

The Student Has Become the Teacher: Tracking the Racial Diversity and Academic Composition of the Teacher Supply Pipeline (IERC 2013-3)

EXECUTIVE SUMMARY

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It is now widely acknowledged that teachers are the most important educational resource in schools.^[i] Research has found that academically skilled teachers have positive impacts on student achievement and that racial/ethnic minority teachers have a positive impact on minority student outcomes.^[ii] As a result, there are currently numerous efforts underway to improve the selectivity and the diversity of the teaching force, both nationally and in Illinois. For example, the Council for Accreditation of Educator Preparation calls for the recruitment of candidates that reflect the diversity of the nation's students and proposes that admission standards for teacher preparation programs ensure that each entering cohort of candidates has average achievement in the top third of a national assessment.^[iii] In Illinois, the state P-20 Council has paced a priority on increasing the state's pipeline of diverse, academically talented teaching candidates.^[iv]

Yet, some evidence suggests that efforts to improve the academic skills of the overall teaching force can have a negative impact on teacher diversity without a parallel commitment to maintaining such diversity.^[v] Therefore, our goal in this study is to inform the design of policies and/or practices to improve the supply of academically skilled, diverse individuals into teaching. To do this, we use a unique, longitudinal state database to track two Illinois high school cohorts (the classes of 2002 and 2003, N= 225,196) through five stages in the new teacher supply pipeline—college entry, enrollment in a four-year college, completion of a bachelor's degree, teacher certification, and employment as a teacher in an Illinois public school. We examine how each stage in this pipeline affects the composition of new entrants to K-12 public school teaching in Illinois, with particular attention to academic skills and racial/ethnic diversity, two characteristics of the teaching force that are at the forefront of local and national policy concerns.^[vi]

Who is interested in teaching during high school?

Just over one in ten (11.5%) of the students in the high school cohorts of 2002 and 2003 aspired to teach, as indicated by their preferred college major or future career while in high school. Students who aspired to teach while in high school were stronger academically than non-aspirants, but racial/ethnic minority students—regardless of academic background—were underrepresented among teacher aspirants. Thus, the relative lack of racial/ethnic diversity among Illinois teachers begins at least as early as high school with lower levels of interest in teaching among racial/ethnic minority students.

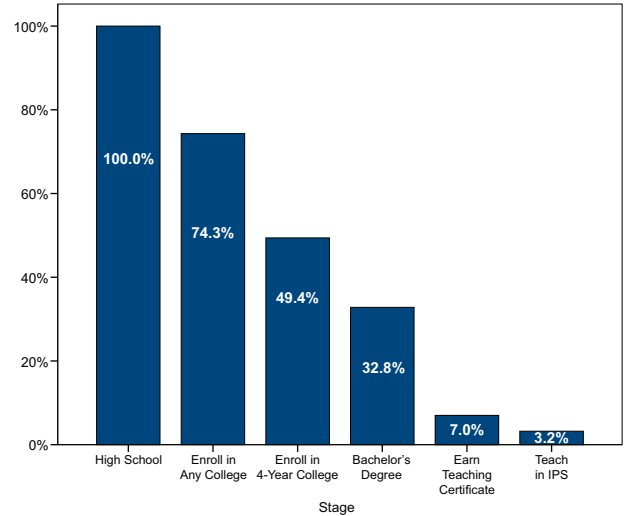
This is important because, as our data show, high school aspirations play a large role in the development of the teaching force all the way through the employment stage. This study found that substantially higher proportions of the students who aspired to become teachers while in high school advanced to each successive stage in the teacher pipeline. Most notably, more than half of the aspirants who received bachelor’s degrees continued on to earn teacher certification, compared to only 15.9% of four-year college completers who did not aspire to teach while in high school. And these differences continued to emerge even as students moved to the teaching stage, where a considerably larger proportion of certified aspirants became employed as teachers in Illinois Public Schools (IPS) compared to certificants who did not aspire to teach while in high school.

Who becomes a teacher?

