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Illinois' Educator Workforce: Changes from 2002-2012

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Overview

This report summarizes key characteristics of Illinois' Pre-K through 12 educator workforce between 2002 and 2014.

An earlier version was presented to the Illinois P-20 Council in March 2016. Thanks to Advance Illinois for providing regular feedback, to George Mu and Sarah Kramer for their help in creating the visual content, and to the Joyce Foundation for their generous support of this work. The views and analysis in this report are the responsibility of the authors alone.

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Key Findings

- Hiring rates in Illinois fluctuate over time, but remain within a relatively small band.
- Overall, the supply of new teachers has consistently been greater than demand, but this varies by subject area.
- Illinois' educator workforce does not align with the racial demographics of its students, and those disparities are not improving.
- High-poverty districts are less likely to hire experienced teachers.
- Retention rates vary across districts and demographic groups.



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Data Sources and Analyses



We used publicly available data from the state of Illinois.

Illinois Teacher Service Record (TSR) database*

- Annual summary of educators employed by Illinois public school districts
- Data available for 2002-2012**
- 296,251 unique educators in dataset
- Teachers make up 85 percent of the sample (also includes administrative and other support personnel)

Illinois Educator Supply and Demand Reports***

- Summary of certifications by Illinois State Board of Education (ISBE); issued annually 2001-2008 and every three years thereafter
- Information compiled from all available reports from 2002 to 2014

* Available at <http://www.isbe.net/research/htmls/educator-employment.htm>.

** In the TSR and throughout this report, “2002” refers to the 2001-02 school year, “2003” refers to the 2002-03 school year, and so on.

*** Available at

http://www.isbe.net/research/htmls/supply_and_demand.htm.

We analyzed the data in a number of ways.

**We summarized statewide trends on overall supply and demand, and educators' race, years of experience, level of education, and retention.
(See Appendix for additional detail.)**

For some analyses, we compared different categories of districts:

Poverty Quintiles: All Illinois districts were divided into quintiles based on ISBE's poverty data from 2012.

- Poverty Quintile 1: 0-20 percent low income (lowest poverty)
- Poverty Quintile 2: 20-33 percent low income
- Poverty Quintile 3: 33-44 percent low income
- Poverty Quintile 4: 44-58 percent low income
- Poverty Quintile 5: 58-100 percent low income (highest poverty)

Sample Large Unit Districts: We identified a sample of five of the state's largest districts for comparison.

- Plainfield (Poverty Quintile 1)
- Indian Prairie (Poverty Quintile 1)
- Elgin (Poverty Quintile 4)
- Rockford (Poverty Quintile 5)
- Chicago (Poverty Quintile 5)



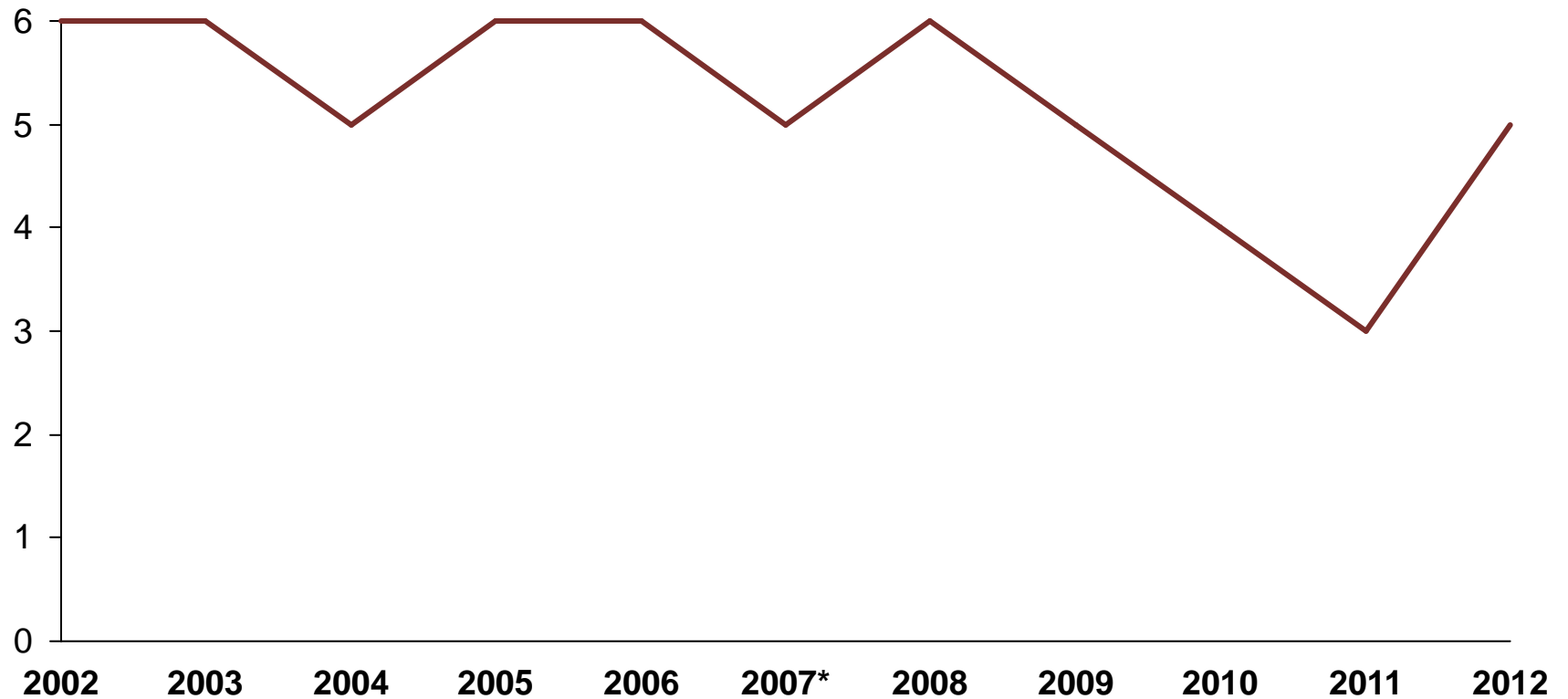
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Findings: Supply and Demand



Hiring rates fluctuate but have stayed within a relatively small band. New hires made up 3 to 6 percent of the total workforce each year.

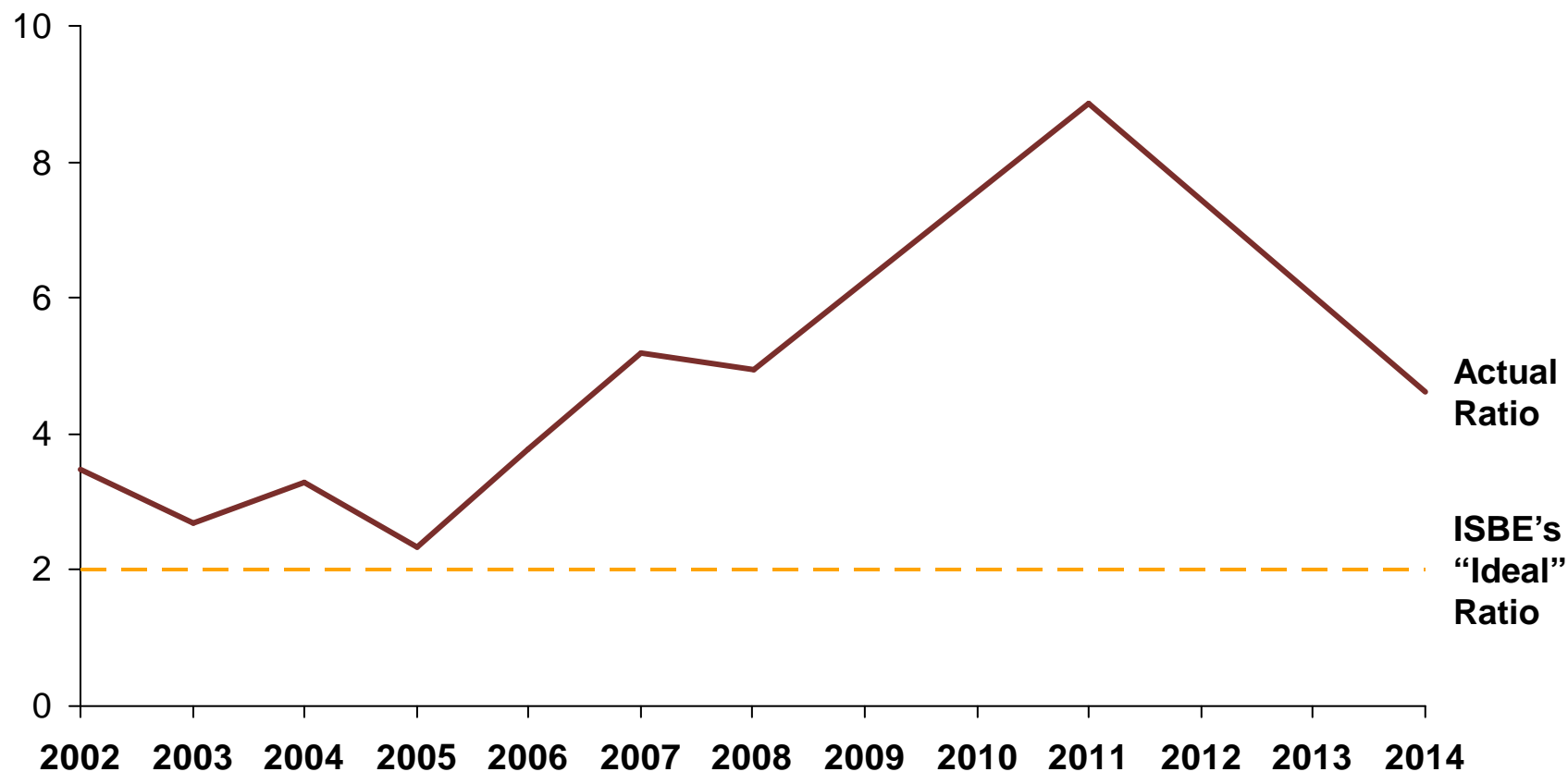
Percentage of New Hires in Total Workforce Over Time (%)



*Evidence of discrepancies in data on new Chicago hires in 2007

Overall, supply exceeds demand.

