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Hometown Disadvantage? It Depends on Where You're From: Teachers' Location Preferences and the Implications for Staffing Schools

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This article focuses on an overlooked factor in the unequal sorting of teachers across schools: the geographic preferences of teachers. Using data from the National Education Longitudinal Study, the author examines the patterns of geographic mobility of new teachers and compares them to the patterns of other college graduates. Specifically, the author demonstrates that teachers' preference for working close to where they grew up is a distinct characteristic of teachers, and the author further explores the implications of those preferences for schools facing chronic shortages of teachers. The author finds that the local nature of the labor force and the differential rates of graduation and production of teachers from traditionally hard-to-staff schools are reinforcing existing deficits of local teacher labor supply.

Keywords: *teacher labor markets, geographic patterns, education policy*

The need for qualified teachers is a growing national concern, furthered by the requirements of the No Child Left Behind Act of 2001. Many schools throughout the country have difficulty attracting and retaining highly effective teachers. This difficulty is particularly pronounced in schools with low-income, low-achieving, and non-White students, as these schools systematically employ more inexperienced teachers who tend to have weak educational backgrounds and academic skills (Elfers, Plecki, & Knapp, 2006; Lankford, Loeb, & Wyckoff, 2002). States and districts recently have implemented a number of incentive policies that aim to attract qualified teachers to difficult-to-staff schools, ranging from offering extra preparatory periods for first-year teachers to low-interest-rate home loans (*Education Week*, 2003). While these and other incentive programs are intended to recruit and retain qualified teachers, the shortage in low-income, high-minority schools remains. The persistent nature of the teacher shortage suggests systemic problems whose solutions require deeper understanding of the dynamics of teacher labor markets.

In order to mitigate the unequal distribution of the teacher workforce across schools, it is necessary to better understand the preferences of those individuals who enter the teacher labor force. This article expands on work about the role of teachers' preferences for living close to home by investigating the geographic mobility patterns of teachers across the country and explores whether these preferences are a unique characteristic of young teachers or if these patterns are common for other young college graduates as well. An analysis of teacher labor markets in New York State found that teachers work in schools in close proximity to the communities in which they grew up. Between 1999 and 2002, 85% of entering New York teachers taught within 40 miles of their hometown, and 60% taught within 15 miles (Boyd, Lankford, Loeb, & Wyckoff, 2005). While

New York provides convincing evidence of a localized market for teachers in a single state, the ability to determine whether or not the "draw of home" is a common characteristic of teachers requires an analysis that crosses state lines. In this article, I use a national data set to examine the patterns of geographic mobility of teachers as well as the patterns for other college graduates. Specifically, I address two distinct yet related questions:

1. What are the geographic mobility patterns of young teachers across the United States, and are they distinct from those of similarly educated young people in different occupations?
2. What are the implications of the geographic mobility patterns of young teachers for schools with different student populations?

In exploring the first question, I address if, and how, the geographic mobility pattern of young teachers is similar or distinct from other young college graduates. I do so by comparing the variability in the geographic mobility of college graduates from a variety of occupations, examine whether teachers' preferences for working close to where they grew up are a distinct characteristic of teachers, and begin to explore possible explanations for the unique geographic mobility of teachers. For the second question, I further explore the implications of those preferences for schools facing chronic shortages of teachers by comparing differences in geographic mobility patterns of students and teachers who graduate from different types of schools. Gaining a more nuanced understanding about the significance of geographic location for teachers across the country sheds light on how to design effective policies related to preparation, recruitment, and the retention of teachers.

Within a geographic market there are many factors that have been shown to contribute to the systematic sorting of teachers across schools. Using rich administrative data from North Carolina, Guarino, Brown, and Wyse (2011) find that schools serving at-risk students struggle to attract teachers with desirable characteristics and that the school demographic characteristics play a large role in within-system sorting of teachers. Independent of salary and the profile of the student body, working conditions such as large class sizes, facilities problems, multitrack schools, and lack of textbooks contribute to high rates of teacher turnover in schools (Buckley, Schneider, & Shang, 2005; Loeb, Darling-Hammond, & Luczak, 2005). Recently a number of studies have identified that effective school leadership is also associated with teachers' decisions of whether or not to stay in their schools (Boyd, Grossman, Ing, Lankford, Loeb, & Wyckoff, in press; Farkas, Johnson, & Foleno, 2000; Grissom, 2011; Johnson & Birkeland, 2003; Smith & Ingersoll, 2004). Yet despite the identification of the multiple factors that contribute to inequities in a school's human capital profile, difficult-to-staff schools continue to face higher than average rates of teacher turnover.

Very little research exists on the role of geography in teacher labor markets. The only study that directly addresses this issue is the aforementioned Boyd et al. (2005) study in which they find that from 1999 to 2002, 88% of teachers from urban hometowns in New York accepted their initial teaching jobs in urban districts. Yet the need for teachers in urban areas is so great that only 60% of urban teachers were from an urban hometown. As a result, urban schools have to import teachers from outside of the local area. Yet the study finds that teachers demonstrate a preference for teaching close to where they grew up. In fact, over 60% of teachers teach within 15 miles of the high school from which they graduated. While Boyd et al. have made a significant contribution to our understanding of the geography of the teacher labor market in New York, it is not clear whether these geographic patterns hold up for teachers nationally. It is this gap in the literature that I address in this article.

Even though little work has focused specifically on the geography of teacher labor markets, a substantial literature examines different trends in the geographical movement patterns of individuals in other occupations. In general, two types of geographic movement are referred to in the literature: local mobility and relocation mobility. Although both types of movement vary in their definitions, local mobility generally refers to the job movement of individuals within particular counties or metropolitan areas that does not require residential relocation. Longer-distance mobility, on the other hand, refers to those moves

that are relatively permanent and occur over significant distances (Long, Tucker, & Urton, 1988). A number of empirical studies have identified individual characteristics that are related to both local and longer distance mobility, including age, gender, marital status, socioeconomic status, and education level. In this article, I focus on longer distance mobility, which I will henceforth refer to as mobility, as opposed to day-to-day mobility, such as commuting patterns.

Studies of geographic mobility consistently show that individuals who are early in their careers, usually in their early 20s, are more likely to be mobile than are older or more tenured workers. Beyond this early career phase, the probability of mobility decreases with increasing age (Eliasson, Lindgren, & Westerlun, 2003; Long et al., 1988). A number of studies have shown that unmarried individuals are more mobile than married persons, in terms of both commuting and mobility (Eliasson et al., 2003; Gallaway, 1967; Long, 1974). Individuals from lower socioeconomic groups are less likely to be mobile than those from higher socioeconomic groups, and according to Martin (2000), lower income individuals are more likely to change jobs than their place of residence. More highly educated individuals tend to have higher rates of mobility, presumably because they have access to a greater range of professional career options and job opportunities. Additionally, more highly educated individuals may be able to gather and process information more efficiently, which can also increase the range of jobs available to them (Eliasson et al., 2003).

In general, these trends do not suggest a clear picture of what we might expect to see within the teacher labor force. The majority of teachers are married and over 30 years old, causing us to predict low rates of mobility. On the other hand, teachers are also generally from mid-socioeconomic groups and highly educated, which suggests they might have higher rates of mobility. Since the data used in this study only follow individuals until 8 years after high school, when the average age of the sample is 26 years old, we might expect to see higher rates of mobility based on Guarino et al. (2011), who demonstrate that young teachers have high transition probabilities across schools, districts, and exits from teaching (the latter two transitions are more likely to entail a relocation/geographic move) when compared to teachers who are at a mid- to later stage in their career. This article will add to the literature by describing the patterns of geographic mobility for young adults in teaching and other occupations across the United States.