Tracking these students through the pipeline, we find that only a small percentage of Illinois public high school students ended up becoming public school teachers in the state (see Figure 1). Almost three quarters of the students in these cohorts enrolled in some postsecondary education (either two-year or four-year college) for at least a semester, and almost one-half enrolled at a four-year institution, either as a direct entrant or as a transfer student from a two-year college. Less than one third of the students in the study eventually earned a bachelor’s degree. Although more than one in five bachelor’s degree completers from these cohorts earned teacher certification, the transition from

Figure 1

Percentage of the Cohort that Progressed Through Each Stage of the Pipeline



certification to teaching appeared to be one of the most critical stages in this pipeline, as less than half of the certificants actually ended up teaching in IPS. Thus, by the time they reached this final stage—roughly a decade after high school—only 3.2% of all students in these cohorts ended up as IPS teachers at any point.

The students who became teachers differed substantially from those who did not become teachers. The teachers who emerged from these cohorts were stronger academically but much less racially/ethnically diverse than their high school peers. Teacher certificants had notably weaker academic qualifications compared to other bachelor’s degree earners, but those who actually became teachers were quite similar academically to non-teaching college graduates. However, the teachers from these cohorts were also considerably less racially/ethnically diverse than other four-year college completers.

To what extent does each stage in the pipeline affect Illinois’ ability to attract an academically skilled, diverse teaching force?

We found that compositional changes by race/ethnicity and academic qualifications occurred to a greater or lesser extent at each stage of the teacher supply pipeline. Table 1 displays the conditional rates of progress for each student group from one stage in the teacher supply pipeline to the next. That is, contingent upon

Table 1
Conditional Rates of Progress Between Each Stage in the Pipeline

		% of High Schoolers Enrolling in Any College	% of College-Goers Enrolling in 4-Year College	% of 4-Year College-Goers Completing a Bachelor's	% of Bachelor's Recipients Certified to Teach in IPS	% of Certificants Becoming a Teacher in IPS
All Students		74.3	68.0	64.8	21.4	45.5
Gender	Male	70.8	65.9	61.1	14.3	37.1
	Female	77.7	69.9	67.8	26.7	48.7
Race/Ethnicity	African American	68.2	61.5	39.3	18.9	27.0
	Asian American	83.0	82.6	70.4	8.9	41.1
	Latino	58.4	53.8	47.3	20.5	50.2
	Multi-racial	70.9	63.3	55.8	17.5	38.4
	Native American	56.1	42.5	48.9	25.6	33.3
	White	78.4	70.8	70.6	23.0	47.1
	Missing	66.8	59.7	57.4	18.5	38.2
ACT	Bottom 1/3 (ACT ≤ 17)	58.0	37.4	36.9	26.3	31.4
	Middle 1/3	78.7	67.4	58.3	26.7	45.4
	Top 1/3 (ACT ≥ 22)	87.6	89.0	75.9	18.8	48.2
Race & ACT	Minority, Bottom 2/3	62.7	54.1	39.4	19.6	34.5
	Minority, Top 1/3	86.7	91.2	71.2	12.2	44.2
	White, Bottom 2/3	70.5	52.0	59.0	29.9	44.4
	White, Top 1/3	88.0	88.7	77.1	20.1	48.9
Aspirant in HS	Yes	83.3	74.1	70.2	52.3	58.0
	No	73.2	67.1	63.9	15.9	38.2

making it to a given stage, what proportion of students in each category proceeded to the following stage in the pipeline? As shown in Table 1, college enrollment and bachelor's degree completion had a negative impact on racial/ethnic minority representation, in part due to the stronger academic preparation required at those stages and the relatively weak academic backgrounds of non-Asian minority high school students from these cohorts.^[vii] While discrepancies in terms of progress through the college pipeline have been well-documented by previous IERC research,^[viii] it is noteworthy that—even conditional upon completing a baccalaureate degree—racial/ethnic gaps were still evident at both the certification and teaching stages. That is, regardless of academic preparation, minority bachelor's degree recipients were less likely to have earned teaching certificates and minorities with teaching certificates were less likely to become teachers in Illinois public schools, compared to Whites. These findings indicate that factors besides academic preparation also had a large impact on the relatively low minority representation of new public school teachers in Illinois.

