

DETERMINANTS OF BEGINNING TEACHER CAREER OUTCOMES:
WHO STAYS AND WHO LEAVES?

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ABSTRACT

Beginning teacher attrition is a problem that exacerbates the inequity of opportunities for all students, especially for those in schools that are already challenged by poverty. This study makes use of the *Beginning Teacher Longitudinal Survey* (covering the period between 2008 and 2012) and U.S. Census data to identify which teachers leave and to explain why. Beyond that, it also offers a look into the characteristics of those teachers who stay at the same school for five years. The empirical investigation is embedded in a conceptual framework that draws from motivation and identity theories, and brings in insight about the importance of geography and of neighborhood effects from works on poverty and education.

The study utilizes a dataset with survey responses from approximately 1,800 full-time teachers from a sample designed to represent the overall population of beginning teachers in the United States. By combining individual-level longitudinal data with information about communities, this dissertation makes an important contribution to the study of new teacher placement, attrition, and retention. The evidence is presented using a variety of descriptive and inferential statistics, and the analysis includes factor analysis and logistic regression models.

The results show that indicators of leaving the profession before the fifth year become apparent early on, as factors measured at the end of year one have significant effects on early career outcomes. Most prominently, higher degrees of burnout reported by teachers, which includes factors such as decreased enthusiasm and increased fatigue, are associated with increased risk for leaving the profession without the prospect to return

to it and with transferring to a different school district. Several other factors on the individual- and school-level emerge as relevant to career outcomes. Teachers who have Highly Qualified Teacher credentials and report a supportive school climate are at less risk to leave the profession. On the other hand, teachers with alternative certifications and master's degrees are more likely to move to a different school or districts in the first five years.

In terms of socio-geographic factors that help explain teacher retention and attrition, the only significant variable in the regression models used in the analysis is the percentage of White residents at the Census tract of the Year 1 school. When everything else is held constant, decreasing this percentage from 100 to 0 increases the predicted probability of leaving the profession by approximately 20%. Considering that the vast majority of beginning teachers both in the sample and in the overall population are White, this finding fits in with theories about “the pull of home” and cultural habitus. The magnitude and significance of this finding suggest that it warrants further exploration, as racial composition of the communities is likely a measurement proxy for complex processes of inequality.

This dissertation is dedicated to my grandfather,

Sabi Dimitrov,

who has always believed in me.

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CHAPTER 1

INTRODUCTION

Staffing schools with qualified teachers and motivating well-prepared novice educators to stay and thrive in their chosen profession, often under difficult work conditions, is one of the most complex and persistent educational problems. State and district educational leaders, principals, policy makers, and academics alike have interest in building and sustaining a teacher labor force that is well-quipped to meet the needs of an ever-changing American and global context. Scholars in the field of education have long acknowledged that one of the main difficulties for struggling schools in impoverished city neighborhoods is attracting and retaining well-qualified and motivated personnel—principals, district superintendents, supporting staff, and teachers (for a succinct review of the literature between 1999 and 2010, see Schaefer, Long, and Clandinin, 2012). Even outside cities, turnover rates during the early years in the profession are high; some scholars estimate that between 40 and 50% of new teachers leave within the first five years and that attrition rates of first-year teachers have increased by one-third in the past decade (Ingersoll, 2012).

The first year of teaching is particularly taxing, and many teachers experience “burnout” and decreased interest in the profession even after only a few months (Kolbe, 2014). This, in turn, is likely to affect the short-term career decisions that teachers make during the first five years of their professional experience, which is the period with the highest rates of attrition. These high rates of exiting the profession have led some scholars to theorize that perhaps teaching is “once again returning to its historical roots as

a temporary occupation” and that an increasing number of beginning teachers approach the start of their professional career as a tentative exploration (Rinke, 2014, p. 1).

The costs of this problem are tremendous: both in terms of finances, and in terms of providing students with high-quality instruction and stable school environments. High-poverty schools and students that are already at risk are particularly vulnerable to the problems caused by teacher attrition (Barnes, Crowe, & Schaefer, 2007).

Ample literature addresses the many dimensions of the problem, as well as some of the reasons for it that span the range of organizational and personal factors: from a late and cumbersome hiring process at the district level (Levin & Quinn, 2003), to inadequate pre-service preparation (Stoddart, 1993), to a lack of specific supports such as induction programs and mentoring (Ingersoll & Smith, 2004), to personal reasons such as school proximity to home (Boyd, Lankford, Loeb, & Wyckoff, 2005). Borman and Darling (2008) suggest there are five important “constellations of variables” that affect teacher retention and likely most other facets of the teachers’ professional experience: (1) teacher characteristics, (2) teacher qualifications, (3) school characteristics, (4) school resources, and (5) student characteristics (p. 400).

The complex challenges that beginning teachers face affect their experience and career choices as novice professionals, regardless of their school setting. However, the problems are only exacerbated if a teacher joins a school and community affected by the presence of pervasive poverty and racial discrimination. Poverty and racial segregation have shown to seriously affect all aspects of life, including student learning, and individual and family resilience (Hopson & Lee, 2001; Okech, Howard, Mauldin,

Mimura, & Kim, 2012). This phenomenon undoubtedly translates into additional workplace pressures for teachers in environments of poverty (Loeb, Darling-Hammond, & Luczak, 2005). In turn, the challenges in student learning and work conditions affect teacher career outcomes (Sass et al., 2012; Scafidi & Sjoquist, 2007).

Understanding the complexity of teacher retention and attrition, and the context within which they occur, is key for improving teaching and learning. Researchers and educational leaders agree that teachers are the most important school-based factor affecting student achievement (Laine, Behrstock-Sherratt, & Lasagna, 2011). Of course, teachers do not exist in a vacuum, but instead in a system of components and individuals that make up their workspace—leaders, students, parents, buildings, material resources, infrastructure, and environmental and neighborhood characteristics. In fact, a central epistemological belief that underlies this dissertation is that contextual variables matter when we talk about teacher-level outcomes. This assumption is in line with what Linda Darling-Hammond (2013) describes as systemic thinking about teacher quality. In a way, looking for explanations without accounting for larger social, political, and economic factors that surround American teachers limit the scope of possible explanations. Therefore, the investigation of key outcomes will be conducted with an understanding that individual teachers are only one of the levels in a complex and interdependent system.

Purpose of Study

The purpose of this study is to add to explanations of the problems of beginning teacher retention and attrition by taking advantage of newly available longitudinal

individual-level data and merging it with information about the environments (both school and socio-geographic) in which the teachers work. Thus, it extends our current understanding by viewing teachers not simply as individual agents of their career outcomes, but considers them to be deeply embedded in the socio-cultural reality of American education, which shapes their resilience, and in turn, their professional decisions.

Schools and classrooms have never been isolated microclimates, and they contain in themselves the same problems and tensions that exist in society at large, such as poverty, inequality, and racism. By placing individual teachers at the center, and accounting for the way in which they experience their working environments and the characteristics of their surrounding communities, this study aims to arrive at a more comprehensive picture of the correlates of teacher career outcomes.

As it focuses on the first five years in teachers' professional lives, the study also specifically sheds light on contemporary trends in teachers' qualifications, placement, and perceptions of themselves as beginning professionals. Additionally, the focus on these early years enriches our understanding of the critical phase of the teachers' career cycle that some have called "the apprentice teacher" stage (Steffy, Wolfe, Pasch, & Enz, 2000) or the "induction" and "competency building" stages (Fessler & Christensen, 1992; Lynn, 2002). These formative years are so critical that many of the policy efforts to strengthen the teacher labor force concentrate on them. This study aims to guide educational leaders toward the most significant factors that determine the teachers' career outcomes at this stage.

Research Questions

This dissertation study examines the variation of teacher experiences in the first three years of their careers and the associated professional outcomes. It focuses on individual-level variation and its correlates, but also places an important emphasis on schools and the novice teachers in them as parts of larger communities that often suffer from widespread and pervasive social and economic inequity and adversity. In order to better understand the career outcomes of beginning teachers across a variety of school and neighborhood settings, this research poses the following questions:

1. What are the characteristics of beginning teachers in the United States and how, if at all, do they differ across teachers with different career outcomes?
2. What individual- and school-level factors help explain the career outcomes of beginning teachers, in particular those who stay in the same school for five years and those who leave the profession with no intent to return?
3. Does the socio-geographic location of schools help explain the career outcomes of teachers, and which, if any, socio-geographic factors affect teacher attrition and retention?

Conceptual Framework

The conceptual framework for this study rests on an understanding that the teachers' beginning years are a critical time point in their professional lives—a time of identity-formation that affects the rest of their careers. It draws from prior work in the field of identity by Flores and Day (2006), who conceptualize teacher identity “as an

ongoing and dynamic process which entails the making sense and (re)interpretation of one's own values and experiences" (p. 220). In their study, Flores and Day (2006) pose that teachers' identity in their first two years of teaching gets continually shaped and reshaped under the influence of personal, professional, and contextual factors (p. 221). They categorize three main kinds of factors: (1) prior influences such as the teacher's experiences as former students, (2) initial training and practice, and (3) teaching context such as the culture of their school and the effects of leadership (Flores & Day, 2006, p. 223). The appeal of this framework is that it acknowledges the multiple sources of influence that teachers are subjected to when they first begin working in the field. It allows for individual-level factors and background characteristics to be important, but it also emphasizes the importance of context.

It is similar, to a degree, to the ecological model proposed by Bronfenbrenner (1979). According to the model, people—much like all other living organisms—live in a constant state of interaction with their environment. The interactions occur at four levels surrounding the person, each successive one being more comprehensive: the microsystem, the mesosystem, the exosystem, and the macrosystem. One example that illustrates the use of these concepts in educational research comes from Tissington (2008), who applied the Bronfenbrenner model to the study of new teachers who have gone through alternative certification programs and are transitioning to the classroom. She conceptualized the four levels as follows: (1) the microsystem are activities and practices in the candidate's classroom, (2) the mesosystem is the professional collaboration with peers and other colleagues at the school site or in learning communities that the candidate

belongs to, (3) the exosystem is the organizational structural and policies, and (4) the macrosystem is not a specific context, but rather the larger cultural value and laws that affect the candidate (Tissington, 2008, pp. 107–109).

The socio-ecological model has been applied in many other social scientific investigations; some, while seemingly unrelated, tackled similar phenomena of individual actions and outcomes as the ones of interest in this study. For example, one recent study from the field of behavioral nutrition used it as a framework in an empirical study of the predictors of dropping out of organized sports in early adolescence (Vella, Cliff, & Okely, 2014), and found that the theory allows for nuanced explanations that take into account individual, family, and community characteristics.

The present dissertation draws partially from this theory to posit that beginning teachers are at the center of a complicated, multi-layered system of relationships and interactions. Their students, peers, administrators, and the overall “ecosystem” around them, including factors within and beyond the school walls, affect them, their perceptions, experiences, and choices.

The theoretical framework underlying this study, however, moves beyond the work of Bronfenbrenner by incorporating insight from the field of psychology, particularly work on resilience (or resiliency) of teachers in their professional life. The concept has been studied by scholars of human development and behavior for over half a century; Prince-Embury (2008) offers for a good overview of the evolution of thinking and research on the subject. In educational studies, resilience has often been explored as an attribute of students, which is often done in the context of those who are considered

“at risk” of adverse educational and life outcomes; a classic study by Garmezy, Masten, and Tellegen (1984) used the term “stress resistance” to denote this attribute of students.

However, newer work has re-conceptualized resilience as ordinary and developmentally normative even outside the context of adversity (Masten, 2001). It has also been applied as a framework for understanding the behavior of professional adults and has been widened to include more factors than immutable personal characteristics. Day and Gu (2014) have systematized work in this vein and have proposed that teacher resilience is a “relative, multidimensional and developmental construct” that is dynamic and exists within a “social system of interrelationships”:

Thus, we may all be born with a biological or early life experience basis for resilient capacity, “by which are able to develop social competence, problem-solving skills, a critical consciousness, autonomy, and a sense of purpose” (Benard, 1995:1) However, the capacity to be resilient in different negative circumstances, whether or not these are connected to personal or professional factors, can be enhanced or inhibited by the nature of the settings in which we work, the people with whom we work and the strength of our beliefs and aspirations (Benard, 1991; Luthar, 1996; Henderson and Milstein, 2003; Oswald et al., 2003, Day et al., 2006). (Day & Gu, 2014, p.7)

Day and Gu (2014) use this multi-dimensional, socially constructed concept of resilience to discuss its relevance to teacher development, retention, overall commitment, and effectiveness, as well as factors in the workplace that promote it. They conclude that “during their professional lives teachers’ capacity to be resilient may fluctuate, depending on their cognitive and emotional management of the effects of different combinations of policy, socio-cultural, workplace-based, and personal challenges” (Day & Gu, 2014, p. 141). Such variations in resilience are closely tied to teachers’ sense of identity, commitment, and moral purpose as well, and they help us understand and explain

variations in career trajectories. Using this framework of resilience as a relational concept, scholars and leaders are encouraged to consider complex, interwoven factors on the individual, school, and social levels that foster resilience, which in turn increases efficacy, intrinsic motivation, and retention.

While Day and Gu (2014) acknowledge the important role of social factors, they do not focus on them in detail; therefore, completing the framework for my study relies on other scholarly work. In a seminal 1995 article, two Urban Institute scholars, George Galster and Sean Kilen, introduced the concept of *geography of opportunity*: a conceptual framework that stipulates that there are objective spatial variations in the social structures, markets, and institutions available to individuals in different parts of the metropolis (p. 7). If we situate the problem of high teacher turnover in the highest-poverty schools in cities, we can talk about good teachers being a part of the institutional makeup of neighborhoods. Their availability, or lack thereof, directly affects the educational opportunities for individual students.

Such a view is consistent with that presented in the classic work on neighborhood effects by Jencks and Mayer (1990), who write about the *institutional models* of neighborhood effects as one of the theorized mechanisms through which neighborhoods affect students:

Institutional models also focus on the way adults affect children, but they focus primarily on adults from outside the community who work in the schools, the police force, and other neighborhood institutions. Almost everyone assumes, for example, that elementary schools in affluent neighborhoods get better teachers than those in poor neighborhoods and this affects how much students learn. (Jencks & Mayer, 1990, p. 115)

Significance of Study

This dissertation adds to the extant literature by contributing to our knowledge of two things: (1) the effects of individual-level factors and perceptions on teachers' career trajectories, and (2) the relevance of key socio-economic characteristics of their schools and communities. It does so from a framework of teacher identity and resilience formation as a result of personal, organizational, and larger socio-geographic factors. It extends our understanding in several important ways.

First, it uses a more detailed and longitudinal measure that tracks the first five years in the profession of a sizable sample of teachers' career trajectories. Existing studies most frequently include either a large number of teachers from diverse backgrounds, but an analytic period of only one to three years (Luekens, Lyter, & Fox, 2004; Ingersoll, Merrill, & May, 2014), or offer longer temporal views on the problem by focusing on a smaller, specific subcategory of teachers, such as urban science teachers tracked for seven years (Rinke, 2014). Smaller scale qualitative studies that have been rich in their in-depth insight have also been quite limited in the number of teachers that they follow and the length of time that they span. Rinke (2011), for example, studied a sample of eight teachers over ten months, spanning two school years. Such studies have established some fundamental findings about the factors that are associated with the professional choices and outcomes of teachers. The data and methodology used in this dissertation will allow me to test how previous findings hold up when using recent longitudinal data.

Secondly, it combines the detailed individual-level data with school characteristics and even more importantly, situates individuals within a geographic community. Studies have documented the uneven distribution of teaching talent across school and community settings, but only a few have actually dug deeper into the effects of location on the phenomena of teacher turnover, attrition, and retention. This dissertation advances a claim that socio-geographic context matters and puts it to the test. The study makes use of measures of concentrated poverty and racial segregation statistics from beyond the confines of the school environment, and connects them to the characteristics, perceptions, and career outcomes of teachers. Using information about the schools' locations and linking it to individual teachers' backgrounds, opinions, and decisions about their work is an innovative way to explore the connection between poverty, racially-based inequity, and school staffing.

CHAPTER 2

REVIEW OF THE LITERATURE

This chapter presents the conceptual framework first and elaborates on its major components. Next, a review of what the scholarly community currently knows about the determinants and correlates of teacher career outcomes is presented, which helps demonstrate how the contributions that this study aims to make are situated within the field.

The Effects of Individual-Level Factors

First, this dissertation extends the line of work of scholars who have posed questions about teachers' career trajectories and have explored individual factors associated with choices to leave or stay in the profession. Borman and Dowling (2008) provide an extensive meta-analytic review of the literature on teacher attrition that includes 34 quantitative studies of 63 variables (or moderators) related to attrition; some of them are personal, such as gender, race, and subject taught, and some are structural and related to the characteristics of schools and students, such as concentrations of economically-disadvantaged, or special needs students, or high staff turnover.

Among the individual-level demographic and preparation variables that Borman and Dowling (2008) identify as often significant in predicting outcomes in teacher retention and attrition are the following: gender, race, age, marital status, whether or not the individual has a child (and the number of children he or she has), teacher training, experience, teacher ability or performance, teacher specialty area, and others. The authors

conclude, however, that while many of the studies do use large national datasets, they are quite limited in the fact that they capture only two time points and measure career trajectories from one year to the next; they argue that we need “truly longitudinal data” (Borman & Dowling, 2008, p. 399).

Simon and Johnson (2013) also offer a useful summary of what they call early explanations for teacher turnover that focus on the characteristics of teachers, such as age, gender, teaching experience, race/ethnicity, and the characteristics of their students as driving factors. Numerous studies they cite found that teachers with stronger academic background, better accreditations and certifications, and specialized subjects tend to prefer Whiter, wealthier schools (if they don't quit teaching), whereas the most novice teachers with less preparation are the ones least likely to leave the high-poverty, high-minority schools. One exception to this tendency seems to be the case of Black and Latino teachers, who are more likely to stay in high-minority schools and have motivation to teach in student populations of their own racial and ethnic background (Simon & Johnson, 2013, p. 9). The evidence for this, however, is mixed and as Whipp and Geronime (2015) note, some studies show that minority teachers have higher rates of turnover (p. 4). Additionally, in their review of the literature, Whipp and Geronime (2015) conclude that a general finding across studies seems to be that young, unmarried female teachers with no dependents have a particularly high rate of turnover in urban schools (p. 4).

As Ingersoll, Merrill, and May (2014) point out in the literature review for their research report on effects of teacher education and preparation on beginning teacher

attrition, “empirical assessment of teachers’ qualifications is a well-worn path” (p. 3).

Factors such as the level and type of education of teacher, their performance on certifying and licensing exams, and their possession of credentials signifying professional expertise in content knowledge or pedagogy have been linked to student achievement and have shown mixed results. Unsurprisingly, scholars have also investigated the effects of these factors on teacher retention and attrition.

Burnout and Career Outcomes

The concept of teacher burnout was first introduced by Freudenberger (1974) to describe the “wearing out” of those in the human service and care—or helping—professions. It was brought to educational studies in the late 1970s by McGuire (1979), who speculated that teachers also suffered from high degrees of emotional and mental exhaustion related to the challenging demands of the job. In a classical book on the subject, Dworkin (1986) used extensive survey data from the Houston Independent School Districts between 1977 and 1982. He offers the following conceptualization:

My assumption is that stresses associated with the teaching role reduce enthusiasm and heighten the desire to quit. The desire to quit in turn heightens the likelihood that the teacher will quit. Teacher burnout becomes the conceptual mechanism which translates work experiences into behavioral intentions and actual behavior. In addition, burnout becomes the social-psychological element linking job experience with job commitment, given that the desire to quit and actual quitting behavior represent dimensions of occupational commitment. (Dworkin, 1986, p. 21)

Dworkin also draws parallels between the concepts of burnout and alienation, speculating that the latter is a specific form of the former. After an extensive empirical investigation, he concluded that a set of factors increased the likelihood that a teacher

would suffer from burnout: being a newer teacher, having a more external locus of control, being more racially isolated from the student composition of the school, having greater disparity between the principal's role as seen by the teacher and by the principal, and reporting experiences of racial discrimination (Dworkin, 1986, p. 155). Conversely, some factors decreased the risk of burnout, namely being a Black teacher in the Houston Independent School District, having tenure, reporting supportive norms of interracial relations at the school, and having greater support for assigning teachers to schools based on their race (Dworkin, 1986, p. 153). However, burnout in and of itself, was not particularly strongly associated with what Dworkin (1986) called "quitting behavior"; in fact, he found that "individual variables which indicated greater career alternatives were the strongest predictors of quitting behavior" (p. 154).

In the decades following Dworkin's extensive study, the concept of burnout as a determinant of teachers' career trajectories has been continuously re-investigated and some scholars have reached quite the opposite conclusions. Currently in educational studies, teacher burnout is often understood by contemporary scholars to consist of three related, but distinct components—emotional exhaustion, depersonalizing behavior, and a reduced sense of personal accomplishment—and is often measured by the Maslach Burnout Inventory (MBI), which has a specific educator version (Maslach, Jackson, & Leiter, 1996).

In a mixed-methods study of 84 recent teaching program graduates from an American university, Hong (2010) conceptualized teacher professional identity as having six dimensions: values, commitment, self-efficacy, emotions, knowledge and beliefs, and

micropolitics (p. 1531). Weakening any of these factors negatively impacted the retention of teachers in the workforce, but burnout (measured by a scale of emotional exhaustion and depersonalization) was the key cause that explained dropping out of the profession.

The Effects of School and Student Characteristics

The other big set of factors that has a substantial influence on teacher turnover is at the school level. Factors such as the size and type of school, the numbers of students and teachers and their socio-demographic characteristics, and the poverty levels among students have all been shown by research to be related to retention and attrition.

For example, Jackson (2009) shows that as the percentage of Black students in schools increases (in his sample from a North Carolina school district), the percentages of experienced teachers, teachers with higher scores on licensing exams, and high “teacher value added” effects on student achievement decreases. Whipp and Geronime (2015) show that the general consensus is as follows:

Collectively, these studies show that teachers tend to continue teaching in schools and school districts with higher numbers of White students who perform well on standardized tests (Lankford, Loeb, & Wyckoff, 2002; Sass et al., 2012); where they perceive that they have access to adequate resources (Ingersoll, 2004; Loeb, Darling-Hammond, & Luczak, 2005); where they sense that they have support from administrators and colleagues (Allensworth, Ponisciak, & Mazzeo, 2009; Boyd et al., 2011; Ingersoll, 2004; Ladd, 2011; Loeb et al., 2005); where they have access to mentors and professional networks (DeAngelis, Wall, & Che, 2013); and where their students are showing gains in achievement (Boyd et al., 2012). (Whipp & Geronime, 2015, pp. 2–3)

As this summary shows, student demographic characteristics and organizational-level factors often get grouped together in the same category of “school-level effects.”

There is a lot of debate, however, on which factors are most influential and what the relative sizes of their effects are. As Simon and Johnson (2013) explain, the mechanisms through which these influences manifest in teacher turnover are also a point of contention. Jackson (2009), writing about variations in teacher quality, explains:

On the basis of previous studies, one cannot say whether the observed differences are caused by (a) school attributes that are correlated with student characteristics, (b) neighborhood attributes that are correlated with student characteristics, or (c) mobility of teachers toward their residences that happens to move them out of inner-city schools. (Jackson, 2009, p. 214)

The Role of Supportive School Climate

While some scholars focus on the effects socio-demographic composition of the student body, and related problems with academic performance and behavior, others concentrate on organizational theory. Richard Ingersoll at the University of Pennsylvania is perhaps the most well-known scholar that has worked in the organizational theory of teacher turnover vein of research and has authored multiple studies within this framework. Ingersoll and May (2012) write that the processes of retention, attrition, and turnover can be well-explained if scholars adopt an organizational-level perspective that moves beyond demographic characteristics on the teachers' and the students' levels, and look at the impact of schools as organizations. Ingersoll (2001) posits: "Schools are not simply victims of large-scale, inexorable demographic trends, and there is a significant role for the management of schools in both the genesis and solution of school staffing problems" (p. 525). From a similar vantage point, Susan Moore Johnson connects teachers' career

outcomes to the working conditions at the schools with evidence from interviews with 115 teachers in her 1990 book, *Teachers at Work: Achieving Success in Our Schools*.

Some scholars argue that while schools serving low-income, non-White students tend to have higher rates of turnover and attrition, it is not student demographics that drives this. Johnson, Kraft, and Papay (2012) examine information from statewide teacher surveys, and data on student demographic and achievement data in Massachusetts to conclude that “measures of the school environment explain away much of the apparent relationship between teacher satisfaction and student demographic characteristics” (p. 2). The authors interpret this to mean that high turnover rates at struggling schools do not mean that the departing teachers reject their students, but rather the “dysfunctional contexts in which they work” (Johnson et al., 2012, p. 4). In earlier work, Johnson, Kardos, Kauffman, Liu, and Donaldson (2004) coined the term the “support gap” as a counter to the “achievement gap”; they argue that “new teachers in low-income schools receive significantly less assistance in the key areas of hiring, mentoring, and curriculum than their counterparts working in schools with high-income students” (p. 2).

Just like neighborhood residents and students, teachers form perceptions about their school environments, which likely affect their career choices (Weiss, 1999). Factors such as their perception of student apathy and unpreparedness, family poverty, and lack of parental support can increase the levels of stress and alienation that a teacher experiences in their everyday environment at school. Conversely, when those problems are minimized, schools might be seen as more stable, predictable, and engaging environments for teachers to work in. In addition, if teachers feel that they have structural

support from the school or district, this can be instrumental to their professionalization and development, as well as their social and emotional well-being.

Hopson and Lee (2011) borrow on ecological theory and stipulate that school climate can significantly affect learning and behavioral outcomes: “A positive school climate is not only a protective factor, but also provides a broader context in which vulnerable students can develop the social supports that are the foundation for resilience” (p. 2223). Most important for a positive school climate, they argue, are the relationships among participants: students, teachers, and administrators.

Support can take the form of providing a structured induction program, a reduced teaching schedule, common planning time with other teachers, seminars or classes for beginning teachers, classroom assistance, regular communication, and working with a coach or a mentor (Ingersoll & Smith, 2004). Such factors have been shown to have a positive effect on the well-being and success of teachers, as well as their attitudes and perceptions. However, the empirical evidence about the direct effectiveness of mentoring programs, broadly defined, is inconclusive, partially perhaps due to the non-linear relationship between induction and mentoring processes and retention (Waterman & He, 2011).

Researchers have provided empirical support for many of these speculations. Kolbe (2014), for example, conducted a study of 353 K–12 teachers with two to four years of experience that completed a survey with 47 items aimed at uncovering the relationship between teachers’ career decisions and motivation, and their perceptions of various dimensions of their experience. His findings show that teachers’ intent to move

schools, districts, or to exit the profession are related to their perceptions of workload, workplace stability, school leadership, professional support, and school climate.

The Effects of Professional Autonomy and Control over Teaching

Having an institution with supportive climate entails granting a significant degree of professional autonomy to individuals within it. Although teachers seek and desire help and recognition from their peers, leaders, and professional communities, they also shy away from regimentation and value the freedom to implement personal solutions to problems (Crocco & Costigan, 2007). According to Skaalvik and Skaalvik (2014), school context and climate are strong predictors of job satisfaction, because the extent to which teachers experience individual professional discretion and autonomy (which are critical to well-being and motivation) is decided at the school level. As Crocco and Costigan (2007) write in their review of the literature, this positive relationship between autonomy and job satisfaction is well-documented by social psychologists and is valid for most well-educated professionals (p. 522).

A study of mathematics and science teachers' mobility patterns by Ingersoll and May (2012) found that in a sample of teachers from the 2003–2004 School and Staffing Survey and the 2004–2005 Teacher Follow-Up Survey, the strongest predicting factor for differences in turnover patterns for mathematics teachers was the degree of classroom autonomy experienced by individual teachers. The effects were even more evident when considering the level of autonomy experiences by teachers across classrooms: “A one unit difference in reported teacher autonomy between schools (on a four-unit scale) was

associated with a 37% difference in the odds of a teacher departing. This school-level association was much larger than the individual association of autonomy, suggesting a very large contextual relationship” (Ingersoll & May, 2012, p. 453). In fact, the 70% decrease in the odds of a teacher departing that was associated with one-unit increase of school-wide autonomy was “by far the single largest relationship” (Ingersoll & May, 2012, p. 453).