In what follows, I begin by describing the data and methods I use, I then present my results, and I conclude with a discussion of conclusions and implications.

Data and Methods

Data

I utilize two National Center for Education Statistics data sets in this article: the National Education Longitudinal Study of 1988 (NELS:88/00) restricted data and the publicly available Common Core of Data (CCD). NELS:88/00 is a nationally representative cohort of eighth graders surveyed five times over the 12-year span from 1988 to 2000. The data contain rich information on students' background, academic aspirations, achievement, and educational attainment (Ingels, Curtain, Kaufman, Alt, & Chen, 2002). Of particular interest are two sets of variables that allow for identification of the occupations of the NELS respondents in the year 2000 (8 years after an on-time high school graduation in 1992) as well as the zip codes of the schools the respondents attended in 8th, 10th, and 12th grades, and the zip codes of the place of residence of the respondents in the year 2000.

The sample of students in this analysis is a subsample of the full panel of NELS:88/00 respondents. Because I am primarily interested in those individuals who become teachers, I begin by limiting the sample to high school graduates. This limitation reduces the sample from 12,144 respondents to 11,451 respondents. I further limit the sample to those individuals who have full data on the key set of variables used in my analysis including measures of distance, student test scores, and characteristics of high school attended. These limitations decrease my overall sample to 7,535 respondents. Although this is a significant decrease in the full sample and limits the generalizability of results, it is important to point out that it was not possible to obtain distance information for those respondents who attended private high school, 12% of the full sample. Therefore, the

sample I analyze includes high school graduates who attended public school and participated in each wave of data collection from the base-year through fourth follow-up. Throughout the article, I analyze three samples of mutually exclusive groups: those who completed high school and did not complete a bachelor's degree (high school graduates), those who completed at least a bachelor's degree and are *not* teachers (college graduates), and teachers who completed at least a bachelor's degree (teachers). The sample sizes of these groups are 5,046, 2,210, and 279, respectively. These are the key samples of interest unless otherwise noted.

The sampling design of the NELS:88/00 data is a two-stage stratified clustered sample that requires adjustment for the unequal probability of selection into the sample and an adjustment for the stratification of the sampling design. In this article, I use STATA's survey design commands (svy) to account for these factors.

The CCD provides detailed information on the public middle and high schools that the NELS students attended between 1988 and 1992. The data in CCD are collected annually at the institutional level and include information on demographic characteristics of the students and staff, community characteristics, addresses, and revenues and current expenditures. The ability to link data from the NELS:88/00 and CCD data sets makes it possible to supplement school-level information provided by NELS with detailed information on the racial/ethnic make-up of the student population as well as information on the urbanicity of the community in which the school is located.[1] These data make it possible to consider the implications of the geographic mobility of teachers for public schools with traditionally difficult-to-staff populations and for schools located in different types of communities.

In combination, these two datasets, NELS: 88/00 and CCD, allow for expansion upon previous work on the geographic mobility of teachers. The nationally representative structure of NELS makes it possible to characterize the geographic mobility patterns of teachers on the national and regional levels. Additionally, these data allow for a comparison between the geographic mobility of teachers and individuals in other occupations.

Key Variables

The main variables used in this article are described below. Appendix A reports descriptive statistics associated with these and all of the other variables used throughout this analysis.

Geographic mobility. I operationalize the concept of geographic mobility using two measures. The first is the distance, in miles, an individual moved between the school attended in 10th grade (1990) and his or her place of residence in 2000 (8 years after an on-time high school graduation). This distance is calculated using geocoded data derived from zip codes of the 10th grade year and the respondent's residence in the final year of the survey (2000). These distances are used to determine how far from home (as measured by the distance moved from high school attended) individuals in different occupations move. The distribution of the distances moved by individuals has a large positive skew, suggesting most individuals do not move, or move very short distances, from the area in which they grew up. As a result, I also use a second measure of geographic mobility, a binary variable, which I refer to as "local." Individuals are classified as being local if, in the year 2000, they live within 20 miles of where they attended school in the 10th grade. Twenty miles is derived from conventional definitions for travel-to-work time and commuting distance found in the geographic mobility of workers literature and the U.S. Census Bureau's American Community Survey definition of average daily commute time for the nation. However, the results in the analyses presented are not sensitive to the specification of 20 miles.[2]

Occupations. The NELS data provide information on 39 predefined occupational categories, including a distinct category for K–12 teachers, allowing for a comparative analysis between teachers and a number of other occupations. The specific question from which occupations are coded is from the fourth follow-up of the NELS survey in the year 2000, which asked respondents for their current or previous occupation. Many of the occupational categories are gross compilations of numerous similar occupations (such as medical practice professionals and legal professionals) and do not allow for specific occupational comparisons such

as nurses. However, many informative comparisons are possible especially when occupational categories are combined with education level: For example, a comparative analysis between teachers and bachelor's degree recipients in each occupation group provides insight into the nature of the teacher labor market.

High school preferences. I create a set of variables that capture high school students' articulated preferences for the importance students place on (a) being close to home, (b) having lots of money, and (c) helping other people in their community. Specifically, during high school, students were asked to rate how much importance they placed on each of these preferences in their lives using the response categories *not important*, *somewhat important*, and *very important*. These variables are included to provide insight on the factors that *may* have motivated students to choose, or not to choose, teaching as an occupation.

Hard-to-staff schools. To classify the schools that the students in the NELS sample attended in the 10th grade as hard-to-staff schools, I use two common proxy measures including percentage minority enrollment and percentage of students receiving free and reduced price lunch (FRPL). While there are many schools that serve poor and non-White students that are not hard-to-staff, on average, researchers have found that these schools face a lower supply of teachers and are more likely to experience high levels of teacher turnover (Elfers et al., 2006). Specifically, hard-to-staff schools are identified as schools which either have over 75% minority enrollment (high-minority) or have over 50% of the students receiving FRPL (high-FRPL). These categories of hard-to-staff schools are defined as those that fall into the top decile of schools with the largest population of minority students (over 75%) and the top decile of schools with the percentage of students receiving FRPL (over 50%). Because each of these factors has been demonstrated to contribute to the teacher staffing challenge independently, I choose to include both measures of being a hard-to-staff school in my analysis. The measures of minority enrollment and FRPL status for the 10th grade schools attended by the NELS survey respondents are obtained from the 1998 CCD data.

Empirical Approach

The methods employed in these analyses are descriptive in nature. I use standard descriptive bivariate statistics, including *t* tests and Mann-Whitney tests as well as multivariate logistic regressions.

Research Question 1: Mobility patterns of teachers. Simple descriptive statistics provide useful measures for characterizing the geographic mobility of teachers compared to high school and college graduates. I use three mutually exclusive groups of individuals—high school graduates who do not earn a bachelor's degree (HS), college graduates who are not teachers (BA), and teachers (teacher)—to calculate the median distance moved by each group between high school and the year 2000, the last year of the NELS survey. I disaggregate the median distances moved for each group by the community type of the high school attended, and I conduct Mann-Whitney equality of medians tests between HS and BA, between HS and teacher, and between BA and teacher within each of the community types as well as for the overall samples. I also calculate the percentage of each of these three groups of individuals who live within 20 miles of where they attended high school (i.e., are local) and make the same comparisons among the three groups of individuals.