Ratio of Certificates Issued to First-Timers Hired, Over Time

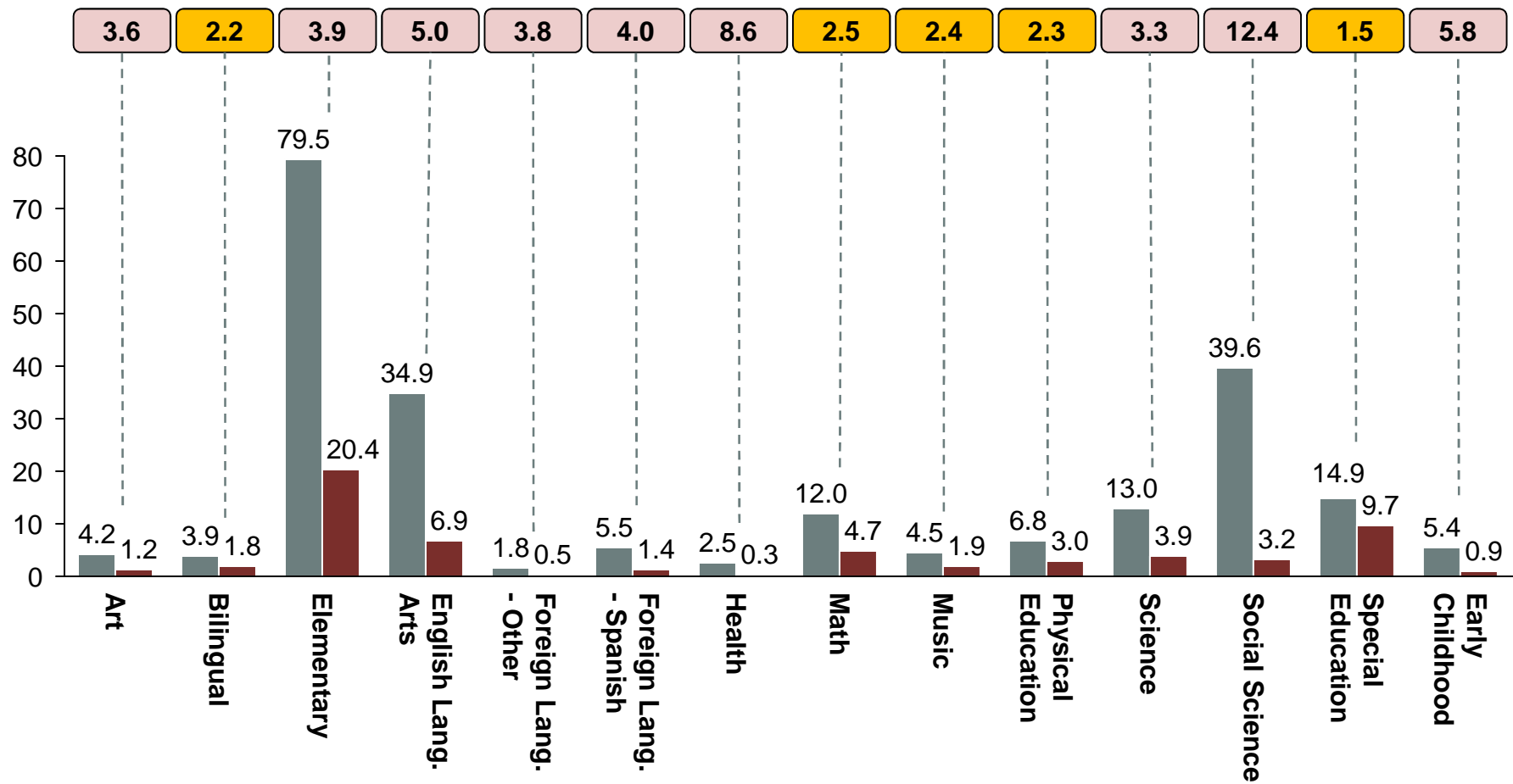


* Data compiled from ISBE Educator Supply and Demand reports. Data for the 2009, 2010, 2012, and 2013 fiscal years were not available.

Although overall supply is high, this varies significantly by subject. Special education, bilingual education, math, music, and P.E. supplies are tightest.

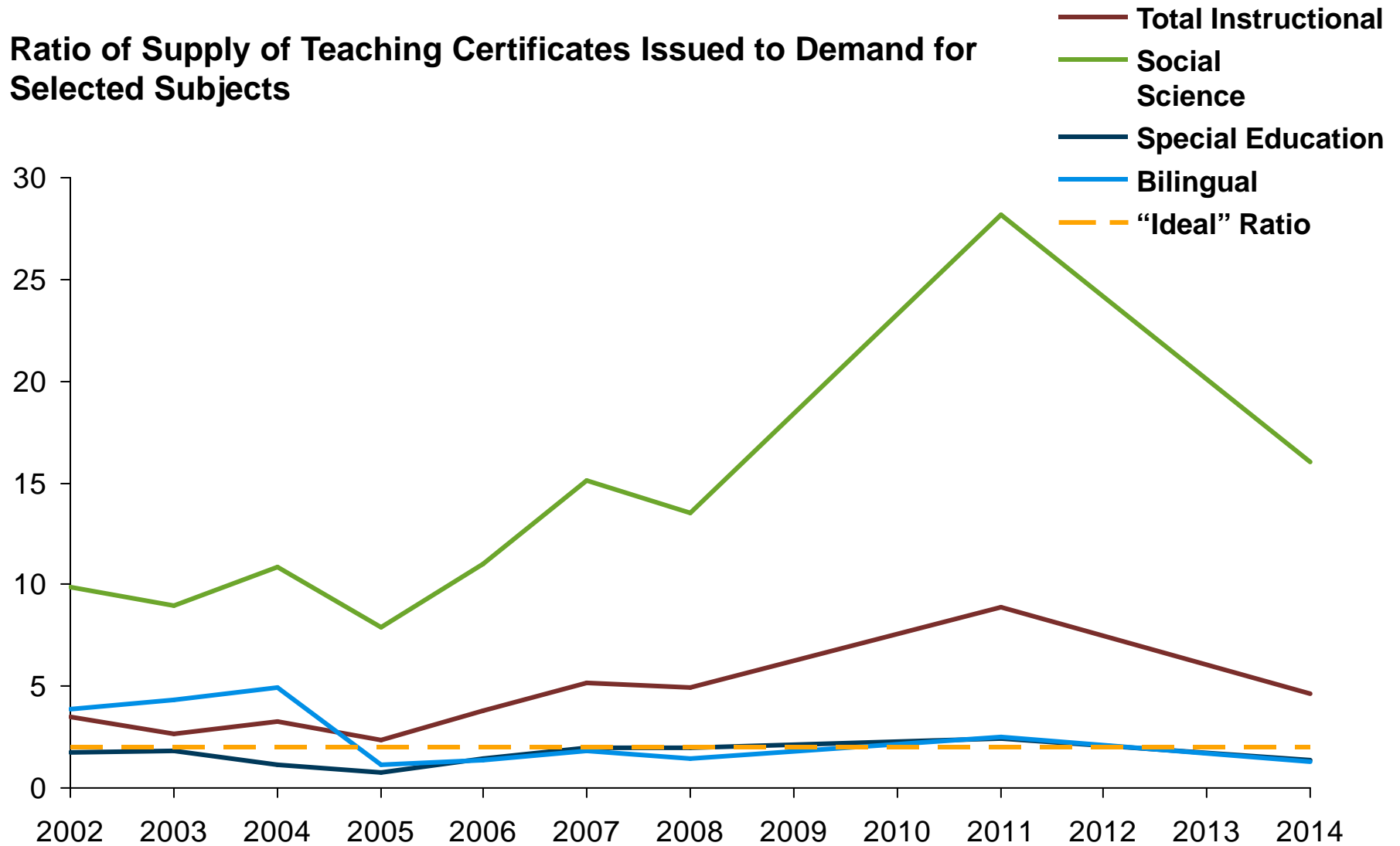
First Certificates Issued
 Certs:Hired Ratio
 First-Timers Hired
 Certs:Hired Ratio, tightest supply

Comparison of Certificates Issued to First-Timers Hired, 2002-2014*(K)



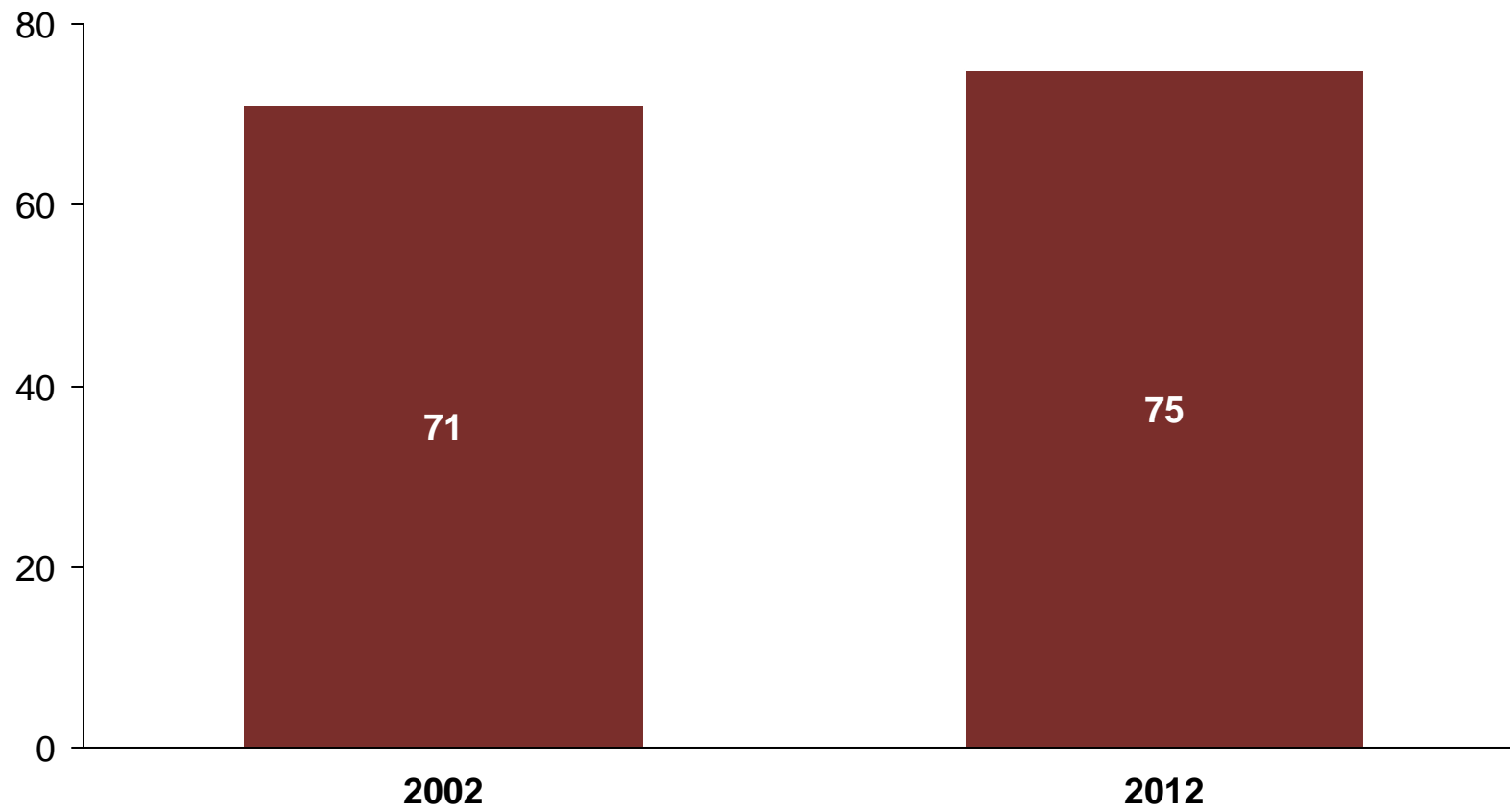
* Data compiled from ISBE Educator Supply and Demand reports. Data for the 2009, 2010, 2012, and 2013 fiscal years were not available. Early Childhood first appears as a separate certificate category beginning in 2006 and onward.