The authors, who also analyzed similar earlier data, note that autonomy appeared to emerge in relevance around the mid-2000s. Autonomy was also more important for mathematics teachers than for science teachers. One possible explanation that the authors provide for was the increase in standardized testing requirements that affected mathematics teachers (whose subject was more frequently tested as of 2014) more than science teachers. This could have increased the desire for mathematics teachers to be allowed more freedom than that present in “high-stakes” testing environments, in which teaching frequently follows a rigid schedule tied to tests.

Crocco and Costigan (2007) also reach this conclusion about the effects of the *No Child Left Behind* mandates on curriculum, instruction, and testing in their qualitative investigation of new teachers in urban schools in New York City. They studied the phenomenon of “narrowing the curriculum” and discovered that it has a negative effect on teachers’ creativity, autonomy, and relationship with students, and thus indirectly increased attrition. A common theme in the interviews of beginning teachers was “the ‘shrinking space’ for their classroom decision-making” (Crocco & Costigan, 2007, p. 521), which resulted in feelings of being de-professionalized and deprived of the chance

to build meaningful relationships with their students through individualized teaching practice. The effects of this on teacher retention were moderated by the teachers' preparation and route into teaching, grade level, and school leadership. Traditionally-prepared teachers seem to be able to counter the negative impacts and remain in teaching. However, teachers who held alternative certification, taught at middle schools, and faced pressure from principals and school leaders to follow a scripted curriculum were more likely to leave urban schools or the profession altogether (Crocco & Costigan, 2007, p. 527).

Relating Teachers' Characteristics and Career Outcomes to Socio-Geographic Patterns

Poverty and racial isolation have been shown to seriously affect all aspects of life, including student learning, and individual and family resilience (Hopson & Lee, 2001; Okech et al., 2012). This phenomenon undoubtedly translates into additional workplace pressures for teachers in environments of poverty (Darling-Hammond, 2000). Borman and Dowling (2008) write, "the research evidence has continued to suggest that poor and minority students have less access to qualified teachers than do more affluent and nonminority children (Borman & Kimball, 2005; Ferguson, 1998; Kain & Singleton, 1996)" (p. 398). A recent report published by Educational Testing Service (ETS) opens as follows: "As citizens, we should concern ourselves with the question of whether the current levels of poverty and inequality really matter. The answer is they matter a great deal" (The ETS Center for Research on Human Capital and Education, 2013, p. 2).

Scholars in the field of urban education have long believed in the importance of context and there is some intriguing new work that pushes the frontier of our understanding of the effects of socio-geographic context on educational outcomes. As Lipman (2013) writes:

Space is not simply a container, but a social process whose meaning is constituted by those who live and work there. It is both “the ‘perceived space’ of material spatial practices and the ‘conceived space’ of symbolic representations and epistemologies” (Soja, 1999, p. 74). (Lipman, 2013, p. 94)

One article that tackles such questions is “The Geography of Exclusion: Race, Segregation, and Concentrated Poverty” by Lichter, Parisi, and Taquino (2012). They acknowledge that in recent years, there has been a surge of interest toward understanding the changes inside metropolitan cities and focus on the distribution of poverty “*between* rather than *within* places and municipalities, while emphasizing an emerging pattern of heightened place stratification among America’s hierarchy of big cities, suburban places, and small towns” (Lichter et al., 2012, p. 365). According to Lichter, Parisi, and Taquino (2012), the level of geography that matter most is places and communities, because that is where local political and economic decisions are made, and places create both opportunities and barriers that define “the spatial separation of winners and losers” (p. 368).

Lichter, Parisi, and Taquino (2012) demonstrate that there has been a 31% increase in the number of poor places during the post-2000 period. Not only did pockets of poverty grow in number, but they also fell along new patterns of isolation and led to increased segregation of the poor from the non-poor, associated with crippling outcomes:

“Poor people living in poor places are doubly disadvantaged: they are both poor and exposed disproportionately to declining employment opportunities, low-wage jobs, poor schools, and inadequate public services (including transportation)” (Lichter et al., 2012, p. 384).

This conceptualization and operationalization pushes us to consider that many crucial educational processes and outcomes also occur on this level, but are overlooked because of a focus on either larger or smaller units of analysis—for example, counties and states, or schools and classrooms. If places are “the new battleground of inclusionary and exclusionary policies that sort poor and nonpoor people” (Lichter et al., 2012, p. 382), would similar patterns of unequal distribution of teachers’ human capital emerge when we map the characteristics of beginning teachers and their outcomes, and the poverty of the places where they teach?

Undoubtedly, educational opportunities for children are highly affected by these trends. In *Whither Opportunity: Rising Inequality, Schools, and Children’s Life Chances*¹ by education researchers and professors, Greg Duncan at UC Irvine and Richard Murnane, the authors compile a variety of evidence-based studies to show that economic gaps have translated into opportunity and attainment gaps for youths and their families. They selected pieces concentrating on the peer effects of having more classmates with behavioral and learning disadvantages, as well as on the effects of teachers leaving poorer neighborhoods at higher rates than elsewhere.

¹An executive summary and select excerpts are available at <https://www.russellsage.org/publications/whither-opportunity>

²http://datatools.metrotrends.org/charts/metrodata/_B24g/Maps/PovertyRace_DW/Map.html#35620,1980,

Mapping out poverty and racial segregation is not new, as evidenced by a growing number of projects that make use of the spatial data on poverty and provide striking visualizations. Examples include:

- *Poverty and Race in America, Then and Now* by the Urban Institute,² an interactive map making use of the exact same data sources as Lichter, Parisi, and Taquino: 1980, 1990, and 2000 Census data and 2007–11 American Community Survey (ACS) data, and
- *The Racial Dot Map*, a project by Dustin Cable at the Weldon Cooper Center for Public Service at the University of Virginia,³ using Census 2010 data to display the 308,745,538 U.S. residents as dots at the location they were counted; each dot is color-coded by the individual’s race and ethnicity.

The connections likely are more than superficial and there is prior research, which suggests underlying causality. Small and Newman (2011), for example, provide a thorough review of a mechanism behind the so-called “neighborhood effects.” They can be divided broadly into two categories: socialization mechanisms (focused on how neighborhoods socialize those who grow up or live in them) and instrumental mechanisms (describing how individual agency is affected by neighborhood) (Small & Newman, 2011, p. 32). The authors point out that despite some fruitful “and in some ways most sophisticated” (Small & Newman, 2011, p. 34) methodological work in urban poverty, much more conceptual work remains to be done to test and demonstrate

²http://datatools.metrotrends.org/charts/metrodata/_Blog/Maps/PovertyRace_DW/Map.html#35620,1980,2010,12,40.73347023268492,-73.96133422851562

³<http://coopercenter.org/demographics/Racial-Dot-Map>

(empirically and philosophically) causality between neighborhood poverty and various outcomes in human lives.

One mechanism behind the emergency of neighborhood effects is provided by the theory of collective neighborhood efficacy. Mennis, Dayanim, and Grunwald (2013) provide a comprehensive review of the theory, as well as an empirical application of it. According to their summary definition, collective efficacy “captures the willingness of neighbors to work together on community issues as well as the degree of social interaction among neighbors and the sense of belonging a resident feels towards his or her community (Sampson et al, 1997)” (Mennis et al., 2013, p. 2176).

As their definition indicates, the theory and concept were popularized through the work of sociologist Robert Sampson and his collaborators in the late 1990s. Sampson, Raudenbush, and Earl (1997) speculated that collective efficacy—the degree of social cohesion of neighbors—was linked to violent crime in the neighborhood. They tested the proposition using survey data gathered in 1995 from 8,782 residents of 343 neighborhoods in Chicago. Using multi-level statistical models to situate the individuals within their communities, they tested for the effects of person-level factors (including race, ethnicity, gender, age, marital and socio-economic status, home ownership, and years in the neighborhood) and neighborhood-level indicators (concentrated disadvantage, immigrant concentration, residential stability, and collective efficacy). On the basis of their results, they concluded that:

Together, three dimensions of neighborhood stratification—concentrated disadvantage, immigration concentration, and residential stability—explained 70% of the neighborhood variation in collective efficacy. Collective efficacy in turn mediated a substantial portion of the association

of residential stability and disadvantage with multiple measures of violence, which is consistent with a major theme in neighborhood theories of social organization (1-5). (Sampson, Raudenbush, & Earl, 1997, p. 923)

The study drew attention to the importance of collective efficacy, whose statistical significance proved consistence across a variety of models. A subsequent study by Sampson established a connection between social efficacy and inequality for children (Sampson, Morenoff, & Earls, 1999).

Over a decade later, and following a vein of research inspired by Sampson's work in the late 1990s, Mennis, Dayanim, and Grunwald (2013) tested propositions that social efficacy is associated with several different manifestations of neighborhood diversity (not just ethnic diversity, but also diversity in age and wealth). They found that "neighborhood churning, characterized by high levels of diversity in ethnic and other cultural characteristics, and coupled with residential mobility, plays an important role in neighborhood collective efficacy" (Mennis et al., 2013, p. 2190). This finding provided a deeper understanding of how social efficacy amongst neighbors increases or decreases, and what its implications are for outcomes at both the community and the individual levels.

Thus, collective efficacy emerges from the sociological and geographic literature as yet another potential mechanism that connects people to the spaces they inhabit, and weaves persons and communities in a complex web of relationships. However, despite strong theoretical considerations and plentiful empirical investigation of neighborhood effects on individual outcomes, few studies investigating associations between concepts such as collective efficacy, and outcomes for students and teachers in schools exist. Even

less work has been conducted that moves beyond associations and investigates causality. This is a legitimate gap in educational research that this dissertation does not address. Yet, even without ambitious claims to establish causality between neighborhood effects and outcomes in teachers' careers, this study still constitutes a contribution to our current understanding of the problem and will be a step toward causal analyses. It attempts to link an individual-level outcome, such as a teacher's decision on whether to stay at the same school, transfer, or leave the profession to neighborhood characteristics. Specifically, it investigates various manifestations of poverty, and their connection to teacher attrition and retention.

The Poverty Gap

One of the central issues in educational research today is the so-called educational gap—the disparities between educational outcomes that exist in contemporary American society. The differences in achievement can take on many manifestations: it is evident when comparing White children to minorities, girls to boys. One of the most striking contrasts is between students from middle class or affluent families, and those who live in poverty. The poverty gap is already wide on the first day of kindergarten; according to a 2012 report by the Brookings Institution, only 48% of poor children (living in families with income below 100% of poverty) are deemed ready for school at age five, compared to 75% of children from families with moderate or high income (starting above 185% of poverty) (Isaacs, 2012). Reardon (2012) found that this poverty gap is now twice as big as the racial gap in academic achievement between White and Black students; it is also

30 to 40% larger for children born in 2001 than for those born 25 years earlier. It is pervasive and has lasting effects over the full life span of individuals.

Many factors and complicated causal mechanisms contribute to the existence of the poverty gap in educational achievement. In a 2014 research report, researchers from the Alliance for Excellent Education systematized recent data on the magnitude of the problems caused in education by poverty. According to the report, the teacher turnover rate in high poverty schools is approximately 20% annually, which is roughly 50% more than the rate in more affluent schools. Additionally, the estimated percentage of new teachers leaving the profession within five years can be as high as 40 or 50%, and a disproportionately large number of them hail from high-poverty and high-minority urban or rural schools (Alliance for Excellent Education, 2014, p. 3).

A picture of a vicious cycle emerges out of the extant research. Poor students enter school at a disadvantage, often into schools that lack resources and good quality teachers, widening the gap between them and their more privileged counterparts. Teachers, on the other hand, lack incentives and/or the required preparation to work in high-poverty schools where chronic underperformance and low resources pose a multitude of challenges for them. What is the way to break this chain? I argue that a crucial step is to understand exactly how and why high-poverty schools end up with the problems of high teacher turnover and a shortage of well-qualified teachers, so that better policies can be put in place to prevent them.

Is the importance of this understanding supported by empirical evidence? If so, what factors and mechanisms beyond personal characteristics of teachers and school-

level variables might explain this unequal spatial distribution of teachers? In the following section, I examine in greater detail several studies that draw attention to geographic factors contributing to teachers' career decisions.

Good Teachers in Good Schools in Good Neighborhoods:

A Classic Sociological View

Are there factors beyond the personal and school characteristics that affect teachers' career decisions and progressions? This question has garnered a lot of attention. Sociologist Howard Becker published one study that explores the phenomenon of teacher attrition in high poverty schools in 1952. He interviewed 60 teachers in Chicago and discovered that there is a certain pattern to how public school teachers begin and develop their careers:

Movement in the system, then, tends to be from the 'slums' to the 'better' neighborhoods, primarily in terms of the characteristics of the pupils. Since there are few or no requests for transfer to "slum" schools, the need for teachers is filled by the assignment to such schools of teachers beginning careers in the Chicago system. Thus, the new teacher typically begins her career in the least desirable kind of school. (Becker, 1952, p. 472)

Starting in these kinds of schools, teachers then follow one of two most prevalent routes: (1) "an immediate attempt to move to a 'better' school in a 'better' neighborhood," which characterized the majority of his 60 interviewees or (2) the path of adjusting to the conditions in the "slum" schools, which 13 teachers described. Fundamentally, both career paths are an attempt at establishing a predictable, stable work environment where the teacher knows the expectations and rules; any disruptions to it

such as a changed school composition (he calls this an ecological change) or new leadership (which he calls an administrative event), are likely to result in career moves.

In a sense, Becker's argument incorporates elements of accounting for both student body characteristics and schools' organizational structures. However, he also explicitly places the students within neighborhoods and ties changes to the student body composition to larger changes on the neighborhood level. What he calls ecological changes are, in essence, dynamic neighborhood processes:

Ecological invasion of a neighborhood produces changes in the social-class group from which pupils and parents of a given school are recruited. This, in turn, changes the nature and intensity of the teacher's work problems and upsets the teacher who has been accustomed to working with a higher status group than the one to which she thus falls heir. The total effect is the destruction of what was once a satisfying place in which to work, a position from which no move was intended. [...] Ecological and demographic processes may likewise create a change in the age structure of a population which causes a decrease in the number of teachers needed in a particular school and a consequent loss of the position in that school for the person last added to the staff. The effect of neighborhood invasion may be to turn the career in the direction of adjustment to the new group, while the change in local age structure may turn the career back to the earlier phase, in which transfer to a "nicer" school was sought. (Becker, 1952, p. 475)

As a representative of the Chicago school of sociology, Becker brought the importance of the urban environment and urban sociological processes to the attention of educational scholars. For him, however, neighborhoods are important "primarily in terms of the characteristics of the students" (Becker, 1952, p. 472). More recent research provides a more nuanced understanding of neighborhood effects and extends beyond population demographics. The next section provides an overview of current studies about the importance of cultural and physical proximity as neighborhood effects.

The Appeal of Home

The first kind of study looks at distance between the home location of teachers and that of the schools they choose to work in, both literally in terms of miles and figuratively in terms of habitus, broadly defined as the way in which individuals interact with their social surroundings. An example of the latter is a comparative study of student teachers conducted in four institutions in Denmark and the United States (Steensen, 2009). The author uses Bourdieu's framework and his concepts of habitus and dispositions to investigate, through interviews, the formation of a teaching identity of novice teaching professionals (or, in this case, students about to join the profession). According to Steensen (2009), "One of the main findings of the study is that, irrespective of institutional context, most student teachers want to 'go home' to teach in familiar surroundings" (p. 85). The meaning of this finding is not merely geographical; it also refers to a return to familiarity in the "habitual sense," which serves as a form of social and cultural replication. For example, one of the participants in the study comes from a mixed urban environment, but she herself has a middle-class background and went to private school for her education; she expressed a strong preference for teaching in a private school and considered many of the public schools that she could teach at to be of "inferior quality" (Steensen, 2009, p. 91).

It is not surprising that many teachers then take up their first job in close proximity to their hometowns. Boyd, Lankford, Loeb, and Wyckoff (2005) studied the job locations of teachers in New York during several points in their careers starting at the time when they were first hired, and found that geographically speaking, the labor market

for teachers is very small, as the majority of teachers preferred areas with characteristics similar to their hometown. They found that 61% of beginning public school teachers in New York from 1999 to 2002 first taught in schools located within 15 miles of their hometown; 85% did so within 40 miles of their hometowns (Boyd et al., 2005, p. 117).

A finer-grained analysis revealed that this finding is not just a matter of proximity, but it is also a desire for familiar settings. Over 90% of teachers from New York City, for example, first taught there; whereas 60% of those who grew up in the suburbs took up first jobs in a suburban setting (the patterns were similar in other metropolitan areas in the state). With respect to cities specifically, 88% of those who grew up in urban areas also began teaching in cities, but only 60% of urban teachers grew up in cities (Boyd et al., 2005, p. 118). Boyd et al. (2005) summarize: “Although distance may play a role in these results, it is also the case that apart from distance, the culture of schools or communities may play some role in the segmentation of teacher labor markets” (p. 119). Geographic preference, in this case, is far more complicated than distance, as it is also a function of searching for similarity. It is important to note that these effects were not found to vary much based on other personal characteristics of the teachers.

The implications of this finding are that urban schools are *a priori* disadvantaged given these preferences, since the number of new teachers that come from urban areas is smaller than the number of positions that need to be filled in urban schools (Boyd et al., 2005, p. 127). Thus, urban schools must work hard to overcome the strong “hometown pull” for teachers of other backgrounds and even though they generally cannot offer more

competitive salaries or working conditions. Additionally, the authors note, there is a secondary challenge:

If, historically, the graduates of urban high schools have not received adequate education, then the cities face a less-qualified pool of potential teachers even if they are not net importers. Preferences for proximity lead to the perpetuation of inequities in the qualifications of teachers. (Boyd et al., 2005, p. 127)

The finding that teachers prefer similarity, however, is not unique to urban schools. In a study of hiring decisions in rural Appalachian districts in Kentucky over a 20-year time span, Fowels et al. (2014) found that “extrinsic characteristics matter for teacher employment decisions: teachers are most likely to obtain first employment in districts close to and with cultural similarities to the location of their college” and that “the less privileged rural districts employ the new teachers of lowest observed aptitude, implying that the quality of education provided by these districts may differ in systematic ways that reinforce longstanding achievement gaps” (p. 504).

Another study that takes up questions about the distribution of teachers across places was conducted by Reininger (2012). She used a national sample from the National Longitudinal Educational Study and investigated teacher mobility patterns as compared to patterns of other professionals. Strikingly, she found that between the time they were in 10th grade and the year 2000, the median distance moved for teachers was 13 miles, much less than the median of 54 miles for other college graduates (Reininger, 2012, p. 133). This confirms that the New York City finding from the previous study is sustained on a national level; it seems that teachers’ labor markets are much smaller geographically than those for other professions. Reininger (2012) also finds that this “localness” has

implications for hard-to-staff schools with high turnover rates: “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” (p.140).

Importance of Geography

One important takeaway point from the literature on the geography of the teachers’ labor market is that teachers prefer to accept jobs in places that are familiar and similar to what they are used to. But what happens once teachers are at their new schools—how does geography affect that? The single comprehensive study on the topic comes from Boyd, Lankford, Loeb, Ronfeld, and Wyckoff (2010). They used data from the New York City Department of Education Transfer Request System and combined information about teachers, schools, and neighborhoods to investigate the relative importance of neighborhood characteristics on career outcomes. They defined a neighborhood as the 0.8 by 0.8 miles square, of which the school is at the center (as they speculated this is a reasonable walking distance in New York City), and they used aggregated U.S. Census tract data from all Census tracts that fall into it. They included the following neighborhood characteristics in their investigation: median family income, population density, percentage of population who are non-White, percentage of households of married couples with children under eighteen, percentage of vacant housing units, percentage of population living in the same house five years ago, percentage of population aged 25 years with a bachelor’s degree, distance from school to

the nearest subway, high violent crime rate, and two different measures of general amenities. After controlling for select school factors such as school level, demographic composition of the student body, and eligibility for free and reduced lunch, the gist of the finding is:

Not surprisingly, neighborhood characteristics are more important to teachers in high-density areas. In lower-density areas, it is likely easier for teachers to travel, and thus the immediate surroundings of the school are less important. In applying to schools, teachers tend to favor neighborhoods with higher median income and less violent crime. In higher-density areas, teachers also favor neighborhoods with greater local amenities, particularly for practical (grocery, hardware drugstores) and leisure (bars, fitness centers, coffee shops, movie theaters) purposes. (Boyd et al., 2010, p. 393)

The authors admit that their study has several limitations. First and foremost is the danger of omitted variable bias: some of the neighborhood characteristics might reflect the importance of school-level factors that have not been measured and included in the analysis. Secondly, including the neighborhood characteristics does not explain away the teachers' preference for schools with more White, better achieving students, which persists in all the models in the study. However, the important conclusion is that neighborhood effects—to the extent that they do matter—further disadvantage the population of students that is already suffering from shortage of well-qualified teachers.

The selected studies in this review show that geography matters, because teachers and teacher candidates have very strong geographic preferences; the vast majority of them highly prefer to stay close to home both distance-wise and setting-wise. Further, holding all other factors constant, teachers avoid poor, crime-ridden areas when making career decisions. Racial makeup of the community is also relevant. For example, Goyette,

Farrie, and Freely (2012) argue that as neighborhood dynamics change to increase the percentage of more Black residents, residents begin to perceive school quality as declining, regardless of whether or not that is factually true. They show how that change affects parents' choices about their children's schooling; therefore, it is reasonable to expect that teachers making professional choices are also likely affected by race as a factor, independently of the makeup of the student body at their school.

These findings have important implications for staffing schools. Generally speaking, teachers are both products of their own community, and important agents of social and cultural reproduction. If they themselves lack in preparation, education, and motivation, they are likely to pass such disadvantages to their schools and students. As Boyd, Lankford, Loeb, and Wyckoff (2005) write: "Inadequate education is a cycle that is difficult to break" (p. 127).

The complex challenges that beginning teachers face may affect their experience and career choices as novice professionals, regardless of their school setting. However, they are exacerbated by pervasive poverty and racial discrimination in the schools and communities that teachers join. Poor places are on the rise in America and so are the important implications of that fact.

CHAPTER 3

DATA AND METHODS

This chapter presents data sources used in the study. First, it offers a detailed look into the main dataset: the Beginning Teacher Longitudinal Study (BTLS) program and the criteria used to define the analytic sample of teachers. Next, the complex sampling procedures used by the developers of the survey are discussed, together with the appropriate techniques applied to take the sampling characteristics into account during the analysis. Special attention is dedicated to explaining the primary dependent variable—career outcome—and all of its categories as they pertain to the research questions at hand.

The next subsection presents the demographic characteristics of teachers in the analytic sample, as well as descriptive statistics of some key perceptions and opinions about their teaching experience. The inclusion criteria are specified and those who are left out from the analysis are discussed briefly as well.

In the second half of the chapter, the methodology for linking teacher and school data to socio-geographic data is discussed, and the characteristics of the communities where the Year 1 schools of teachers are located are discussed. After a review of the distribution of teachers across schools and schools across geographic locations, a rationale for the statistical methodology chosen for the study is presented.

Teacher Dataset

BTLS was sponsored by the National Center for Education Statistics (NCES) and executed by the U.S. Census. BTLS is a series of annual surveys designed to follow a cohort of beginning teachers for five years. It started in 2007–2008 as part of the School and Staffing Survey (SASS) program and ended in the 2011–2012 school year. In the baseline year, the SASS study included 1,990 beginning teachers, who were selected and tracked with follow-up surveys for the next five years of their careers as they continued to teach, moved schools, left teaching, or even re-entered the profession.

The dataset used for analysis, thus, consists of five waves of data. The first wave (school year 2007–2008) contains the subsample of beginning teachers from SASS, defined as those “who began teaching in 2007 or 2008 in a traditional public or public charter school that offered any of grades K–12 or comparable ungraded levels” (National Center for Education Statistics, 2015, p. 1). It contains a large number of demographic variables, certifications and preparation to teach, a variety of questions about the teachers’ attitudes toward their job, their perceptions of the working conditions, and their intended plans. The second wave (school year 2008–2009) is the Teacher Follow-Up Survey (TFS), which had two versions: one for those who were still teaching and one for those who had left. The Year 1 Questionnaire is attached as Appendix A, as all the independent variables used from the analysis are defined there.

Waves 3 through 5 (school years 2009–2010, 2010–2011, and 2011–2012, respectively) are separate from the SASS and TFS, and they include further information about teachers leaving, moving, re-entering the profession, as well as about their new

careers if they left teaching. The surveys were administered online, and after screening the current status of the respondent through the initial questions, the instrument branched off into different versions for current and former teachers. Additionally, the instruments differed somewhat each year, as questions were revised or added.

Using Weights for Correct Variance Estimation for BTLS

According to the BTLS 2011–2012 User Manual, both SASS and BTLS are designed in several ways that violate the assumptions of random sampling “such as stratifying the school sample, oversampling new school teachers, and sampling with differential probabilities” (p. 28). Therefore, the teachers included in the final dataset were not selected independently and/or did not all have the same probability of being included in the sample as other teachers in the nation. To ensure that these complex sample design features do not result in incorrect variance estimations, both the design and the probability of being selected into the sample need to be reflected in the analysis (Natarajan, Lipsitz, Fitzmaurice, & Gonin, 2008). The recommended approach with SASS and BTLS data is replication, which means that multiple sub-samples of cases are drawn from the full sample and the statistic of interest is estimated for each sample using, in this case, a bootstrap variance estimator (Gray, Goldring, & Taie, 2015, p. 29).

Using the bootstrap variance methodology, school replicate weights were calculated for 88 sub-samples of the SASS using the same estimation procedures as the full sample. Each teacher record was then assigned a replicate weight, calculated by multiplying the school’s replicate weight by the teacher’s conditional probability of

selection into the SASS sample. For BTLS, which is a subset of the 2007–2008 SASS, weights were taken directly from SASS for the first year (National Center for Education Statistics, 2015, p. 8). For the remaining four waves,

an initial basic weight (the inverse of the sampled teacher’s probability of selection in SASS) is used as the starting point. A weighting adjustment is then applied that reflects the impact of the SASS teacher weighting procedure. Next, a nonresponse adjustment factor is calculated and applied using information that is known about the respondents and nonrespondents from the sampling frame data. Finally, a ratio adjustment factor is calculated and applied to the sample to adjust the sample totals to the First Wave totals (excluding out-of-scopes found in the later waves) in order to reduce sampling variability. The products of these factors are the analysis weights for the second through fifth waves of BTLS. (National Center for Education Statistics, 2015, p. 8)

In addition to these analysis weights, BTLS includes sets of weights calculated for use in longitudinal analysis spanning multiple years. Since BTLS originated from SASS 2007–2008, everyone was a respondent to the first wave, and when estimating change from wave 1 to wave 2, the wave 2 analysis weights are used. However, when estimating change between waves 1 through 3, waves 1 through 4, or waves 1 through 5, appropriate longitudinal analysis weights need to be used. BTLS includes two sets of such weights: one for only those teachers who responded to all the waves in question and one that also includes teachers who were retrospective respondents, i.e., missed a wave of questions, but provided responses to them in the next one (National Center for Education Statistics, 2015, p. 8). Thus, there are 14 sets of weights included with BTLS, listed as follows:

- Wave 1: the first-wave analysis weight.
- Wave 2: second-wave analysis weight, second-wave retrospective analysis weight.
- Wave 3: third-wave analysis weight, third-wave retrospective analysis weight,

third-wave longitudinal weight, third-wave retrospective longitudinal weight.

- Wave 4: fourth-wave analysis weight, fourth-wave retrospective analysis weight, fourth-wave longitudinal weight, fourth-wave retrospective longitudinal weight.
- Wave 5: fifth-wave analysis weight, fifth-wave longitudinal weight, fifth-wave retrospective longitudinal weight.

Depending on the research question, the appropriate set of weights should be used for variance estimations to assure accuracy and account for non-response and oversampling of certain subgroups of schools and teachers (National Center for Education Statistics, 2015, p. 8). For the analysis used in this study, all calculations using the weights provided with the dataset were done with the *svy* commands in STATA SE 14.1 for Mac. Kelly and Northrop (2015) used the same software in their study using the first three waves of BTLS.