To gain an understanding of how the geographic mobility patterns of teachers compare to those in other occupations, I estimate four binomial logistic regression models where the dependent variable is 1 if someone is local, living within 20 miles of where they attended high school, and 0 if they are living farther than 20 miles and hence not considered to be local. The models are estimated using a general binomial logit model that estimates the log odds of an individual being local or not:

$$\begin{aligned} \ln[odds(Y_{io}=1)] &= \beta_o + X_{io}\beta_1 + \varepsilon_{io} \\ \ln[odds(Y_{io}=1)] &= \beta_o + X\beta_1 + \beta_2 T_{io} + \varepsilon_{io} \\ \ln[odds(Y_{io}=1)] &= \beta_o + X\beta_1 + \delta_o + \varepsilon_{io}, \end{aligned} \quad (1)$$

where Y for individual i in occupation o is the dichotomous outcome local; X is a vector of background characteristics including measures

for gender, race, socioeconomic status of the NELS student's family in 10th grade, the census region for the location of the school attended in 10th grade, and the student's composite test score from NELS administered reading and math tests, and whether or not the individual was married; *T* is an indicator variable for anyone who became a teacher by the last follow-up survey round of NELS; and δ is a set of dummy variables for each of the occupations available in the data; K–12 teachers are the left out reference category in the estimations. I first estimate the probability of being local for the full sample, Models 1 and 2, and then limit the next set of estimates to college graduates, Models 3 and 4. Models 1 and 3 include all background characteristics as well as an indicator variable comparing teachers to all other occupations. In Models 2 and 4, I include background characteristics and a series of indicator variables for each of the other NELS occupational categories where the teacher category is the reference category. Given that becoming a teacher typically requires a bachelor's degree, Models 3 and 4, which compare individuals in other occupations with bachelor's degrees to teachers, are the preferred models. Models 1 and 2 are included to illustrate the similarities and differences between teachers and all workers, not just other similarly educated workers. The percentage of bachelor's degree holders by occupation is listed in Appendix B, along with the mean test score and percentage of individuals who are local for college graduates by occupational category.

These models are only intended to detect associations between variables of interest and are not causal estimations of underlying relationships. For example, if I find that teachers are more likely to be local, this does not imply that becoming a teacher makes a person more likely to become local. Instead, these equations let us know whether teachers are more likely to live close to where they went to high school even after adjusting for other observable characteristics. This more-local nature of teaching could arise, for example, because of preferences that teachers tend to share for stability or because of more local job opportunities, relative to other occupations.

The final step in this section of the analysis is to estimate a second logistic regression model, Model 5, predicting whether or not an individual becomes a teacher. The model presented in this section provides a first look at potential reasons why an individual may become a teacher. The variables of interest I include are based on a series of questions students were asked in high school about their preferences. In particular, they were asked how important it was to them to (a) stay close to home after school, (b) make lots of money, and (c) help others. A standard logistic regression framework is used to estimate the odds of a college graduate becoming a teacher:

$$\ln[odds(Y_{io} = 1)] = \beta_0 + X_{io}\beta_1 + W_{io}\beta_2, \qquad (2)$$

where *Y* for individual *i* in occupation *o* is a dichotomous variable that takes the value of 1 for those who are, or were, teachers by the last follow-up of the survey and 0 for those who are not; *X* is the same vector of background characteristics used in the previous logistic regression model including gender, race/ethnicity, family socioeconomic status, region of high school attended, and the student's composite math and reading test score; and *W* is a vector of additional factors that may be related to whether or not a student becomes a teacher. These factors include whether or not either parent of the student was a teacher; the student's relative interest in being close to home, making lots of money, and helping others after high school; if the individual is married by the last survey follow-up; and whether the student attended a hard-to-staff school as measured by indicator variables for a school with over 75% of students coming from minority groups or an indicator for a school with over 50% of students receiving FRPL.

Research Question 2: Mobility patterns relating to hard-to-staff schools. To identify differences between schools that serve different student populations, I divide schools into two broad categories, traditionally hard-to-staff versus not hard-to-staff. I use two proxy variables for hard-to-staff schools, high percentages of students on FRPL, and high percentages of minority students. I designate schools in the top decile of each classification, over 50% of students receiving FRPL (high-FRPL), and schools with over 75% minority

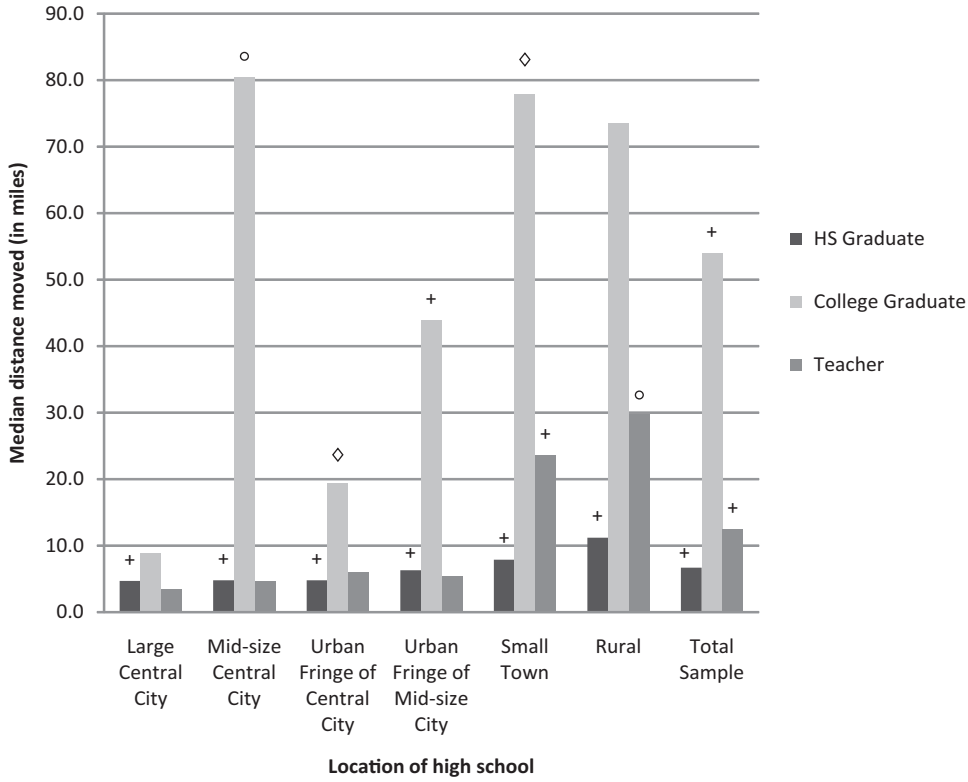

FIGURE 1. *Median distance moved by high school graduates, college graduates, and teachers ten years after high school by community type of high school attended.*

Note. Median distance moved by high school graduates (N = 5,046), college graduates (N = 2,210), and teachers (N = 279) 10 years after high school by community type of high school attended. Categories of high school graduates, college graduates, and teachers are mutually exclusive. Significant differences from Mann-Whitney equality of medians tests between high school graduates and college graduates, college graduates and teachers, and high school graduates and teachers are indicated above the high school graduate, college graduate, and teacher bars, respectively. Significance of test statistics indicated by: + $p < 0.001$, ○$p < 0.01$, and ◊$p < 0.05$.

students (high-minority), as traditionally hard-to-staff. I then use *t* tests to compare the average outcomes of NELS students who attend these hard-to-staff schools to the average outcomes of those who did not attend hard-to-staff schools including the percentage of students who earn a bachelor's degree, become teachers, and remain local. The *t* tests are reported for comparisons of students in high-FRPL to low-FRPL schools and for comparisons of students in high-minority to low-minority schools. I further use these distinctions of schools to compare the mean composite test score of students who attended these schools and graduated from high school, graduated from college, and became teachers.