Each year from 2002 to 2014, there was consistent overproduction in some subject areas and consistent underproduction in others.



Illinois districts hired a higher percentage of teachers from in-state baccalaureate colleges in 2012 than in 2002.

Percentage of Total New Hires From In-State Institutions (%)





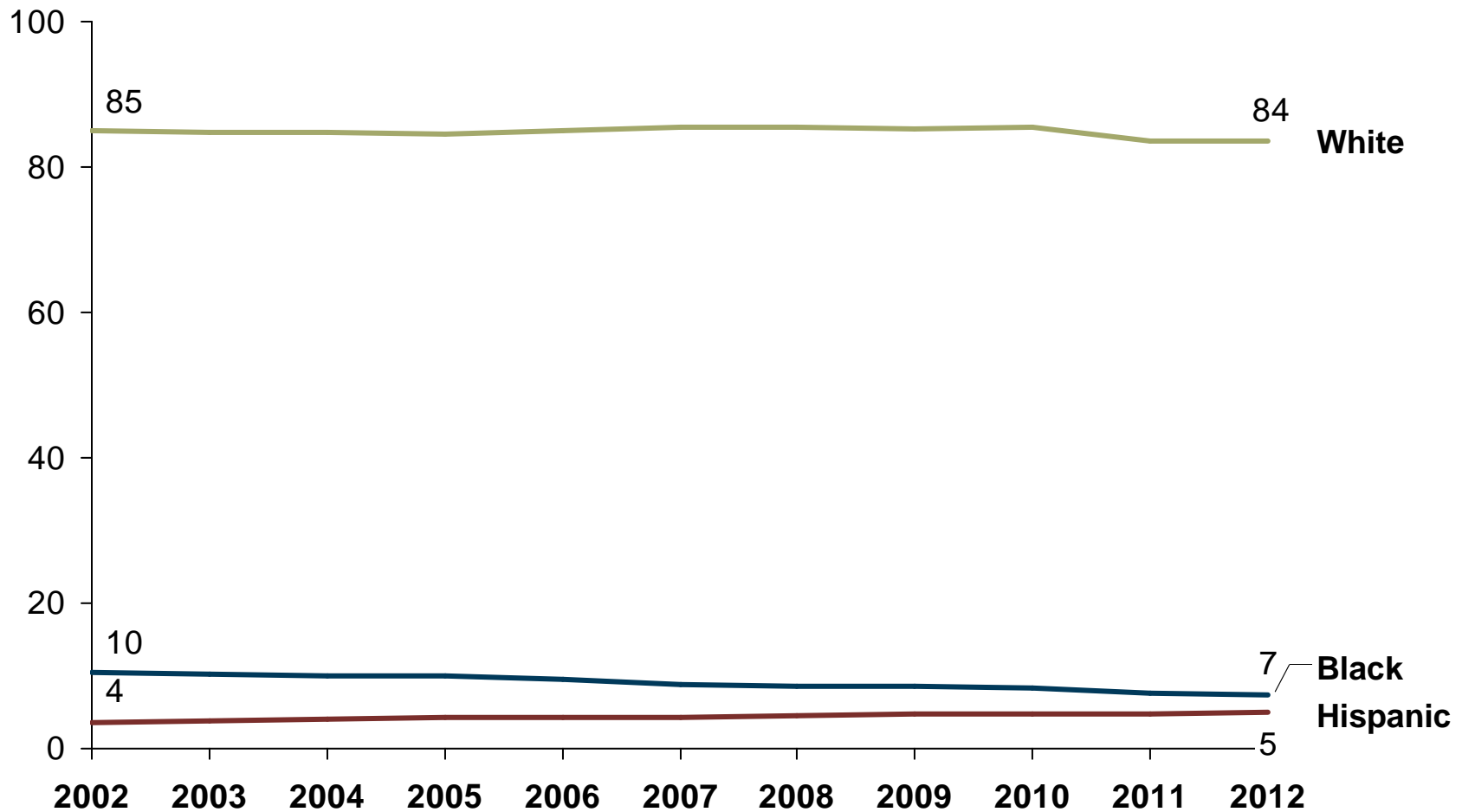
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Findings: Racial Demographics



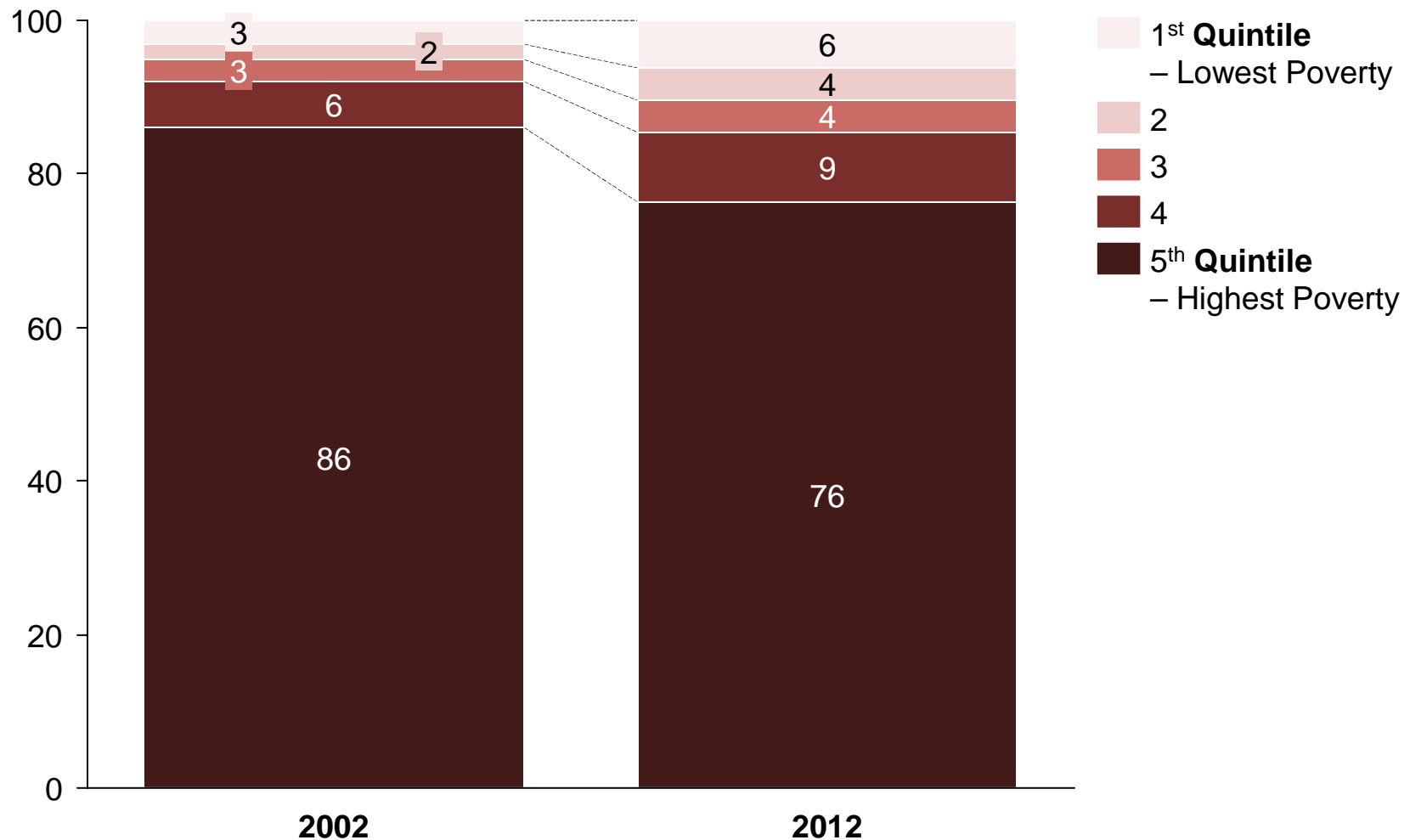
Illinois has not increased the diversity of its workforce. From 2002 to 2012, a large majority of Illinois school staff members were white.