Defining the Analytic Sample

For the purposes of this study, the analytic sample was narrowed down from the full set of 1,990 teachers in several ways. Firstly, three of the initial respondents were deceased by the last survey year (two by Year 4 and one additional by Year 5), so their answers were excluded from the analysis as to not skew the results; this left 1,987 respondents. Secondly, only those teachers that held full-time positions during the first survey year became part of the main analysis. Each respondent was asked to select whether he or she was a regular full-time teacher, a regular part-time teacher, an itinerant teacher, a long-term substitute, a short-term substitute, a student teacher, a teacher aide,

an administrator, a library media specialist or librarian, other professional staff (e.g., counselor, curriculum coordinator, social worker), or support staff (e.g., secretary). Everyone who chose the first option (regular full-time teacher) was included in the analytic sample; this included 1,763 teachers or 88.7% of the full set of respondents. All others were excluded from the main analytic sample.

The primary reason for this selection criterion was that research has established that the rates of attrition and job migration vary based between regular full-time teachers and those who hold part-time positions (Luekens, Lyter, & Fox, 2004). Given that these are the main outcome variables of interest, we can expect that the reasons and causal mechanisms behind these career decisions likely vary based on the type of teacher employment (regular full-time teacher vs. all other kind of arrangements); similarly, the working conditions and set-up are also likely different between the two groups.

Table 3.1 shows the differences in proportions of leavers (those who leave the teaching profession), stayers (those who have taught at the same school for all five years of the survey), movers (those who have changed schools), returners (those who leave teaching for some time after the first year, but end up returning to the profession within five years), and non-respondents by Year 5 across several different groups of teachers. There were fewer leavers (15.8%) and movers (5.4%) and more stayers (53.9%) in the group of 1,763 regular full-time teachers than amongst the remaining 224 other respondents, 22.8% of who were leavers, 7.6% were movers, and 46.9% were stayers. The highest proportions of leavers and movers were amongst the subsample of 46 teachers who were not holding regular teacher positions, yet still taught full-time in the

first year of the survey. Those included 45 long-term substitutes and one itinerant teacher, who answered a question about how much time they spent teaching at the school where they received the survey with the option, “Full-Time.” Almost one-third of them (30.4%) left the teaching profession by Year 5 and about one-fifth (19.6%) moved to different schools. Only one-third (32.6%) reported still teaching during Year 5.

Table 3.1

Unweighted Percentages of Year 5 Leavers, Stayers, Movers, Returners, and Non-Respondents Across Different Types of Teachers

Type of teacher	Leaver	Stayer	Mover	Returner	Missing
Regular full-time teachers (<i>N</i> = 1,763)	15.8	53.9	5.4	1.8	23.0
All others (<i>N</i> = 224)	22.8	46.9	7.6	2.2	20.5
Teaching part-time (<i>N</i> = 178)	20.8	50.6	4.5	1.1	23.0
Teaching full-time (<i>N</i> = 46)	30.4	32.6	19.6	6.5	10.9

Note: Calculations are based on the variable for status in Year 5; not longitudinal career variable.

These differences confirm the decision to separate the regular full-time teachers as their own analytic sample and reserve the other respondents for separate supplemental analyses. The career outcomes among teachers excluded from the main analysis are certainly important to understand, as that would help shed light on the ramifications of

hiring decisions and other policies that affect part-time teaching staff. Thus, even though regular full-time teachers are the primary focus of this study, separate supplementary analyses look at the subsample of 224 other respondents included in BTLS.

Dependent Variables: Career Outcomes of Beginning Teachers

In order to answer the main research questions of the study related to teacher retention and attrition, data from the BTLS survey was used to create a variable (CAREER) that reflected the career trajectory (or path) of each respondent over the five years of the survey program. The variable was coded in seven different categories for each of the respondents who answered all five waves of the survey (including those who answered it retrospectively in one or more years). These are the exact criteria suggested by the BTLS analysts working with NCES for classifying respondents into career paths:

CRITERIA USED TO DEFINE THE DETAILED 5-YEAR CAREER PATH

Teachers who taught all years:

1. In same school: Teachers who taught all years in the same school were classified into Career Path 1.
2. In same district but not same public school: Teachers who taught all years in the same district but not the same public school were classified into Career Path 2.
3. Not in same district: Teachers who taught all years but not in the same district (including teaching in private schools or outside the United States) were classified into Career Path 3.

Teachers who did not teach all years:

4. Returned to teaching (taught in 5th year): Teachers who did not teach all years but went back to teaching. Teachers who taught in the most recent year but did not teach during all years were classified into Career Path 4.
5. Are expected to return: Teachers who did not teach all years but are expected to return to teaching. Teachers who did not teach

during all years and met one or more of the criteria below were classified into Career Path 5.

- On maternity/paternity leave, disability leave, or sabbatical from teaching—these teachers may have a short-term reason for not teaching and are expected to return to teaching.
 - Applied for position of a pre-K–12 teacher during most recent school year—this action indicates a desire to continue teaching.
 - Teachers whose most important reason for leaving the position of a pre-K–12 teacher is listed below and who do not have any of the criteria indicating they are not expected to return to teaching as described for Career Paths 6 and 7. These reasons for leaving are not related to dissatisfaction with teaching as a profession and may indicate that the teacher expects to return to teaching. Because these reasons alone may not be sufficient to indicate expectation to return to teaching, if factors defining Career Paths 6 or 7 exist, the teacher is classified into one of those paths.
 - Left teaching position involuntarily/contract not renewed.¹
 - Changed residence or wanted job more convenient to home.
 - Was pregnant or needed more time to raise children.²
 - Was being involuntarily transferred and did not want the offered assignment.
 - Was concerned about job security at last year’s school.
 - Decided to take courses to improve career opportunities within the field of education.
6. Are not expected to return: Teachers who did not teach all years and are not expected to return to teaching. Teachers were classified into Career Path 6 if they (1) did not teach all years; (2) were not assigned to Career Path 4; (3) were not assigned to Career Path 5 based on one of the first two criteria listed for path 5; and (4) met one or more of the criteria below.
- Did not apply for position of a pre-K–12 teacher and met one of the following criteria:³
 - Gave one of the following reasons for not applying:
 - “I was not interested in continuing a career in pre-K–12 teaching.”
 - “I wanted a position outside the classroom in an elementary or secondary school.”
 - “I wanted to pursue an occupation outside elementary and secondary schools.”
 - Or would not ever consider returning to position of a pre-K–12 teacher.
 - Current main occupational status is retired.

- Current main occupation is one of the positions listed below. Teachers who become assistant principals, principals, or school district administrators may be considered to have obtained a higher position in education. Teachers who become librarians or school counselors/psychologists have made a decision to go into a different field of education that often requires additional education in that specialty. These positions include the following:
Principal/school head/dean,
Assistant principal,
School district administrator,
Librarian, and
Counselor or school psychologist.
 - The most important reason for leaving the position of a pre-K–12 teacher is one of those listed below.⁴ With the exception of retirement, these reasons indicate the teacher wants a position outside of teaching or is dissatisfied with teaching.
The teacher decided it was time to retire.
The teacher decided to take courses to improve career opportunities outside the field of education.
The teacher was dissatisfied with teaching as a career/dissatisfied with teaching.
The teacher decided to pursue position other than pre-K–12 teacher/wanted to pursue another career.
7. Cannot determine if returning: Teachers who did not teach all years for whom it cannot be determined if they will return. Teachers who did not teach all years and did not meet the criteria for Career Path 4, 5, or 6 were classified into Career Path 7.

¹ For waves 2 and 3, former teachers were asked ‘Did you leave teaching because your contract was not renewed?’ In waves 4 and 5, teachers were asked ‘Did you leave your pre-K–12 teaching position involuntarily (e.g., contract not renewed, laid off, school closed or merged)?’

² In waves 4 and 5, respondents were asked about ‘other personal life reasons (e.g., health, pregnancy/childcare, caring for family).’

³ In wave 2, respondents who did not apply for a teaching position were asked to indicate which factors influenced their decision not to apply. In waves 3, 4, and 5, respondents who did not apply were asked whether they would ever consider returning to the position of a pre-K–12 teacher.

⁴ In the third, fourth, and fifth waves of data collection, sample members who did not respond during the previous wave were asked selected items about the previous wave. These respondents are referred to as retrospective respondents. Retrospective respondents were asked a shorter list of questions to determine reasons for leaving pre-K–12 teaching, so only the last two reasons apply to these respondents.

NOTE: All BTLs teachers were teaching in public schools during wave 1. (Raue & Gray, 2015, pp. 4–5)

A variable named CAREER was generated using these definitions, the list of variables used to code the career path from (Raue & Gray, 2015, p. 34) and adapted SAS code for generating a career path variable from (Gray & Brauen, 2013, pp. B6–B8). The variable was coded in seven categories, corresponding to the seven career paths. Upon coding, the distribution of career paths was compared to the distribution of “approximately 1,440 teachers” analyzed by Raue and Gray (2015) to verify the coding was correct. The results were nearly identical and the small differences are likely attributed to the difference of sample by two respondents (the analytic sample for this analysis excludes respondents deceased by Year 5), rounding, or slightly different software algorithms for replicate weights.

Table 3.2 reports the results, using all 1,438 teachers who responded in all five years (sometimes retrospectively). The weighted numbers and percentages are calculated using the Year 5 retrospective longitudinal analysis weight, and the 88 retrospective longitudinal replicate weights. It shows that about half the teachers stayed in the same school and close to two-thirds stayed in the same district.

Table 3.2

Unweighted and Weighted Distribution of Career Paths of Five-Year Respondents to BTLS in Full Sample

Career path	Unweighted number of BTLS respondents	Weighted number of population teachers	Weighted %
1. Taught all years in same school	688	74,788	48.1
2. Taught all years in same district	126	20,382	13.1
3. Taught all years (different districts)	243	24,757	15.9
4. Left teaching but returned	79	9,359	6.0
5. Left teaching but expected to return	140	10,717	6.9
6. Left teaching, not expected to return	103	8,412	5.4
7. Left teaching and cannot predict path	59	7,214	4.6
Total	1,438	155,630	100.0

Table 3.3 shows the distribution of the variable in the analytic sample. Of the 1,763 full-time respondent teachers in it, only 1,269 had provided responses to all five waves of the BTLS.

Table 3.3

Weighted Distribution of Five-Year Respondents to BTLS in the Analytic Sample

Career path	Unweighted number of BTLS respondents	Weighted number of population teachers	Weighted %
1. Taught all years in same school	634	65,176	50.9
2. Taught all years in same district	103	15,516	12.1
3. Taught all years (different districts)	213	20,487	16.0
4. Left teaching but returned	63	5,909	4.6
5. Left teaching but expected to return	119	8,321	6.5
6. Left teaching, not expected to return	87	6,927	5.4
7. Left teaching and cannot predict path	50	5,660	4.4
Total	1,269	127,997	100.0

Note. Percentages do not add up to exactly 100 due to rounding in STATA.

In analysis, the CAREER variable can be used as a multinomial categorical variable, or can be separated into a series of binary variables to designate “Stayer,” “Mover,” “Leaver,” or “Returner” status. However, since CAREER is only coded for teachers who responded to BTLS in all years, this leaves out a portion of the analytic sample excluded from models where CAREER or its derivatives are used as the outcome variable. Thus, additional separate variables—called “Leaver” and “Mover”—were created to include respondents who did not complete all waves of the BTLS, but for whom there is a record of either moving into different schools or districts, or leaving

teaching during the years in which they were respondents. Table 3.4 shows the distribution of the two variables in the analytic sample.

Table 3.4

Weighted Distribution of Career Outcomes of Five-Year Respondents to BTLS in the Analytic Sample

Career path	Unweighted number of BTLS respondents	Weighted number of population teachers	Weighted %
Movers			
Moved at least once	491	40,154	28.4
Never moved or unable to determine	880	101,154	71.6
Total	1,763	141,313	100.0
Leavers			
Left at least once	412	28,032	19.8
Never left or unable to determine	1,351	113,281	80.2
Total	1,763	141,313	100.0

Note. Because the weights used to generate the weighted number of population teachers and the weighted percent are the fifth-year retrospective longitudinal replicate and analysis weights and those in the categories “not able to determine mover/leaver” status are non-respondents in those waves, they are excluded from the distribution.

Table 3.5 shows that the two additional binary variables, “Leaver” and “Mover,” capture respondents from multiple career paths, and additionally capture 93 teachers who left the profession and 102 teachers who moved to a different school at least once during

the five years of the survey. These respondents did not complete all years of BTLS, so a career path cannot be computed for them, but their career outcomes still present valuable information. It is important to note that when using the binary variables “Leaver” and “Mover” as outcome variables, the Year 5 retrospective longitudinal replicate and analysis weight are no longer appropriate, since these variables include teachers that were non-responders in some years. Thus, the original Year 1 replicate and analysis weights will be used.

Table 3.5

Unweighted Distribution of Final Career Outcomes for Leavers and Movers in the Analytic Sample

Final career outcome	Leaver	Mover
1. Taught all five years in same school	--	--
2. Taught all five years in same district	--	103
3. Taught all five years in different districts	--	213
4. Left teaching but returned	63	17
5. Left teaching but expected to return	119	28
6. Left teaching and not expected to return	87	9
7. Left teaching and cannot predict path	50	19
8. Cannot determine career path due to non-response	93	102
Total	412	491

Note. $N = 1,763$.

Table 3.6 provides further detail on when teachers in the analytic sample left teaching. As it shows, the largest number of leavers (139 teachers) was observed in the second year of the survey, which means that teachers left after only one year of practice. The number of leavers is lower, and is about the same in Years 3 and 4 of the BTLS (97 and 94 teachers, respectively), and even lower in Year 5 (67 teachers). In a few individual cases, teachers left, returned to teaching, but then left again by the end of the survey program.

Table 3.6

Unweighted Distribution of Leavers by Year of Leaving

Year of leaving teaching	Unweighted number of BTLS respondents
Left in Year 2	139
Left in Year 3	97
Left in Year 4	94
Left in Year 5	67
Left in Years 2 and 4	6 ^a
Left in Years 2 and 5	5 ^b
Left in Years 3 and 5	4
Total	412

Note. $N = 1,1763$. Respondents that left the profession twice either returned and taught during the in-between years, or were non-respondents.

^aOne individual was a non-respondent in Year 3, the remaining five respondents returned to teaching in that year; all left again in Year 4; ^bAll five individuals returned to teaching in Year 3, one was a non-respondent in Year 4 and the remaining four were stayers; all left again in Year 5.

Demographic Characteristics of Teachers in Analytic Sample

Table 3.7 shows some of the characteristics of 1,763 beginning teachers in the analytic sample, as reported in the first year of the BTLS survey program. All of the teachers in the BTLS sample began teaching in the calendar year 2007 or 2008; 1,761 of the teachers were in their first year of teaching and only two reported having two years of teaching experience (these appears to be either reporting errors or the respondents began teaching in the spring of 2007, as both respondents reported starting to teach in 2007).

Over two-thirds of the teachers (67.4%) were women and a vast majority (89.6%) were White. The highest proportions of minority race/ethnicities were Black or African-American teachers (7.5%) and Hispanic teachers (6.4%). Not surprisingly, most beginning teachers held bachelor's degrees (78.1%) and only less than one-fifth of them had post-baccalaureate education: 17.8% held master's degrees, 1.1% held doctorates or professional degrees, and a small number reported holding the degree of educational specialist or an advanced graduate certificate (0.9%). Only 2.1% of all teachers had associate's degrees.

There was variety in terms of the main field of the teachers' assignments. About one-fifth (21.4%) were Early Childhood or General Elementary teachers. Among the rest, the largest proportion taught English and Language Arts (14.7%). Teachers in the three fields of Special Education (10.2%), Natural Sciences (10%), and Social Sciences (9.2%) comprised about one-third of all teachers. Vocational, Career, or Technical Education teachers comprised of 8.8% of the sample. Less than 100 teachers per field represented certain subjects: Arts and Music (4.4%), Health or Physical Education (4%), Foreign

Languages (3.2%), and ESL or Bilingual Education (0.6%). 48 teachers (2.7%) reported a different field.

In terms of the instructional levels, about half of the teachers (45.8%) taught high school students, one quarter taught at the primary level (25.2%), 17.3% taught middle school students, and only 11.7% of teachers taught students at more than one instructional level.

One question in the survey asked teachers whether they entered teaching through an alternative certification program, described by the BTLS survey developers as one “that was designed to expedite the transition of non-teachers to a teaching career, for example, a state, district, or university alternative certification program” (BTLS Codebook & Layout, p. 1576). Twenty-eight percent, or 494 of the teachers in the analytic sample, reported entering teaching in this manner; the remaining 72% did not. Finally, a little more than half of the regular full-time teachers (57.5%) were union members, 41.2% were not, and 1.2% did not provide an answer to this question. Most teachers taught students at the high school level.

Table 3.7

Unweighted Descriptive Statistics of Demographic Characteristics of Beginning Teachers Included in Analytic Sample

Characteristic	Frequency	Valid %
Gender		
Female	1188	67.4
Male	575	32.6
Race/ethnicity		
White	1580	89.6
Black or African American	133	7.5
Hispanic	112	6.4
Asian	41	2.3
American Indian or Alaska Native	38	2.2
Native Hawaiian or Other Pacific Islander	10	0.6
Highest degree		
Associate's degree	37	2.1
Bachelor's degree	1377	78.1
Master's degree	314	17.8
Education specialist or certificate of advanced graduate studies	15	0.9
Doctorate or professional degree	20	1.1
General field		
Early Childhood or General Elementary	378	21.4

Table 3.7 (continued)

Characteristic	Frequency	Valid %
English and Language Arts	260	14.7
Mathematics	189	10.7
Special Education	180	10.2
Natural Sciences	176	10.0
Social Sciences	163	9.2
Vocational, Career, or Technical Education	155	8.8
Arts and Music	77	4.4
Health or Physical Education	70	4.0
Foreign Languages	57	3.2
All others	48	2.7
ESL/Bilingual Education	10	0.6
Level of students		
Primary	444	25.2
Middle	305	17.3
High	807	45.8
Combined	207	11.7
Alternative certification Y1		
Yes	494	28.0
No	1269	72.0

Table 3.7 (continued)

Characteristic	Frequency	Valid %
Alternative certification ^a		
Yes	527	29.9
No	1236	70.1
Highly qualified teacher		
Yes	1153	67.0
No	567	33.0
Union member		
Yes	1013	57.5
No	726	41.2
Missing	24	1.4

Note. $N = 1,763$.

^aThe reported numbers combine information from two questions that asked teachers about alternative certification numbers, one in Year 1 (W1T0153) and one in Year 2 (W2ALTYN). There were some small discrepancies between the teacher answers on these questions, but this variable captures everyone who answered “Yes” in either wave, regardless of their answer in the other wave.

Table 3.8 shows a more detailed breakdown of the grades in which the teachers from the analytic sample taught. The high school grades were more heavily represented than the middle and the elementary school grades.

Table 3.8

Unweighted Descriptive Statistics for Grades Taught by Teachers in the Year 1 Analytic Sample

Grade of students taught	Frequency	Valid %
Pre-kindergarten	23	1.3
Kindergarten	133	7.5
1st	174	9.9
2nd	150	8.5
3rd	157	8.9
4th	163	9.2
5th	178	10.1
6th	210	11.9
7th	327	18.5
8th	345	19.6
9th	756	42.9
10th	818	46.4
11th	821	46.6
12th	759	43.1
Ungraded	84	4.8

Note. $N = 1,763$. One teacher can teach more than one grade, hence the total number of teachers across all grades exceeds 1,763.

Teachers Excluded from Analysis

As mentioned previously, the first wave of the survey program included 1,992 teachers, but 224 of them were not regular full-time teachers. These individuals were selected out of the main analytic sample because prior research, as well as preliminary analysis of the BTLS dataset, indicated that the rates of leaving, moving, and re-entering are different for them in comparison to regular full-time teachers. However, they still represent an interesting segment of teaching professionals, so a brief look into their characteristics is warranted.

Table 3.9 shows the main assignment of these respondents. Half of them were regular part-time teachers, about one-fifth (49 teachers or 21.9%) were long-term substitutes, and another one-fifth (48 teachers or 21.4%) were itinerant teachers. A few respondents held other staff or leadership positions, but participated in the survey because they taught at least one regularly scheduled class.

Table 3.9

Unweighted Distribution of Main Assignment of Teachers Excluded from Analysis

Main assignment	Frequency	Valid %
Regular part-time teacher	112	50.0
Long-term substitute	49	21.9
Itinerant teacher	48	21.4
Other professional staff (e.g., counselor, curriculum coordinator, social worker)	12	5.4

Table 3.9 (continued)

Main assignment	Frequency	Valid %
Administrator (e.g., principal, assistant principal, director, school head)	1	0.4
Library media specialist or Librarian	1	0.4
Support staff (e.g., secretary)	1	0.4

Note. $N = 224$.

Unsurprisingly, only about one-fifth (46 teachers or 20.5%) of these respondents taught full-time and the rest held less than full-time positions. Table 3.10 shows the distribution of teachers in terms of how much time they spent teaching.

Table 3.10

Unweighted Distribution of Status of Teachers Excluded from Analysis

Time spent teaching	Frequency	Valid %
Full-time	46	20.5
3/4 time or more, but less than full-time	29	12.9
1/2 time or more, but less than 3/4 time	88	39.3
1/4 time or more, but less than 1/2 time	39	17.4
Less than 1/4 time	22	9.8

Note. $N = 224$.

Another thing to note about the 224 teachers who did not fit the criteria for the main analytic sample selection is that the subjects they taught differed, on the whole, from the regular full-time teachers. For example, about one-fifth of them (46 teachers or 20.5%) taught Arts and Music; in contrast, only 4.4% of the main analytic sample taught these subjects. The most represented subjects for regular full-time teachers were Early Childhood Education, and English and Language Arts, accounting for more than one-third of all teachers, whereas only 44 of the 224 excluded teachers (less than one-fifth) taught these two subjects.

Table 3.11

Unweighted Distribution of General Field of Main Teaching Assignment of Teachers Excluded from Analysis

Field	Frequency	Valid %
Arts and Music	46	20.5
Vocational, Career, or Technical Education	24	10.7
Special Education	23	10.3
English and Language Arts	22	9.8
Health or Physical Education	21	9.4
Early Childhood or General Elementary	20	8.9
Foreign Languages	20	8.9
Social Sciences	15	6.7

Table 3.11 (continued)

Field	Frequency	Valid %
Natural Sciences	12	5.4
Mathematics	10	4.5
ESL or Bilingual Education	7	3.1

Note. $N = 224$.

While these teachers are not included in the analysis for their study, this sub-sample could offer an interesting opportunity to better understand the patterns that exist in the part-time teacher labor force and might have important and interesting implications for research and policy.

Opinions, Perceptions, and Attitudes of Teachers in the Analytic Sample

The BTLS contains a multitude of variables that are used as independent variables that help explain the career trajectories of new teachers. They cover a wide variety of relevant factors, such as teachers' attitudes toward teaching, perception of their professional environment and the support they receive, their career intentions, and their motivation. This section reports the summary statistics of some of these survey items that are used in the analysis. All the statistics are computed from the unweighted sample.

In Year 1, all teachers were asked to report how much control they felt they possessed as a professional; the question was formulated as, "How much actual control do you have IN YOUR CLASSROOM at this school over the following areas of your

planning and teaching?” and there were four response options provided: 1 = No control, 2 = Minor control, 3 = Moderate control, and 4 = A great deal of control.

Table 3.12 provides details about the teachers’ responses; the variables are treated as continuous on a scale of 1 to 4, and the different categories of teacher control are listed from the lowest to highest average. It shows that on average, teachers reported that they had the least amount of control in the area of selecting textbooks and other instructional materials (the average response was 2.38, falling between minor and moderate control). On the other hand, in their first year as professionals, teachers felt most in control of the amount of homework for their students (the average response was 3.72, close to the maximum of 4).

Table 3.12

Degree of Perceived Control in Teaching Practice During Year 1

Area of control	Valid responses	Mean	SD
Selecting textbooks and other instructional materials	1,747	2.38	1.07
Selecting content, topics, and skills to be taught	1,750	2.75	1.05
Disciplining students	1,751	3.43	0.67
Evaluating and grading students	1,752	3.63	0.62
Selecting teaching techniques	1,750	3.68	0.58
Determining the amount of homework to be assigned	1,750	3.72	0.61

Note. $N = 1,763$.

Another survey question in Year 1 asked teachers to rate their level of agreement with statements about school climate; the question wording was, “To what extent do you agree or disagree with each of the following statements?” and the response scale was 1 = Strongly Agree, 2 = Somewhat Agree, 3 = Somewhat Disagree, and 4 = Strongly Disagree. Several statements about negative factors (noted in Table 3.13) were recoded, so the scale became 1 = Strongly Disagree, 2 = Somewhat Disagree, 3 = Somewhat Agree, and 4 = Strongly Agree. As Table 3.13 shows, teachers overall agreed the least with statements about receiving support from school administrators and principals, and agreed strongly with statements about the challenges brought on by student tardiness, misbehavior, and about the decreased sense of job security brought on by teacher evaluations based on student performance.

Table 3.13

Degree of Agreement with Statements About Various Aspects of School Climate During Year 1

Statement about school climate	Valid responses	Mean	<i>SD</i>
The school administration’s behavior toward the staff is supportive and encouraging	1,746	1.44	0.71
My principal enforces school rules for student conduct and backs me up when I need it	1,746	1.47	0.73
I am generally satisfied with being a teacher at this school	1,747	1.49	0.67
The principal knows what kind of school he/she wants and has communicated it to the staff	1,749	1.50	0.72

Table 3.13 (continued)

Statement about school climate	Valid responses	Mean	<i>SD</i>
There is a great deal of cooperative effort among the staff members	1,750	1.73	0.76
In this school, staff members are recognized for a job well done	1,748	1.77	0.77
Most of my colleagues share my beliefs and values about what the central mission of the school should be	1,743	1.80	0.71
Necessary materials such as textbooks, supplies, and copy machines are available as needed by the staff	1,750	1.84	0.90
Rules for student behavior are consistently enforced by teachers in this school, even for students who are not in their classes	1,747	2.02	0.89
I am given the support I need to teach students with special needs	1,738	2.18	0.88
I receive a great deal of support from parents for the work I do	1,750	2.39	0.87
I am satisfied with my teaching salary	1,750	2.42	0.97
State or district content standards have had a positive influence on my satisfaction with teaching	1,737	2.43	0.77
Routine duties and paperwork interfere with my job of teaching*	1,747	2.59	0.92
The amount of student tardiness and class cutting in this school interferes with my teaching*	1,747	2.34	1.03

Table 3.13 (continued)

Statement about school climate	Valid responses	Mean	SD
The level of student misbehavior in this school (such as noise, horseplay or fighting in the halls, cafeteria, or student lounge) interferes with my teaching*	1,750	2.30	1.01
I worry about the security of my job because of the performance of my students on state and/or local tests*	1,746	2.20	0.92

Note. $N = 1,763$.

*Responses were recoded to a scale reversed from the original, since these statements express agreement with a negative aspect of school climate, unlike the rest.

Teachers were also asked to rate the extent to which different negative influences on teaching and learning were a problem at the school where they began their teaching career; the question was worded as, “To what extent is each of the following a problem in this school?” and the response options were 1 = Serious problem, 2 = Moderate problem, 3 = Minor problem, and 4 = Not a problem. The responses of teachers in the analytic sample are reported in Table 3.14, which shows that the most prevalent problems that teachers reported were unprepared students and poverty, and the least problematic areas were student dropouts and teacher absence.

Table 3.14

Reported Extent of School Problems

School problem	Valid responses	Mean	SD
Unprepared students	1748	2.14	0.96
Poverty	1746	2.31	1.00
Parent involvement	1746	2.36	0.97
Students absent	1745	2.39	0.91
Student apathy	1721	2.51	1.06
Student tardiness	1747	2.59	0.91
Student health	1744	3.04	0.80
Class cutting	1744	3.10	0.96
Student drop outs	1741	3.19	0.92
Teachers absent	1744	3.56	0.65

Note. $N = 1,763$.

Another important group of independent variables is a set of questions asked in the Year 1 survey that captured the teachers' levels of satisfaction with their school and job, their levels of motivation for teaching, and their desire for leaving or changing their profession. In a sense, these variables can be thought of as attempting to measure the degree of burnout teachers felt by the end of their first year of teaching.