Results

Research Question 1: Mobility Patterns of Teachers

The comparison of the median distance moved by teachers, other college graduates, and high school graduates between 10th grade (the year 1990) and the year 2000 is quite striking. Figure 1 reveals that, across the country, the median distance moved by teachers, 13 miles, is much less than that of other college graduates, 54 miles, and is more similar to the median distance moved by high school graduates, 7 miles. Mann-Whitney tests indicate the difference in the medians for

the three sample comparisons (HS versus BA, HS versus teacher, and BA versus teacher) are all statistically significant at the 0.001 level.

Disaggregating the data by the type of community where the student attended high school, the same trend holds: Teachers move shorter distances than other college graduates. However, there is variation by community type. Not surprisingly, urban students of all types tended to move shorter distances. Teachers who attended high school in very urban communities, large central cities, moved a median distance of 4 miles compared to 9 miles for other college graduates and 5 miles for high school graduates. At the other extreme, teachers who lived in rural communities moved a median distance of 30 miles versus 74 miles moved by other college graduates and 11 miles for high school graduates. In all comparisons between HS and BA, the differences in the median distances moved are statistically significant at the 0.001 level. The median comparisons between BAs and teachers by community type are statistically significant at a minimum of the 0.05 level in all but large central cities and rural towns. The Mann-Whitney tests between HS and teachers are only significant for those in small towns, rural areas, and the aggregated sample as a whole. Overall the conclusion is the same: The median distance moved by teachers is less than that of other college graduates across community types.

Given the skew of the median distance moved, it is informative to calculate the percentage of teachers who are local, living within 20 miles of where they attended high school, compared to the percentage of other college and high school graduates who live similarly close to their high school homes. Figure 2 shows that while a large percentage of college graduates, 42%, live within 20 miles of where they attended high school, an even larger percentage of teachers are local, nearly 60%, a statistically significant difference (t = 3.73, $p > 0.001$). Again, the mobility trends of teachers are more similar to those of high school graduates than those of college graduates with 70% of high school graduates classified as local; however, this difference is also statistically significant ($t = 3.71$, $p > 0.001$).

Disaggregated data by community type of high school attended reveal the same pattern in each of the six types of communities considered: a higher percentage of teachers than college graduates are local and a lower percentage of teachers than high school graduates are local. In urban communities, 81% of teachers, 61% of college graduates, and 74% of high school graduates are local. In rural areas, 39% of teachers, 32% of college graduates, and 64% of high school graduates are local. Results displayed in Figure 2 indicate that all comparisons between HS and BA, except in large central cities, are significant at the 0.001 level; comparisons of HS and teacher are significant for those in small towns, rural areas, and the overall sample at a minimum significance level of 0.01; and comparisons between BA and teacher are significant for urban fringe of central cities and mid-size cities and the overall sample at a minimum of $p < 0.05$. Even though more teachers are local than other college graduates, it is notable that, on average, 61% of all individuals are living within 20 miles of where they attended high school. The results described above are not specific to the definition of local as less than 20 miles. All the results hold under multiple definitions of local, including 5, 10, 30, and 40 miles in addition to 20 miles.

The next step in the analysis is to use a multivariate framework to assess whether teachers are more likely to be local than other college graduates. Table 1 reports the maximum likelihood estimations of the associations between being local and the various occupations, after partialling out the influence of the control variables. The results suggest that teachers are more likely to be local than college graduates in other occupations. For example, in Model 3, the odds of a teacher living within 20 miles of their hometown are 1.75 times as large as the odds for other college graduates being local, controlling for background characteristics. When the teacher indicator variable is replaced with individual dummies for each of the occupational categories, the results are notable (see Model 4). For each occupation in which there is a statistically significant difference between teachers and the given occupation, the odds of an individual being local are smaller than for a teacher. Adjusted Wald tests for the joint significance of the inclusion of the occupation dummies confirm the occupations are jointly significant in Models 2 and 4. It is important to note that since the sample is restricted to only college graduates for Models 2 and 4, the cell sizes of some of the occupations are substantially reduced.[3]

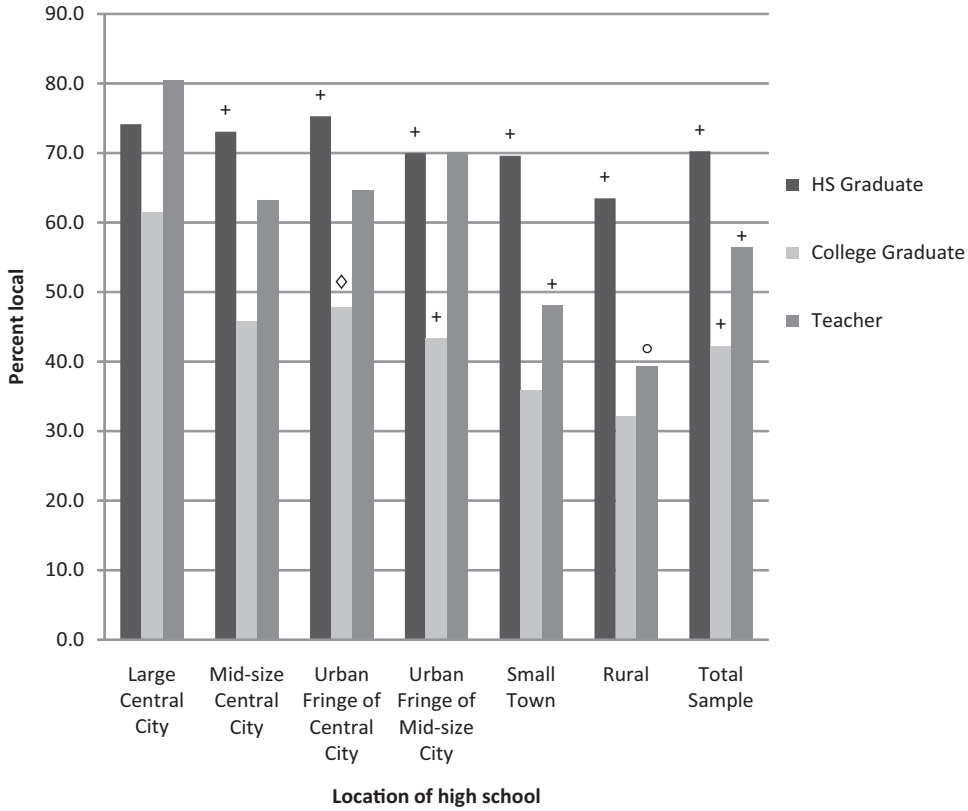

FIGURE 2. *Percentage of high school graduates, college graduates, and teachers who remain within 20 miles (local) by community type of high school attended.*

Note. Percentage of individuals who are local (i.e., remain within 20 miles of where they attended high school). Categories of high school graduates (N = 5,046), college graduates (N = 2,210), and teachers (N = 279) are mutually exclusive. Significant differences from t tests between high school graduates and college graduates, college graduates and teachers, and high school graduates and teachers are indicated above the high school graduate, college graduate, and teacher bars, respectively. Significance of t statistics indicated by: ◊$p < 0.05$, ○$p < 0.01$, and +$p < 0.001$.