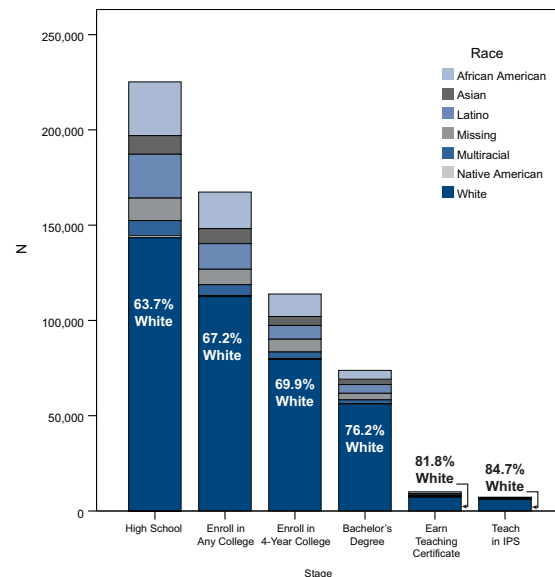
Focusing on academic qualifications, we found that students from the top third of the ACT distribution enrolled in postsecondary education (especially four-year institutions) and completed bachelor's degrees at considerably higher rates than students with lower ACT composite scores. This trend reversed itself at the certification stage, though, where substantially larger proportions of bachelor's degree completers from the bottom two-thirds of the ACT distribution progressed to the teacher certification stage, relative to bachelor's

degree earners from the top third by ACT. This indicates that teacher certification may be less attractive to college graduates with stronger academic backgrounds.

Changes in the Composition of the Teacher Pipeline at Each Stage

As a result of these differential rates of progress, non-White students represented an increasingly smaller share of the students who progressed through each stage of teacher pipeline, from initial enrollment all the way through employment as teachers (see Figure 2). That is, whereas non-White students made up more than a third of the students in our high school cohorts, they represented less than half that proportion of the students

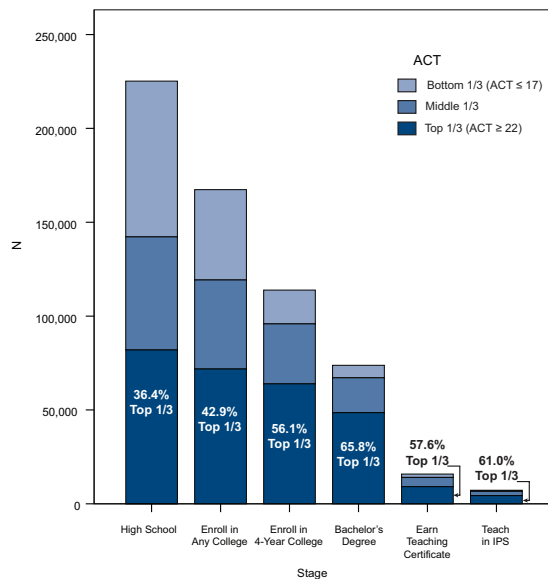
Figure 2
Changes in the Composition at each Stage of the Pipeline, by Race/Ethnicity



from these cohorts who became Illinois public school teachers.

By definition, this study began with roughly a third of the students in the top ACT category, with composite scores of 22 and above. Due to the differential rates of progress displayed in Table 1, this top third constituted an increasing proportion of the students enrolled in any college and enrolled in four-year colleges, and constituted almost two thirds of the students from these cohorts who received bachelor's degrees (see Figure 3). However, because bachelor's degree recipients from the top third academically were less likely to be certified conditional upon earning a four-year degree (see Table 1), the share of such students dropped considerably at the certification stage.

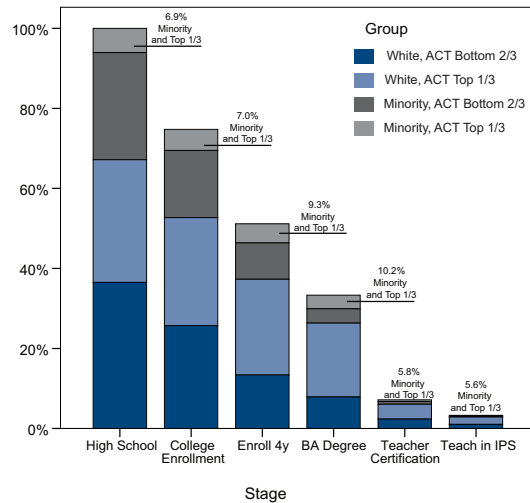
Figure 3
Changes in the Composition at each Stage of the Pipeline, by ACT Category



For non-White students from the top ACT third, their share of the pipeline continued to grow at each stage through bachelor's degree completion (see Figure 4). However, because college graduates from both groups (most racial/ethnic minority groups and students from the top third academically) tended to obtain teacher certification at lower rates (see Table 1), the share of non-White students from the top academic tier dropped nearly in half at the certification stage. Transitioning from the certification to the employment stage, the proportion of most academically qualified

racial/ethnic minority students fell slightly again, primarily due to the relative underrepresentation of certified African Americans in the teaching force from these cohorts.