The teachers were presented with a set of seven statements and asked, "To what extent do you agree or disagree with each of the following statements?"; the response options were 1 = Strongly Agree, 2 = Somewhat Agree, 3 = Somewhat Disagree, and 4 = Strongly Disagree (the scale was reversed for two of the items, which were worded

positively, unlike the rest; thus, higher values on these two items show stronger agreement instead of stronger disagreement). Table 3.15 shows the descriptive statistics for these items. Somewhat surprisingly, the average levels of disagreement with statements about burnout and fatigue at the end of Year 1 were quite high, with averages above 3.00 on those items. This indicated that, in general, teachers did not feel too tired of their job yet.

Table 3.15

Degree of Agreement with Statements About Satisfaction, Motivation, and Plans

Statement	Valid responses	Mean	SD
I think about transferring to another school	1747	3.06	1.00
I like the way things are run at this school*	1748	3.12	0.84
The teachers at this school like being here; I would describe us as a satisfied group*	1746	3.14	0.79
If I could get a higher paying job I'd leave teaching as soon as possible	1746	3.26	0.86
I don't seem to have as much enthusiasm now as I did when I began teaching	1740	3.29	0.91
The stress and disappointments involved in teaching at this school aren't really worth it	1735	3.32	0.80
I think about staying home from school because I'm just too tired to go	1745	3.38	0.86

Note. $N = 1,763$.

*Responses were recoded to a reverse scale, since these statements express agreement with a positive statement, unlike the rest. Thus, higher values for these items show stronger agreement.

Preparation, Support and Professional Development of Teachers

In Year 1 of the BTLS, respondents were asked to self-assess the degree to which they were prepared to tackle different job responsibilities in their first year of teaching. They also reported on a variety of support resources and professional development opportunities that were available to them through their schools. This section briefly presents these responses, which are used as independent variables in the analysis.

Teachers were asked, “In your FIRST year of teaching, how well prepared were you to - Handle a range of classroom management or discipline situations?” and the response options were 1 = Not at all prepared, 2 = Somewhat prepared, 3 = Well prepared, and 4 = Very well prepared. As Table 3.16 shows, teachers generally felt best prepared to teach their subject matter (the mean for that item was 3.23) and least prepared to handle a variety of classroom management situation (the mean for that item was 2.78).

Teachers were also asked a series of question about whether or not they were provided with seven different kinds of support during their first year of teaching. Table 3.17 shows the distribution of responses. The availability of types of support varied widely. While the vast majority of teachers (84.7%) reported having regular supportive communication with the administrators and leadership at their school, less than one-fifth of them (14.1%) had a reduced schedule to help with the adjustment to professional teaching.

Table 3.16

Self-Reported Preparation for Teaching Practice

Prepared to ...	Valid responses	Mean	SD
Handle a range of classroom management or discipline situations?	1,707	2.78	0.78
Select and adapt curriculum and instructional materials	1,702	2.83	0.78
Assess students	1,707	2.95	0.73
Use a variety of instructional methods	1,709	3.00	0.76
Use computers in classroom instruction	1,705	3.03	0.87
Teach your subject matter	1,708	3.23	0.73

Note. $N = 1,763$.

Table 3.17

Available Support for New Teachers

Type of support	Frequency	%
Regular supportive communication with principal, other administrators		
No	218	12.4
Yes	1,494	84.7
Missing	51	2.9
Ongoing guidance or feedback from a master or mentor teacher		
No	314	17.8
Yes	1,398	79.3
Missing	51	2.9

Table 3.17 (continued)

Type of support	Frequency	%
Seminars or classes for beginning teachers		
No	468	26.6
Yes	1,245	70.6
Missing	50	2.8
Teacher induction program		
No	450	25.5
Yes	1,235	70.1
Missing	78	4.4
Common planning time with teachers in subject		
No	817	46.3
Yes	896	50.8
Missing	50	2.8
Extra classroom assistance (e.g., teacher aides)		
No	1,195	67.8
Yes	518	29.4
Missing	50	2.8
Reduced teaching schedule or number of preparations		
No	1,465	83.1
Yes	248	14.1
Missing	50	2.8

Note. $N = 1,763$.

Based on these responses, an additive variable (*support_total*) that reflects the total number of different types of support that teachers reported was created, ranging from 0 to 7. Table 3.18 shows the distribution of that variable. Very few teachers reported that they either had none of the types of support listed or that they had all seven (less than 3% in each category). Most commonly, teachers reported having four (23.9%) or five (26.8%) different types of support.

Table 3.18

Self-Reported Preparation for Teaching Practice in Year 1

Number of supports	Frequency	%
None	29	1.6
One	89	5.1
Two	139	7.9
Three	246	14.0
Four	422	23.9
Five	472	26.8
Six	235	13.3
Seven	51	2.9
Missing data ^a	80	4.5

Note. $N = 1,763$.

^aAn observation was coded as missing, if data was missing about at least one of the different types of support.

More questions about the role of mentors were asked in Year 2, when respondents were retrospectively asked to report the frequency of different activities, such as observing and work on teaching subject matter or grade level that their mentor performed during the 2007–2008 school year. In Year 3, teachers were again asked to answer questions about mentoring during that current school year. In Years 3, 4, and 5, survey developers asked teachers to rate the levels of support they received from their principal for different aspects of teaching, such as classroom management issues, professional development, and respect. These items are also included in the analysis of support for beginning teachers.

In Years 2, 3, 4, and 5, the BTLS included different questions depending on the career status of teachers. For those who left, moved, or returned, targeted questions were asked to determine the motivation behind those decisions. Some of these items were used in the construction of the CAREER variable (as explained in Figure 3.1).

Characteristics of Schools in the Analytic Sample

In addition to individual demographic information about the respondents, BTLS also provides information about the schools where they worked. In Year 1, the 1,763 teachers in the analytic sample taught at 1,549 schools, because the sample included more than one teacher from some schools. Four of the schools hosted four teacher respondents each, 16 schools had three respondents, 170 schools had two respondents, and the remaining 1,359 schools had one respondent each.

Table 3.19 shows the characteristics of the represented schools in the analytic sample during Year 1. In terms of instructional levels, the breakdown across categories corresponds closely to the grade levels that teachers reported teaching at, which is presented in Table 3.7. There was a considerable variation in the types of locations of the schools. The largest type of setting was a large suburb (18.8%), about one-fifth of all schools were in cities (combined across large, midsize, and small cities), and just over one-third of them were rural.

A very small proportion of the schools were charter schools: 54 schools (3.5%) were independently run charter schools and 34 schools (2.2%) were charter schools governed by public school districts. Most of the schools were regular program schools and less than 10% had a particular focus. Among the latter, 52 schools (3.4%) were categorized as alternative, 30 schools (1.9%) had a special program emphasis, 27 schools (1.7%) were career, technical, or vocational, and 24 schools (1.5%) were classified as special education.

Table 3.19

Unweighted Descriptive Statistics of School Characteristics in Year 1 of the Analytic Sample

Variable	Frequency	Valid %
School level		
Primary	400	25.8
Middle	195	12.6
High	730	47.1
Combined	224	14.5
Urbanicity		
City, large	162	10.5
City, midsize	68	4.4
City, small	107	6.9
Suburb, large	291	18.8
Suburb, midsize	33	2.1
Suburb, small	28	1.8
Town, fringe	61	3.9
Town, distant	105	6.8
Town, remote	117	7.6
Rural, fringe	215	13.9
Rural, distant	187	12.1
Rural, remote	175	11.3

Table 3.19 (continued)

Variable	Frequency	Valid %
Charter status		
Independent charter school	54	3.5
Charter school governed by public school district	34	2.2
Not a charter school	1461	94.3
Program type		
Regular	1416	91.4
Alternative	52	3.4
Special program emphasis	30	1.9
Career/technical/vocational education	27	1.7
Special education	24	1.5

Note. $N = 1,549$.

The BTLS program uses a nation-wide stratified probability proportionate to size (PPS) sample in order to ensure adequate representations of all regions and states at the different instructional levels. Table 3.20 shows the numbers of schools in the analytic sample by state.

Table 3.20

Unweighted Number of Schools by State in Year 1 of the Analytic Sample

State	Frequency	Valid %	State	Frequency	Valid %
Arizona	73	4.7	South Dakota	28	1.8
Oklahoma	65	4.2	Iowa	27	1.7
Texas	63	4.1	Kentucky	27	1.7
Mississippi	52	3.4	Maryland	27	1.7
Alabama	47	3.0	North Dakota	27	1.7
Missouri	46	3.0	Alaska	25	1.6
California	45	2.9	Wisconsin	25	1.6
Florida	43	2.8	Maine	24	1.5
North Carolina	42	2.7	Pennsylvania	24	1.5
South Carolina	40	2.6	Idaho	23	1.5
Georgia	37	2.4	Washington	23	1.5
Montana	37	2.4	New Jersey	22	1.4
Utah	36	2.3	West Virginia	22	1.4
Arkansas	35	2.3	Connecticut	20	1.3
Illinois	35	2.3	New Hampshire	20	1.3
Tennessee	35	2.3	Virginia	20	1.3
Minnesota	33	2.1	Hawaii	19	1.2
Ohio	33	2.1	Massachusetts	19	1.2
Kansas	31	2.0	New York	18	1.2

Table 3.20 (continued)

State	Frequency	Valid %	State	Frequency	Valid %
Indiana	30	1.9	Delaware	16	1.0
Nebraska	30	1.9	Michigan	16	1.0
Nevada	30	1.9	Wyoming	15	1.0
Louisiana	29	1.9	Washington DC	14	0.9
New Mexico	29	1.9	Vermont	12	0.8
Colorado	28	1.8	Rhode Island	4	0.3
Oregon	28	1.8			

Note. $N = 1,549$.

There were several continuous variables recorded in the BTLS for each school, presented in Table 3.21. As the table shows, there is a large variation in the number of students and full-time equivalent (FTE) teachers that these schools contain, as well as in the percentage of minority teachers and students. The only variable measuring socio-economic status of the student body in each school in the BTLS is the percentage of enrolled students approved for the National School Lunch Program (NSLP) at school; it is available only for schools participating in the NSLP program, which was 1,500 of the 1,549 schools in Year 1.

Table 3.21

Descriptive Statistics for Schools in Year 1 of the Analytic Sample

Variable	Mean	SD	Min.	Max.
Total enrollment in the district	30488.04	98952.46	12	1100000
Total enrollment in the school	788.73	634.12	4	4509
Number of FTE teachers	51.31	36.38	1	284.51
Number of students per FTE teacher	14.75	5.06	2.00	55.56
Percentage minority teachers	15.56	22.76	0	100
Percentage minority students	43.30	35.30	0	100
Percentage of enrolled students approved for the NSLP at school ^a	45.61	27.53	0	100

Note. $N = 1,549$.

^a $N = 1,500$ because some schools in the sample did not participate in the NSLP.

Linking Schools to External Data

In BTLS, each school is identified using a unique number—the school’s NCES ID, which is a 12-digit number consisting of the school’s district ID number (the first seven digits), followed by the school’s ID number (the last five digits).

This enabled the linking of the schools in each wave of the study with information about them from the NCES from the Public Elementary/Secondary School Universe Data files for each school year covered by BTLS from 2007–2008 through 2011–2012. The files include basic descriptive statistics about each school and its students, such as address, and number of students by race/ethnicity, gender, and grade. They were downloaded electronically from <https://nces.ed.gov/ccd/pubschuniv.asp>.

Using these files and the common NCES ID, information about each school’s physical address and geographic coordinates (longitude and latitude) was obtained and merged with the BTLS. Over the course of five years, the teachers in the complete BTLS sample (excluding the three deceased by the end of the survey program) taught in 2,214 unique schools with valid NCES IDs. Some of the school IDs could not be matched with NCES data files other than the BTLS; additionally, some of these schools contained more than one teacher respondent. This reduced the overall and the analytic samples of teachers that could be matched with school data. The invalid data are described in Table 3.22.

Table 3.22

Unweighted Numbers of Respondents with Missing and Invalid NCES IDs

Survey year	Teachers with invalid school NCES IDs		Teachers with missing school NCES IDs	
	Full sample	Analytic sample	Full sample	Analytic sample
Year 1	18	14		
Year 2	29	20	19	17
Year 3	31	24	23	19
Year 4	23	33	18	27
Year 5	21	16	62	55
Total	122	107	122	118

Note. $N = 1,990$ for the full sample and $N = 1,763$ for the analytic sample.

Next, a database of the 2,214 schools' NCES IDs, addresses, and geographic coordinates was uploaded and processed through the geocoding services website hosted by Texas A&M University. Specifically, the *Batch Census Intersection* service was used at the website, <http://geoservices.tamu.edu/Services/CensusIntersection>. This process added 2000 and 2010 U.S. Census tract numbers to each address, based on the latitude and longitude from the NCES school files. Tract numbers were then merged with the BTLS. Thus, each respondent-year unit that had a valid NCES School ID was matched with a U.S. Census Tract.

Neighborhood Variables

In order to obtain information about the schools' neighborhoods, data from the U.S. Census American Community Surveys (ACS) 2012 five-year estimates was downloaded in table format from Social Explorer, using a Temple University license. The American Community Survey is an annual nationwide survey that collects population and housing data from a random sample of U.S. addresses. As explained by the program administrators, about one out of 480 addresses gets selected, no more than once every five years (United States Census Bureau, 2013, p. 8).

The choice to use five-year estimates as opposed to Census 2000, Census 2010, or any single-year ACS survey was motivated by several key features of this dataset. Firstly, when compared to one-year or three-year estimates, five-year estimates are most reliable and include the largest sample size. Additionally, they include data for all areas, as opposed to one-year estimates that only contain information about areas with populations

over 65,000 people and three-year estimates that include areas with populations over 20,000 people. On the other hand, the five-year estimate dataset, can be used for analysis on the Census tract level. Thus, the developers recommend that five-year estimates be used when precision is more important than how current the data are and when very small areas are analyzed.

The recommendations for which estimates to use based on the sample size are online at <https://www.census.gov/programs-surveys/acs/guidance/estimates.html>. Given that BTLS spans the 2008–2009 to 2011–2012 school years, the 2012 ACS five-year estimates were used, which includes the 2008, 2009, 2010, 2011, and 2012 surveys. Table 3.23 shows the descriptive statistics for selected variables from the ACS for the Census tracts of the schools in the analytic sample in Year 1. This included 1,501 tracts, since some tracts had more than one school in them and some schools had more than one teacher. There is a wide range of tracts with respect to all the different characteristics listed in Table 3.23; of special interest are the variables measuring income inequality (the Gini index) and poverty, all of which exhibit large standard deviations and ranges.

Table 3.23

Unweighted Descriptive Statistics for Census Tracts of Schools in Year 1 Analytic Sample

Variable	Mean	SD	Min.	Max.
Total population ^a	4769.4	2141.8	0.0	18947.0
Gender (% of total)				
Male	49.3	3.9	30.8	91.1
Female	50.7	3.9	8.9	69.2
Race (% of total)				
White	76.0	24.3	0.0	100.0
Black or African American	12.3	21.0	0.0	99.8
American Indian and Alaskan Native	2.8	11.3	0.0	98.9
Asian	2.5	5.9	0.0	77.4
Native Hawaiian and Other Pacific	0.3	1.5	0.0	31.4
Islander				
Some other race alone	3.3	6.7	0.0	60.9
Two or more races	2.8	3.6	0.0	44.6
Hispanic	12.4	19.1	0.0	99.6
Households (% of total)				
Family Households	67.7	11.9	5.6	100.0
Married-couple family households	49.4	14.8	0.0	91.0
Average size	2.6	0.5	1.4	6.0
With earnings	78.1	9.3	28.9	100.0

Table 3.23 (continued)

Variable	Mean	<i>SD</i>	Min.	Max.
No earnings	21.9	9.3	0.0	71.1
Housing units (% of total)				
Occupied	86.9	10.2	18.6	100.0
Vacant	13.1	10.2	0.0	81.4
Housing units (% of occupied)				
Owner occupied	67.4	18.7	0.0	100.0
Renter occupied	32.6	18.7	0.0	100.0
Gini Index of Income Inequality ^b	0.4	0.1	0.3	0.7
Families (% of total)				
Income in 2012 below poverty level	12.8	10.3	0.0	64.2
Income in 2012 at or above poverty level	87.2	10.3	35.8	100.0
Population mobility (% of total)				
Same house as 1 year ago	84.4	8.5	38.6	99.9
Moved within same county	9.3	6.2	0.0	45.8
Moved from different county within same state	3.2	3.3	0.0	47.8
Moved from different state	2.7	3.2	0.0	51.0
Moved from abroad	0.4	1.1	0.0	26.8

Table 3.23 (continued)

Variable	Mean	SD	Min.	Max.
Insurance status (% of total)				
No health insurance	15.5	8.6	0.0	63.6
With health insurance	64.8	16.6	11.3	100.0

Note. $N = 1,500$ (which is less than the number of schools and the number of teachers, because some schools had more than one teacher and some tracts had more than one school in them; one of the tracts had predominantly missing data).

^a*Population total* $N = 1,501$; ^b*Income Inequality* $N = 1,499$.

Finally, the teacher survey data was combined with a composite socio-economic measure available on the Census tract level called the Area Deprivation Index (ADI). The original index included 17 different variables from the 1990 Census and was subsequently updated to include 22 variables from the 2000 U.S. Census (Singh, 2003). A version of the original 1990 index, containing 17 variables, was updated and made publically available by researchers at the University of Wisconsin School of Medicine and Public Health, and the file was downloaded from <https://www.hipxchange.org/ADI>. The following variables are included in a factor-based index:

- Percent of the population aged 25 and older with less than 9 years of education,
- Percent of the population aged 25 and older with at least a high school diploma,
- Percent employed persons aged 16 and older in white-collar occupations,
- Percent of civilian labor force population aged 16 years and older who are unemployed,
- Median family income in U.S. dollars,

- Income disparity,
- Median home value in U.S. dollars,
- Median gross rent in U.S. dollars,
- Median monthly mortgage in U.S. dollars,
- Percent of owner-occupied housing units (home ownership rate),
- Percent of families below federal poverty level,
- Percent of the population below 150% of the federal poverty threshold,
- Percent of single-parent households with children less than 18 years of age,
- Percent of households without a motor vehicle,
- Percent of households without a telephone,
- Percent of occupied housing units without complete plumbing (log), and
- Percent of households with more than 1 person per room (crowding).

Originally developed to enable the relationship between socio-economic factors and health outcomes in communities, the ADI was merged with the teacher and school data in order to serve as a measure of the degree to which school neighborhoods were disadvantaged. The values of ADI in the sample of 1,501 tracts ranging from a minimum of -47.7 to a maximum of 127.2, with a mean of 104.0 and a standard deviation of 13.3.

Analytic Procedures

The combined dataset containing all BTLS variables, select school characteristics from the CCD, and select neighborhood variables from the ACS was analyzed using a variety of techniques for longitudinal survey data, including factor analysis, analysis of

variance, and logistic regression. Given the availability of data on different levels—teachers, schools, and neighborhoods—multilevel models were also considered. Multilevel models, in this instance, would allow for more rigorous estimation of school and neighborhood effects. However, there were not enough level-1 units (teachers) per level-2 (schools) or level-3 (neighborhood) clusters.

Table 3.23 shows how teachers were spread out across schools and neighborhoods for all five years in the analytic sample. In Year 1, the schools with more than two teachers were only 1.3% of all schools with a valid NCED ID and the tracts that contained more than two schools were 1.8% of all. In all subsequent years, those proportions of schools and tracts were less than 0.5% and 1%, respectively.

Table 3.24

Distribution of Teachers Across Schools and Schools Across Census Tracts

Survey year	Percent of schools with ...			Percent of tracts with ...		
	One teacher	Two teachers	More than two teachers	One school	Two schools	More than two schools
Year 1 ^a	88.7	11.0	1.3	85.7	12.5	1.8
Year 2 ^b	92.4	7.3	0.3	90.7	8.6	0.7
Year 3 ^c	93.6	6.0	0.4	91.6	7.8	0.6
Year 4 ^d	95.4	4.3	0.3	94.0	5.5	0.5
Year 5 ^e	96.4	3.2	0.4	95.2	4.3	0.5

^a*N* = 1,763 teachers across 1,549 schools across 1,500 tracts; ^b*N* = 1,445 teachers across 1,337 schools across 1,296 tracts; ^c*N* = 1,379 teachers across 1,291 schools across 1,244 tracts; ^d*N* = 1,201 teachers across 1,144 schools across 1,111 tracts; ^e*N* = 1,022 teachers across 983 schools and 955 tracts.

Clarke and Wheaton (2007) explain that this poses a problem for social scientific research, and traditional rules of thumb have advised that at least 15 to 30 units per group are needed to perform multilevel analysis. This problem has often been counteracted by using clustering techniques, such as merging similar and close neighborhoods together in order to increase the number of individuals per neighborhood. They show that very small group sizes (less than or equal to two units per group) are problematic, and that as the proportion of singleton groups (groups with only one unit at the lower level) increases, bias increases. They conclude that “unbiased and efficient estimates of the fixed-effects and variance components can be obtained with 10 observations per group (even at low ICC values) as long as there are at least 200 groups” and that “singleton groups pose the greatest risk to validity of the variance components” (Clarke & Wheaton, 2007, p. 345). A later study by Clarke (2008) lowered the threshold even further, with the conclusion that “multilevel models can be reliably estimated with an average of only five observations per group” (p. 752), thus showing a higher tolerance of multilevel models for smaller group sizes. Therefore, researchers should not automatically utilize clustering techniques, ordinary-least squares (OLS), or logistic regression. When using OLS instead of multilevel models, Clarke (2008) shows that this increases the risk of Type I errors, even with groups as small as two units.

The dispersion of teachers across schools and schools across Census tracts shown in Table 3.23 demonstrates, however, that the BTLS file combined with school and Census tract data falls far from the criteria shown by both Clarke and Wheaton (2007) and Clarke (2008). Further, clustering techniques would be impractical given the

relatively small sample of level-1 units (teachers), who are intentionally sampled to represent communities across the nation and not in similar settings nearby. Therefore, this study does not make use of multilevel models.

CHAPTER 4

RESULTS

This chapter provides the results from the analysis conducted to answer the main research questions for the study, which are:

1. What are the characteristics of beginning teachers in the United States and how, if at all, do they differ across teachers with different career outcomes?
2. What individual- and school-level factors help explain the career outcomes of beginning teachers, in particular those who stay in the same school for five years and those who leave the profession with no intent to return?
3. Does the socio-geographic location of schools help explain the career outcomes of teachers, and which, if any, socio-geographic factors affect teacher attrition and retention?

Chapter 3 presented a detailed description of the sample of beginning teachers, their schools, and the socio-demographic context of the schools' location and answered the very first part of research question 1. Chapter 4 presents the results of the remainder of the analyses that were conducted, ranging from exploratory data analysis to advanced, non-linear regression models. First, key cross-tabulations between key independent variables and career status (specifically, five-year stayers and leavers who are not expected to return) are presented. Next, the results from factor analysis and the subsequent creation of several indexes that capture aspects of the teachers' perceptions and experiences at the end of Year 1 are shown. Finally, the chapter concludes by

presenting the results of multinomial logit models that regress career outcomes on individual, school, and community characteristics.

In order to allow for reference to the analytical samples that the analysis in this chapter uses, Table 4.1 presents a summary of the different teacher subgroups included in various analytical models. While Chapter 3 presented some information about the complete BTLS sample of teachers including those excluded from the analysis, the focus in Chapter 4 primarily falls on regular full-time teachers, which included 1,763 teachers. If teachers had data recorded for all five years of the study, this allowed for them to be included in the multinomial model; the number of such teachers is 1,269. However, if they had missing career data for one or more years, but at least one recorded transfer or exit from the profession, they were included in binary models of leavers (412 teachers) or movers (491 teachers), and compared to the rest of the full-time teachers who did not have such career events recorded.

Table 4.1

Number of Teachers in Different Samples from the BTLS

Sample	Category of teacher	Number
Full BTLS sample	All teachers included in BTLS*	1,987
	With career data available for five years	1,438
Analytical sample	Full-time teachers	1,763

Table 4.1 (continued)

Sample	Category of teacher	Number
Multinomial logit sample	Full-time teachers with career data available for five years	1,269
Logit “leaver” model sample	Full-time teachers who left at least once	412
Logit “mover” model sample	Full-time teachers who moved at least once: sample for binary logit	491

Differences in Teacher Characteristics by Career Outcomes

In Chapter 3, the demographic characteristics of beginning teachers and their schools were presented for the entire analytic sample. Next, some more detailed analysis presents whether there were significant observable differences between those teachers who stayed in the same school for five years (stayers) and everybody else, in order to begin to understand what factors underlie teacher retention. The purpose of this analysis is to uncover significant relationships that exist and to guide the development of a multivariate model. Differences in the following independent variables were tested using Pearson Chi-square tests that accounted for the complex survey sample by using the *svy: tabulate* command in STATA and the default option of a Pearson Chi-square test (the five-year analytic and replicate weights were used). According to the STATA manual on *svy: twoway*:

To account for the survey design, the statistic is turned into an F statistic with noninteger degrees of freedom by using a second-order Rao and Scott

(1981, 1984) correction. Although the theory behind the Rao and Scott correction is complicated, the p -value for the corrected F statistic can be interpreted in the same way as a p -value for the Pearson χ^2 statistic for 'ordinary' data (that is, data that are assumed independent and identically distributed [i.i.d.]). (STATA manual *svy:twoway*, p. 6)

The analysis included cross-tabulations of stayer or leaver status with the following categorical independent variables: gender, White race, Black race, Hispanic identification, union membership, alternative certification, National Board certification or certification in progress, passing any Praxis test, master's degree, regular state teaching certificate (as opposed to a certificate that requires the fulfillment of additional components, such as probationary period or practice teaching), Highly Qualified Teacher status, practice teaching, feeling about choosing teaching as a profession, professional development (content specific, computers, reading, discipline, special education), number of teaching hours (English and Mathematics), and number of classes taught.

Table 4.2 shows the significant associations (with p -values of the Pearson Chi-square test under .10 or below) between some independent variables and stayer status that emerged from the analysis. The unweighted analytic sample was split about evenly between 634 stayers and 635 non-stayers. The total population size after weighting the sample appropriately is approximately 138,518 people, with 70,196 who were stayers and 68,321 who were not. Significant differences exist when it comes to several different measures of licensing and certification. Teachers who held alternative certifications fell more frequently in the non-stayer group (58.4% of those with alternative certifications did not stay at the same school for five years) than in the stayer group (41.6%). When it comes to holding the status of a Highly Qualified Teacher, the requirements vary by state,

but generally include a bachelor's degree, full state certification or licensure, and proof of content knowledge expertise.⁴ Those who held it were more frequently found in the stayer category (55.0%) vs. the non-stayer category (45.0%). When investigating just the relationship between holding a regular state certificate and stayer status, it also turns out to be significant: 56.7% of regular certificate holders stayed in the same school and 43.3% did not.

Table 4.2

Significant Associations Between Final Five-Year Stayer Status and Teacher and School Characteristics

Characteristic	% Stayers	% Others	<i>p</i> -value	<i>N</i>
Alternative certification				
Yes	41.6	58.4	.048	1,269
No	54.8	45.2		
Highly qualified teacher				
Yes	55.0	45.0	.023	1,243
No	41.4	58.6		
Regular/standard state teaching certificate				
Yes	56.7	43.3	.084	1,269
No	45.7	54.3		

⁴As summarized by the U.S. Department of Education at:
<http://www2.ed.gov/nclb/methods/teachers/hqtflexibility.html>

Table 4.2 (continued)

Characteristic	% Stayers	% Others	<i>p</i> -value	<i>N</i>
Professional Development – Computers				
Yes	58.6	41.4	.021	1,265
No	43.3	56.7		

Note. The *p*-values refer to the results of Pearson Chi-square tests.

The only other significant difference that emerged out of this bivariate analysis was that those who have received professional development (PD) related to the use of computers also tend to be in the stayer category in larger numbers; 58.6% of them are stayers and 41.4% are non-stayers. This finding is interesting, but hard to interpret. The offering of computer-related PD could be a proxy for the availability of technology in schools and classrooms, or it could mean that bolstering this area of preparation translates into better retention of teachers.