Appendix B displays the number of individuals in each occupational category who have a bachelor's degree. Despite the reductions, the majority of occupations still have a large number of bachelor's degree recipients allowing for meaningful comparisons.

To begin exploring possible underlying reasons why teachers are more local than other college graduates, I use a multivariate analysis to provide descriptive information on the characteristics of individuals who are likely to become teachers. Table 2, Model 5 presents the results from the estimations predicting the odds of a college graduate becoming a teacher. I find significant relationships between many of the variables hypothesized to be related to becoming a teacher.

As expected, the odds of a female becoming a teacher are significantly higher, 2.47 times the odds for males. The odds for college graduates with at least one parent who was a teacher are 1.59 times the odds for a student without a parent who was a teacher. Interestingly, but not surprisingly, given the results from the estimations predicting whether teachers are more likely to be local than other college graduates, students placing high importance on living close to home after high school have 1.30 times the odds of becoming a teacher than those who do not place similar importance on staying local. The students who place high importance on making lots of money in their careers, on the other hand, have lower odds than students who do not place high importance on this factor for becoming a teacher as

TABLE 1

Logistic Regression Estimates Predicting Whether an Individual Lives Within 20 Miles of Where They Attended High School

	Full Sample				College Graduates			
	Model 1		Model 2		Model 3		Model 4	
	OR	*(SE)*	OR	*(SE)*	OR	*(SE)*	OR	*(SE)*
Female	1.09	(0.07)	1.13	(0.09)	1.17	(0.12)	1.14	(0.13)
Race (versus White)								
Black	1.57**	(0.26)	1.56**	(0.24)	1.99**	(0.49)	2.06**	(0.49)
Hispanic	1.09	(0.14)	1.15	(0.16)	1.67*	(0.40)	1.75*	(0.42)
Asian/PI	1.28	(0.21)	1.37	(0.22)	1.85***	(0.34)	2.03***	(0.38)
Native American/AK Nat	0.77	(0.39)	0.91	(0.45)	3.83	(3.70)	3.54	(3.36)
SES (versus 1st highest quintile)								
5th quintile	3.06***	(0.36)	2.62***	(0.32)	1.33	(0.30)	1.27	(0.30)
4th quintile	2.42***	(0.25)	2.16***	(0.23)	1.48*	(0.26)	1.50*	(0.27)
3rd quintile	1.87***	(0.18)	1.79***	(0.18)	1.49**	(0.22)	1.53**	(0.22)
2nd quintile	1.41***	(0.14)	1.38**	(0.14)	1.39*	(0.18)	1.42**	(0.18)
Region HS (versus West)								
Northeast	1.27	(0.16)	1.31*	(0.17)	1.06	(0.19)	1.03	(0.19)
Midwest	1.06	(0.12)	1.05	(0.12)	0.76	(0.13)	0.75	(0.13)
South	1.02	(0.13)	1.03	(0.13)	0.73	(0.15)	0.73	(0.15)
Standard Composite Test Score	0.96***	(0.004)	0.97***	(0.004)	0.97***	(0.01)	0.97***	(0.01)
Married (versus Not)	0.95	(0.06)	0.95	(0.06)	1.00	(0.10)	0.96	(0.10)
Teacher	1.29	(0.19)			1.75***	(0.27)		
Occupation (versus Teacher)								
Secretary, reception			0.95	(0.21)			0.55	(0.23)
Cashier, teller, sales clerk			0.94	(0.24)			0.32	(0.22)
Clerk, data entry			0.58	(0.22)			0.06**	(0.06)
Clerical other			1.12	(0.26)			0.59	(0.29)
Farmer, farm laborer			1.28	(0.43)			0.73	(0.55)
Personal services			0.70	(0.14)			0.22***	(0.09)
Cook, chef, baker			0.88	(0.32)			1.45	(1.69)
Laborer (other than farm)			1.31	(0.26)			0.83	(0.34)
Mechanic, service tech			0.93	(0.22)			0.72	(0.39)
Craftsmen			1.25	(0.33)			1.03	(0.70)
Skilled operative			1.71*	(0.44)			2.54	(2.41)
Transport operative			2.64**	(0.88)			0.49	(0.81)
Protect services, criminal justice			0.70	(0.25)			0.80	(0.28)
Military			0.21***	(0.09)			0.09***	(0.06)
Business/financial support			0.92	(0.18)			0.46**	(0.12)
Financial service professional			0.71	(0.15)			0.66	(0.16)
Sales/purchasing			0.63*	(0.12)			0.47**	(0.11)
Customer service			0.76	(0.19)			0.31*	(0.15)
Legal professional			0.69	(0.34)			0.71	(0.36)
Legal support			1.02	(0.49)			1.14	(0.60)
Medical practice professional			0.56	(0.51)			0.05**	(0.05)
Medical licensed professional			1.31	(0.30)			1.20	(0.36)
Medical service			0.78	(0.16)			0.67	(0.22)
Educators–other than K–12			0.83	(0.18)			0.68	(0.18)
Human service professional			0.79	(0.19)			0.75	(0.21)

(continued)

TABLE 1 (continued)

	Full Sample				College Graduates			
	Model 1		Model 2		Model 3		Model 4	
	OR	*(SE)*	OR	*(SE)*	OR	*(SE)*	OR	*(SE)*
Engineer, architect			0.48**	(0.11)			0.46**	(0.12)
Scientist, statistician professional			0.96	(0.46)			0.80	(0.41)
Research assistant/lab tech			0.48*	(0.14)			0.34**	(0.12)
Technical/professional worker			0.67	(0.19)			0.44*	(0.17)
Computer system professional			0.60*	(0.15)			0.60	(0.19)
Computer programmer			0.67	(0.23)			0.64	(0.25)
Computer equipment operator			0.30*	(0.16)			0.08**	(0.07)
Editor, writer, reporter			0.47*	(0.15)			0.48	(0.18)
Performer/artist			0.78	(0.24)			0.93	(0.39)
Manager-executive			1.42	(0.52)			0.57	(0.28)
Manager-midlevel			0.65*	(0.14)			0.37**	(0.12)
Manager-supervisor, office			0.74	(0.13)			0.52**	(0.12)
Health/recreation services			0.47*	(0.18)			0.32*	(0.16)
F stat & Prob > F	$F(15,818) = 28.91$ Prob > $F = 0.000$		$F(53,778) = 9.88$ Prob > $F = 0.000$		$F(15,818) = 5.62$ Prob > $F = 0.000$		$F(52,780) = 2.94$ Prob > $F = 0.000$	
Observations	7,509		7,339		2,465		2,412	

Note. OR represents the odds ratios; standard errors in parentheses. Sample in Models 1 and 2 includes full sample. Sample in Models 3 and 4 is limited to all college graduates. Significance of odds ratios indicated by *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

indicated by the odds ratios of 0.60 in Model 5. Individuals who are married by the last survey follow-up also have higher odds of becoming teachers than those who are unmarried by the same point in time. Although these results are not causal, they do highlight that the desire to stay close to home is explicit and long-standing particularly for those who later become teachers.