All Illinois Educators by Race, Over Time (%)

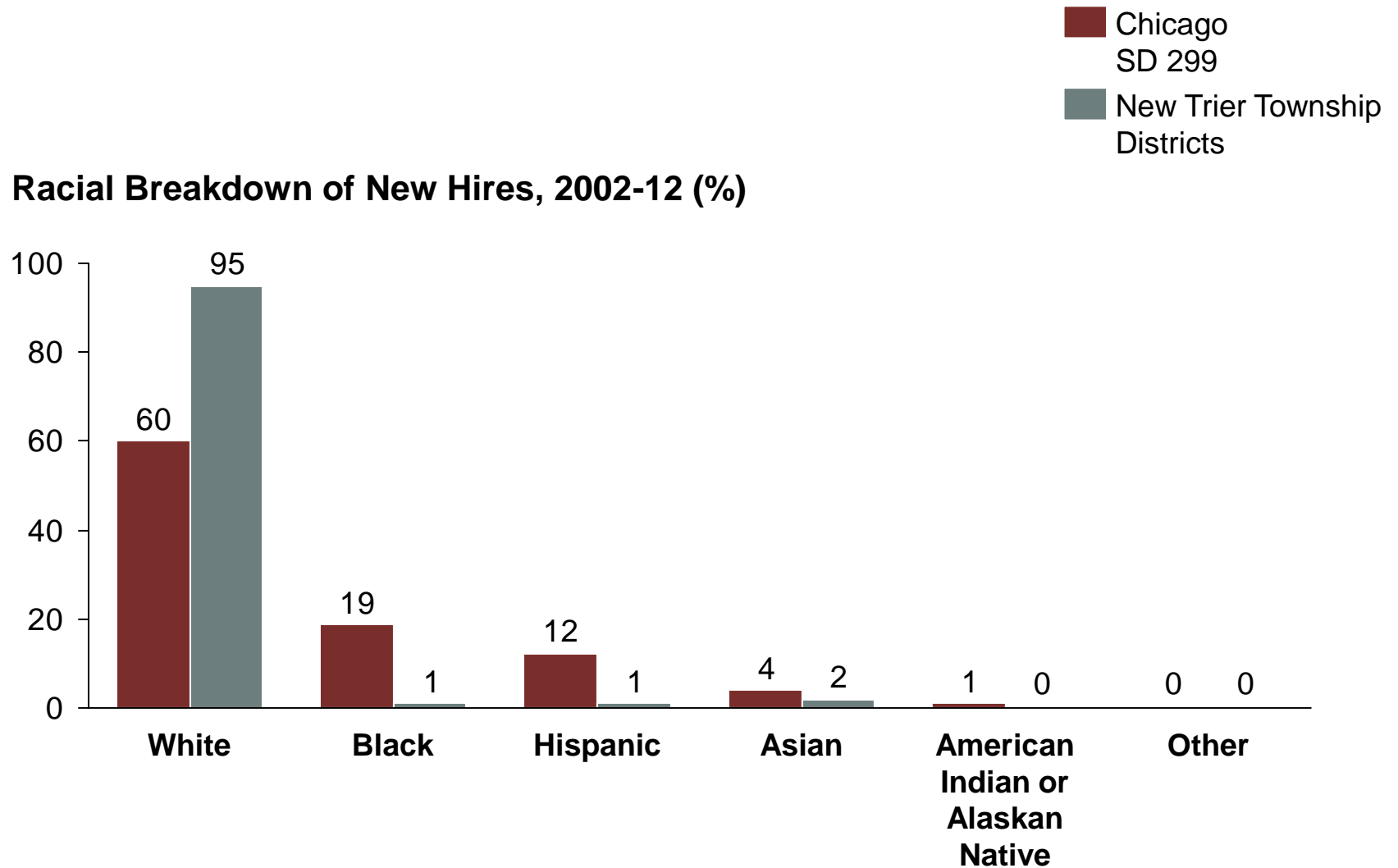


The vast majority of the state's black and Hispanic school staff members work in Illinois' highest-poverty districts.

Distribution of Black and Hispanic Staff by District Poverty Quintile (%)



The demographics of new hires differ across districts. For example, Chicago new hires are more diverse than in neighboring New Trier.



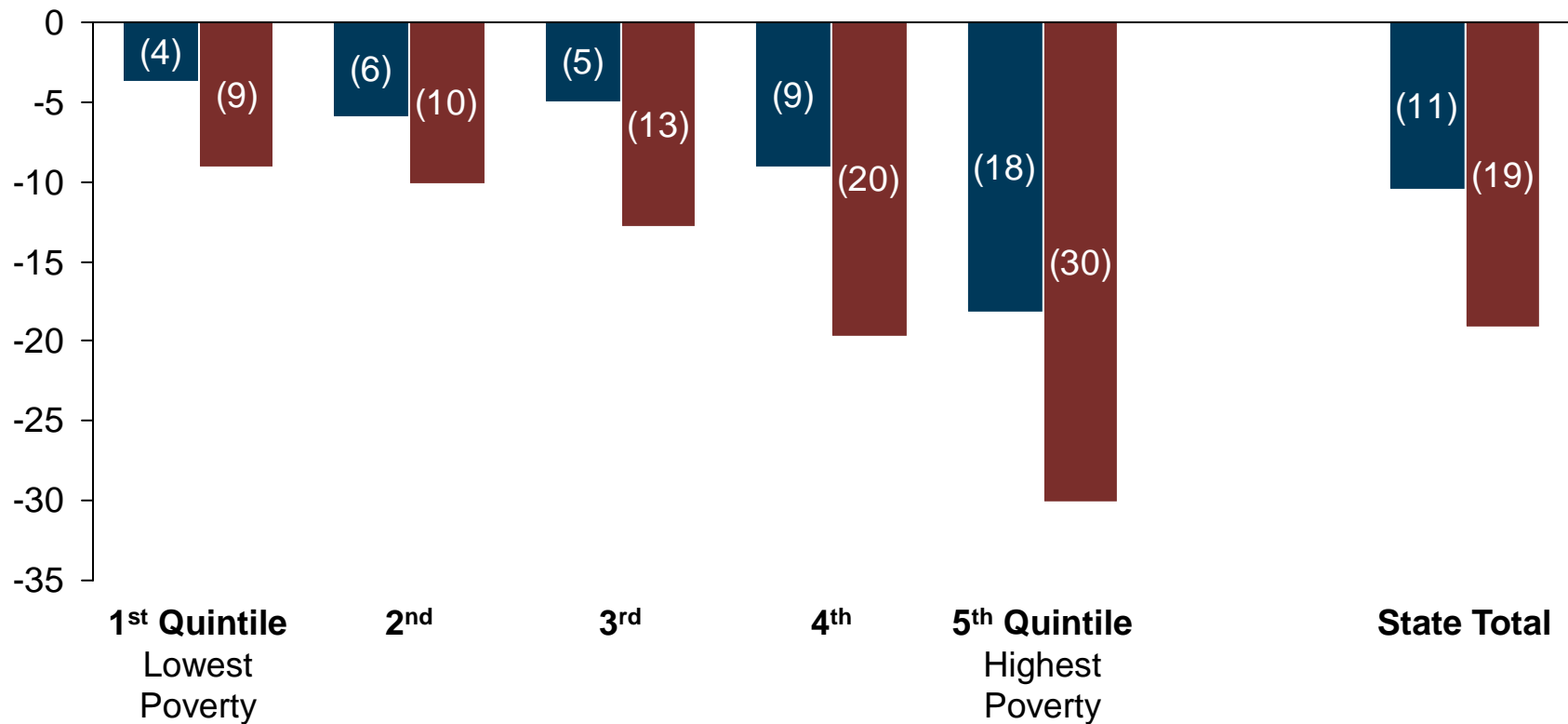
Note: Percentages may not add up to 100 percent due to rounding.

There are significant gaps between the percentages of students and staff of color. The largest gaps are in low-income districts.

■ Black staff/student gap
■ Hispanic staff/student gap

Gap Between Student and Staff Demographic Makeup (Percentage Points)

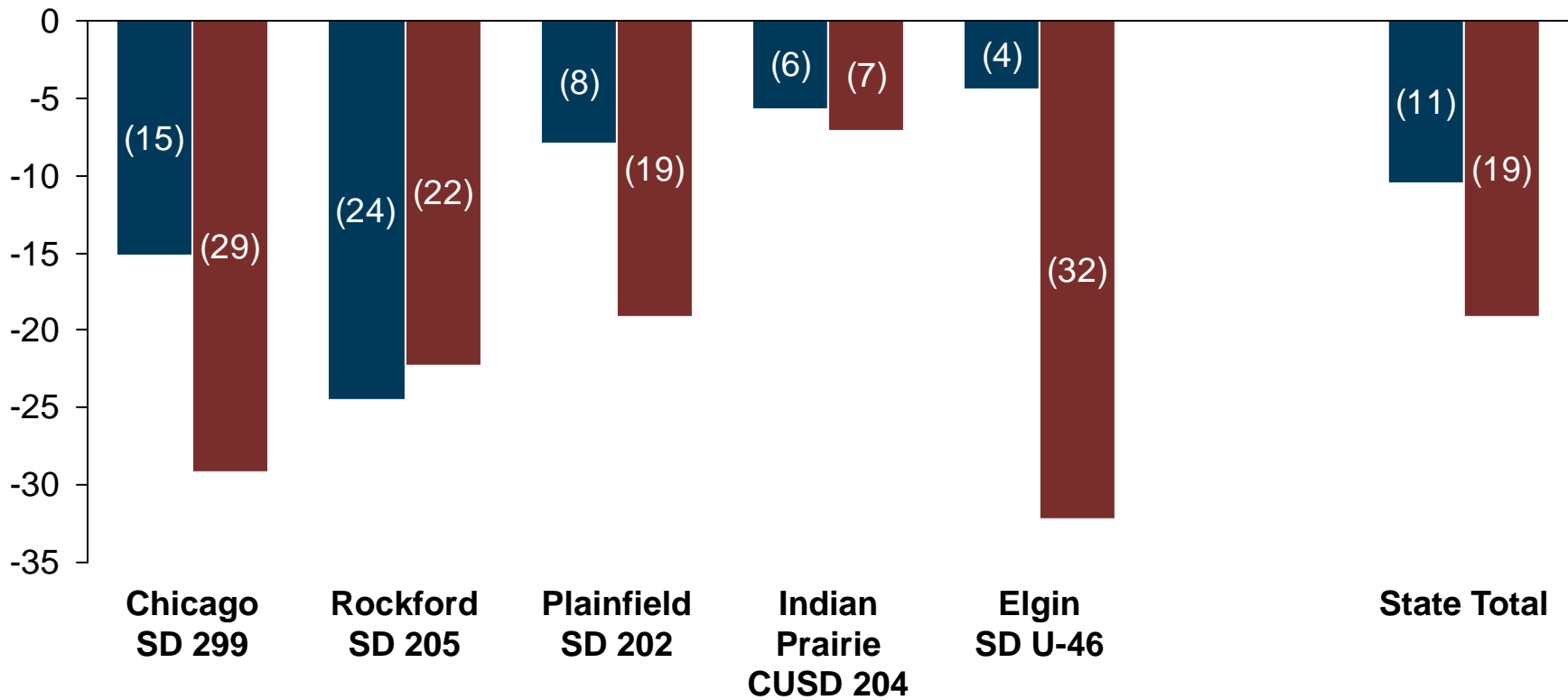
by Race and Poverty Quintile (2012)



The disparities vary across districts and race.

