 2006, the last year for which we have TSR data.

15. Beaudin, 1993; Grissmer & Kirby, 1992.

16. Because of differences in the return trajectories of the 1970s and 1990s cohorts (Figure 3), we opted not to use historical return information from the 1970s to extrapolate return rates for the nineties cohorts.

17. An additional one to five percent of new teachers in each cohort leave teaching during the first five years for non-teaching positions in IPS. These teachers are included in the attrition rates in this section, but are considered separately later in the paper.

18. Henke et al., 2001; Presley, 2003.

19. Harris & Adams, in press.

20. Fleisher, 1970; Grissmer & Kirby, 1992.

21. See, for example, Feng (2006), Grissmer & Kirby (1992), Hanushek et al. (2001), Imazeki (2005), Murnane & Olsen (1989, 1990), and Stinebrickner (1998).

22. Whereas some studies have found attrition rates to be higher among new teachers who begin their careers in urban schools versus those who begin in suburban schools (Hanushek et al., 2001; Lankford et al., 2002) or in schools in non-urban locales more generally (Imazeki, 2005), others report no differences in departure rates by school locale (Feng, 2006; Theobald & Laine, 2003).

23. Evidence regarding the association between new teacher attrition rates and student characteristics, however, is mixed. The percentage of low-income students in a school appears to have little to no impact on new teachers' rate of departure from teaching (Feng, 2006; Plecki & Elfers, 2007), particularly once the percentage of minority students in a school also is taken into account (Scafidi et al., 2007). Schools with higher percentages of minority students generally have been found to have higher attrition rates than schools with lower percentages of minority students (Scafidi et al., 2007), although it appears that white teachers' (Hanushek et al., 2001) and male teachers' (Imazeki, 2005) exit behaviors are the most affected by percent minority students in the school. Feng (2006), in contrast, finds that the percentage of minority students impacts teachers' decisions to transfer to other schools, but not their decisions to exit the profession. Findings regarding the impact of average student achievement in a school on new teacher attrition are the most consistent with lower performing schools registering higher attrition rates than higher performing schools (Boyd et al., 2005; Hanushek et al., 2001; Scafidi et al., 2007).

24. Grissmer & Kirby, 1992; Stinebrickner, 1998.

25. Existing evidence regarding differences in new teacher attrition by teachers' race/ethnicity is mixed. While Theobald and Laine (2003) report that minority teachers in four Midwestern states leave the profession at lower rates than white teachers, Imazeki (2005) finds that minority teachers in Wisconsin are more likely to leave their teaching positions than their white colleagues.

26. See Feng 2006; Grissmer & Kirby 1992; Imazeki 2005; Murnane & Olsen 1989; Theobald & Laine 2003. In these studies, younger teachers (typically defined as those aged 30 or younger) were more likely to leave during their first five years than teachers who started their teaching careers later in life.

27. Murnane & Olsen, 1989.

28. While this finding coincides with Imazeki's (2005) results for Wisconsin teachers and Feng's (2006) results for a national sample of teachers, it conflicts with other studies that have found degree level to have either no impact (Stinebrickner, 1998) or the opposite impact on teachers' decisions to leave (Theobald & Laine, 2003).

29. Grissmer & Kirby, 1992; Murnane & Olsen, 1989, 1990; Stinebrickner, 1998; Theobald & Laine, 2003

30. Boyd et al., 2005; Lankford et al., 2002, Murnane & Olsen, 1990; Podgursky et al., 2004. In general, teachers with higher academic qualifications, as indicated by their scores on teacher certification exams, their own ACT scores, or the selectivity of their baccalaureate institutions, tend to leave the teaching profession at higher rates than those with lower qualifications, most likely due to the higher opportunity costs of teaching for those with better academic skills.

31. Teacher's own ACT composite score quartiles are constructed based on the population of new teachers from the 1987 through 1997 cohorts for whom we have ACT scores.

32. This study underestimates the total amount of movement of new teachers because they are assigned to only one category based on their final status for each time period. So, for example, a new teacher who changed schools for the first time after year 3 and left IPS after year 5 is considered to be a stayer after years 1 and 2 and a leaver after year 5. Her intermediary school change after year 3 is not shown in this analysis. Similarly, new teachers who change schools are labeled as movers regardless of how many moves they make during the time period. In their study of new teachers in Washington state, Plecki and Elfers (2007) found that 16 percent of new teachers changed schools more than once during their first five years.

33. This impact of mobility on total attrition from schools is similar to what has been found for new teachers from four Midwestern states (Theobald & Laine, 2003) and for all teachers at the national level (Ingersoll & Smith, 2003).

34. Bureau of Labor Statistics, 2006.

35. Hicks, 2007.

36. Findings regarding the impact of student characteristics on teacher movements are mixed. Imazeki (2005) reports that the percentage of low-income or minority students in a school has no impact on teacher transfer rates across districts. Feng (2006), in contrast, finds that teachers who start their careers in higher poverty schools or schools with higher percentages of African American students are more likely to leave their initial school. Similarly, Boyd et al. (2005) show lower retention rates among teachers who start in high minority schools and low performing schools. Hanushek et al. (2001) also report differences in stay rates across schools with different student characteristics, although they find that white teachers and minority teachers respond differently to the characteristics of students in schools.

37. Other researchers, studying the movement of teachers across schools and/or districts, have found higher mobility rates for special education teachers compared to teachers of other subjects (Feng, 2006; Imazeki, 2005; Theobald & Laine, 2003). In addition, some researchers report mobility differences by gender (Boyd et al., 2005; Imazeki, 2005), race/ethnicity (Feng, 2006; Theobald & Laine, 2003), and teachers' academic qualifications (Boyd et al., 2005; Feng, 2006), although the findings are somewhat inconsistent across studies.

38. DeAngelis et al., 2005; Lankford et al., 2002; Presley, White, & Gong, 2005.

39. Lankford et al. (2002) find that New York teachers who move across districts end up in schools with significantly lower percentages of low-income, LEP, and minority students; smaller class sizes; and higher salaries than the schools which they left. The advantages to New York teachers who move within district are not nearly as great. Plecki and Elfers (2007), in contract, do not find obvious patterns of improvement among new teachers who change schools in Washington state, perhaps because they do not distinguish between within-district and out-of-district movers.

40. Ingersoll, 2001; Ingersoll & Smith, 2003; Johnson & Birkeland, 2003; Loeb et al., 2005; Ponisciak et al., 2006.

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