These simple descriptive analyses show that on a national scale the geographic mobility of teachers is less than that of other college graduates. The evidence presented here suggests that the local nature of the teacher labor market documented in previous research from New York does not appear to be an anomaly. Throughout the country, the majority of young teachers live within 20 miles of the high school they attended. Teachers are far more local than other college graduates and approximately as local as high school graduates, except in small towns and rural areas. Teachers are more likely to live within 20 miles of where they attended high school, even after partialling out the associations of some individual and school characteristics. Many possible factors may contribute to the distinct geographic mobility patterns of teachers. Schools are located in nearly every community in the country, so the ability to become a teacher without needing to move long distances is one likely cause for the observed patterns. Additionally, the wide availability of teacher preparation programs often makes obtaining certification close to home possible.

However, although job and training availability may be one cause of the patterns, the analyses above indicate that teachers' preferences (even those preferences stated in high school) are likely to be important factors affecting the observed patters. Females, those who had a parent as a teacher, those who in high school express a desire to live close to home, and those who in high school did not place a high importance on making money are all more likely to become teachers than are other college graduates. Other research has also shown there is a high correlation between parents' occupational choice and the occupational choice of the child, especially if the parent is a teacher

TABLE 2
Logistic Regression Estimates Predicting Who Becomes a Teacher

	Model 5	
	OR	*(SE)*
Female	2.47***	(0.53)
Race (versus White)		
Black	0.59	(0.22)
Hispanic	1.48	(0.54)
Asian/Pacific Islander	0.39**	(0.13)
Native American/AK Nat	1.62	(1.17)
SES (versus 1st highest quintile)		
5th quintile	0.91	(0.33)
4th quintile	0.91	(0.24)
3rd quintile	1.19	(0.27)
2nd quintile	1.18	(0.27)
Region HS (versus West)		
Northeast	1.01	(0.27)
Midwest	1.23	(0.30)
South	1.47	(0.44)
Standard composite test score	0.98*	(0.01)
Parent a teacher	1.59*	(0.35)
Importance of ….		
… being close	1.30*	(0.16)
… making lots of money	0.60***	(0.09)
… helping others	1.17	(0.20)
Attended high-minority school	0.81	(0.33)
Attended high-FRPL school	0.99	(0.29)
Married (versus not married)	1.47*	(0.25)
F stat & Prob > *F*	$F(19, 813) = 5.57$ Prob > $F = 0.000$	
Observations	2,439	

Note. OR represents the odds ratios; standard errors in parentheses. Sample is limited to all college graduates. Significance of odds ratios indicated by $*p < 0.05$, $**p < 0.01$, $***p < 0.001$.

(Werts, 1966). It may be the case that for college graduates, who place a premium on living close to where they attended high school, teaching is an attractive option. Depending on one's location, the decision to remain local may restrict the types of career options college graduates can choose from, except teaching, as teachers are needed in every community across the country.

Research Question 2: Mobility Patterns Relating to Hard-to-Staff Schools

Having established that teachers are more likely than college graduates in other occupations to live near where they grew up, I next consider the implications of the "localness" of teachers for schools with different populations of students. I look at the production of teachers from schools that are likely to face staffing challenges. Using two proxy measures for hard-to-staff schools, the percentage of students receiving FRPL and percentage minority students, I compare schools that are low on these measures with schools that are high on these measures with respect to the percentage of students who graduate from college, become teachers, and remain local.

Not surprisingly, comparisons between students who attended hard-to-staff schools and those who attended non-hard-to-staff schools reveal significant differences in the outcomes of these students. The *t* tests in Panel A of Table 3 indicate that there are significantly higher percentages of students who complete a bachelor's degree from both low-FRPL and low-minority schools than

TABLE 3
Comparisons of the Percentages of Individuals Achieving Different Outcomes by the Characteristics of High School Attended

	Characteristics of High School Attended					
	% FRPL			% Minority Enrollment		
	Under 50%	Over 50%	t Test	Under 75%	Over 75%	*t* Test
Panel A			% Completing BA			
Full sample (N = 7,535)	35.1	16.6	7.00***	34.9	18.7	5.92***
Panel B			% Becoming Teachers			
Full sample (N = 7,535)	4.3	2.1	4.15***	4.3	2.2	2.68**
College Grads (N = 2,470)	10.9	10.9	0.02	11.1	9.4	0.59
Panel C			% Remaining Local			
HS Grads (N = 4,975)	69.9	72.2	0.67	68.9	78.6	3.03**
College Grads (N = 2,192)	41.4	57.3	2.10*	39.9	75.3	6.91***
Teachers (N = 279)	56.1	63	0.57	54.4	91.6	5.80***

Note. The college graduate sample in Panel B includes teachers. Samples in Panel C are mutually exclusive categories. Significance of t statistics is indicated by $*p < 0.05$, $**p < 0.01$, $***p < 0.001$.

from high-FRPL and high-minority schools. Panel B of Table 3 reports that a higher percentage of students become teachers from schools that are not hard to staff. However, conditional on a student earning a bachelor's degree, there are no statistically significant differences in the percentages of students who become teachers from the different types of schools.

Panel C of Table 3 shows comparisons between the percentage of mutually exclusive categories of high school graduates, college graduates (who are not teachers), and teachers who stay local from these different types of schools. The results show that more high school and college graduates who attended high percentage minority and FRPL schools are likely to stay local. Nearly 80% of high school graduates and 75% of college graduates from high-minority schools are local, whereas 70% of high school graduates and 40% of college graduates from low-minority schools are local; the differences between high- and low-minority schools are statistically significant. Similar significant patterns are seen for high school and college graduates from high-FRPL schools. The final row of Panel C, Table 3 compares the percentage of teachers who remain local from these different types of schools. Notably, nearly 92% of students who attended a high-minority school and became teachers live within 20 miles of the school they themselves attended, whereas only 54% of teachers from low-minority schools live locally, a statistically significant difference. The same pattern holds when comparing teachers from low- and high-FRPL schools; however, the results are much less pronounced and are not statistically significant based on the results of the t tests.

The next comparisons focus on the mean composite test scores of high school graduates, college graduates, and teachers who attended these different types of schools. Results of t tests comparing mean test scores of these groups displayed in Table 4 show that high school graduates, college graduates, and teachers who attended non-hard-to-staff schools had higher mean composite test scores on the reading and math tests administered by the NELS survey team than those who attended hard-to-staff schools. I further compare teachers to college graduates who attended the same type of school and find significant differences in mean test scores between teachers and college graduates who attended non-hard-to-staff schools, but I do not find statistically significant differences in mean test scores for those who attended traditionally hard-to-staff schools, on both measures of hard-to-staff. Even though test scores are a weak correlate of teacher quality, the results for teachers from non-hard-to-staff schools are in keeping with previous research that has documented that teachers, on average, have lower test scores than other college graduates. A more in-depth analysis of NELS mean composite test scores of teachers from these different types of schools reveals that the mean test scores of teachers who attended hard-to-staff schools were at a

TABLE 4
Comparisons of Mean Composite Test Scores by Characteristics of High School Attended

	Characteristics of High School Attended					
	% FRPL			% Minority Enrollment		
	Low-FRPL	High-FRPL	*t* Test	Low-Minority	High-Minority	*t* Test
HS grads	48.9	45.2	6.14***	49.1	44.1	8.03***
College grads	58.3	52.7	5.26***	58.3	53.4	4.04***
Teachers	56.9	53.2	1.84~	57.0	51.1	2.12*

Note. Standardized test composite score (reading and math) is from the 2nd follow-up of the NELS survey. Each category of HS graduate, college graduate, and teacher is mutually exclusive. Significance of *t* statistics is indicated by ~$p < 0.1$, *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

higher percentile in the test score distribution of all college graduates from hard-to-staff schools (40th–45th percentile) relative to the test scores of teachers who attended non-hard-to-staff schools and had lower placement in the non-hard-to-staff test score distribution of college graduates (35th–40th percentile). These findings support the notion that teachers who attended hard-to-staff schools are doing better relative to other college graduates from hard-to-staff schools.