Black staff/student gap
Hispanic staff/student gap

Gap Between Student and Staff Demographic Makeup (Percentage Points)
by Race and District (2012)





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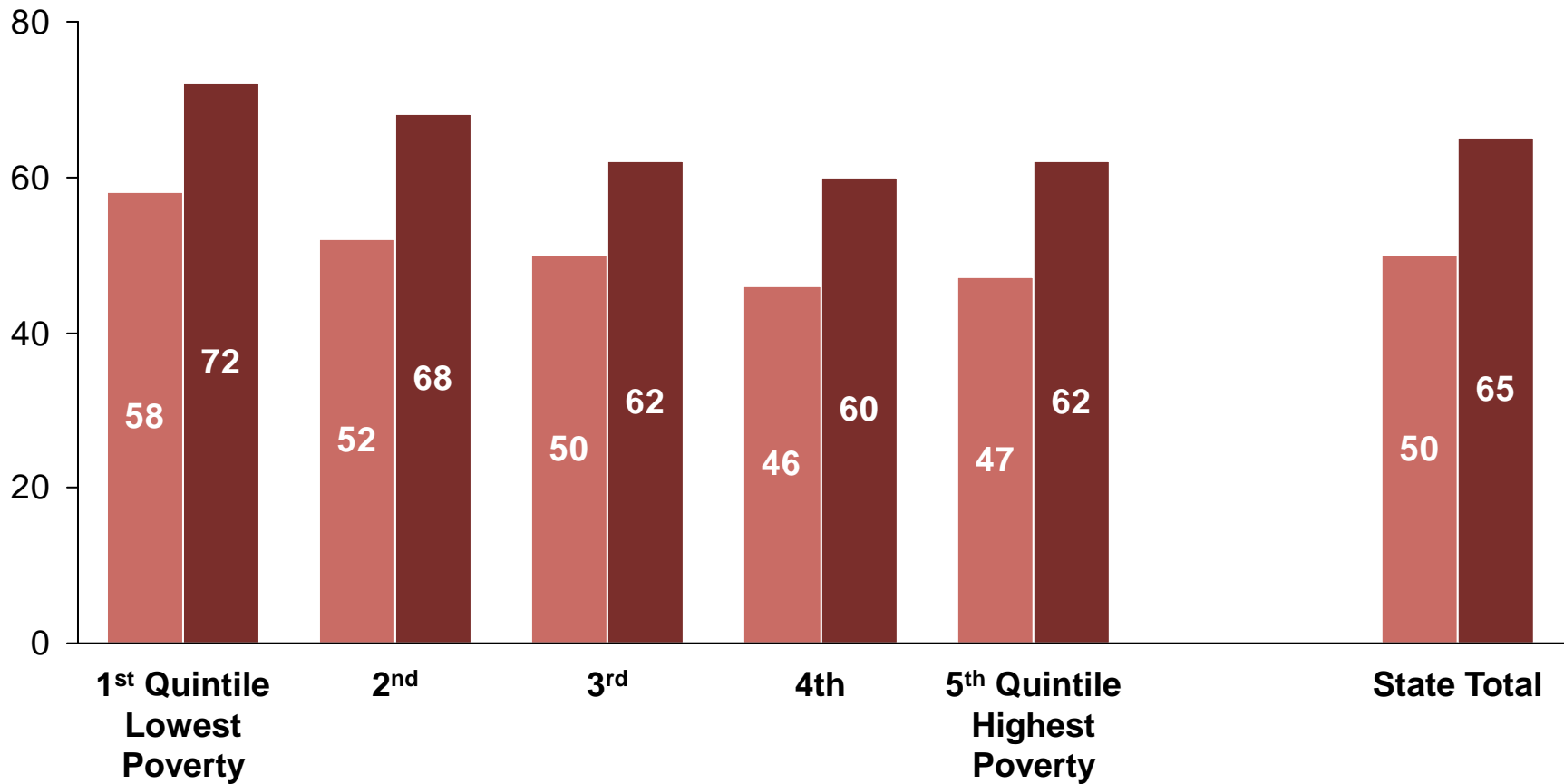
Findings: Level of Education



More Illinois educators have master's degrees. That shift was driven by changes in both the existing workforce and in new hires.

2002
2012

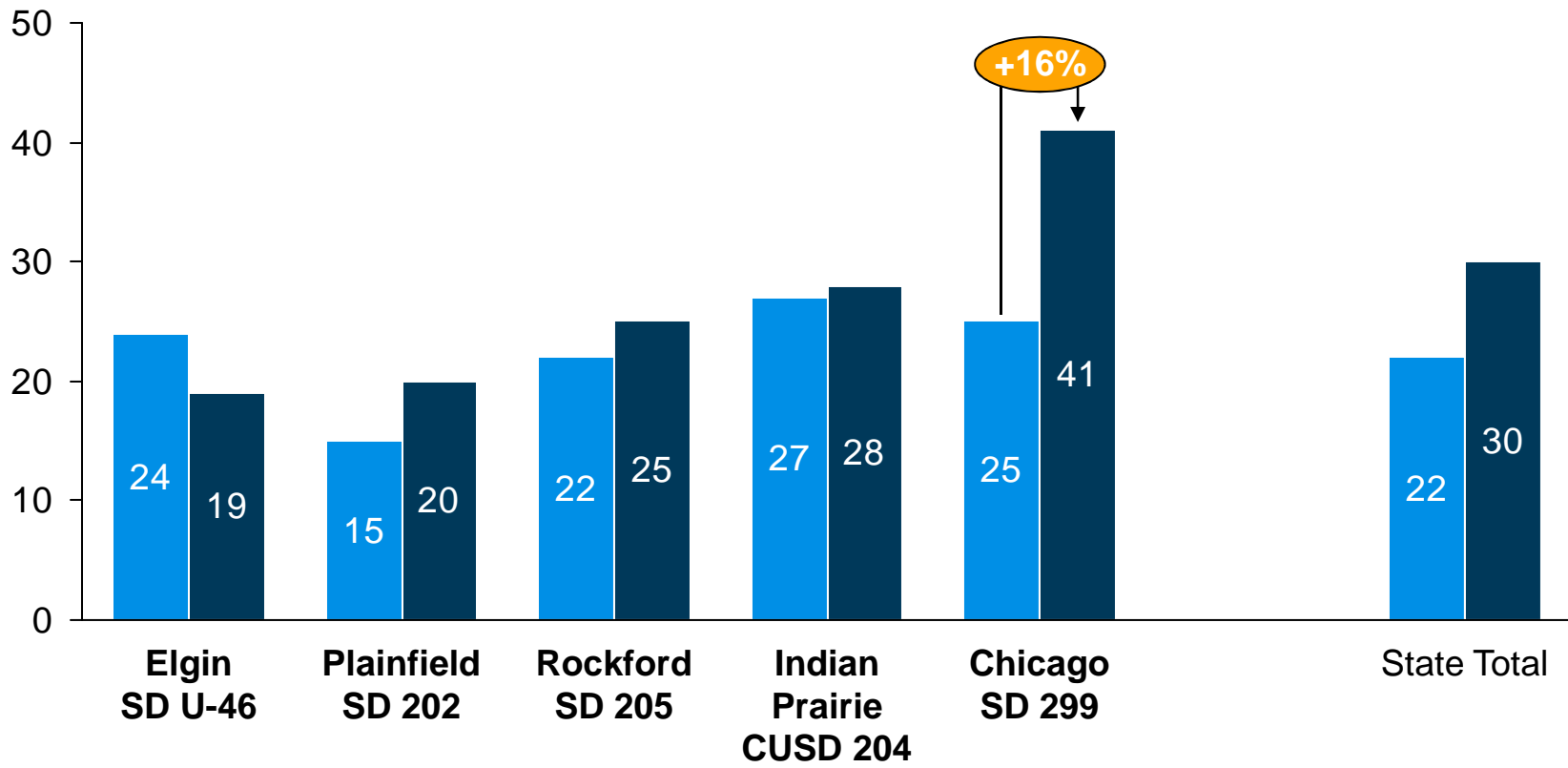
Percentage of Staff With a Master's Degree, by Poverty Quintile (%)



The percentage of new hires with master's degrees increased across the state, especially in Chicago.

2002
2012

Percentage of New Hires With a Master's Degree, Across Large Unit Districts (%)





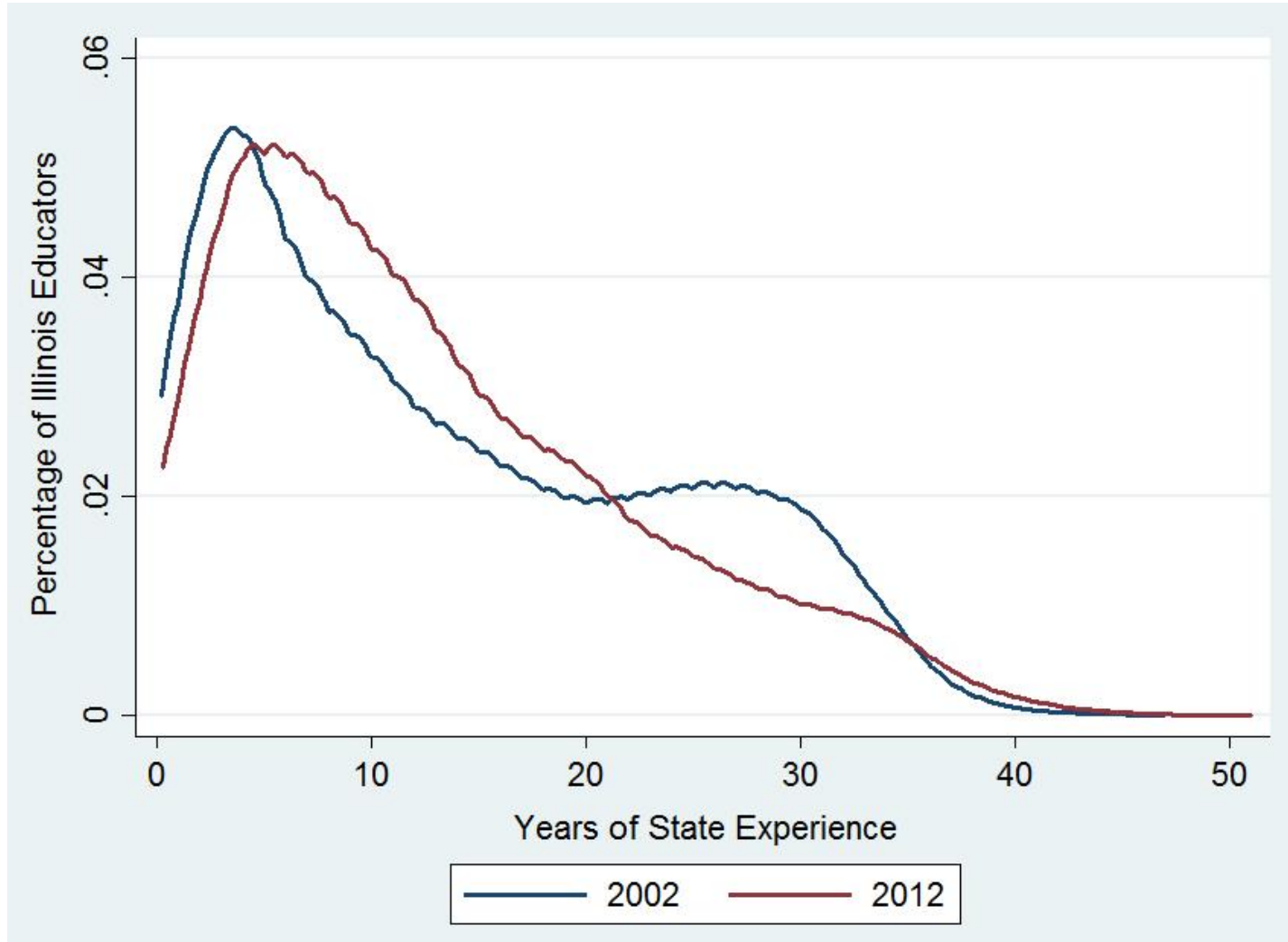
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Findings: Experience Levels