No demographic characteristics such as gender, White or Black race, or Hispanic identity, were significantly associated with stayer vs. non-stayer status. Further, neither of the weighted cross-tabulations of White race and Black race of teachers with the seven-category race variable was significant based on the *p*-values of the Chi-square statistics. Within the 1,269 teachers with available data for career outcome, 1,157 were White (over 90%). When looking at the weighted cross-tabulation of White race with stayer status vs. non-stayer status, a significant association with *p*-value of .07 emerges: 52.2% of White teachers stayed in the same school for five years, whereas only 37.7% of non-White teachers did. The number of all Black teachers was very low: only 78 teachers of the

1,269 teachers, which was just over 6% of the sample. Among them, only 34.4% were stayers in the same school for five years, compared to 52.2% for non-Blacks (the p -value for the Pearson Chi-square test was .04). Due to the dramatic difference in sample sizes of White and Black teachers, however, trying to estimate whether this difference in proportions is not just an artifact of the predominantly White sample is challenging.

Table 4.3 shows the results of the same analysis carried out on the categories of those teachers who left teaching and are not expected to return, and those who are in all the remaining six career trajectories. For this comparison, the two groups were quite uneven in terms of number of teachers in the unweighted sample that fell in each: only 87 respondents were leavers not expected to return and 1,182 were not. Since the estimates and post-estimation methods used with and after the *svy* command in STATA are based on balanced repeated replications of the sample, the total 1,269 teachers corresponded to a population size of 127,997 teachers.

Significant differences were observed in the categories of alternative certification, whether or not teachers had practice teaching, with the expressed desire to become a teacher again if given the chance to make a different career choice, and with the expressed intent to remain in teaching. A larger percentage of those with alternative certification were leavers (8.7%) compared to those with a regular certification, of whom 3.4% were leavers. Additionally, 10% of teachers who had entered the profession without any practice of teaching were leavers, which was more than double the rate of those who had some practice teaching (4.5% of them left without an intent to return).

Not too surprisingly, when teachers were asked at the end of their first year to report whether they would choose teaching as a profession again, those who were uncertain left the profession at a higher rate compared to those who were more secure in their choice: 8.2% vs. 2.7%. Similarly, amongst teachers who expressed a desire to stay in teaching as long as able, only 2.5% turned out to leave permanently in five years; this proportion was significantly higher (9.5%) amongst those who cited a shorter expectation for their teaching longevity.

Importantly, the White or Black race of the teacher was not significantly associated with this career outcome. Of all the White teachers in the weighted sample, 4.6% fell in the category of leavers not expected to return; of the Black teachers, 9.1% were leavers. Yet, the two-way cross tabulations of the variable for status of leaver (not expected to return) and either White or Black race of the teacher did not show statistical significance based on the p -values for the Pearson Chi-square statistics. This could be due to the small numbers of both Black teachers, leavers not expected to return compared to all others, or it could in fact be a genuine lack of association between these two racial categories and leaving the profession.

Table 4.3

Significant Associations Between Leaver Status (Not Expected to Return) and Teacher and School Characteristics

Characteristic	% Leavers	% Others	<i>p</i> -value	<i>N</i>
Alternative certification				
Yes	8.7	91.3	.014	1,763
No	3.4	96.6		
Practice teaching				
Yes	4.1	95.9	.046	1,651
No	10.1	89.9		
Would become a teacher again ^a				
Uncertain	8.2	91.8	.021	1,749
Certain	2.7	97.2		
Remain in teaching ^b				
As long as able	2.5	97.5	0.002	1,751
Other (shorter duration)	9.5	90.5		

Note. The *p*-values refer to the results of Pearson Chi-square tests.

^aThis item is based on variable W1T0320. Teachers were asked, "If you could go back to your college days and start over again, would you become a teacher or not?" and were given five answer choices: "Certainly would become a teacher," "Probably would become a teacher," "Chances about even for and against," "Probably would not become a teacher," and "Certainly would not become a teacher." The variable was recoded as "Certain" if a teacher chose the first option and "Uncertain" if he or she chose any of the other options.

^bThis item is based on the variable W1T0320. Teachers were asked, "How long do you plan to remain in teaching?" and given the response options of "As long as I am able," "Until I am eligible for retirement benefits from this job," "Until I am eligible for retirement benefits from a previous job," "Until I am eligible for Social Security benefits," "Until a specific life event occurs (e.g., parenthood, marriage)," "Until a more desirable job opportunity comes along," "Definitely plan to leave as soon as I can," and "Undecided at this time."

Differences on the Classroom and School Levels

Similarly to the investigation of the relationship between teacher-level independent variables and career outcomes, the differences in school-level (or classroom-level) variables were assessed for significant and measurable variations associated with the different possible career trajectories and, particularly, with the final statuses of stayer and leaver. Generally speaking, these were factors measured objectively by recording them for administrative purposes rather than subjectively by means of asking the teachers' opinion or perception of them. The independent variables included in the analysis were total enrollment of students, number of students taught by teachers of departmentalized and self-contained classes, average class size for teachers of departmental and self-contained classes, estimated number of students per full-time equivalent (FTE) teacher, percentage of teachers' students with an individualized educational plan (IEP), percentage of teachers' students with limited English proficiency (LEP), percentage of enrolled students approved for the national school lunch program (NSLP) at school, and percentage of teachers at the school who are a racial/ethnic minority.

The significant differences in Year 1 school characteristics between stayers and all others are reported in Table 4.4. As it shows, schools of stayers had significantly smaller proportions of minority students and students eligible for free or reduced lunch.

Table 4.4

Significant Differences in School-Level Variables for Year 1 Schools of Teachers Who Stayed in the Same School by Year 5 and All Others

Statistic	Stayers <i>N</i> = 634		Others <i>N</i> = 635		Diff.	t-stat	<i>p</i> -value
	Mean	<i>SE</i>	Mean	<i>SE</i>			
% minority students	43.27	4.10	57.10	2.97	-13.83	-2.72	.01
% students eligible for NSLP	43.47	2.92	51.03	2.55	-7.56	-1.81	.07

Those who left by Year 5 and are not expected to return started their teaching careers in schools with higher proportions of minority students: 65.5% compared to 50.4%, and the difference of 15.1% was significantly different with an associated *p*-value of .01.

Another school-level variable considered was whether the school was a public charter school or not. The distribution of the seven-category teacher career outcome variable was not significantly different for the 77 teachers who taught at charter schools compared to the 1,192 who did not; charter school status was similarly not associated with significantly different proportions of just leavers or stayers. This could potentially be due to the very small number of teachers in charter schools in the sample.

Differences on the Level of Census Tract of Year 1 Schools

In addition to analyzing differences in individual-level factors, the next step in analysis was to explore the differences in levels of continuous socio-demographic variables measured at the school and neighborhood levels. The following variables—measured at the Census tract level—were tested for significant differences in the means of stayers vs. all others and leavers (not expected to return) vs. all others: percent population White alone, percent population Black alone, percent population with less than high school education, percent population with bachelor's degree or more, percent civilian population in labor force, percent households with less than \$15K income, percent population not Hispanic or Latino, percent population Hispanic or Latino, percent population aged 16 to 19, percent population without high school diplomas, percent population not enrolled in school, percent civilian population 16 and over who are employed, percent population without health coverage, percent population with ratio of income to poverty level under 2.00 (poor or struggling), percent population under 18 living under poverty line, percent population who live in the same house as year ago, percent population who are foreign born, and percent vacant housing units.

Table 4.5 shows the variables whose averages were statistically different between the stayers and everyone else (all teachers from the remaining six career trajectories). The largest gap (6.6%) was in the percent White population by Census tract of the Year 1 schools. Additionally, differences were observed in the percent population with bachelor's degrees or more, percent civilian population (over age 16) employed, and percent people in the labor force. Somewhat surprisingly, level of wealth as measured by

any of the various available indicators did not appear different between the locations of Year 1 schools of stayers and non-stayers.

Table 4.5

Significant Differences in Average Statistical Indicators Between Census Tracts for Year 1 Schools of Teachers Who Stayed in the Same School by Year 5 and All Others

Statistic	Stayers N = 634		Others N = 635		Diff.	t-stat	p-value
	Mean	SE	Mean	SE			
% population White alone	77.93	1.49	71.30	2.01	6.62	2.67	.009
% population Black alone	11.15	2.16	15.73	2.15	-4.57	-1.75	.084
% civilian population 16 and over who are employed	59.52	1.00	56.85	0.82	2.66	2.08	.041
% in labor force	91.02	0.51	89.72	0.51	1.30	1.95	.055

More statistically significant differences emerged when comparing the socio-economic indicators of Year 1 schools of leavers not expected to return to everyone else in the analytic sample; they are reported in Table 4.6. The largest gap (16.7%) is again in the percentage of White residents in the Census tract, followed by the difference in the percentage of Black residents (15.1%). When comparing other indicators, the Census tract of schools where the leavers taught during their first year in the profession were inhabited by larger percentages of people with less than a high school education, no

health coverage, poor or struggling (as indicated by a ratio of income to the poverty level under 2.00 and also as being below the poverty line).

Two other indicators also showed significant differences: the median percentage of income that renters paid, as rent was higher in the school Census tracts for leavers, and the mean Area Deprivation Index.

Table 4.6

Significant Differences in Average Statistical Indicators Between Census Tracts for Year 1 Schools Between Teachers Who Left (Not Expected to Return) by Year 5 and All Others

Statistic	Leavers N = 87		Others N = 1,676		Diff.	t-stat	p-value
	Mean	SE	Mean	SE			
% population White alone	58.29	3.80	74.95	1.27	-16.66	-4.09	< .001
% population Black alone	27.92	4.85	12.78	1.24	15.14	3.08	.003
% population with ratio of income to poverty level under 2.00 (poor or struggling)	43.47	2.94	35.28	1.44	8.18	2.96	.007
% population under 18 years of age for whom poverty status is determined: living under poverty line	29.40	3.42	19.71	1.20	9.69	2.55	.012

Table 4.6 (continued)

Statistic	Leavers <i>N</i> = 87		Others <i>N</i> = 1,676		Diff.	t-stat	<i>p</i> -value
	Mean	<i>SE</i>	Mean	<i>SE</i>			
% bachelor's degree or more	17.90	1.96	25.03	1.07	-7.13	-3.15	.002
% education < than high school	23.10	3.02	15.89	0.72	7.21	2.27	.025
% no health coverage	20.46	1.92	15.80	0.72	4.66	2.23	.029
Median gross rent as a percent of income in 2012	35.33	1.85	30.74	0.62	4.59	2.17	.033
Area Deprivation Index (Year 2000)	107.28	1.37	101.74	0.94	5.54	3.42	.001

Factor Analysis

The next step in analyzing the BTLS was to investigate the individual survey items for common underlying patterns of variance using factor analysis. In order to accomplish this, an expansive set of 46 items that were designed to capture various aspects of the first-year teaching experience and attitudes toward the profession were analyzed with the *factor* command in STATA, with default option of principal-factor method (*pf*). When using *pf* to analyze the correlation matrix, the factor loadings “are computed using the squared multiple correlations as estimates of the communality” (STATA help manual). All the items included were on a scale of 1 to 4; some of the

original items were recoded to reverse the scale with the goal of aligning all items so that higher numeric values indicated more positive reported opinions and attitudes (e.g., higher satisfaction or more control over teaching, less worry about job, and less interference from paperwork).

Prior to selecting the factor analysis method, an exploration of the correlation matrix showed that an oblique rotation would be more appropriate (Brown, 2009; Matsunaga, 2011); using such a rotation adjusts for the assumed correlation among individual items and accomplishes a simplification of the data into theory-driven and interpretable factors, also referred to as “simple structure” (Brown, 2009). This was accomplished using the *promax* rotation option in STATA. After the first iteration, five factor loadings emerged with eigenvalues of 1 or higher (Kaiser-Guttman criterion); within each of them, only factor loadings with values of .40 were retained. Both of these cut-off values are standardly accepted in the social sciences. Items that had factor loadings that were too low were excluded. It is of substantive interest to note that an item asking teachers about their satisfaction with salary did not load above .40, with other items in the same related vein of questions related to satisfaction with school-level factors.

Each of the five factors was then investigated using a test to generate a Cronbach’s alpha value—a measure of reliability, estimating whether the items that loaded in the same factor reliably tap into the same underlying concept. Each item within the factor was evaluated in terms of its effect on the Cronbach’s alpha statistics. One item, asking teachers how well prepared they felt in their first year to teach using

computers, was excluded even though its factor loading was above .40, because when it was dropped from the grouping of other preparation-related items, it increased the Cronbach's alpha value of the scale. It also showed a high value (over .70) of uniqueness, another concept used in evaluating the appropriateness of factors derived from factor analysis, which further justified its removal from the construct.

This process resulted in the creation of five factors: supportive school climate, school problems, burnout, preparation to teach, and control over teaching. The items that were included in each factor, as well as their factor loadings, and the Cronbach's alpha value of each scale are reported in Table 4.7. All the values of Cronbach's alpha are either above or round up to the .70 cut-off value that is commonly cited as acceptable in social science, although one of them falls just below it. According to Lance, Butts, and Michels (2006), this value appears to be a bit arbitrary and not as clear-cut as generally assumed. Therefore, the index of *Control over teaching*, which has a Cronbach's alpha of .69 can still justifiably be included in the analysis as long as it is appropriate on a theoretical level.

Table 4.7

Factor Loadings and Reliability Alphas for Individual Survey Items from Year 1

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Supportive school climate					
Supportive administration	.705				
Principal enforces rules	.670				
Teacher enforce rules	.564				
Colleagues share beliefs	.584				
Principal communication	.806				
Cooperation	.759				
Staff recognized	.787				
Support to teach students with special needs	.429				
Satisfied with being a teacher at this school	.477				
Teachers are generally satisfied	.597				
School is well run	.675				
$\alpha = .899; N = 1,757$					
School problems					
Student misbehavior interferes		.423			
Student tardiness interferes		.690			
Student tardiness is a problem		.759			
Students absent		.825			

Table 4.7 (continued)

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Class cutting		.793			
Student drop outs		.754			
Student apathy		.682			
Lack of parent involvement		.720			
Poverty		.642			
Unprepared students		.726			
Student health		.531			
<i>$\alpha = .903; N = 1,757$</i>					
Burnout					
Teaching not worth it			.670		
Leave for better pay			.647		
Transfer to other school			.493		
Less enthusiasm			.700		
Too tired for school			.508		
<i>$\alpha = .783; N = 1,748$</i>					
Preparation to teach					
Handling class management or discipline situations				.528	
Instructional methods				.761	
Subject matter				.616	

Table 4.7 (continued)

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Computers*				.496	
Assess students				.761	
Select materials				.745	
$\alpha = .815; N = 1,710$					
Control over teaching					
Selecting textbooks					.460
Selecting content					.632
Selecting techniques					.637
Grading students					.673
Homework					.548
$\alpha = .688; N = 1,752$					

Note. $N = 1,625$; $df = 88$.

*After additional analysis, this variable was not used in the construction of the index, even though it loaded above .400.

To construct each of the five index scales, all the items in the category were averaged for each respondent. Missing values were omitted from calculating the average in order to make the value of the index comparable across individuals. The investigation of missing value patterns amongst the items comprising each of the five indices revealed that a very small number of individuals had one or more missing values: between 3.7 and 1.1%, depending on the index. Therefore, missing values are not likely to affect the

analysis. Table 4.8 shows the descriptive statistics for the five factors, calculated using the unweighted sample.

Table 4.8

Unweighted Descriptive Statistics for the Indices Derived from Factor Analysis

Index	Scale	Valid <i>N</i>	Mean	<i>SD</i>
Supportive school climate	1 = Strongly disagree 2 = Disagree 3 = Agree 4 = Strongly agree	1,757	2.88	0.39
School problems*	1 = Not a problem 2 = Minor problem 3 = Moderate problem 4 = Serious problem	1,757	2.36	0.69
Burnout	1 = Strongly disagree 2 = Disagree 3 = Agree 4 = Strongly agree	1,748	1.74	0.65
Preparation to teach	1 = Not at all prepared 2 = Somewhat prepared 3 = Well prepared 4 = Very well prepared	1,710	2.96	0.57
Control over teaching	1 = No control 2 = Minor control 3 = Moderate control 4 = A great deal of control	1,752	3.23	0.54

*Two items included in this scale were worded differently from the rest; they asked teachers to report their degree of agreement with the statements that student misbehavior and student tardiness interfered with their teaching and the scale was: 1 = Strongly disagree, 2 = Disagree, 3 = Agree, and 4 = Strongly agree.

In addition to the factor analysis of the individual-level items from BTLS, a large number of variables measured on the level of Census tracts of Year 1 schools were also

analyzed with the intention of creating constructs. However, the exploratory factor analysis did not uncover any substantive and significant factors that could be used to construct indices. Instead, select individual Census variables were incorporated into the regression analysis described in the next section, as well as the Area Deprivation Index described in Chapter 3.

Multinomial Logit Model of Categorical Career Outcome

After the construct scales were constructed, they were used as independent variables in a multinomial logit model, in which the dependent variable was the seven-category career trajectory. Guided by theory and the exploratory data analysis of differences in means and distributions, the final model that emerged contained variables on the teacher and school level, as well as the one socio-economic indicator that emerged as the largest significant difference in earlier analysis—the percentage of White residents in a Census tract. Earlier iterations of the model showed some multi-collinearity issues between Census tract-level variables or other estimation problems (i.e., too little variation in some independent variables, such as race of the teachers in some of the career outcomes). The Area Deprivation Index—even though is not significantly different between leavers not expected to return and all others—did not contribute any explanatory power to the model and was removed as to not add multicollinearity with the Census variable, since it includes in it measures of the racial composition of the Census tracts.

Multicollinearity was assessed by using a methodology suggested by scholars at the University of California,⁵ specifically for complex sample survey models. It is based on investigating the variance inflation factors (VIFs) after regressing each independent variable on the rest. Generally, VIFs over 10 are of concern; in this case, the highest VIF was 2.1 and all the rest were under 2, suggesting no issues of this nature in the final model. Additionally, special further attention was paid to estimating the size and significance of the correlation between the percentage of minority students at the school and the percentage of White residents in the Census tracts of the school's location. To do so, a procedure suggested by the STATA developers was employed, given the complex survey structure.⁶ The command *correlate* with the option to use the first wave analysis weight was used; it indicated that the correlation coefficient between the two variables is -0.60. To estimate the *p*-value, each of the variables was regressed on the other one, using the *svy:regress* command and the bigger of the two *p*-values ($p < .01$) was used to assess the significance of the correlation. Thus, as expected, the higher the percentage White residents in the Census tract, the lower the percentage of minority students at the school. However, the relationship is not as strong.

Table 4.9 presents the results of estimating the final model specification with the data from the analytic sample. The baseline comparison (or base) category is stayers and each column of the table represents one of the other six career trajectories. The results are presented in terms of relative risk ratios (obtained by the *rrr* command in STATA).

Relative risk ratios show the constant effect of one unit change in each independent

⁵See <http://www.ats.ucla.edu/stat/stata/faq/svycollin.htm>

⁶<http://www.stata.com/support/faqs/statistics/estimate-correlations-with-survey-data/>

variable when holding the others constant, expressed in relation to the reference category; they are more intuitive to understand than coefficients in their standard form.

The first two categories in the table are movers: teachers who ended up in a different school (column 1) or school district (column 2) at the end of the five years. No significant factors are identified as predictors of the risk of moving to a different school. However, when it comes to moving to a different district, two variables emerge as significant: being a highly qualified teacher (HQT) as defined by the requirements of the state and having less supportive climate at the Year 1 school. Thus, if an individual teacher is a HQT, he or she is at a lower risk—less than one-third of the risk of those who are not—for moving to a different school district by the end of the first five years compared to staying in the same school.

Interestingly, the HQT variable does not have significance when it comes to predicting the risk of moving to a different district. Instead, two other independent factors emerge as significant: being a highly qualified teacher and burnout. Highly qualified teachers were at about 0.4 times the risk of moving to a different district than those that did not meet that criterion. Individuals with higher levels of burnout, however, were at a higher risk for moving to a different district. When holding all else constant, increasing the level of burnout by 1 unit (on a 1 to 4 scale, with 4 being higher burnout) was associated with almost triple the risk of moving to a different district.

Four variables emerged as significant predictors with respect to the outcome of leaving the profession, but returning again by Year 5: having a master's degree, going through an induction program, being female, and having a high degree of burnout. A

master's degree highly increases the risk of temporarily exiting teaching, but returning within five years (by a relative risk ratio of 3.5), if other factors are the same. Holding all else constant, an induction program reduced the risk of falling in this category to about one-third of the risk for those who did not have an induction program before they began teaching.

All else equal, being female quadruples the risk that a new teacher would leave briefly and return; this fits with the fact that many beginning female teachers also juggle multiple, often conflicting roles as mothers and family caregivers (Cinamon & Rich, 2005). As in the case of moving to a different district, the risk of being a "returner" is highly increased by a unit rise in the levels of burnout by the end of Year 1; holding all else constant, the relative risk ratio associated with this factor is 2.4.

No independent variables in the model predicted the relative risk of leaving, but being expected to return with statistical significance. Generally speaking, this fits with the overall expectation that we would have *a priori* about this outcome: it affects teachers who are primarily leaving for personal, often unexpected and unplanned, but temporary reasons.

However, two independent variables emerged as significant for those who left the profession and were not expected to return: burnout and percent White residents in the Census tract of the Year 1 school. An increase of one unit in burnout, holding all else constant, was associated with risk of attrition that was 3.706 times higher.

Table 4.9

Relative Risk Ratios of Different Career Outcomes Compared to Staying in the Same School for Five Years

	Move within district	Move to different district	Leave and return	Leave, expected to Return	Leave, not expected to return	Leave, unclear return
Highly qualified teacher	0.674	0.423**	1.000	0.611	1.071	0.258
Master's degree	1.357	0.772	3.455*	0.462	0.874	0.296
Passed any Praxis test	1.150	0.779	0.401	1.031	0.884	0.814
Wants to remain in teaching as long as able	0.880	1.873	0.418	0.865	0.394**	0.954
Base salary	1.000	1.000	1.000	1.000	1.000	1.000
Induction program	0.654	1.076	0.363*	0.671	0.815	2.652
Mentor	3.544	1.310	2.810	1.701	1.023	1.775
Alternative certification	1.610	1.233	0.545	0.974	1.900	1.116
Union member	0.807	0.692	2.516	1.416	0.758	1.401
Female	1.080	0.907	4.069*	0.730	0.715	0.917
Preparedness to teach	0.684	1.175	1.013	0.610	0.563	0.919
Control over teaching	0.669	0.604	0.596	1.616	0.611	0.742
School problems	1.530	0.835	0.473	1.145	1.076	1.416
Supportive climate	1.174	0.390	1.566	0.478	0.631	0.630
Burnout	0.946	2.774***	2.443*	1.758	3.606***	1.914
Level of students: middle	0.462	1.198	0.382	0.666	3.938	9.839

Table 4.9 (continued)

	Move within district	Move to different district	Leave and return	Leave, expected to Return	Leave, not expected to return	Leave, unclear return
Level of students: high	0.359	1.771	1.123	0.631	3.124	8.127
Level of students: combined	0.598	0.680	0.672	0.436	1.657	0.917
Urbanicity of school: Suburb	1.495	1.385	2.006	1.751	0.502	0.309
Urbanicity of School: Town	0.616	2.433	1.845	0.584	0.315	0.211
Urbanicity of School: Rural	0.799	2.521	2.257	2.046	1.479	0.508
Number of FTE teachers at the school	0.996	0.994	0.996	0.991	0.998	0.982
% minority students in the school	1.012	1.010	1.020	1.007	1.003	1.005
% population White in Census tract	1.011	1.007	1.020	1.007	0.974**	0.994
Constant	0.173	0.246	0.023	0.160	36.670	0.107

*** $p < .01$; ** $p < .05$; * $p < .1$.

As the model shows, one more percent White residents at the Census tract of the Year 1 school, holding all else constant, lowered the risk of falling in the category of “Leaver Not Return,” as the relative risk ratio was just under 1. In order to aid in the interpretation, predictive margins from the multinomial logit model were generated using the *margins* post-estimation command in STATA. The variable measuring the percentage

White residents at the Census tract of the Year 1 was set to vary in ten percent increments from 0 to 100, and the rest of the variables were held constant at their levels in the sample. Figure 4.1 shows the predicted probabilities for the outcome “Leaver Not Expected to Return” at the different values of that variable, and the 95% confidence intervals (CIs) around them. As it shows, none of the CIs included zero, showing the statistical significance of the variable. Further, the figure shows that if a Census tract contained no White residents at all, the probability of leaving the profession with no expectation to return was just over .2 (20%). As the percentage of White residents increases, that probability decreases, ultimately falling to only .02 or 2%.

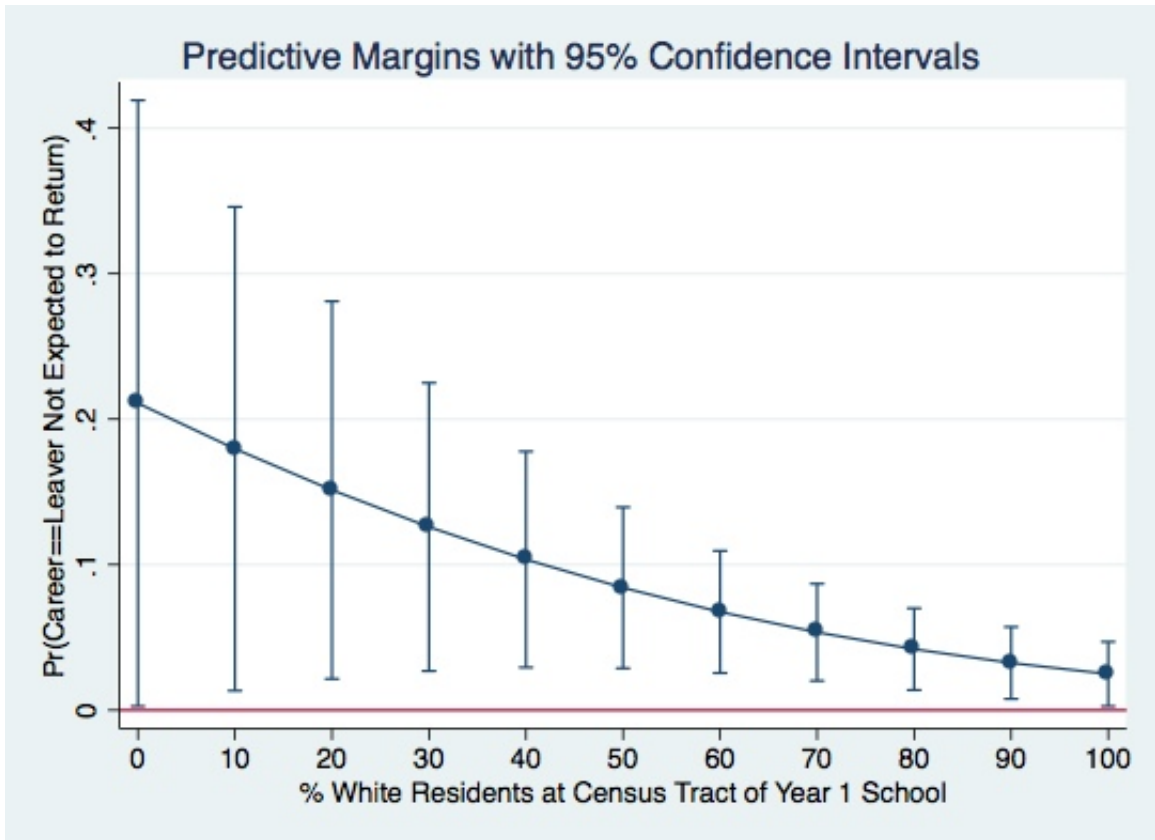


Figure 4.1. Predictive Margins for Probability of Being a Leaver (Not Expected to Return) at Different Values for Percentage White Residents at Census Tract of Year 1 School

Logit Models of Binary Career Outcomes

As explained in Chapter 3, the final seven-category career outcome measure is only available for all the teachers who responded to all five waves of the BTLS, even if it was retrospectively for some waves. Data available from those respondents who had missing data at one or more data points, however, can be incorporated into a set of binary variables to indicate ever leaving the profession or moving schools over the course of the

five-year survey. These two variables, therefore, capture more respondents than the final career outcome variables, even if they are lost to the survey after two, three, or four years.