The strong preferences of teachers for being local may create staffing challenges, particularly to areas which do not produce a large supply of college graduates. Since the first step to becoming a teacher is earning a bachelor's degree, areas with schools producing low percentages of college graduates are likely to face local teacher supply shortages. Using schools with large minority student populations and large percentages of students receiving FRPL as proxies for difficult-to-staff schools, the results from this section suggest that this is in fact the case. The difficult-to-staff schools have significantly lower percentages of students earning bachelor's degrees and becoming teachers than do non-traditionally difficult-to-staff schools. However, when conditioning on graduating from college, the difficult-to-staff schools produce similar percentages of teachers as the other schools, suggesting that if difficult-to-staff schools increased the numbers of students earning bachelor's degrees, the number of students becoming teachers would also increase. Furthermore, college graduates and teachers who attend difficult-to-staff schools are actually more likely to live locally than other college graduates and teachers from not traditionally difficult-to-staff schools. This differential pattern is particularly strong when hard-to-staff is proxied by measures of race and ethnicity and may be the result of the relative urbanicity of this population.

The analyses suggest that the supply-limiting step for producing teachers in local communities is producing enough college graduates from areas with difficult-to-staff schools. An earlier paper by Vegas, Murnane, and Willett (2001) finds similar results and reports that the critical obstacle in the teacher pipeline for minorities is that too few minority students are graduating from high school and entering college.

The results from the comparisons of composite test scores suggest that disadvantaged schools are producing students who have lower average achievement test scores than students from advantaged schools. In combination with the other results in this section, the local nature of the labor force, the differential rates of graduation and production of teachers, and the lower academic performance of teachers from traditionally hard-to-staff schools are likely to reinforce existing deficits of local teacher labor supply.

Conclusions and Implications

This article set out to address two independent, yet related, questions pertaining to the geographic mobility patterns of teachers across the country. The descriptive analysis of this article confirms that young teachers across the country, from rural towns to large urban central cities, live close to their high school hometown. Whether looking at this as a function of the median distance moved between high school and 8 years after they

graduate or by the percentage of students who live within 20 miles of their high school, the results are consistent: Young teachers are local. Furthermore, when compared to other college graduates and college graduates in a variety of different occupations, teachers are more likely to be living locally 8 years after their high school graduation.

A multitude of reasons may explain the local nature of the teacher labor force. One possibility was suggested by Boyd et al. (2005), who posit the reason for the high concentration of teachers living near their hometown is that those who become teachers have strong preferences for living geographically close to where they grew up or in a location with similar characteristics. I present evidence in this article that adds support to this claim. By taking advantage of questions asked of NELS students about the importance of living close to home after high school, I am able to detect an association between those students who place high importance on living close to home and the likelihood they become teachers. Since teaching is not a geographically restrictive occupation, in the sense that all communities have a potential need for teachers, teaching may be a particularly attractive occupation for those who want to live in or near their hometowns. Similarly, with thousands of teacher preparation programs in the United States, individuals are likely to be able to earn the necessary teacher certification without having to relocate as is often necessary with many other occupations.

Finally, the implications of teachers' preferences for living close to where they attended high school raise cause for some concern. Since students from hard-to-staff schools are less likely to perform well on academic achievement tests and less likely to graduate from college as compared to their peers in non-hard-to-staff schools, the local nature of the teacher labor force creates particular problems for these disadvantaged schools. Combined with the observation that graduates from traditionally hard-to-staff schools are more likely to stay local, these results suggest that the stock of local teachers in areas with difficult-to-staff schools is likely to be smaller, requiring these areas to import teachers from outside of the local area. The lack of local supply may be perpetuating the cycle in these disadvantaged schools.

What are the short-term and long-term policy implications of these findings? In the short term, the strong preference of teachers for living close to their hometown suggests that unless schools have other attractive features likely to draw non-local teachers (i.e., effective school leadership, competitive salaries, opportunities for teacher collaboration, and good working conditions), schools and districts with inadequate local teacher supply will need to design incentives that will make relocating away from their hometown attractive to non-local teachers. However, it is not enough to consider only short-term solutions, especially for areas continually facing staffing challenges. The costs of turnover are high and implementing policies and incentives that only provide a temporary fix to an ongoing problem may ultimately result in overall higher financial costs.

To alleviate the continual staffing challenges faced by schools and to provide a long-term solution to this perennial problem, districts and schools need not only focus on improving pecuniary and non-pecuniary aspects of the teaching job but also focus on increasing the number of local high school students who graduate from college. The results of this article suggest that by increasing the number of college graduates from difficult-to-staff schools, these schools could see an increase in the percentages of graduates becoming teachers and returning to the local area at levels similar to (or possibly higher than) schools that do not face staffing challenges.

Some schools and districts across the country have already taken steps in this direction through initiatives such as "grow your own" programs, financial incentives, and partnerships with 2- and 4-year colleges to recruit students early into the profession of teaching (*Education Week*, 2003). "Grow your own" programs target local high school students and get them involved and interested in teaching early, either through providing volunteer opportunities in schools, offering structural supports to help with college applications, and/or financial incentives to support a student's postsecondary education. Financial incentives can take on many forms from loan-forgiveness programs, low-rate mortgage loans, and signing bonuses. To ensure teachers stay local, the incentives could be structured in such a way to make sure the students who take advantage of the benefits of the

program enter teaching in a local school and remain in teaching. Finally, partnerships between high schools and colleges and universities may increase the number of students earning college degrees by making the transition between high school and college more transparent.

However, the previous discussion rests on the assumption that teachers from the local area are qualified to teach in the hardest-to-staff schools. The analysis in this article does not address this issue, but there may be reasons to believe having teachers from the local community would in fact be beneficial for local school districts, schools, and teachers. First, if local teachers have lower rates of turnover than nonlocal teachers, districts and schools would decrease the costs associated with hiring and turnover. Schools could also benefit from this decreased turnover since the staff would be more consistent, allowing for an atmosphere of institutional stability and consistency often hard to establish in high-turnover environments.

Teachers from the local area may also benefit students in a number of ways. First, local teachers bring with them knowledge of an area acquired through personal experience. This local knowledge can translate into a better understanding of the typical lifestyles of students and their families as well as understanding cultural idiosyncrasies specific to the area. Additionally, these teachers have an immediate advantage over non-local teachers through their familiarity with the local infrastructure in the community.