The Illinois educator workforce experience profile has changed over time.

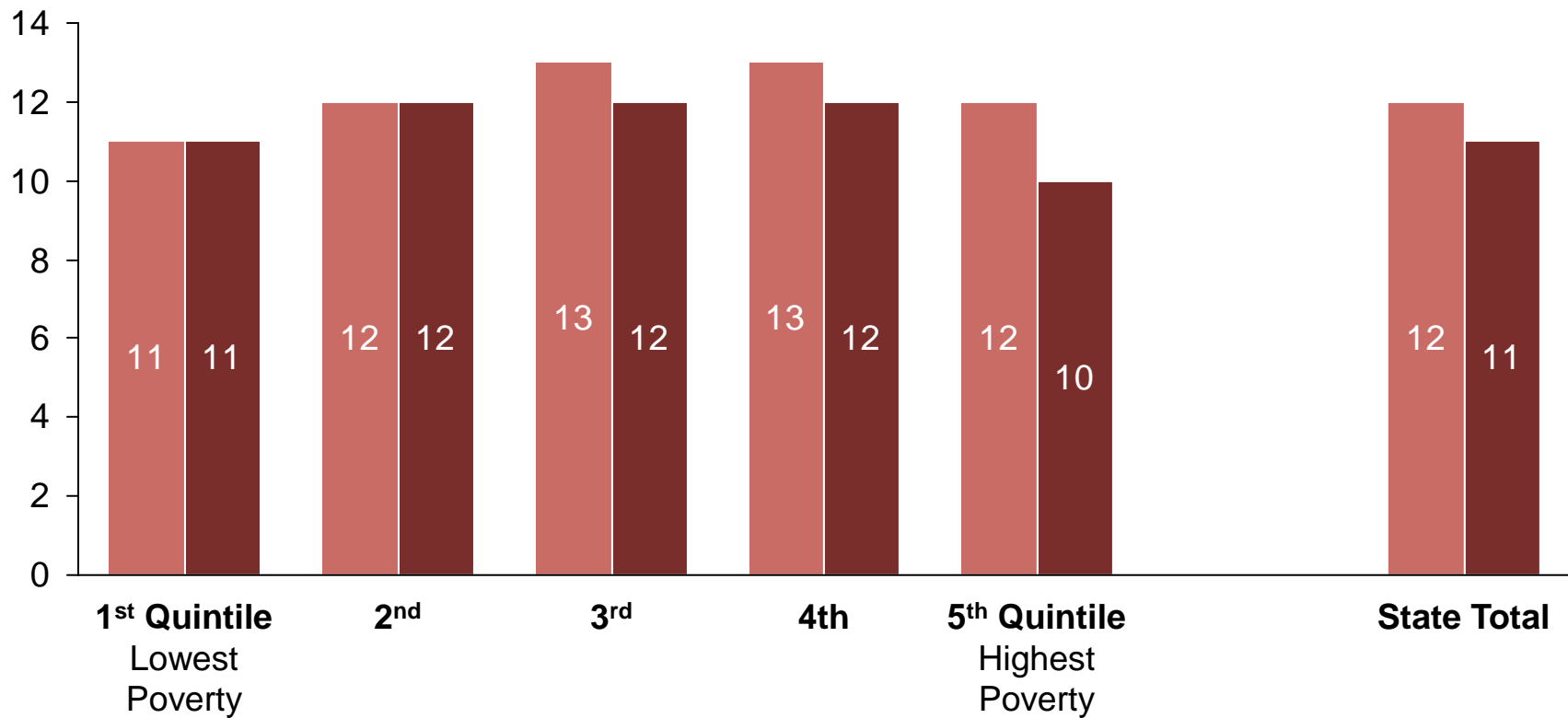
State Experience of All Illinois Educators



Changes in the experience profile do not show up in averages. The median educator had similar levels of experience in 2002 and 2012.

2002
2012

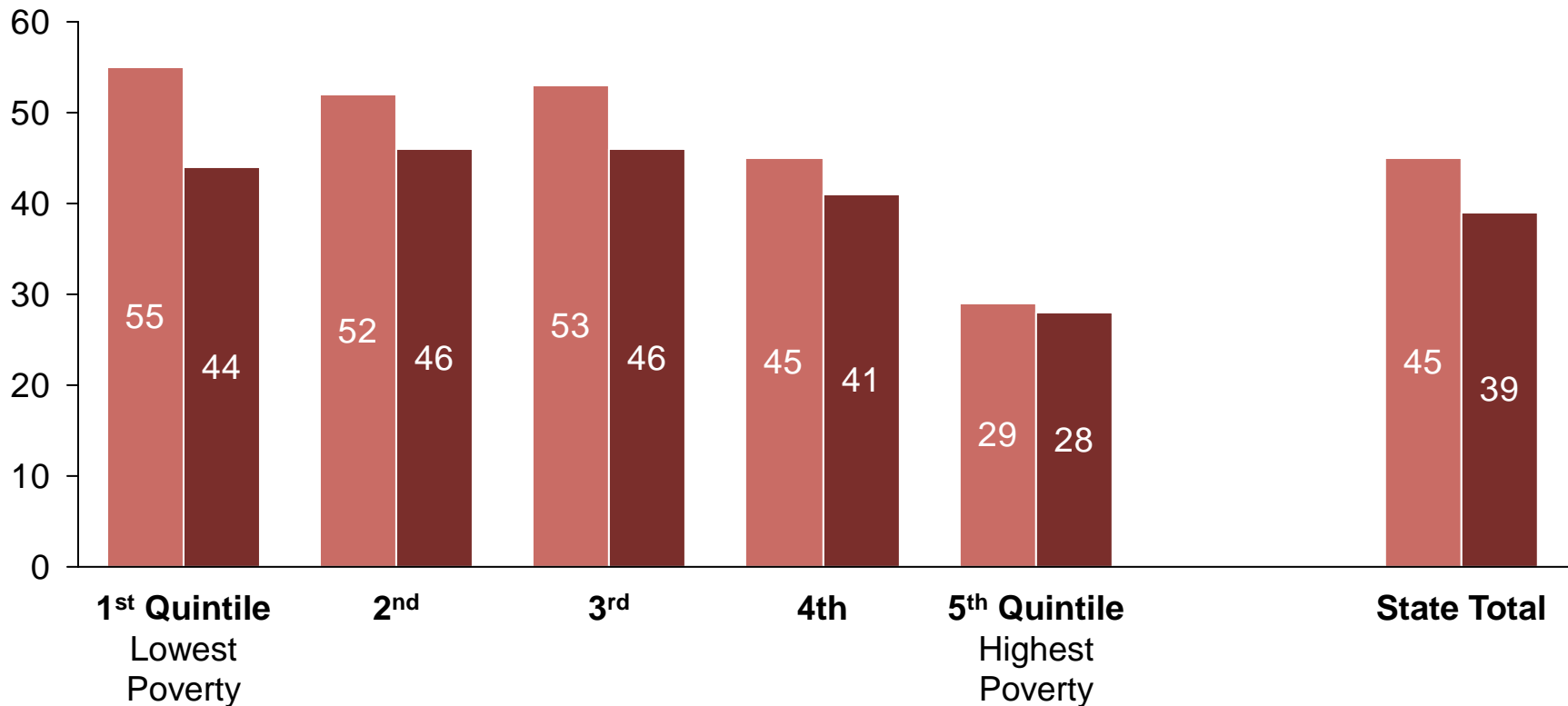
Illinois Median Years of State Experience for All Staff (Years)