The two variables were used as binary outcome variables in two logit models, predicting the probabilities that a teacher would leave the profession (without regards to whether they are expected to return or not), or if he or she would change schools or districts during the 2008–2012 span that BTLS covers. Logistic regression models with these two outcomes as dependent variables included the same independent variables as in the multinomial logistic regression described earlier and two additional ones: Hispanic ethnicity and Black race (since the model allowed estimation for that because there were not many smaller outcome categories). As mentioned in Chapter 3, since these variables were constructed without using data for all five years, the Year 1 probability and replicate weights are used instead of the Year 5 ones used in the multinomial logit model.

Table 4.10 presents the logistic regression coefficients and the transformation into odds ratios. Two significant predictors of leaving the profession emerges: burnout and the number of FTE teachers at the school. A level burnout higher by one unit in Year 1 doubles the likelihood that a teacher will leave the profession at least once in the course of the first five years, holding all else constant. An additional FTE teacher at the school decreases the risk of leaving the profession at least once during the course of the BTLS survey program.

Table 4.10

Likelihood of Leaving the Profession at Least Once Between 2008 and 2012 Compared to All Other Career Trajectories

Variable	B	SE B	Odds ratio
Highly qualified teacher	-0.188	0.291	0.829
Master's degree	-0.121	0.344	0.886
Passed any Praxis test	-0.146	0.290	0.864
Wants to remain in teaching as long as able	-0.360	0.290	0.698
Base salary	0.000	0.000	1.000
Induction program	-0.178	0.323	0.837
Mentor	0.508	0.340	1.662
Alternative certification	-0.263	0.301	0.769
Union member	0.307	0.263	1.360
Female	-0.087	0.301	0.917
Hispanic	0.219	0.639	1.245
Black	0.191	0.587	1.210
Preparedness to teach	-0.158	0.223	0.854
Control over teaching	-0.103	0.230	0.902
School problems	0.039	0.288	1.040
Supportive climate	-0.063	0.423	0.939
Burnout	0.674**	0.272	1.962
Level of students: middle	0.514	0.390	1.671
Level of students: high	0.542	0.419	1.719
Level of students: combined	-0.033	0.464	0.968

Table 4.10 (continued)

Variable	B	SE B	Odds ratio
Suburb	-0.022	0.397	0.979
Town	-0.405	0.456	0.667
Rural	0.421	0.379	1.523
Number of FTE teachers at the school	-0.009*	0.004	0.991
% minority students in the school	0.004	0.007	1.004
% population White in Census tract	-0.003	0.009	0.997
Constant	-2.394	2.538	0.091

*** $p < .01$; ** $p < .05$; * $p < .1$.

Table 4.11 presents the logistic regression coefficients and the transformation into odds ratios. Two variables come out as significant predictors. Having an alternative teaching certification is associated with a twofold increase in the likelihood of transferring to a new school or new district before the end of the first five years, holding all else constant. Additionally, increasing the degree of supportive school climate in Year 1 by one unit (on a scale of 1 to 4) halves the risk that a teacher will be a mover, holding all else constant. In other words, teachers who perceive a more supportive climate at their starting school are half as likely to move away from it when all else is equal.

Table 4.11

Likelihood of Moving to a Different School or District at Least Once Between 2008 and 2012 Compared to All Other Career Trajectories

Variable	B	SE B	Odds ratio
Highly qualified teacher	-0.341	0.304	0.711
Master's degree	0.101	0.377	1.106
Passed any Praxis test	-0.014	0.254	0.986
Wants to remain in teaching as long as able	0.275	0.225	1.317
Base salary	0.000	0.000	1.000
Induction program	-0.093	0.282	0.911
Mentor	0.342	0.344	1.407
Alternative certification	0.752***	0.275	2.121
Union member	-0.003	0.298	0.997
Female	0.215	0.270	1.240
Hispanic	-0.089	0.679	0.915
Black race	0.102	0.382	1.107
Preparedness to teach	0.138	0.248	1.148
Control over teaching	-0.127	0.285	0.881
School problems	-0.144	0.252	0.866
Supportive climate	-0.696*	0.367	0.499
Burnout	0.347	0.326	1.415
Level of students: middle	-0.250	0.399	0.779
Level of students: high	0.081	0.340	1.084
Level of students: combined	-0.075	0.532	0.928

Table 4.11 (continued)

Variable	B	SE B	Odds ratio
Suburb	-0.016	0.344	0.984
Town	0.076	0.447	1.079
Rural	0.117	0.399	1.125
Number of FTE teachers at the school	-0.004	0.004	0.996
% minority students in the school	0.006	0.006	1.006
% population White in Census tract	0.005	0.008	1.005
Constant	-0.598	2.745	0.550

*** $p < .01$; ** $p < .05$; * $p < .1$.

The Effects of Teachers' Race and Community Racial Composition

Race of teacher was not used as a predictive variable in the final multinomial logit model because the model could not converge, likely due to the small numbers of non-White teachers in some career trajectories, such as that of leavers not expected to return. Multinomial logit models could not be estimated even if race of the teacher was the only predictor used. Furthermore, when investigating the relationship between race of the teacher and career paths, no significant association emerges from a bivariate cross-tabulation of stayer status and White race of teacher (uncorrected Chi-square = 6.04; design-based $F(1, 87) = 2.13$; p -value = .15) or a bivariate cross-tabulation of the career variable with all seven categories and White race of the teacher (uncorrected Chi-square = 16.95; design-based $F(1, 87) = 1.06$; p -value = .38). Thus, we do not have expectations

that White race of the teacher in and of itself would statistically contribute to either retention or attrition.

However, this factor has been suggested as important to career outcomes of teachers by numerous prior studies, so it warrants further investigation. The relationship is complicated by the fact that White teachers tend to teach more often in White neighborhoods. In this dataset, the White teachers in Year 1 taught in schools in Census tracts that, on average, had 76.3% White populations; whereas non-White teachers taught in tracts that had 56.6% White populations on average (both are based on the weighted sample). This difference was statistically significant based on an Adjusted Wald test, performed on the weighted sample ($N = 1,755$; population size = 137,804.98), with $F(1, 87) = 11.38$, $\text{Prob} > F = 0.001$.

To further tease out the ways in which the race of individual teachers and the racial composition of the communities where their schools were located affected career outcomes, additional analyses were conducted. In the multinomial logit model, the percentage of White-only population in a Census tract was a significant predictor of a teacher staying in a school located there (career track 1) vs. a teacher leaving and not expected to return (career track 6). Therefore, a binary variable was created that identified White stayer teachers (coded as 1) and White leaver teachers not expected to return (coded as 0). Then, the average percent of White teachers in the Census tract of their Year 1 school was compared between the two groups. Another variable coded non-White teacher stayers as 1 and non-White leavers as 0; again, the average percents of White teachers in the Census tract of their Year 1 schools were compared. Finally, the

comparison was conducted between all stayers and all leavers without respect for their own race. The results are reported in Table 4.12, which shows that when we look at White teachers, there is a significant difference in the mean percentage of White residents in the Year 1 schools between stayers and leavers; that difference is not statistically significant for non-White teachers. However, the results should be interpreted with caution, as the two samples are vastly different in size and the sample of non-White teachers might be too small to detect statistical significance for the differences.

Table 4.12

Difference in Means of White Population (As Percentage of Total) in the Census Tracts of Year 1 Schools Across Race and Career Outcome of Teachers

Variable	<i>N</i> (non-weighted)	Average % of White population in Census tract of Year 1 school (weighted sample)
White teachers		
Stayers	591	78.6
Leavers	76	60.4
Difference in means		18.2***
Non-White teachers		
Stayers	43	63.4
Leavers	11	44.0
Difference in means		19.4

Table 4.12 (continued)

Variable	<i>N</i> (non-weighted)	Average % of White population in Census tract of Year 1 school (weighted sample)
All teachers		
Stayers	634	77.5
Leavers	87	58.0
Difference in means		19.5***

****p*-value < .001.

Finally, organizational demography theory suggests that racial mismatch might be driving some of these results; it is possible that teachers whose race is different from that of many of their students are less likely to be satisfied with their position and feel more tension. Ranzulli, Parrott, and Beattie (2011) offer an overview of key insight from organizational demography theory that highlight the conflicts of individuals in heterogeneous settings. However, a full investigation of this conflict extends far beyond the scope of the analysis in this dissertation. To partially investigate this finding further, a set of variables to identify White and non-White teachers in White and non-White neighborhoods was created using 60% White-only population as the cutoff (Renzulli et al., 2011).

Table 4.13 shows the number of teachers in the unweighted analytic sample in each of the four possible categories, and what percentage of them were stayers and leavers. The results from a weighted Pearson Chi-square test indicate that the four categories are associated with significantly different percentages of stayers ($p = .081$) and

leavers ($p = .023$). The category of White teachers in a White neighborhood contains both the highest average percent of stayers (54.7%) and the lowest average percent of leavers (3.6%). Conversely, the lowest percentage of stayers (32.2%) and the highest percentage of leavers (13.2%) were among non-White teachers in non-White neighborhoods. The results should be considered with caution, due to the fact that the vast majority of teachers fell in the first category of White teachers in White neighborhoods, which makes the ascertainment of statistical significance of these results challenging.

Table 4.13

Distribution of Racially Matched and Racially Mismatched Teachers at the Census Tract Level Across the Career Categories of Stayers and Leavers

Variable	<i>N</i> (non-weighted)	Average % of stayers (weighted)	Average % of leavers (weighted)
White teachers in a White neighborhood	970	54.7	3.6
Non-White teachers in a White neighborhood	56	44.7	5.2
Non-White teachers in a non-White neighborhood	56	32.2	13.2
White teachers in a non-White neighborhood	187	39.1	11.1
<i>Pearson Chi-square test</i>		$p = .081$	$p = .023$

CHAPTER 5

DISCUSSION

This study investigated the career trajectories and characteristics of a nationally representative sample of novice teachers, as well as key factors from their schools and communities, with the primary goal of furthering our knowledge about the causes of teacher attrition and retention, and improving our policy solutions. It confirmed some key findings from our prior knowledge, for example, that higher levels of physical and emotional burnout are associated with higher risk of leaving the profession (Dworkin, 1986; Maslach, Jackson, & Leiter, 1996). However, it also advanced the less investigated notion that in order to fully evaluate career outcomes of teachers, we need to consider their lives as professionals and individuals who live in communities. Social geography adds a separate, distinct dimension to their experience that often gets superficial, if any, acknowledgements by both theory and practice.

In this concluding chapter, I will first summarize the key findings related to each of the main three research questions of the study and their relevance. Then, I also analyze some of the main implications for theory and research, for policy and practice, and for future investigation.

Answering the Research Questions

The study posed three main research questions. Next, I offer answers that succinctly summarize the analytic findings and situated them in the extant literature.

Research Question 1: What are the characteristics of beginning teachers in the United States and how, if at all, do they differ across teachers with different career outcomes?

In the sample of teachers included in the BTLS, the vast majority—89.6%—were White. On average, in their Year 1 schools, only 15.6% of the teachers identified as an ethnic or racial minority. This reflects the conclusions reached by other comprehensive studies. For example, Ingersoll and May (2011) note in their article, “The Minority Teacher Shortage: Fact or Fable?”, that this gap between the proportions of minority students and minority teachers has been large and persistent for decades. In a 2014 report by the Consortium for Policy Research in Education, Ingersoll, Merrill, and Stuckey write that perhaps the landscape is slowly changing in the direction of diversification of the teacher labor force. Numerically, there were more minority teachers during the 2011–2012 school year than ever before and the rate of growth in the number of minority teachers actually exceeded the rate of growth of minority students: “So, although the proportion of minority students in schools is still far greater than the proportion of minority teachers, the teaching force has rapidly grown more diverse” (Ingersoll et al., 2014, p. 16).

Yet, at the same time, recent and current cohorts of students in teacher preparation programs for the same time period were also overwhelmingly comprised of White students. A study released by the American Association of Colleges for Teacher Education reported that in 2009–2010 (the second year of the BTLS study), over 80% of

the bachelor's degrees in teacher education programs were earned by White, non-Latino students.⁷

What is the relevance of this finding for understanding teacher career outcomes? Scholars have shown that minority teachers, in addition to being outnumbered in the labor force, also experience higher rates of turnover than others (Ingersoll et al., 2014). In this sample, however, neither White nor Black race was significantly associated with the seven-category variable of career outcome. Additionally, White or Black race of the teacher was not found to be significantly associated with staying at the same school for five years or leaving the profession with no intention to return. These conclusions are somewhat limited by the very small number of Black teachers in the sample of respondents with career data from all five years. It is challenging to assess the effect of teachers' race with so little variability in race. However, in this sample of teachers, race does not emerge as a factor that is strongly and significantly tied to either retention or attrition.

Beginning full-time teachers in 2007–2008 were also two-thirds female and over three-quarters of them held bachelor's degrees. About one-third held alternative teacher certificates. Just over two-thirds had received the designation of Highly Qualified Teacher, as defined by their state.

Research Question 2: What individual- and school-level factors help explain the career outcomes of beginning teachers, in particular those who stay in the same school for five years and those who leave the profession with no intent to return?

⁷<https://aacte.org/news-room/aacte-in-the-news/347-student-diversity-is-up-but-teachers-are-mostly-white>

Before turning to a discussion of the factors that help explain career outcomes, it is important to note that the rate of leaving the profession for teachers in this analytic sample is actually far lower than estimates cited by scholars and the popular claim that attrition rates are as high as 30%, or even up to 50%, among beginning teachers. A surprise at this discrepancy was reported in the Washington Post, together with Ingersoll's commentary, after preliminary analysis of the BTLS data was released by the Department of Education.⁸ Ingersoll attributed this to limiting the sample to public schools and to beginning teachers only, as well as to excluding those who left but returned within five years from the category of "leavers." In fact, in the sub-sample of full-time teachers used for the analysis of this dissertation, over half of the teachers stayed in the very same school where they began teaching for the full five years of the survey. Another 35% were teaching in Year 5, but had either moved schools, districts, or had even temporarily exited the profession. Thus, about 15% of the teachers with a known career outcome had left teaching by Year 5 and slightly over one-third of them (6.9% of the total sample) were expected to return eventually, as the reasons they provided for leaving were of temporary nature, such as maternity, family, or sick leave.

The initial investigation at the individual-, school-, and community-level factors among teachers with different career outcomes revealed findings that were not too surprising. In terms of demographics and preparation, significant differences when it came to certification confirmed what previous research has suggested: the association between certification and stayer or leaver status is statistically significant. Among those

⁸https://www.washingtonpost.com/news/local/wp/2015/04/30/study-new-teacher-attrition-is-lower-than-previously-thought/?utm_term=.9d3e339598e9

who had an alternative certification, 40.1% stayed in the same school for five years, whereas 59.1% had another career path. Amongst those who had a regular teaching certificate, the split was more even and actually more than half of them (54.8%) stayed in the same school for five years. Other measures of teacher preparation also stood out as being different between stayers and leavers: almost 55% of Highly Qualified Teachers, for example, were stayers vs. only about 41% of those who did not hold that credential. An interesting and important finding was the significant association between not having any teaching practice in a classroom at all before becoming a teacher of record and leaving the profession within five years; a bivariate correlation analysis showed that a smaller proportion of teachers who had any amount of teaching practice left than those who did not.

Beyond correlation analysis, the multinomial and binary logit regressions also shed light on the factors associated with different career outcomes. The most prominent finding is that burnout at the end of Year 1 is a strong and significant predictor of leaving the profession at least once in the first five years, of leaving the profession without intention to return, and of moving to a different school district by the end of that period. Holding everything else constant, increasing burnout by one unit on a four-unit scale increases the risk of leaving the profession permanently by over 3.5 times, and more than doubles the risks of either leaving temporarily or moving to a different school district. This finding confirms the long-standing observation made by educational researchers that burnout really matters (Maslach, Jackson, & Leiter, 1996). Suggested as early as the 1970s as a critical factor in job satisfaction and outcomes for teachers, burnout after a

year of teaching is still the single strongest predictor of how the individuals' career trajectory will unfold in the subsequent years.

In addition to burnout, the results also confirm the relevance of teacher qualifications and preparation to career outcomes. Even though the label of highly qualified teacher (HQT) is somewhat political and contentious, as it is closely connected to the controversial emphasis on teacher evaluation emerging from *No Child Left Behind* and reinforced by *Race to the Top*, it appears to hold predictive power when it comes to career outcomes: HQTs are at about half the risk of transferring to a different district within five years. Other measures of teacher preparation also emerge as significant. Holding an alternative certification doubles the odds of moving to a different school or district at least once in five years, which has been documented by previous research as well (Redding & Smith, 2016). Two measures of teacher preparation are also significant in explaining the outcome of being a "returner," i.e., one who leaves but comes back to teaching within five years. Having a master's degree at the start of teaching increases the risk for that more than three times, while going through an induction program decreases it by about two-thirds. This career outcome is somewhat different from the rest, as many personal factors could drive people to take a temporary break from the teaching career early on; even the results from the model are not yet easily interpretable. Yet, the fact that these variables emerge as significant does suggest that perhaps there are systemic effects at work related to the qualifications. Some scholars have suggested, for example, that teachers with higher degrees might be more tempted to explore different career tracks (Imazeki, 2005). On the other hand, induction programs, while not proven to definitively

reduce attrition, have been shown by some authors to provide support and increase stability for new teachers.

Research Question 3: Does the socio-geographic location of schools help explain the career outcomes of teachers, and which, if any, socio-geographic factors affect teacher attrition and retention?

The answer to this question is not as clear or definitive as initially expected at the start of this project. In bivariate analysis, leaver and stayer status are significantly associated with a number of socio-geographic variables, confirming prior research findings that schools in impoverished communities experience higher degrees of turnover and attrition, while affluent schools were more likely to retain teachers longer (Simon & Johnson, 2015).

However, the only socio-geographic variable that emerged as significant in the multinomial logit, which controlled for individual-level factors was the percent White residents in the Census tract. This resonates well with the literature on *habitus*: given that the majority of beginning teachers in the sample (and in fact, in the population, even though that tends to be slightly more diverse) are predominantly White, “the pull of home” theory would predict that they would tend to be more stable at jobs located in White neighborhoods. Of course, the interpretation is not that simplistic. Race, on both the individual and the aggregate levels, is really not a biological distinction, but is instead a social construct imbued with complex meanings and implications.

Around the world, “Whiteness” is associated with higher levels of privilege, affluence, education, and life longevity—and the reasons for this are as complex as society itself. Education scholar Pauline Lipman argues in her 2014 book, *The New Political Economy of Urban Education*, that race is intricately connected to capitalism in ways that have a profound effect on social quality. When describing her thesis, she writes, “I show that race and capital are intertwined in the concrete production of educational injustice and, more broadly, in the neoliberal economic, spatial, and social restructuring of the city for capital accumulation and racial exclusion and containment” (Lipman, 2015, p. 345). The finding that the proportion of White residents has significant explanatory power in understanding why teachers choose to leave the profession certainly fits in with this perspective, as the lasting effects of high teacher turnover and attrition entrench preexisting inequality of educational outcomes and opportunity even deeper. As Lipman suggests, however, this factor likely works together with other complicated economic and political forces, and should only be interpreted in such larger context.

The answers to the three research questions provided in this study do not stand in sharp contrast to what scholars had already established about the phenomena of teacher attrition, retention, and turnover. For example, the conclusions about the importance of burnout affirm what decades of prior scholarship on the subject have emphasized: emotional burnout manifests itself in the form of decreased motivation to be a teacher and, ultimately, in a departure from the profession. Similarly, both scholars and practitioners have demonstrated the strong association between indicators of teachers’ preparation and qualification (such as length of student teaching or type of teaching

certification) that emerged from the analysis: well-prepared teachers do better and last longer. Notably, the study provided empirical support for a claim that has been suggested, but not widely investigated by others: neighborhood characteristics—in particular, racial composition—are associated with and affect the career outcomes of teachers.

On the other hand, the study offers some evidence that challenges the relative importance of some factors that have been discussed in the literature reviewed in Chapter 2 as significant for teachers' careers outcomes. Primarily, the results did not support a prominent association between the teachers' perceptions of school climate and their career decisions; similarly, mentoring and induction programs did not emerge as reliable predictors of staying at the same school or leaving the profession. This, of course, could be an artifact of the study's methodology, which focused primarily on establishing direct effects of these factors on career outcomes instead of exploring the many complicated relationships between the independent variables themselves.

Implications for Policy

Given the findings in this study, there are three main areas for targeted policy and practice aimed at increasing the retention rates of beginning teachers, and at improving their early years in the profession. I argue based on the evidence I analyzed that the following could have a positive overall impact on beginning teachers' professional development and the cultivation of a high quality teacher labor force: (1) increasing qualifications and preparation of individuals before they enter the classrooms as teachers of record, (2) identifying teachers at risk for or experiencing early burnout and providing

intensive support to counteract it, and (3) recognizing the importance of factors external to the school and district for the professionalization of new teachers.

The importance of teacher preparation in the time before induction into the profession is, of course, well understood. However, there is significant debate over which elements of preparation are most effective; identifying them would save resources and allow for targeted intervention. Based on results from my model, requiring or encouraging teachers to obtain Highly Qualified Teacher status, while sometimes criticized as a cumbersome, bureaucratic hurdle without much substantive meaning, might actually be beneficial. The combined requirements for teachers to have a bachelor's degree, to have full-state certification, and to provide proof of expertise in the subjects they teach are associated with lowered risk of turnover, as is traditional teacher preparation vs. an alternative certification route. Moreover, while having a mentor is not supported by the data in this study as beneficial, there is some evidence that induction programs could be reducing the rates of early temporary exit from the profession. Thus, analysis from this study supports spending resources on comprehensive teacher education programs that provide depth of content knowledge and continued support past the first day of teaching. In a recent interview with NPR, Linda Darling-Hammond also underscores the point that teacher preparation matters a lot and explains that when underprepared teachers leave (as they do at much higher rates than those with more solid qualifications), solving teacher shortages by quickly staffing with other underprepared teachers exacerbates the problem and creates a vicious circle. She does specifically point

at a failure of the last administration to fully deliver on promises of reform and hopes in on fiscal support of teaching candidates:

We need to make some investments in teacher preparation. Obama made a promise when he ran in 2008. He said, ‘If you will teach, we will pay for your education.’ That didn’t happen, but if we were to reboot that promise and actually ensure that people who choose this noble profession do not come into it with college debt, that would also make a huge difference in the conditions of teaching and supply.⁹ (Darling-Hammond, 2016)

Beyond reducing college debt, preparing future educators likely entails overhauling admission and graduation requirements, increasing standards, bolstering meaningful student teaching, funding residency and induction programs, and supporting the comprehensive professional development of new graduates.

A second key area for practice and policy is identifying teachers who are experiencing high levels of burnout as early and accurately as possible, and offering them professional development and support to offset the negative effects of stress. While teachers might be willing to admit to overwhelming feelings of exhaustion and detachment in a survey, or among close friends and colleagues, they need to feel encouraged to acknowledge burnout as a key occupational risk factor and to seek support. Providing teachers with effective coping mechanisms and fostering a supportive school climate can be critically important to cultivating resilient teacher.

Finally, policy makers need to fully recognize that there are factors outside the larger community level that affect teachers’ decisions on whether or not they can thrive and stay at a school. Data from this specific study shows that teacher retention efforts

⁹<http://www.npr.org/sections/ed/2016/09/15/493808213/frustration-burnout-attrition-its-time-to-address-the-national-teacher-shortage>

should acknowledge the importance of segregation as a potential factor. Preparing teachers for the reality of the most segregated communities, and the compounded deep effects of racial and economic inequity might mitigate some of the tension teachers in the most segregated experience. In such areas, they may find themselves serving the roles of not simply educators, but of front-line buffers absorbing the devastating effects of poverty and segregation on the welfare and achievement of their students.

Implications for Future Research

This study answered some important questions, but it also opened many avenues for further exploration. For example, the results point out a need to investigate the causes and correlates of burnout, given its big and significant effect on teachers' outcomes. This would also require a better and deeper understanding of the school climate, which in the current study is only captured through the subjective perceptions of teachers, but in future work could be enhanced by school-level variables from the School and School Principal Questionnaires from the Schools and Staffing Survey Program. Even more ambitiously, incorporating information from teacher evaluations, even on an aggregate level, in the analysis as a factor to take into consideration could enrich our understanding of the relationships between teachers and their school and district-wide leaders. In general, incorporating more district-level variables would also expand the explanatory power of any study on teacher career outcomes, as school district policy and directives are important.

One additional possibility to expand the scope of this study comes from a deeper analysis of the questions that ask teachers to discuss their reasons for leaving, moving, and returning. In this study, these items from the second through the fifth years were incorporated in the definition of the main dependent variable—the seven-category career trajectory item—as they provided the evidence used to classify whether leavers were expected to return or not. However, there is richer information available about reasons for moving and more detailed answers from a limited numbers of respondents who chose to complete open-ended survey items. An analysis of these items could enrich the study.

Finally, the finding about the importance of community racial composition is important and intriguing, and certainly warrants deeper, more precise investigation. As a field, we need to refine socio-geographic measurements of communities and link them to schools and students. There are some interesting and promising projects to define and measure school attendance boundaries using GIS tools, such as The School Attendance Boundary Information System (SABINS). An extended study could link the teacher- and school-level data not to single Census tracts, but to better define the precise areas where students in the school come from. The coverage of this data is still not comprehensive and it remains limited in terms of time-span as well; however, the results from this study certainly justify future resources expended on the endeavor even with imperfect data.

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APPENDIX

Teacher Questionnaire School and Staffing Survey, 2007–2008 School Year

TEACHER QUESTIONNAIRE

SCHOOLS AND STAFFING SURVEY

2007-08 SCHOOL YEAR



(Please note all name and address changes on page 3.)

THIS SURVEY HAS BEEN ENDORSED BY:

American Federation of Teachers
Bureau of Indian Affairs, Office of Indian Education Programs
National Association of Elementary School Principals
National Association of Secondary School Principals
National Education Association
National Indian Education Association

NOTICE:

This survey is authorized by Title I, Part E, Sections 151(b) and 153(a) of Public Law 107-279, the Education Sciences Reform Act of 2002.



DEAR TEACHER:

The Schools and Staffing Survey is the largest sample survey of America's elementary and secondary schools. Your participation is important. Below are answers to some general questions.

WHAT IS THE PURPOSE OF THIS SURVEY?

The purpose of this survey is to obtain information about teachers, such as professional background, teaching field, workload, and opinions about working conditions.

WHO IS CONDUCTING THIS SURVEY?

The U.S. Census Bureau is conducting this survey for the National Center for Education Statistics (NCES) of the U.S. Department of Education.

WHY SHOULD YOU PARTICIPATE IN THIS SURVEY?

Policymakers and educational leaders rely on data from this survey to inform their decisions concerning K-12 schools. Because it is a sample survey, your responses represent the responses of many. Higher response rates give us confidence that the findings are accurate.

WILL YOUR RESPONSES BE KEPT CONFIDENTIAL?

Your responses are protected from disclosure by federal statute (P.L. 107-279, Title I, Part E, Sec. 183). All responses that relate to or describe identifiable characteristics of individuals may be used only for statistical purposes and may not be disclosed, or used, in identifiable form for any other purpose, unless otherwise compelled by law.

HOW WILL YOUR INFORMATION BE REPORTED?

The information you provide will be combined with the information provided by others in statistical reports. No individually-identifiable data will be included in the statistical reports.

WHERE SHOULD YOU MAIL YOUR COMPLETED QUESTIONNAIRE?

Please return your completed questionnaire in the enclosed pre-addressed, postage-paid envelope or mail it to:

**U.S. CENSUS BUREAU
ATTN: DCB 60A
1201 E. 10th STREET
JEFFERSONVILLE, IN 47132-0001**

WE HOPE YOU WILL PARTICIPATE IN THIS VOLUNTARY SURVEY.

SINCERELY,



MARK SCHNEIDER

**COMMISSIONER FOR EDUCATION STATISTICS
NATIONAL CENTER FOR EDUCATION STATISTICS**

Paperwork Burden Statement

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1850-0598. The time required to complete this information collection is estimated to average 45 minutes per response, including the time spent to review instructions, search existing data resources, gather the data needed, and complete and review the information collection. If you have any comments concerning the accuracy of the time estimate(s) or suggestions for improving this form, please write to: U.S. Department of Education, Washington, DC 20202-4651. If you have comments or concerns about the contents of this questionnaire, e-mail: dsd.sass@census.gov, or write directly to: Schools and Staffing Survey, National Center for Education Statistics, 1990 K Street, N.W., #9018, Washington, DC 20006.