Despite all of the potential benefits of having a local teacher, there are some possible drawbacks as well. Especially in areas with low overall student achievement levels, a teacher who attended high school in the area may be the product of an inadequate education themselves. Much qualitative research has shown that teachers teach the way they were taught. Placing a teacher who was taught by lower quality teachers into the most difficult-to-staff schools may prove not to be the best solution if the ultimate goal is to increase student achievement. There could also be additional benefits, especially in areas with hard-to-staff schools, of nonlocal teachers including the infusion of new strategies and ideas for teaching as well as raising students' awareness of other places.

But the question remains, Does being a local teacher make for a more effective teacher? At this point, there is not an empirical answer to this question and remains an area for future research.

APPENDIX A

Descriptive Statistics of Variables Used in Analyses by Mutually Exclusive Sample Categories

		HS Grads (N = 4,879)		College Grads (N = 2,165)		Teachers (N = 274)	
	Definition	*M*	*SE*	*M*	*SE*	*M*	*SE*
Local	In 2000, did R live within 20 miles of HS attended?	70.5	0.010	42.3	0.015	56.7	0.036
Female	Is R female?	47.5	0.009	53.2	0.013	77.0	0.033
Race							
White	Is R White?	70.1	0.017	81.6	0.014	84.7	0.027
Black	Is R Black?	13.9	0.013	8.3	0.012	5.4	0.016
Hispanic	Is R Hispanic?	11.6	0.011	4.6	0.007	7.0	0.019
Asian/PI	Is R Asian or Pacific Islander?	2.5	0.003	5.0	0.005	1.6	0.005
NatAm/AKNat	Is R Native American or Alaskan Native?	1.9	0.005	0.5	0.002	1.3	0.011
SES Quintile	R's family SES in 10th grade in quintiles. Based on parent educ., income, & occupation.						
5th quintile	Highest SES quintile	11.1	0.007	46.4	0.017	42.4	0.028
4th quintile	4th SES quintile	20.4	0.009	24.2	0.012	25.8	0.032

(continued)

APPENDIX A (continued)

	Definition	HS Grads (N = 4,879)		College Grads (N = 2,165)		Teachers (N = 274)	
		M	*SE*	*M*	*SE*	*M*	*SE*
3rd quintile	3rd SES quintile	22.3	0.008	16.2	0.010	19.6	0.027
2nd quintile	2nd SES quintile	25.8	0.009	9.1	0.007	8.2	0.017
1st quintile	Lowest quintile	20.3	0.011	4.2	0.005	3.9	0.010
Region of HS	Region of high school–census region definition						
West	HS in West	19.4	0.010	17.5	0.014	15.6	0.029
NE	HS in Northeast	17.5	0.011	26.8	0.020	21.9	0.029
South	HS in South	19.8	0.010	14.7	0.013	19.2	0.031
Midwest	HS in Midwest	43.3	0.013	41.0	0.020	43.3	0.037
Standardized Composite Test Score	Std composite test scores (math and reading) from NELS administered 10th grade tests.						
		48.4	0.213	58.1	0.257	56.8	0.595
Parent a teacher	Does R have a parent who is a teacher?	5.0	0.004	13.9	0.009	18.0	0.026
Importance of…	How important was it to R in HS to … (scale 1–3, where 3 is *very important*)						
…close	…be close to home	2.0	0.016	2.0	0.019	2.1	0.042
…money	…make lots of money	2.4	0.011	2.3	0.016	2.1	0.052
…help others	…help others	2.2	0.012	2.3	0.014	2.4	0.042
Majority Minority school	Attended a HS with over 75% minority enrollment						
		13.9	0.017	6.7	0.013	5.7	0.017
Majority FRPL school	Attended a HS with over 50% of students on free and reduced priced lunch						
		14.2	0.016	5.8	0.011	5.8	0.014
Married	Is R married in 2000?	51.7	0.011	34.8	0.013	49.8	0.038

APPENDIX B

Comparisons of Percentage BA Holders by Occupation for Full Sample and Mean Test Scores and Percentages of College Graduates Who Are Local by Occupation

	Full Sample (N = 7,363)		College Graduates (N = 2,436)		
	N	% With BA	*N*	Mean Test Score	% Local
Skilled operatives	262	3.1	8	58.9	78.4
Cooks, chefs, bakers	65	4.7	3	48.9	71.8
Medical licensed professionals	232	47.6	105	58.8	59.9
Craftsmen	274	4.8	12	52.4	57.7
Teachers K–12	**313**	**92.7**	**279**	**56.7**	**56.5**
Performers, artists	90	38.2	35	56.7	53.5
Legal support	40	67.5	27	62.6	53.4
Protect services, criminal justice	172	26.7	45	54.3	52.7
Human service professionals	148	68.2	98	55.9	51.8
Laborers (other than farm)	528	6.8	32	55.8	50.8
Secretaries, receptionists	329	16.9	53	56.1	49.7

(continued)

APPENDIX B (continued)

	Full Sample (N = 7,363)		College Graduates (N = 2,436)		
	N	% With BA	N	Mean Test Score	% Local
Transport operatives	112	1.8	2	49.6	49.6
Educators other than K–12	229	59.0	132	56.6	48.8
Managers-executive	52	42.3	20	56.1	47.3
Mechanics, service technicians	203	7.6	15	55.0	47.0
Scientist, statistician professionals	31	87.1	27	60.7	46.8
Financial service professionals	236	72.9	177	57.7	46.5
Farmers, farm laborers	61	18.0	10	56.7	46.3
Medical services	302	23.8	71	58.5	46.0
Computer system professionals	245	50.8	124	58.8	43.3
Clerical other	210	14.4	35	58.5	42.2
Managers-supervisory, office	588	31.6	187	57.4	41.2
Computer programmers	55	78.2	44	61.8	40.9
Business/financial support	433	31.5	137	56.5	40.1
Editors, writers, reporters	67	77.6	53	60.1	37.8
Sales/purchasing	536	39.8	214	56.6	37.7
Legal professionals	26	96.2	26	62.7	37.7
Technical/professional workers	77	51.9	41	61.2	36.9
Engineers, architects	164	75.3	124	62.0	32.6
Customer service	155	18.8	28	56.5	31.9
Cashiers, tellers, sales clerks	212	10.0	17	55.9	31.7
Managers-midlevel	262	26.4	69	58.7	31.7
Research assistants/lab tech	107	69.2	73	60.8	30.2
Health/recreation services	44	53.5	24	57.1	27.3
Personal services	344	14.9	44	55.6	25.9
Computer equipment operators	20	20.0	4	56.1	10.8
Military	64	40.6	26	59.4	9.9
Clerks, data entry	63	11.1	7	57.8	7.9
Medical practice professionals	10	80.0	8	61.9	7.6
Other	2	0.0	0	N/A	N/A

Note. Table is organized by the percentage of college graduates who are local. Category names are from NELS occupation categories. Teachers are in bold for comparison.

Notes

1. Even though measures of the racial/ethnic make-up of the student population and the urbanicity of the community are included in NELS, the measures provided by the CCD are more detailed.

2. Multiple distances were used to define the dichotomous variable, local, including 5, 10, 30, and 40 miles. In all cases, the results of the analyses were consistent.

3. To ensure the results are not being driven by the inclusion of a small number of respondents from occupations that do not traditionally require a bachelor's degree, I limited the sample to occupations in which at least 50% of individuals held bachelor's degrees. The results are qualitatively similar to those presented here. I further limited the sample to occupations with a threshold of at least 75% of bachelor's degree holders and again find similar results but with a much reduced sample size. Results are available from the author upon request.

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