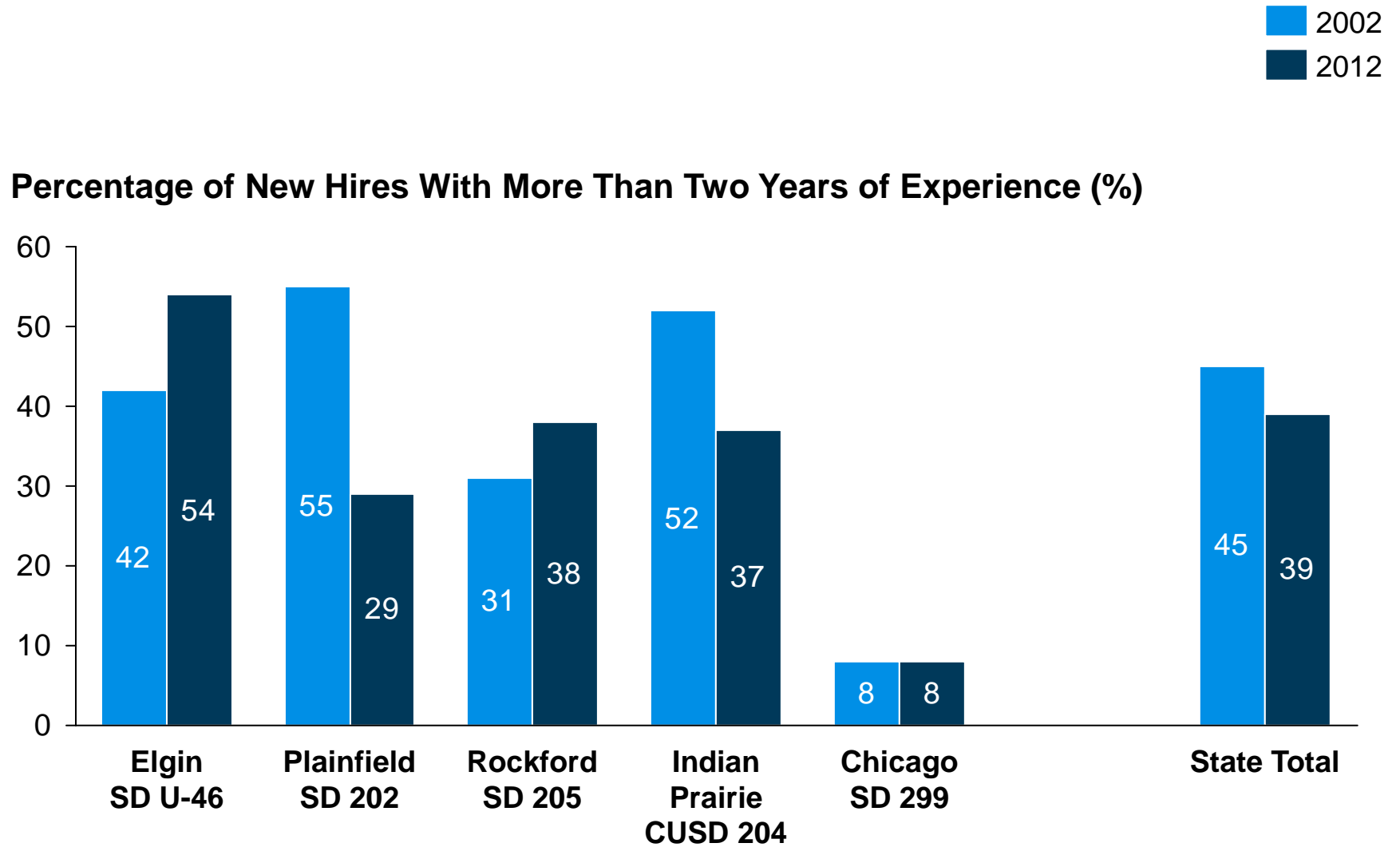
Many districts hired educators with prior state experience. That mobility primarily benefits lower-poverty districts.

2002
2012

Percentage of New Hires With More Than Two Years of State Experience (%)



Chicago, in particular, did not hire staff with prior experience. They were likely exporting rather than importing educators.





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Findings: Retention



Approximately two-thirds of staff in each cohort of new hires were still working in Illinois schools five years after first hired.

Retention Rates of School Staff Entering Workforce from 2002 to 2012

School Staff Entering Workforce in:	N	Still Teaching in Illinois									
		After 1 yr	After 2 yrs	After 3 yrs	After 4 yrs	After 5 yrs	After 6 yrs	After 7 yrs	After 8 yrs	After 9 yrs	After 10 yrs
2001-02	9.7K	86%	76%	71%	67%	63%	61%	59%	58%	54%	52%
2002-03	9.2K	85%	79%	73%	68%	66%	63%	62%	56%	55%	
2003-04	8.3K	88%	81%	73%	69%	67%	65%	59%	56%		
2004-05	9.4K	89%	79%	74%	72%	69%	63%	60%			
2005-06	10.2K	86%	80%	75%	73%	66%	63%				
2006-07*	7.8K	89%	82%	78%	70%	66%					
2007-08	10.0K	82%	77%	67%	62%						
2008-09	8.0K	84%	71%	64%							
2009-10	6.4K	79%	67%								
2010-11	5.5K	81%									

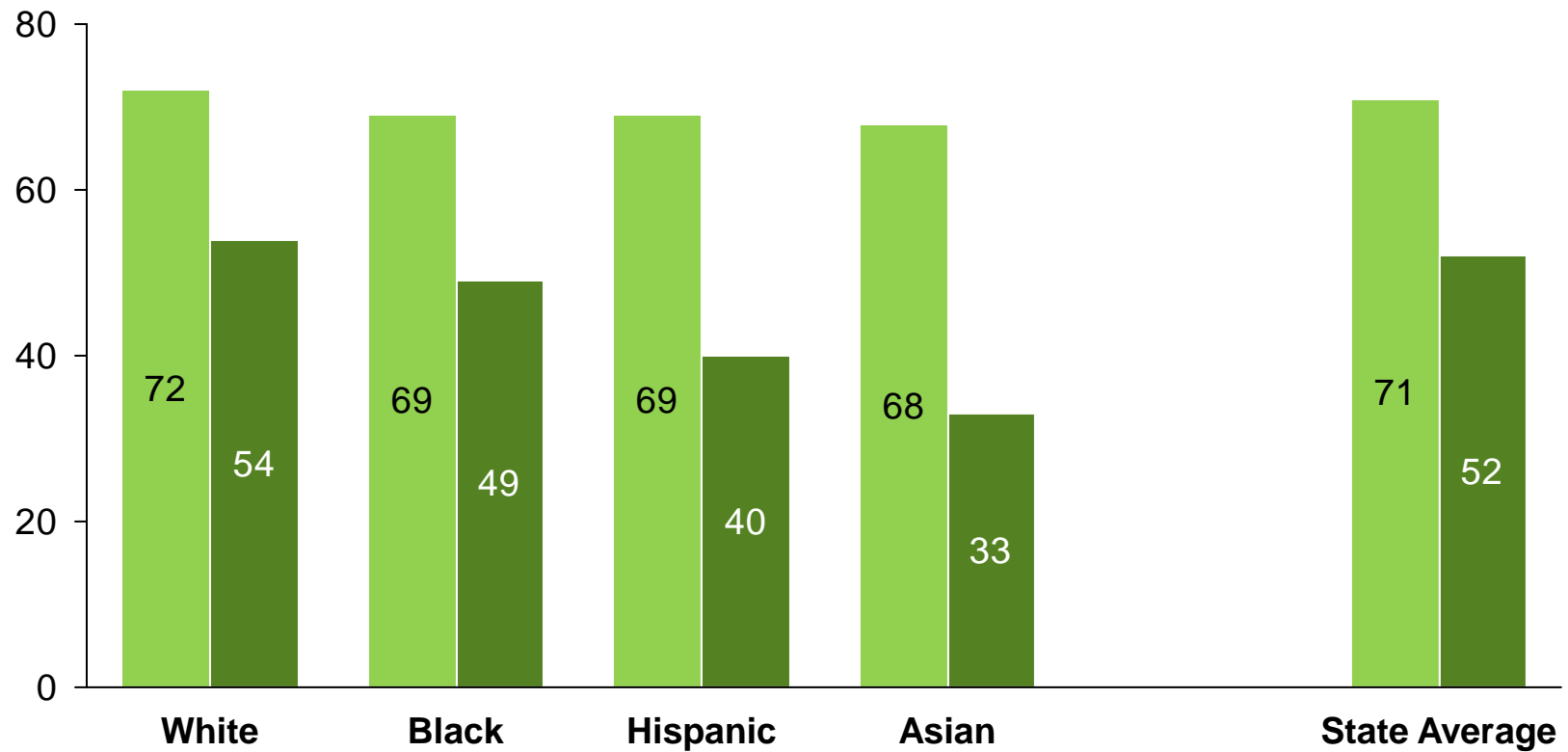
Note: Evidence of discrepancies in data on new Chicago hires in 2007

Retention rates differ across race. White and black educators had comparatively higher long-term retention rates, state-wide.

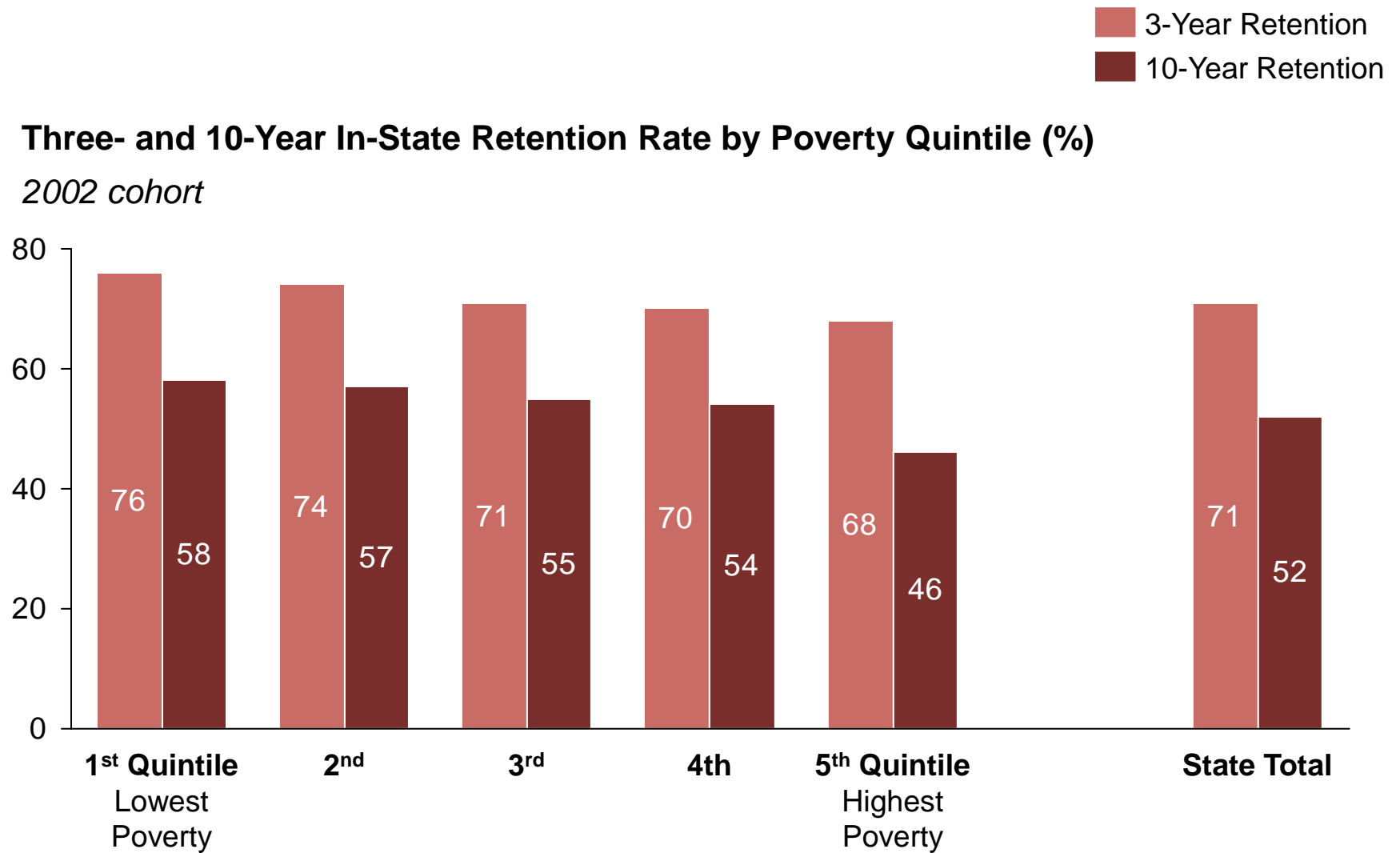
3-Year Retention
10-Year Retention

Three- and 10-Year In-State Retention Rate by Race (%)

2002 cohort



Retention rates were lowest in the highest-poverty districts.