INSTRUCTIONS

The data you enter on this form will be captured through the use of imaging technology. Please print all information clearly in ordinary characters, using a black ballpoint pen.

<p>CORRECT marking example – <i>(Use care to keep characters in their designated spaces.)</i></p> <div style="text-align: center; margin: 10px 0;"> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="text-align: center;">3</td><td style="text-align: center;">5</td><td style="text-align: center;"> </td><td style="text-align: center;"> </td></tr> </table> </div> <p>1 <input checked="" type="checkbox"/> Yes</p> <p>2 <input type="checkbox"/> No</p>					3	5			<p>INCORRECT marking example –</p> <div style="display: flex; justify-content: space-around; align-items: center; margin: 10px 0;"> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="text-align: center; font-size: 2em;">35</td><td style="text-align: center;"> </td><td style="text-align: center;"> </td><td style="text-align: center;"> </td></tr> </table> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="text-align: center;">3</td><td style="text-align: center;">5</td><td style="text-align: center;"> </td><td style="text-align: center;"> </td></tr> </table> </div> <p>1 <input type="checkbox"/> Yes</p> <p>2 <input checked="" type="checkbox"/> No</p> <p style="text-align: center; margin: 0 20px;">OR</p> <p>1 <input checked="" type="checkbox"/> Yes</p> <p>2 <input type="checkbox"/> No</p>					35								3	5		
3	5																								
35																									
3	5																								

- a. If you are the teacher named on the cover page label, please complete the questionnaire.
- b. Please do not write any comments near the answer boxes.
- c. If you are unsure about how to answer a question, please give the best answer you can rather than leaving it blank.
- d. If you have any questions, call the U.S. Census Bureau at 1-800-221-1204. Someone will be available to take your call Monday through Friday, between 8:30 a.m. and 5:00 p.m. (Eastern Time). The U.S. Census Bureau is also available to answer your questions via e-mail at: dsd.sass@census.gov.

Please correct any errors in name, address, and ZIP Code.

9001 Teacher name

9002 School name

9003 Address

9004 City

9005 State 9006 ZIP Code



I GENERAL INFORMATION

1. How do you classify your position at THIS school, that is, the activity at which you spend most of your time during this school year?

🍎 Mark (X) only one box.

0025

- 1 Regular full-time teacher
- 2 Regular part-time teacher
- 3 Itinerant teacher (i.e., your assignment requires you to provide instruction at more than one school)
- 4 Long-term substitute (i.e., your assignment requires that you fill the role of a regular teacher on a long-term basis, but you are still considered a substitute)
- 5 Short-term substitute
- 6 Student teacher
- 7 Teacher aide
- 8 Administrator (e.g., principal, assistant principal, director, school head)
- 9 Library media specialist or Librarian
- 10 Other professional staff (e.g., counselor, curriculum coordinator, social worker)
- 11 Support staff (e.g., secretary)

2. Which box did you mark in item 1 above?

0026

- 1 Box 1 → **GO TO item 5 on page 5.**
- 2 Box 2, 3, or 4 → **GO TO item 4 below.**
- 3 Box 5, 6, or 7 → **Please STOP now and return this questionnaire to the U.S. Census Bureau. Thank you for your time.**
- 4 Box 8, 9, 10, or 11



3. Do you TEACH any regularly scheduled class(es) at this school?

🍎 If you work as a library media specialist or librarian at this school, do not include classes in which you teach students how to use the library (e.g., library skills or library research).

0027

- 1 Yes
- 2 No → **Please STOP now and return this questionnaire to the U.S. Census Bureau. Thank you for your time.**



4. How much time do you work as a TEACHER at THIS school?

🍎 Mark (X) only one box.

0028

- 1 Full time
- 2 3/4 time or more, but less than full-time
- 3 1/2 time or more, but less than 3/4 time
- 4 1/4 time or more, but less than 1/2 time
- 5 Less than 1/4 time



5. How many days are covered by your contract?

🍏 Include professional development, student contact days, and any other days covered by your contract.

0029

Days

6. What was your MAIN activity LAST school year (2006-07)?

🍏 Mark (X) only one box.

0030

- 1 Teaching in this school
- 2 Teaching in another public elementary or secondary school IN THIS SCHOOL SYSTEM
- 3 Teaching in a public elementary or secondary school IN A DIFFERENT SCHOOL SYSTEM IN THIS STATE
- 4 Teaching in a public elementary or secondary school IN ANOTHER STATE
- 5 Teaching in a PRIVATE elementary or secondary school
- 6 Student at a college or university
- 7 Teaching in a preschool
- 8 Teaching at a college or university
- 9 Working in a position in the field of education, but not as a teacher
- 10 Working in an occupation outside the field of education
- 11 Caring for family members
- 12 Military service
- 13 Unemployed and seeking work
- 14 Retired from another job
- 15 Other – please specify → ⁵⁰³⁰

7a. Did you mark box 10 (Working in an occupation outside the field of education) in item 6?

0031

- 1 Yes
- 2 No → GO TO item 8 on page 6.

b. What kind of work did you do, that is, what was your occupation?

🍏 Please record your job title; for example, plumber, typist, or farmer.

5032

c. What were your usual activities or duties at the job?

🍏 For example, typing, keeping account books, filing, selling cars, operating printing press, laying brick.

5033

d. In addition to these usual activities, were you also teaching in one or more of grades K-12 last school year?

0034

- 1 Yes → GO TO item 7e on page 6.
- 2 No → GO TO item 8 on page 6.



7. Continued –

e. How would you classify that teaching position?

● Mark (X) only one box.

0035

1 Regular full-time teacher

2 Regular part-time teacher

3 Substitute teacher

4 Itinerant teacher

5 Other – please specify →

5035

8. In what year did you begin teaching in THIS school?

● If you have had a break in service of **one year or more**, please report the year that you returned to this school.

● Do not include time spent as a student teacher.

0036

Year

9. In what year did you begin teaching, either full-time or part-time, at the elementary or secondary level?

● Do not include time spent as a student teacher.

0037

Year

10a. How many years have you worked as a FULL-TIME elementary or secondary teacher in PUBLIC SCHOOLS?

● Include the current school year if you are a full-time teacher this year.

● Public schools include public charter and/or Bureau of Indian Affairs-funded schools.

● Record whole years, not fractions or months.

● If none, please mark (X) the box.

0038

0 None or Year(s)

b. How many years have you worked as a PART-TIME elementary or secondary teacher in PUBLIC SCHOOLS?

● Include the current school year if you are a part-time teacher this year.

● Public schools include public charter and/or Bureau of Indian Affairs-funded schools.

● Record whole years, not fractions or months.

● If none, please mark (X) the box.

0039

0 None or Year(s)



11a. Have you ever worked as an elementary or secondary teacher in a PRIVATE SCHOOL?

0040

1 Yes2 No → *GO TO item 12 on page 9.***b. How many years did you teach FULL-TIME in PRIVATE SCHOOLS?**🍎 *Record whole years, not fractions or months.*🍎 *If none, please mark (X) the box.*

0041

0 None or Year(s)**c. How many years did you teach PART-TIME in PRIVATE SCHOOLS?**🍎 *Record whole years, not fractions or months.*🍎 *If none, please mark (X) the box.*

0042

0 None or Year(s)**YOUR COMMENTS**

**Table 1. Teaching Assignment and Subject-matter Codes
For Questions 15 and 22**

General Education

Elementary Education

- 101 Early childhood or pre-K, general
102 Elementary grades, general

Special Education

- 110 Special education, any

Subject-matter Specific

Arts and Music

- 141 Art or arts and crafts
143 Dance
144 Drama or theater
145 Music

English and Language Arts

- 151 Communications
152 Composition
153 English
154 Journalism
155 Language arts
158 Reading
159 Speech

English as a Second Language (ESL)

- 160 ESL or bilingual education: General
161 ESL or bilingual education: Spanish
162 ESL or bilingual education: Other languages

Foreign Languages

- 171 French
172 German
173 Latin
174 Spanish
175 Other foreign language

Health Education

- 181 Health education
182 Physical education

Mathematics and Computer Science

- 191 Algebra I
192 Algebra II
193 Algebra III
194 Basic and general mathematics
195 Business and applied math
196 Calculus and pre-calculus
197 Computer science
198 Geometry
199 Pre-algebra
200 Statistics and probability
201 Trigonometry

Natural Sciences

- 210 Science, general
211 Biology or life sciences
212 Chemistry
213 Earth sciences
215 Integrated science
216 Physical sciences
217 Physics

Social Sciences

- 220 Social studies, general
221 Anthropology
225 Economics
226 Geography
227 Government or civics
228 History
231 Native American studies
233 Psychology
234 Sociology

Vocational, Career, or Technical Education

- 241 Agriculture and natural resources
242 Business management
243 Business support
244 Marketing and distribution
245 Health occupations
246 Construction trades, engineering, or science technologies (including CADD and drafting)
247 Mechanics and repair
249 Manufacturing or precision production (electronics, metalwork, textiles, etc.)
250 Communications and related technologies (including design, graphics, or printing; not including computer science)
253 Personal and public services (including culinary arts, cosmetology, child care, social work, protective services, custodial services, and interior design)
254 Family and consumer sciences education
255 Industrial arts or technology education
256 Other vocational, career, or technical education

Miscellaneous

- 262 Driver education
264 Library or information science
265 Military science or ROTC
266 Philosophy
267 Religious studies, theology, or divinity

Other

- 268 Other



II CLASS ORGANIZATION

12. In which grades are ALL of the STUDENTS you currently teach at THIS school?

🍏 Mark (X) all that apply.

- | | | | | | | | | | | | |
|------|---|--------------------------|-----------------|------|---|--------------------------|-----|------|---|--------------------------|----------|
| 0050 | 1 | <input type="checkbox"/> | Prekindergarten | 0055 | 1 | <input type="checkbox"/> | 4th | 0060 | 1 | <input type="checkbox"/> | 9th |
| 0051 | 1 | <input type="checkbox"/> | Kindergarten | 0056 | 1 | <input type="checkbox"/> | 5th | 0061 | 1 | <input type="checkbox"/> | 10th |
| 0052 | 1 | <input type="checkbox"/> | 1st | 0057 | 1 | <input type="checkbox"/> | 6th | 0062 | 1 | <input type="checkbox"/> | 11th |
| 0053 | 1 | <input type="checkbox"/> | 2nd | 0058 | 1 | <input type="checkbox"/> | 7th | 0063 | 1 | <input type="checkbox"/> | 12th |
| 0054 | 1 | <input type="checkbox"/> | 3rd | 0059 | 1 | <input type="checkbox"/> | 8th | 0064 | 1 | <input type="checkbox"/> | Ungraded |

13. Of all the students you teach at this school, how many have an Individualized Education Program (IEP) because they have disabilities or are special education students?

🍏 If none, please mark (X) the box.

- 0065 0 None or Students

14. Of all the students you teach at this school, how many are of limited-English proficiency?

(Students of limited-English proficiency [LEP] are those whose native or dominant language is other than English and who have sufficient difficulty speaking, reading, writing, or understanding the English language as to deny them the opportunity to learn successfully in an English-speaking-only classroom.)

🍏 If none, please mark (X) the box.

- 0066 0 None or Students

15. This school year, what is your MAIN teaching assignment field at THIS school?

(Your main assignment is the field in which you teach the most classes.)

🍏 Record one of the teaching assignment and subject matter codes from Table 1 on page 8.

- 0067 Code ⁵⁰⁶⁷ Main assignment

16. Which statement best describes the way YOUR classes at THIS school are organized?

🍏 Mark (X) only one box.

- 0068
- 1 You instruct several classes of different students most or all of the day in one or more subjects (sometimes called Departmentalized Instruction).
 - 2 You are an elementary school teacher who teaches only one subject to different classes of students (sometimes called an Elementary Subject Specialist).
 - 3 You instruct the same group of students all or most of the day in multiple subjects (sometimes called a Self-Contained Class).
 - 4 You are one of two or more teachers, in the same class, at the same time, and are jointly responsible for teaching the same group of students all or most of the day (sometimes called Team Teaching).
 - 5 You instruct a small number of selected students released from or in their regular classes in specific skills or to address specific needs (sometimes called a "Pull-Out" Class or "Push-In" Instruction).



17. Check the box you marked in item 16 on page 9 and follow the arrow for the next item.

0069 1 Box 1 or 2 → *GO TO item 21 on page 11.*

2 Box 3 or 4

3 Box 5 → *GO TO item 19 below.*

18. During your most recent FULL WEEK of teaching at THIS school, what is the total number of students enrolled in the class you taught?

0070 Students → *GO TO item 20 below.*

19. During your most recent FULL WEEK of teaching at THIS school, what is the average number of students you taught at any one time?

0071 Students

20. During your most recent FULL WEEK of teaching, approximately how many hours did YOU spend teaching each of the following subjects at THIS school?

🍎 *If you taught two or more subjects at the same time, apportion the time to each subject the best you can.*

🍎 *Report hours to the nearest whole hour; do not record fractions of an hour or minutes.*

🍎 *If you did not teach a particular subject during the week, mark (X) the "None" box.*

a. English, reading, or language arts (including reading and writing)

0072 0 None or Hours per week

(1) Of these hours, how many were designated for reading instruction?

🍎 *Record response, then GO TO item 20b below.*

0073 0 None or Hours per week

b. Arithmetic or mathematics

0074 0 None or Hours per week

c. Social studies or history

0075 0 None or Hours per week

d. Science

0076 0 None or Hours per week

GO TO item 23a on page 13.



Note: Items 21 and 22 are for teachers who marked box 1 or 2 for item 16, on page 9. If you marked box 3, 4, or 5 for item 16 (and completed items 18-20 or 19-20), **GO TO item 23a on page 13.**

21. How many separate class periods or sections do you currently teach at THIS school?

- 🍏 Do not include homeroom periods or study halls.
(Example: If you teach 2 classes or sections of chemistry I, a class or section of physics I, and a class or section of physics II, you would report 04 classes or sections.)

0077

Number of classes or sections

22. For EACH class period or section that you reported in item 21, record the subject name, subject matter code, grade level code, and number of students.

- 🍏 MIXED GRADES: List the grade with the most number of students.
- 🍏 The number of lines filled out should equal the number of class periods or sections reported in item 21.
- 🍏 Record one of the teaching assignment and subject matter codes from Table 1 on page 8 and use the grade level codes below.

A. Subject Name	B. Subject Matter Code	C. Grade Level Code	D. Number of Students
Example <input style="width: 280px; height: 25px;" type="text" value="English"/>	<input style="width: 20px; height: 20px;" type="text" value="1"/> <input style="width: 20px; height: 20px;" type="text" value="5"/> <input style="width: 20px; height: 20px;" type="text" value="3"/>	<input style="width: 20px; height: 20px;" type="text" value="1"/> <input style="width: 20px; height: 20px;" type="text" value="1"/>	<input style="width: 20px; height: 20px;" type="text" value="3"/> <input style="width: 20px; height: 20px;" type="text" value="3"/>
5078 (1) <input style="width: 280px; height: 25px;" type="text"/>	0078 <input style="width: 20px; height: 20px;" type="text"/>	0079 <input style="width: 20px; height: 20px;" type="text"/>	0080 <input style="width: 20px; height: 20px;" type="text"/>
5081 (2) <input style="width: 280px; height: 25px;" type="text"/>	0081 <input style="width: 20px; height: 20px;" type="text"/>	0082 <input style="width: 20px; height: 20px;" type="text"/>	0083 <input style="width: 20px; height: 20px;" type="text"/>
5084 (3) <input style="width: 280px; height: 25px;" type="text"/>	0084 <input style="width: 20px; height: 20px;" type="text"/>	0085 <input style="width: 20px; height: 20px;" type="text"/>	0086 <input style="width: 20px; height: 20px;" type="text"/>
5087 (4) <input style="width: 280px; height: 25px;" type="text"/>	0087 <input style="width: 20px; height: 20px;" type="text"/>	0088 <input style="width: 20px; height: 20px;" type="text"/>	0089 <input style="width: 20px; height: 20px;" type="text"/>
5090 (5) <input style="width: 280px; height: 25px;" type="text"/>	0090 <input style="width: 20px; height: 20px;" type="text"/>	0091 <input style="width: 20px; height: 20px;" type="text"/>	0092 <input style="width: 20px; height: 20px;" type="text"/>
5093 (6) <input style="width: 280px; height: 25px;" type="text"/>	0093 <input style="width: 20px; height: 20px;" type="text"/>	0094 <input style="width: 20px; height: 20px;" type="text"/>	0095 <input style="width: 20px; height: 20px;" type="text"/>
5096 (7) <input style="width: 280px; height: 25px;" type="text"/>	0096 <input style="width: 20px; height: 20px;" type="text"/>	0097 <input style="width: 20px; height: 20px;" type="text"/>	0098 <input style="width: 20px; height: 20px;" type="text"/>
5099 (8) <input style="width: 280px; height: 25px;" type="text"/>	0099 <input style="width: 20px; height: 20px;" type="text"/>	0100 <input style="width: 20px; height: 20px;" type="text"/>	0101 <input style="width: 20px; height: 20px;" type="text"/>
5102 (9) <input style="width: 280px; height: 25px;" type="text"/>	0102 <input style="width: 20px; height: 20px;" type="text"/>	0103 <input style="width: 20px; height: 20px;" type="text"/>	0104 <input style="width: 20px; height: 20px;" type="text"/>
5105 (10) <input style="width: 280px; height: 25px;" type="text"/>	0105 <input style="width: 20px; height: 20px;" type="text"/>	0106 <input style="width: 20px; height: 20px;" type="text"/>	0107 <input style="width: 20px; height: 20px;" type="text"/>

Codes for grade levels of students

PK	Prekindergarten	07	7th grade
KG	Kindergarten	08	8th grade
01	1st grade	09	9th grade
02	2nd grade	10	10th grade
03	3rd grade	11	11th grade
04	4th grade	12	12th grade
05	5th grade	UG	Ungraded
06	6th grade		



**Table 2. Major Fields of Study Codes
For Questions 23d, 23f, 25d, and 26b**

General Education

Elementary Education

- 101 Early childhood or pre-K, general
102 Elementary grades, general

Secondary Education

- 103 Middle grades, general
104 Secondary grades, general

Special Education

- 110 Special education, any

Other Education

- 131 Administration
132 Counseling and guidance
133 Educational psychology
134 Policy studies
135 School psychology
136 Other non-subject-matter-specific education

Subject-matter Specific

Arts and Music

- 141 Art or arts and crafts
142 Art history
143 Dance
144 Drama or theater
145 Music

English and Language Arts

- 151 Communications
152 Composition
153 English
154 Journalism
155 Language arts
156 Linguistics
157 Literature or literary criticism
158 Reading
159 Speech

English as a Second Language (ESL)

- 160 ESL or bilingual education: General
161 ESL or bilingual education: Spanish
162 ESL or bilingual education: Other languages

Foreign Languages

- 171 French
172 German
173 Latin
174 Spanish
175 Other foreign language

Health Education

- 181 Health education
182 Physical education

Mathematics and Computer Science

- 190 Mathematics
197 Computer science

Natural Sciences

- 211 Biology or life sciences
212 Chemistry
213 Earth sciences
214 Engineering
217 Physics
218 Other natural sciences

Social Sciences

- 221 Anthropology
222 Area or ethnic studies (excluding Native American Studies)

- 223 Criminal justice
224 Cultural studies
225 Economics
226 Geography
227 Government or civics
228 History
229 International studies
230 Law
231 Native American studies
232 Political science
233 Psychology
234 Sociology
235 Other social sciences

Vocational, Career, or Technical Education

- 241 Agriculture and natural resources
242 Business management
243 Business support
244 Marketing and distribution
245 Health occupations
246 Construction trades, engineering, or science technologies (including CADD and drafting)
247 Mechanics and repair
249 Manufacturing or precision production (electronics, metalwork, textiles, etc.)
250 Communications and related technologies (including design, graphics, or printing; not including computer science)
253 Personal and public services (including culinary arts, cosmetology, child care, social work, protective services, custodial services, and interior design)
254 Family and consumer sciences education
255 Industrial arts or technology education
256 Other vocational, career, or technical education

Miscellaneous

- 261 Architecture
263 Humanities or liberal studies
264 Library or information science
265 Military science or ROTC
266 Philosophy
267 Religious studies, theology, or divinity

Other

- 268 Other



III EDUCATIONAL BACKGROUND

23a. Do you have a bachelor's degree?

🍏 If you have more than one bachelor's degree, information about additional degrees will be asked in item 26a.

0110

1 Yes2 No → **GO TO item 26a on page 15.**

b. In what year did you receive your bachelor's degree?

0111

Year

c. Was this degree awarded by a university's Department or College of Education, or a college's Department or School of Education?

0112

1 Yes2 No

d. What was your major field of study?

🍏 Record the field of study code and the field name from Table 2 on page 12.

0113

Code ⁵¹¹³

Major

e. Did you have a second major field of study?

🍏 Do not report academic minors or concentrations.

0114

1 Yes2 No → **GO TO item 24a below.**

f. What was your second major field of study?

🍏 Record the field of study code and the field name from Table 2 on page 12.

🍏 Do not report academic minors or concentrations.

0115

Code ⁵¹¹⁵

Major

24a. What is the name of the college or university where you earned this degree?

Name of college or university

5116

b. In what city and state is it located?

City

5117

State

5118

0119

1 Located outside the United States

25a. Do you have a master's degree?

🍏 *If you have more than one master's degree, information about additional degrees will be asked in item 26a.*

0120

1 Yes2 No → **GO TO item 26a on page 15.****b. In what year did you receive your master's degree?**

0121

Year

c. Was this degree awarded by a university's Department or College of Education, or a college's Department or School of Education?

0122

1 Yes2 No**d. What was your major field of study?**

🍏 *Record the field of study code and the field name from Table 2 on page 12.*

0123

Code

5123

Major

YOUR COMMENTS

26a. Have you earned any of the degrees or certificates listed below?

0124

1 Yes

2 No → **GO TO item 27 below.**

a. Degree	b. What was your major field of study for each degree? 📌 Record the field of study code and the field name from Table 2 on page 12.	c. Was this degree awarded by a university's Department or College of Education, or a college's Department or School of Education?	d. In what year?
(1) Vocational certificate	0125 Code <input type="text"/> 5125 Major field of study title <input type="text"/>		0126 Year <input type="text"/>
(2) Associate's degree	0127 Code <input type="text"/> 5127 Major field of study title <input type="text"/>		0128 Year <input type="text"/>
(3) SECOND Bachelor's degree	0129 Code <input type="text"/> 5129 Major field of study title <input type="text"/>	0130 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No	0131 Year <input type="text"/>
(4) SECOND Master's degree	0132 Code <input type="text"/> 5132 Major field of study title <input type="text"/>	0133 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No	0134 Year <input type="text"/>
(5) Educational specialist or professional diploma (at least one year beyond a master's level)	0135 Code <input type="text"/> 5135 Major field of study title <input type="text"/>	0136 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No	0137 Year <input type="text"/>
(6) Certificate of Advanced Graduate Studies	0138 Code <input type="text"/> 5138 Major field of study title <input type="text"/>	0139 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No	0140 Year <input type="text"/>
(7) Doctorate or first professional degree (Ph.D., Ed.D., M.D., J.D., D.D.S.)	0141 Code <input type="text"/> 5141 Major field of study title <input type="text"/>	0142 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No	0143 Year <input type="text"/>

27. Did any of your coursework result in a concentration or specialization in READING?

0144

1 Yes

2 No

YOUR COMMENTS



28. Have you taken the following tests?

● *Mark (X) only one box.*

a. The Praxis I Pre-Professional Skills Test (PPST): Reading

(The Praxis was formerly called the National Teachers Exam [NTE].)

0145

- 1 Taken and passed
- 2 Taken and have not yet passed
- 3 Not taken
-

b. The Praxis I Pre-Professional Skills Test (PPST): Mathematics

(The Praxis was formerly called the National Teachers Exam [NTE].)

0146

- 1 Taken and passed
- 2 Taken and have not yet passed
- 3 Not taken
-

c. The Praxis I Pre-Professional Skills Test (PPST): Writing

(The Praxis was formerly called the National Teachers Exam [NTE].)

0147

- 1 Taken and passed
- 2 Taken and have not yet passed
- 3 Not taken
-

d. The Praxis II: Subject Assessment in a specific content area

(The Praxis was formerly called the National Teachers Exam [NTE].)

0148

- 1 Taken and passed
- 2 Taken and have not yet passed
- 3 Not taken
-

e. Another test of basic skills or subject knowledge, other than those listed above, required by your state or district

0149

- 1 Taken and passed
- 2 Taken and have not yet passed
- 3 Not taken



29. Have you ever taken any graduate or undergraduate courses that focused on teaching methods or teaching strategies?

- 🍎 Include courses you have taken to earn a degree and courses taken outside a degree program.
- 🍎 Do not include student teaching.

- 0150
- 1 Yes →
- 2 No

How many courses?

- 🍎 Mark (X) only one box, then GO TO item 30 below.

- 0151
- 1 1 or 2 courses
- 2 3 or 4 courses
- 3 5 to 9 courses
- 4 10 or more courses

30. How long did your practice teaching last?

- 🍎 Mark (X) only one box.

- 0152
- 1 I had no practice teaching
- 2 4 weeks or less
- 3 5-7 weeks
- 4 8-11 weeks
- 5 12 weeks or more

31. Did you enter teaching through an alternative certification program?

(An alternative program is a program that was designed to expedite the transition of non-teachers to a teaching career, for example, a state, district, or university alternative certification program.)

- 0153
- 1 Yes
- 2 No

32a. Are you certified by the National Board for Professional Teaching Standards in at least one content area?

(The National Board for Professional Teaching Standards is a nongovernment organization that administers National Board certification, a voluntary national assessment program that certifies teachers who meet high professional standards. In order to gain certification, the candidate must at least complete a portfolio of classroom practice and pass one or more tests of content knowledge.)

- 0154
- 1 Yes, fully certified → GO TO item 33a on page 19.
- 2 No

b. Are you working toward National Board Certification?

- 0155
- 1 Yes
- 2 No



**Table 3. Certification Content Area Codes
For Questions 33 and 34**

<u>General Education</u>	
Elementary Education	
101	Early childhood or pre-K, general
102	Elementary grades, general
103	Middle grades, general
Secondary Education	
103	Middle grades, general
104	Secondary grades, general
Special Education	
111	Special education, general
112	Autism
113	Deaf and hard-of-hearing
114	Developmentally delayed
115	Early childhood special education
116	Emotionally disturbed or behavior disorders
117	Learning disabilities
118	Mentally retarded
119	Mildly or moderately disabled
120	Orthopedically impaired
121	Severely or profoundly disabled
122	Speech or language impaired
123	Traumatically brain-injured
124	Visually impaired
125	Other special education
<u>Subject-matter Specific</u>	
Arts and Music	
141	Art or arts and crafts
143	Dance
144	Drama or theater
145	Music
English and Language Arts	
151	Communications
152	Composition
153	English
154	Journalism
155	Language arts
158	Reading
159	Speech
English as a Second Language (ESL)	
160	ESL or bilingual education: General
161	ESL or bilingual education: Spanish
162	ESL or bilingual education: Other languages
Foreign Languages	
171	French
172	German
173	Latin
174	Spanish
175	Other foreign language
Health Education	
181	Health education
182	Physical education
Mathematics and Computer Science	
190	Mathematics
197	Computer science
Natural Sciences	
210	Science, general
211	Biology or life sciences
212	Chemistry
213	Earth sciences
216	Physical sciences
217	Physics
218	Other natural sciences
Social Sciences	
220	Social studies, general
221	Anthropology
225	Economics
226	Geography
227	Government or civics
228	History
231	Native American studies
233	Psychology
234	Sociology
235	Other social sciences
Vocational, Career, or Technical Education	
241	Agriculture and natural resources
242	Business management
243	Business support
244	Marketing and distribution
245	Health occupations
246	Construction trades, engineering, or science technologies (including CADD and drafting)
247	Mechanics and repair
249	Manufacturing or precision production (electronics, metalwork, textiles, etc.)
250	Communications and related technologies (including design, graphics, or printing; not including computer science)
253	Personal and public services (including culinary arts, cosmetology, child care, social work, protective services, custodial services, and interior design)
254	Family and consumer sciences education
255	Industrial arts or technology education
256	Other vocational, career, or technical education
Miscellaneous	
262	Driver education
263	Humanities or liberal studies
264	Library or information science
265	Military science or ROTC
266	Philosophy
267	Religious studies, theology, or divinity
Other	
268	Other



IV CERTIFICATION AND TRAINING

33a. Which of the following describes the teaching certificate you currently hold in THIS state?