Figure 4
Changes in the Composition at each Stage of the Pipeline, by Race and ACT



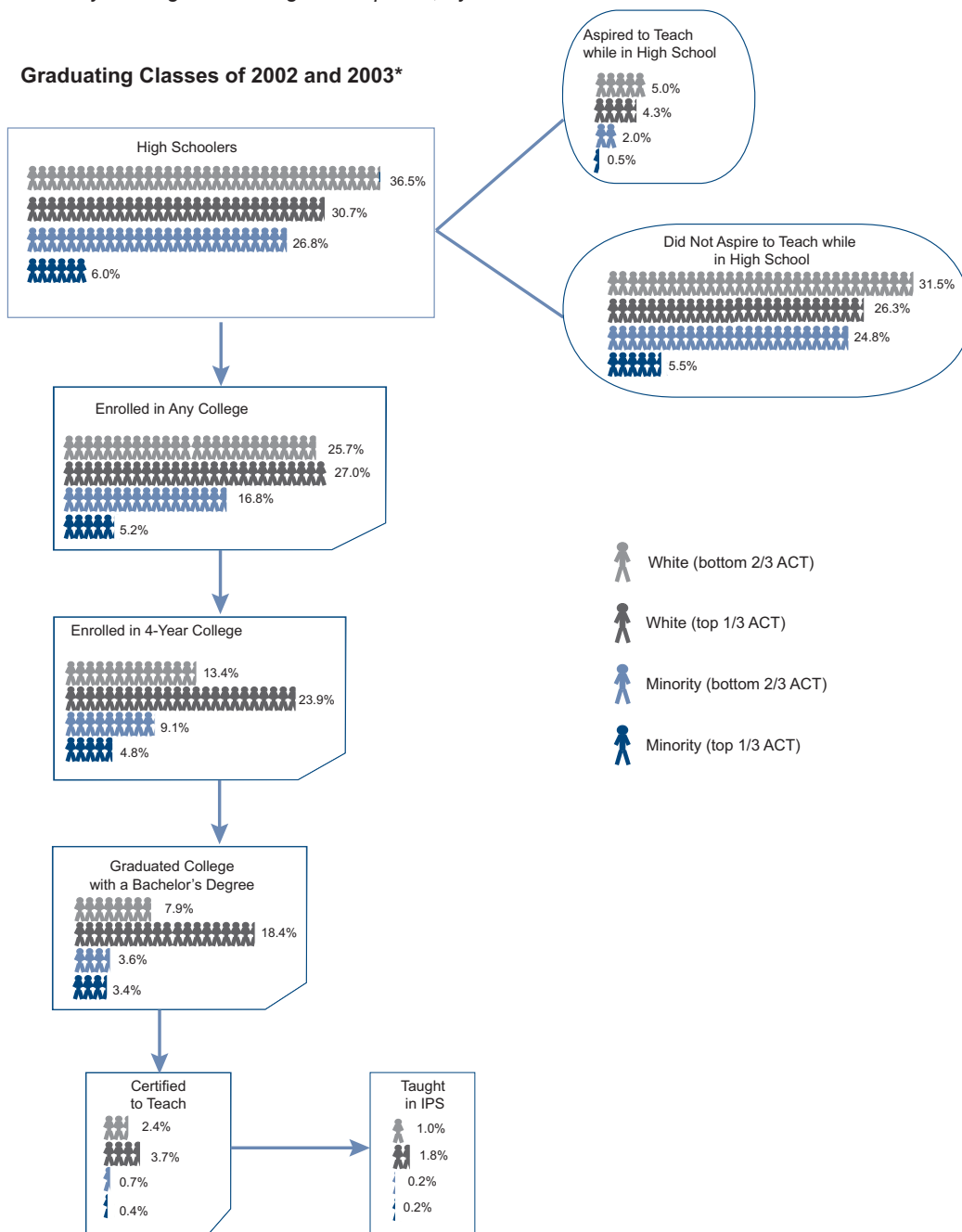
Overview of the New Teacher Pipeline

Figure 5 provides a graphic summary of the teacher supply pipeline analyzed in this study. At the outset, racial/ethnic minorities comprised about one third (26.8% + 6.0%) of all student in these cohorts, with non-Whites from the top of the ACT distribution making up only 6.0% of all Illinois public high schoolers. Whereas more than one in ten of these high schoolers aspired to either an academic major or a career in education, the profession was generally less attractive to racial/ethnic minorities than it was to White students. Racial/ethnic minorities from the top third of the ACT distribution who aspired to teach while in high school represented less than 1% of all students from these cohorts. Although nearly three quarters of the students from these cohorts advanced to postsecondary education, less than half of all students enrolled at a four-year institution, with students from the top ACT third accounting for 28.7% (23.9% + 4.8%). Just under a third of the students from these cohorts earned a bachelor's degree during the course of this study, but racial/ethnic minorities accounted for only 7.0%, roughly equally divided between those from the top ACT third and those from the bottom two-

thirds of the ACT distribution. Seven percent of all students from these cohorts earned teacher certification, yet the number of racial/ethnic minorities who became certified teachers was equal to just 1.1% of all students in this study. The size of the teacher pipeline was cut in half again as students transitioned (or did not transition) from certification to the employment stage. After this final stage, racial/ethnic minorities who

became teachers in Illinois public schools represented less than half a percent of the students who began this study, evenly divided between those from the top third and bottom two-thirds (0.2%) of the ACT distribution. Meanwhile, the number of White teachers emerging from these cohorts equated to 2.8% of the cohorts overall, with White teachers from the top ACT third accounting for more than half of all teachers who emerged from these cohorts.

Figure 5
Summary of Progress Through the Pipeline, by Race and ACT



* Includes only those with valid (i.e., non-missing) race and ACT data.

Based on the results of this study, we conclude that efforts to improve recruitment into the teaching profession and initiatives to increase college enrollment and completion among racial/ethnic minority students are needed in order to have a significant impact on the diversity and academic composition of the state's teaching force. We emphasize that any efforts that focus on boosting teacher diversity must not neglect teacher academics, just as any initiatives intended to increase the academic qualifications of teachers should not neglect teacher diversity. Recommendations include:

- Recruitment efforts that begin at least as early as high school, because students from these cohorts who aspired to teach while in high school progressed through the entire pipeline to become teachers at nearly seven times the rate as those who did not express similar aspirations at that stage;
- Continued recruitment once students enter college, because more than half of the teachers who emerged from these cohorts did not indicate an interest in teaching while in high school;
- Scaling up selective alternative certification programs, because we found this to be a promising route into teaching for academically well-qualified racial/ethnic minority teachers, but this pathway is currently too small to have any widespread impact on the characteristics of the state's teaching force as a whole;
- Providing incentives to convince student who enrolled in college outside of Illinois to return to teach in IPS or creating programs to retain these students in Illinois for postsecondary education from the outset, because students with higher ACT scores, especially minority students, tend to be overrepresented among those who initially enrolled out-of-state; and

- Potentially holding teacher preparation programs more accountable for both the quality and diversity of the teachers they train and creating a statewide initiative to fund teacher preparation programs targeting high-achieving minority candidates.^[ix]

Finally, we note that a comprehensive strategy for increasing the proportion of high achieving minority teachers must also include efforts to improve the educational opportunities and outcomes for all minority students, from early childhood through postsecondary education. We do not recommend strategies that emphasize improving recruitment from two-year colleges or transitions from two- to four-year, because—even if successful—the teachers from our study who emerged from these pathways were, in general, disproportionately White and less academically qualified. We also call for further research to help us understand students' transitions (or lack thereof) from certification to the employment stage, which this study illustrates to be a significant point of leakage from the pipeline. Further investigations are needed to help understand the role that student finances play in Illinois' new teacher pipeline, from college affordability through the role of teacher salaries on students' career choices. We also note that the recent Illinois high school cohorts profiled in this study are just one component of the teacher pipeline, which also includes career switchers, teachers transitioning from other states or private schools, and those who delayed entry into college or the workforce. These additional sources could also improve the diversity and academics of our teaching corps and should not be neglected among the state's broader recruitment efforts. We close with a reminder that getting these diverse, academically talented teachers through the pipeline and into the classroom is only the first step—once they get there, there should be concerted efforts to keep high-quality educators in profession.

Endnotes

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