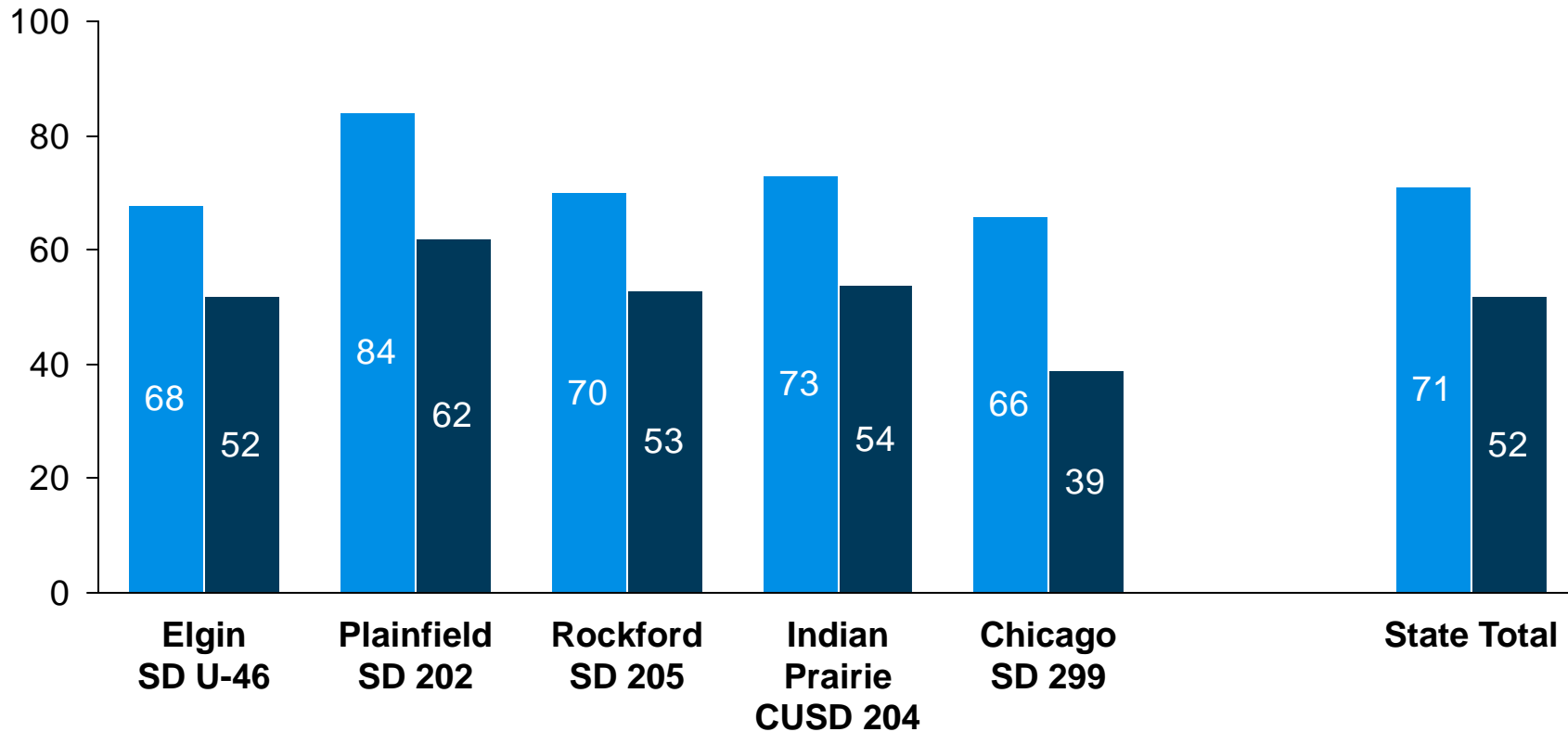


Retention rates also vary by district. Chicago in particular had a very low retention rate, even compared to other large districts.

3-Year Retention
10-Year Retention

Three- and 10-Year In-State Retention Rate by Large Unit District (%)

2002 cohort





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District Pipelines



Overview of Selected District Pipelines

The TSR dataset did not include information on where school staff received their certifications, but it did identify each individual educator's baccalaureate institution.

Although not a complete list for any district, this section shows the top five baccalaureate-granting institutions reported by new hires in the following districts:

- Chicago Public Schools
- Elgin District U-46
- Plainfield District 202
- Indian Prairie District 204
- Rockford District 205
- New Trier Township Districts

Chicago Public Schools: Illinois universities and other midwestern states were among the top five producers of new hires, 2002-12.

Top 5 Baccalaureate Institutions of Chicago New Hires, 2002-12		
Institution	Number of New Hires	Percentage Out of Total New Hires (%)
University of Illinois, Chicago	1,175	7
Northeastern Illinois University	1,111	6
Unknown Illinois institution	958	5
Indiana	880	5
Michigan	814	5

Elgin District U-46: Eleven percent of new hires from 2002 to 2012 came from international universities.

Top 5 Baccalaureate Institutions of Elgin New Hires, 2002-12		
Institution	Number of New Hires	Percentage Out of Total New Hires (%)
Northern Illinois University	374	15
Outside U.S.A.	267	11
Illinois State University	237	10
University of Illinois, Urbana-Champaign	109	4
Wisconsin	84	3

Plainfield District 202: The top five producers of new hires from 2002 to 2012 were in-state universities.

Top 5 Baccalaureate Institutions of Plainfield New Hires, 2002-12		
Institution	Number of New Hires	Percentage Out of Total New Hires (%)
Illinois State University	371	14
Northern Illinois University	250	9
Eastern Illinois University	172	7
University of Illinois, Urbana-Champaign	137	5
North Central College	107	4

Indian Prairie District 204: Illinois universities were the top five producers of new hires, 2002-12.

Top 5 Baccalaureate Institutions of Indian Prairie New Hires, 2002-12		
Institution	Number of New Hires	Percentage Out of Total New Hires (%)
Illinois State University	311	15
Northern Illinois University	191	9
University of Illinois, Urbana-Champaign	188	9
North Central College	99	5
Eastern Illinois University	90	4

Rockford District 205: Twelve percent of new hires earned their baccalaureate degrees either in Wisconsin or outside the country.

Top 5 Baccalaureate Institutions of Rockford New Hires, 2002-12		
Institution	Number of New Hires	Percentage Out of Total New Hires (%)
Northern Illinois University	372	22
Rockford College	239	14
Illinois State University	142	8
Wisconsin	109	7
Outside U.S.A.	80	5

New Trier Township Districts: A substantial proportion of 2002-12 new hires in New Trier earned their degrees in nearby states.

Top 5 Baccalaureate Institutions of New Trier New Hires, 2002-12		
Institution	Number of New Hires	Percentage Out of Total New Hires (%)
University of Illinois, Urbana-Champaign	185	11
Indiana	145	8
Ohio	131	7
Wisconsin	119	7
Michigan	106	6

Across the state, certain institutions produce disproportionate shares of black teachers.

Top 5 Producers of Newly Hired Black Teachers — Statewide, 2012		
Institution	Total Market Share of All New Illinois Teachers	Total Market Share of New Black Teachers
Chicago State University	1%	10%
Unknown Illinois institution	4%	9%
University of Illinois, Urbana-Champaign	7%	5%
Northern Illinois University	5%	4%
Governor's State University	1%	4%

The same is true for Hispanic teachers. Certain institutions produce disproportionate shares of Hispanic teachers.

Top 5 Producers of Newly Hired Hispanic Teachers — Statewide, 2012		
Institution	Total Market Share of All New Illinois Teachers	Total Market Share of New Hispanic Teachers
Northeastern Illinois University	2%	11%
Outside U.S.A.	1%	9%
Unknown Illinois institution	4%	9%
DePaul University	2%	6%
Northern Illinois University	5%	6%



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Looking Ahead



Policy Recommendations

- Be cognizant of cyclical fluctuations in supply and demand.
- Collect and track data that can provide insight into how to attract and retain teachers in specific shortage areas.
 - *Newly certified staff*: What regions/districts do newly certified staff gravitate toward? How many leave the state? How many do not teach at all?
 - *Experienced teachers*: Track movement across districts. Do experienced teachers move to lower-poverty districts? To urban vs. rural districts? Out of the profession?
- Use data to target strategies to specific subject areas and regions where shortages exist.

Data Recommendations

- Since the time period studied, ISBE has created a new database, called the Employment Information System (EIS). The EIS includes changes to data collection and management designed to address many problems with data consistency and ease of analysis found in the TSR. Ongoing monitoring and efforts to solicit feedback can help ensure continued improvement to the quality of the data. Additional recommendations include:
 - Investigate which aspects of the data would be most useful to districts (such as information about mobility) and to institutions of higher education (such as information about teacher placement) and ensure that district and higher education staff can easily access their own data
 - Collect information about teachers' preparation programs and certification areas
 - Release more frequent supply and demand reports



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Appendix



Methodology

- In order to conduct longitudinal analyses, all of the yearly TSR datasets were merged into one file.
- Because the original datasets do not include unique IDs for educators, we assigned individuals their own unique IDs. Then we matched cases across years based on first and last name, middle initial, gender, race, and college attended.
- Approximately 97% of the cases in the sample were successfully matched using this method.