🍏 *Mark (X) only one box.*

🍏 *If you currently hold more than one of the following, a second certification may be listed in item 34.*

- 0160
- 1 Regular or standard state certificate or advanced professional certificate
- 2 Certificate issued after satisfying all requirements except the completion of a probationary period
- 3 Certificate that requires some additional coursework, student teaching, or passage of a test before regular certification can be obtained
- 4 Certificate issued to persons who must complete a certification program in order to continue teaching
- 5 I do not hold any of the above certifications in THIS state → **GO TO item 35a on page 23.**

b. Using Table 3 on page 18, in what content area(s) does the teaching certificate marked above allow you to teach in THIS state?

(For some teachers, the content area may be the grade level, for example, elementary general, secondary general, etc.)

🍏 *If this certificate allows you to teach in more than one content area, you may report additional content areas in later items.*

1) Code Content area

2) **Which of the following grade ranges does this certificate apply to?**

🍏 *Mark (X) all that apply.*

🍏 *If your certificate does not restrict you to a specific grade range(s), mark all three grade ranges.*

- 0162 1 Early childhood, preschool, and any of grades K-5
- 0163 1 Any of grades 6-8
- 0164 1 Any of grades 9-12

c. Does this certificate marked in item 33a allow you to teach in additional content areas?

- 0165
- 1 Yes
- 2 No → **GO TO item 34a on page 21.**

d. In what ADDITIONAL content area does the certificate marked in item 33a allow you to teach?

(For some teachers, the content area may be the grade level, for example, elementary general, secondary general, etc.)

🍏 *Please record the content area code from Table 3 on page 18.*

1) Code Content area

2) **Which of the following grade ranges does this certificate apply to?**

🍏 *Mark (X) all that apply.*

🍏 *If your certificate does not restrict you to a specific grade range(s), mark all three grade ranges.*

- 0167 1 Early childhood, preschool, and any of grades K-5
- 0168 1 Any of grades 6-8
- 0169 1 Any of grades 9-12



33. Continued –**e. Does this certificate marked in item 33a allow you to teach in additional content areas?**

0170

1 Yes2 No → **GO TO item 34a on page 21.****f. In what ADDITIONAL content area does the certificate marked in item 33a allow you to teach?**

(For some teachers, the content area may be the grade level, for example, elementary general, secondary general, etc.)

🍏 Please record the content area code from Table 3 on page 18.

1) Code ⁰¹⁷¹ Content area ⁵¹⁷¹2) **Which of the following grade ranges does this certificate apply to?**

🍏 Mark (X) all that apply.

🍏 If your certificate does not restrict you to a specific grade range(s), mark all three grade ranges.

0172

1 Early childhood, preschool, and any of grades K-5

0173

1 Any of grades 6-8

0174

1 Any of grades 9-12**g. Does this certificate marked in item 33a allow you to teach in additional content areas?**

0175

1 Yes2 No → **GO TO item 34a on page 21.****h. In what ADDITIONAL content area does the certificate marked in item 33a allow you to teach?**

(For some teachers, the content area may be the grade level, for example, elementary general, secondary general, etc.)

🍏 Please record the content area code from Table 3 on page 18.

1) Code ⁰¹⁷⁶ Content area ⁵¹⁷⁶2) **Which of the following grade ranges does this certificate apply to?**

🍏 Mark (X) all that apply.

🍏 If your certificate does not restrict you to a specific grade range(s), mark all three grade ranges.

0177

1 Early childhood, preschool, and any of grades K-5

0178

1 Any of grades 6-8

0179

1 Any of grades 9-12**i. Does this certificate marked in item 33a allow you to teach in additional content areas?**

0180

1 Yes2 No → **GO TO item 34a on page 21.**

33. Continued –

- j. In what **ADDITIONAL** content area does the certificate marked in item 33a allow you to teach? (For some teachers, the content area may be the grade level, for example, elementary general, secondary general, etc.)

🍏 Please record the content area code from Table 3 on page 18.

1) Code Content area

- 2) Which of the following grade ranges does this certificate apply to?

🍏 Mark (X) all that apply.

🍏 If your certificate does not restrict you to a specific grade range(s), mark all three grade ranges.

0182 1 Early childhood, preschool, and any of grades K-5

0183 1 Any of grades 6-8

0184 1 Any of grades 9-12

34a. Do you have another current teaching certificate in THIS state?

0185 1 Yes

2 No → **GO TO item 35a on page 23.**

- b. Which of the following describes this current teaching certificate you hold in THIS state?

🍏 Mark (X) only one box.

0186 1 Regular or standard state certificate or advanced professional certificate

2 Certificate issued after satisfying all requirements except the completion of a probationary period

3 Certificate that requires some additional coursework, student teaching, or passage of a test before regular certification can be obtained

4 Certificate issued to persons who must complete a certification program in order to continue teaching

- c. Using Table 3 on page 18, in what content area(s) does this other teaching certificate, marked in 34b above, allow you to teach in THIS state?

(For some teachers, the content area may be the grade level, for example, elementary general, secondary general, etc.)

🍏 If this certificate allows you to teach in more than one content area, you may report additional content areas in later items.

1) Code Content area

- 2) Which of the following grade ranges does this certificate apply to?

🍏 Mark (X) all that apply.

🍏 If your certificate does not restrict you to a specific grade range(s), mark all three grade ranges.

0188 1 Early childhood, preschool, and any of grades K-5

0189 1 Any of grades 6-8

0190 1 Any of grades 9-12



34. Continued –**d. Does this certificate marked in item 34b allow you to teach in additional content areas?**

0191

1 Yes2 No → *GO TO item 35a on page 23.***e. In what ADDITIONAL content area does this other current teaching certificate (described in item 34b) allow you to teach?**

(For some teachers, the content area may be the grade level, for example, elementary general, secondary general, etc.)

🍏 Please record the content area code from Table 3 on page 18.

1) Code Content area 2) **Which of the following grade ranges does this certificate apply to?**

🍏 Mark (X) all that apply.

🍏 If your certificate does not restrict you to a specific grade range(s), mark all three grade ranges.

0193

1 Early childhood, preschool, and any of grades K-5

0194

1 Any of grades 6-8

0195

1 Any of grades 9-12**f. Does this certificate marked in item 34b allow you to teach in additional content areas?**

0196

1 Yes2 No → *GO TO item 35a on page 23.***g. In what ADDITIONAL content area does this other current teaching certificate (described in item 34b) allow you to teach?**

(For some teachers, the content area may be the grade level, for example, elementary general, secondary general, etc.)

🍏 Please record the content area code from Table 3 on page 18.

1) Code Content area 2) **Which of the following grade ranges does this certificate apply to?**

🍏 Mark (X) all that apply.

🍏 If your certificate does not restrict you to a specific grade range(s), mark all three grade ranges.

0198

1 Early childhood, preschool, and any of grades K-5

0199

1 Any of grades 6-8

0200

1 Any of grades 9-12**h. Does this certificate marked in item 34b allow you to teach in additional content areas?**

0201

1 Yes → *GO TO item 34i on page 23.*2 No → *GO TO item 35a on page 23.*

34. Continued –**i. In what ADDITIONAL content area does this other current teaching certificate (described in item 34b) allow you to teach?**

(For some teachers, the content area may be the grade level, for example, elementary general, secondary general, etc.)

🍏 Please record the content area code from Table 3 on page 18.

1) Code ⁰²⁰² Content area ⁵²⁰²

2) Which of the following grade ranges does this certificate apply to?

🍏 Mark (X) all that apply.

🍏 If your certificate does not restrict you to a specific grade range(s), mark all three grade ranges.

0203 1 Early childhood, preschool, and any of grades K-5

0204 1 Any of grades 6-8

0205 1 Any of grades 9-12

j. Does this certificate marked in item 34b allow you to teach in additional content areas?

0206 1 Yes

2 No → **GO TO item 35a below.**

k. In what ADDITIONAL content area does this other current teaching certificate (described in item 34b) allow you to teach?

(For some teachers, the content area may be the grade level, for example, elementary general, secondary general, etc.)

🍏 Please record the content area code from Table 3 on page 18.

1) Code ⁰²⁰⁷ Content area ⁵²⁰⁷

2) Which of the following grade ranges does this certificate apply to?

🍏 Mark (X) all that apply.

🍏 If your certificate does not restrict you to a specific grade range(s), mark all three grade ranges.

0208 1 Early childhood, preschool, and any of grades K-5

0209 1 Any of grades 6-8

0210 1 Any of grades 9-12

35a. This school year, are you a Highly Qualified Teacher (HQT) according to your state's requirements?

(Generally, to be Highly Qualified, teachers must meet requirements related to 1) a bachelor's degree, 2) full state certification, and 3) demonstrated competency in the subject area(s) taught. The HQT requirement is a provision under No Child Left Behind (NCLB).)

0211 1 Yes → **GO TO item 36 on page 24.**

2 No

b. Do you meet your state's requirements for a Highly Qualified Teacher in at least one subject that you teach?

0212 1 Yes

2 No



36. Was your FIRST year of teaching before the 2003-04 school year?

0213

1 Yes → **GO TO item 40 on page 26.**2 No**37. In your FIRST year of teaching, how well prepared were you to –**🍏 *If you are in your first year of teaching, please answer for THIS school year.*🍏 *Mark (X) one box on each line.*

a. Handle a range of classroom management or discipline situations?

0214

1 2 3 4

b. Use a variety of instructional methods?

0215

1 2 3 4

c. Teach your subject matter?

0216

1 2 3 4

d. Use computers in classroom instruction?

0217

1 2 3 4

e. Assess students?

0218

1 2 3 4

f. Select and adapt curriculum and instructional materials?

0219

1 2 3 4 **38. In your FIRST year of teaching, did you participate in a teacher induction program?**🍏 *If you are in your first year of teaching, please answer for THIS school year.*

0220

1 Yes2 No**YOUR COMMENTS**

--	--



39. Did you receive the following kinds of support during your FIRST year of teaching?

🍎 *If you are in your first year of teaching, please answer for THIS school year.*

a. Reduced teaching schedule or number of preparations

0221

1 Yes2 No**b. Common planning time with teachers in your subject**

0222

1 Yes2 No**c. Seminars or classes for beginning teachers**

0223

1 Yes2 No**d. Extra classroom assistance (e.g., teacher aides)**

0224

1 Yes2 No**e. Regular supportive communication with your principal, other administrators, or department chair**

0225

1 Yes2 No**f. Ongoing guidance or feedback from a master or mentor teacher**

0226

1 Yes2 No**YOUR COMMENTS**

V PROFESSIONAL DEVELOPMENT

40. From the list of topics below, select the three that are your top priorities for YOUR OWN professional development.

- 01- Student discipline and classroom management
- 02- Teaching students with special needs (e.g., disabilities, special education)
- 03- Teaching students with limited-English proficiency
- 04- Use of technology in instruction
- 05- The content of the subject(s) I primarily teach
- 06- Content standards in the subject(s) I primarily teach
- 07- Methods of teaching
- 08- Student assessment
- 09- Communicating with parents
- 10- Other, please specify below ↴

5230

🍏 Enter the appropriate code (01-10) for each priority.

0231

First priority

0232

Second priority

0233

Third priority

41a. In the past 12 months, have you participated in any professional development activities specific to and concentrating on the content of the subject(s) you teach?

0234

1 Yes2 No → GO TO item 42a on page 27.

b. In the past 12 months, how many hours did you spend on these activities?

🍏 Mark (X) only one box.

0235

1 8 hours or less2 9-16 hours3 17-32 hours4 33 hours or more

c. Overall, how useful were these activities to you?

🍏 Mark (X) only one box.

0236

1 Not useful2 Somewhat useful3 Useful4 Very useful

42a. In the past 12 months, have you participated in any professional development activities that focused on the uses of computers for instruction?

0237

- 1 Yes
- 2 No → **GO TO item 43a below.**

b. In the past 12 months, how many hours did you spend on these activities?

🍏 *Mark (X) only one box.*

0238

- 1 8 hours or less
- 2 9-16 hours
- 3 17-32 hours
- 4 33 hours or more

c. Overall, how useful were these activities to you?

🍏 *Mark (X) only one box.*

0239

- 1 Not useful
- 2 Somewhat useful
- 3 Useful
- 4 Very useful

43a. In the past 12 months, have you participated in any professional development activities that focused on reading instruction?

0240

- 1 Yes
- 2 No → **GO TO item 44a on page 28.**

b. In the past 12 months, how many hours did you spend on these activities?

🍏 *Mark (X) only one box.*

0241

- 1 8 hours or less
- 2 9-16 hours
- 3 17-32 hours
- 4 33 hours or more

c. Overall, how useful were these activities to you?

🍏 *Mark (X) only one box.*

0242

- 1 Not useful
- 2 Somewhat useful
- 3 Useful
- 4 Very useful



44a. In the past 12 months, have you participated in any professional development activities that focused on student discipline and management in the classroom?

0243

- 1 Yes
- 2 No → **GO TO item 45a below.**

b. In the past 12 months, how many hours did you spend on these activities?

🍏 *Mark (X) only one box.*

0244

- 1 8 hours or less
- 2 9-16 hours
- 3 17-32 hours
- 4 33 hours or more

c. Overall, how useful were these activities to you?

🍏 *Mark (X) only one box.*

0245

- 1 Not useful
- 2 Somewhat useful
- 3 Useful
- 4 Very useful

45a. In the past 12 months, have you participated in any professional development on how to teach students with disabilities?

0246

- 1 Yes
- 2 No → **GO TO item 46a on page 29.**

b. In the last 3 years, how many hours did you spend on these activities?

🍏 *Mark (X) only one box.*

0247

- 1 8 hours or less
- 2 9-16 hours
- 3 17-32 hours
- 4 33 hours or more

c. Overall, how useful were these activities to you?

🍏 *Mark (X) only one box.*

0248

- 1 Not useful
- 2 Somewhat useful
- 3 Useful
- 4 Very useful



46a. In the past 12 months, have you participated in any professional development on how to teach limited-English proficient students?

0249

- 1 Yes
- 2 No → **GO TO item 47 below.**

b. In the last 3 years, how many hours did you spend on these activities?

🍎 *Mark (X) only one box.*

0250

- 1 8 hours or less
- 2 9-16 hours
- 3 17-32 hours
- 4 33 hours or more

c. Overall, how useful were these activities to you?

🍎 *Mark (X) only one box.*

0251

- 1 Not useful
- 2 Somewhat useful
- 3 Useful
- 4 Very useful

47. In the past 12 months, have you participated in any professional development activities that focused on other topics not included in items 41-46 above?

0252

- 1 Yes → Please specify
- 2 No

5252

YOUR COMMENTS



VI WORKING CONDITIONS

48. Including hours spent during the school day, before and after school, and on the weekends, how many hours do you spend on ALL teaching and other school-related activities during a typical FULL WEEK at THIS school?

● Report to the nearest whole hour; do not record fractions of an hour or minutes.

0260

Total weekly hours

49. How many hours are you required to work to receive BASE PAY during a typical FULL WEEK at THIS school?

(This would be base contract hours, or the equivalent, NOT including stipends or extra pay for extra duty.)

● Report to the nearest whole hour; do not record fractions of an hour or minutes.

0261

Total weekly hours for BASE PAY

50. Of the total BASE PAY HOURS reported in item 49, how many hours a week are you paid to deliver INSTRUCTION to a class of students in THIS school?

(Example: If your base contract requires you to work 40 hours a week, with 30 of those hours for delivering instruction and 10 hours for planning, monitoring students outside of class time, etc., you would report 30 hours.)

● Report to the nearest whole hour; do not record fractions of an hour or minutes.

● "PULL-OUT" or "PUSH-IN" TEACHERS: Please include the number of hours you instruct individual students or small groups of students.

0262

Total weekly hours

51. During this school year, do you or will you –

a. Coach a sport?

0263

1 Yes2 No

b. Sponsor any student groups, clubs, or organizations?

0264

1 Yes2 No

c. Serve as a department lead or chair?

0265

1 Yes2 No

d. Serve as a lead curriculum specialist?

0266

1 Yes2 No

e. Serve on a school-wide or district-wide committee or task force?

0267

1 Yes2 No

52. In the LAST SCHOOL YEAR (2006-07), how much of your own money did you spend on classroom supplies, without reimbursement?

🍎 Please use your best estimate for costs incurred, in whole dollars.

🍎 If none, please mark (X) the box.

0268

0 None or \$, .00

53. Do you use the following to communicate with parents or students outside of the regular school day?

a. E-mail or list-serve to send out group updates or information

0269

1 Yes

2 No

b. E-mail to address individual questions or concerns

0270

1 Yes

2 No

c. Online bulletin board for class discussion

0271

1 Yes

2 No

d. Course or teacher web page

0272

1 Yes

2 No

e. Course or teacher blog

0273

(A blog is a type of website where entries are made, such as in a journal or diary, usually displayed in a reverse chronological order.)

1 Yes

2 No

f. Real-time, typed "conversations" through instant messaging

0274

1 Yes

2 No



VII SCHOOL CLIMATE AND TEACHER ATTITUDES

54. How much actual control do you have IN YOUR CLASSROOM at this school over the following areas of your planning and teaching?

		🍏 Mark (X) one box on each line.			
		No control	Minor control	Moderate control	A great deal of control
a. Selecting textbooks and other instructional materials	0280	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
b. Selecting content, topics, and skills to be taught	0281	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
c. Selecting teaching techniques	0282	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
d. Evaluating and grading students	0283	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
e. Disciplining students	0284	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
f. Determining the amount of homework to be assigned	0285	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>

YOUR COMMENTS



55. To what extent do you agree or disagree with each of the following statements?

		🍏 Mark (X) one box on each line.				
		Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	
a.	The school administration's behavior toward the staff is supportive and encouraging.	0286	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
b.	I am satisfied with my teaching salary.	0287	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
c.	The level of student misbehavior in this school (such as noise, horseplay or fighting in the halls, cafeteria, or student lounge) interferes with my teaching.	0288	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
d.	I receive a great deal of support from parents for the work I do.	0289	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
e.	Necessary materials such as textbooks, supplies, and copy machines are available as needed by the staff.	0290	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
f.	Routine duties and paperwork interfere with my job of teaching.	0291	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
g.	My principal enforces school rules for student conduct and backs me up when I need it.	0292	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
h.	Rules for student behavior are consistently enforced by teachers in this school, even for students who are not in their classes.	0293	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
i.	Most of my colleagues share my beliefs and values about what the central mission of the school should be.	0294	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
j.	The principal knows what kind of school he or she wants and has communicated it to the staff.	0295	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
k.	There is a great deal of cooperative effort among the staff members.	0296	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
l.	In this school, staff members are recognized for a job well done.	0297	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
m.	I worry about the security of my job because of the performance of my students on state and/or local tests.	0298	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
n.	State or district content standards have had a positive influence on my satisfaction with teaching.	0299	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
o.	I am given the support I need to teach students with special needs.	0300	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
p.	The amount of student tardiness and class cutting in this school interferes with my teaching.	0301	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
q.	I am generally satisfied with being a teacher at this school.	0302	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>



56. To what extent is each of the following a problem in this school?

		🍏 Mark (X) one box on each line.			
		Serious problem	Moderate problem	Minor problem	Not a problem
a. Student tardiness	0303	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
b. Student absenteeism	0304	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
c. Student class cutting	0305	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
d. Teacher absenteeism	0306	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
e. Students dropping out	0307	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
f. Student apathy	0308	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
g. Lack of parental involvement	0309	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
h. Poverty	0310	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
i. Students come to school unprepared to learn	0311	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
j. Poor student health	0312	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>

57. To what extent do you agree or disagree with each of the following statements?

		🍏 Mark (X) one box on each line.			
		Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
a. The stress and disappointments involved in teaching at this school aren't really worth it.	0313	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
b. The teachers at this school like being here; I would describe us as a satisfied group.	0314	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
c. I like the way things are run at this school.	0315	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
d. If I could get a higher paying job I'd leave teaching as soon as possible.	0316	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
e. I think about transferring to another school.	0317	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
f. I don't seem to have as much enthusiasm now as I did when I began teaching.	0318	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
g. I think about staying home from school because I'm just too tired to go.	0319	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>



58a. If you could go back to your college days and start over again, would you become a teacher or not?

🍏 *Mark (X) only one box.*

0320

- 1 Certainly would become a teacher
- 2 Probably would become a teacher
- 3 Chances about even for and against
- 4 Probably would not become a teacher
- 5 Certainly would not become a teacher

b. How long do you plan to remain in teaching?

🍏 *Mark (X) only one box.*

0321

- 1 As long as I am able
- 2 Until I am eligible for retirement benefits from this job
- 3 Until I am eligible for retirement benefits from a previous job
- 4 Until I am eligible for Social Security benefits
- 5 Until a specific life event occurs (e.g., parenthood, marriage)
- 6 Until a more desirable job opportunity comes along
- 7 Definitely plan to leave as soon as I can
- 8 Undecided at this time

59a. Has a student FROM THIS SCHOOL ever threatened to injure you?

0322

- 1 Yes
- 2 No → *GO TO item 60a on page 36.*

b. Has a student FROM THIS SCHOOL threatened to injure you IN THE PAST 12 MONTHS?

0323

- 1 Yes
- 2 No → *GO TO item 60a on page 36.*

c. In the past 12 months, how many times has a student FROM THIS SCHOOL threatened to injure you?

0324

Times



60a. Has a student FROM THIS SCHOOL ever physically attacked you?

0325

- 1 Yes
- 2 No → *GO TO item 61 on page 37.*

b. Has a student FROM THIS SCHOOL physically attacked you IN THE PAST 12 MONTHS?

0326

- 1 Yes
- 2 No → *GO TO item 61 on page 37.*

c. In the past 12 months, how many times has a student FROM THIS SCHOOL physically attacked you?

0327

Times

YOUR COMMENTS



VIII GENERAL EMPLOYMENT AND BACKGROUND INFORMATION

The following questions refer to your before-tax earnings from teaching and other employment.

61. DURING THE SUMMER OF 2007, did you have any earnings from –

🍏 *Report amounts in whole dollars.*

a. Teaching summer school in this or any other school?

0335

1 Yes →

How much?

2 No

0336

\$, .00

(1) Did all of these earnings come from your current school or district?

🍏 *Mark (X) Yes or No, then GO TO item 61b below.*

0337

1 Yes

2 No

b. Working in a non-teaching job in this or any other school?

0338

1 Yes →

How much?

2 No

0339

\$, .00

(1) Did all of these earnings come from your current school or district?

🍏 *Mark (X) Yes or No, then GO TO item 61c below.*

0340

1 Yes

2 No

c. Working in any NONSCHOOL job?

0341

1 Yes →

How much?

2 No

🍏 *Record amount, then GO TO item 62 below.*

0342

\$, .00

62. DURING THE CURRENT SCHOOL YEAR, what is your academic year base teaching salary?

🍏 *Report amounts in whole dollars.*

0343

\$, .00



63. DURING THE CURRENT SCHOOL YEAR, do you, or will you, earn any additional compensation from this school system for extracurricular or additional activities such as coaching, student activity sponsorship, or teaching evening classes?

🍏 Report amounts in whole dollars.

0344

1 Yes →

How much?

2 No

🍏 Record amount, then GO TO item 64 below.

0345

\$, .00

64. DURING THE CURRENT SCHOOL YEAR, have you earned income from any OTHER sources from this school system, such as a merit pay bonus, state supplement, etc.?

🍏 Do not report any earnings already reported.

🍏 Report amounts in whole dollars.

0346

1 Yes →

How much?

2 No

🍏 Record amount, then GO TO item 65a below.

0347

\$, .00

65a. DURING THE CURRENT SCHOOL YEAR, do you, or will you, earn additional compensation from working in any job OUTSIDE this school system?

🍏 Report amounts in whole dollars.

0348

1 Yes →

How much?

2 No →

GO TO item 66 on page 39.

🍏 Record amount, then GO TO item 65b below.

0349

\$, .00

b. Which of these best describes this job OUTSIDE this school system?

🍏 Mark (X) only one box.

0350

1 Teaching or tutoring

2 Non-teaching, but related to teaching field

3 Other

YOUR COMMENTS



66. Are you a member of a teachers' union or an employee association similar to a union?

- 0351 1 Yes
- 2 No


67. Are you male or female?

- 0352 1 Male
- 2 Female

68. Are you of Hispanic or Latino origin?

- 0353 1 Yes
- 2 No

69. What is your race?

 Mark (X) one or more races to indicate what you consider yourself to be.

- 0354 1 White
- 0355 1 Black or African-American
- 0356 1 Asian
- 0357 1 Native Hawaiian or
Other Pacific Islander
- 0358 1 American Indian or Alaska Native

GO TO item 71 below.

70. Are you enrolled in a state- or federally-recognized tribe?

- 0359 1 Yes
- 2 No

71. What is your year of birth?

0360

YOUR COMMENTS

IX CONTACT INFORMATION

72. The survey you have completed may involve a brief follow-up next school year in order to gain information on teachers' movements in the labor force. The following information would assist us in contacting you if you have moved or changed jobs.

Please PRINT your name, your spouse's name (if applicable), your home address, your telephone number, the most convenient time to reach you, and your work and home e-mail addresses.

a. Your name

9010

b. Spouse's full name (if applicable)

9011

c. Street address

9012

d. City

9013

e. State

9014

f. ZIP Code + 4

9015

g. Home telephone

AREA CODE TELEPHONE NUMBER

9016

h. In whose name is the telephone number listed?

9017

1 My name

2 Other – please specify ↴

9018



72. Continued – Please PRINT the most convenient time to reach you, your work e-mail address, and your home e-mail address.

i. Best day(s) to reach you
● Enter Mon, Tue, etc., as appropriate.

9019

--	--	--	--	--	--	--

j. Best time of the day to reach you
● Mark (X) only one box.

9020

1 a.m.
2 p.m.

k. Work e-mail address

9021

--

l. Home e-mail address

9022

--

YOUR COMMENTS

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73. What are the names and addresses of two other people who would know where to get in touch with you during the coming years? Please do not list more than one person who now lives with you. Please inform these individuals that you have provided their names and someone from the U.S. Census Bureau may contact them in the coming years if we are unable to locate you.

Please PRINT contact's name, contact's relationship to you, contact's home address, contact's telephone number, and contact's work and home e-mail addresses.

(1) First Contact Person

9023 **a. Name**

9024 **b. Relationship to you**

9025 **c. Street address**

9026 **d. City**

9027 **e. State**

9028 **f. ZIP Code + 4**

9029 **g. Home telephone**
AREA CODE TELEPHONE NUMBER

9030 **h. In whose name is the telephone number listed?**

1 Name entered in part a

2 Other – please specify ↴

9031

9032 **i. Work e-mail address**

9033 **j. Home e-mail address**



73. Continued – What is the name and address of another person who would know where to get in touch with you during the coming years?

Please PRINT contact's name, contact's relationship to you, contact's home address, contact's telephone number, and contact's work and home e-mail addresses.

(2) Second Contact Person

a. Name

9034

b. Relationship to you

9035

c. Street address

9036

d. City

9037

e. State

9038

f. ZIP Code + 4

9039

 -

g. Home telephone

AREA CODE TELEPHONE NUMBER

9040

 - -

h. In whose name is the telephone number listed?

9041

1 Name entered in part a

2 Other – please specify ↴

9042

i. Work e-mail address

9043

j. Home e-mail address

9044



74. Please indicate how much time it took you to complete this form, not counting interruptions.

● Please record the time in minutes, e.g., 50 minutes, 65 minutes, etc.

0361

Minutes

75. Please enter the date you completed this questionnaire.

Month

0362

Day

0363

Year

0364

Thank you very much for your participation in this survey. If you have any questions, please contact us, toll-free, at: 1-800-221-1204 or by e-mail at: dsd.sass@census.gov.

To learn more about this survey and to access reports from earlier collections, see the Schools and Staffing Survey (SASS) website at: <http://nces.ed.gov/surveys/sass>

Additional data collected by the National Center for Education Statistics (NCES) on a variety of topics in elementary, secondary, postsecondary, and international education are available from NCES' website at: <http://nces.ed.gov>

For additional data collected by various Federal agencies, including the Department of Education, visit the Federal Statistics clearinghouse at: <http://www.fedstats.gov>

