Article

Midcareer Entrants to Teaching: Who They Are and How They May, or May Not, Change Teaching

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Abstract

This study uses an innovative methodology and six waves of *Schools and Staffing Survey* data spanning two decades (1988-2008) to assess the potential of midcareer entrants—teachers who enter the profession from careers outside of education—to diversify teaching, staff public schools, and fill vacancies in high-need subjects. We find that the percentage of midcareer entrants among first-year teachers nearly doubled between 1988 and 2008 and that midcareer entrants comprise more than one third of incoming public school teachers. Despite this influx, midcareer entrants have not substantially diversified the teaching workforce. These findings have implications for teacher preparation, induction, and policies aimed at diversifying teaching.

Keywords

midcareer entrants, career changers, Schools and Staffing Survey, teacher shortage, racial and gender diversity

For the past two decades, midcareer entrants—teachers who enter the classroom after working in another field—have been at the center of proposals to

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avert national shortages of teachers and upgrade the teaching workforce (e.g., American Competitiveness Initiative [ACI], 2006; Gordon, Kane, & Staiger, 2006; National Commission on Teaching and America's Future [NCTAF], 2007). These proposals have highlighted the potential of midcareer entrants to help avert staffing shortages and to improve the overall quality of the teaching force—and thus raise student achievement—by recruiting individuals with specialized content knowledge and organizational experience into schools (American Competitiveness Initiative, 2006; Johnson, Birkeland, et al., 2004; National Academies Press, 2000, 2005). Some also think that recruiting more midcareer entrants can reduce the racial and gender imbalances that exist between U.S. teachers and their students (Feistritzer, 2005; Haselkorn & Hammerness, 2008; Natriello & Zumwalt, 1993; Ruenzel, 2002; Shen, 1997, 1998).

Given midcareer entrants' perceived potential to address a number of problems that schools face, in the mid-1980s, state departments of education, local school districts, foundations, and universities launched numerous programs to recruit and prepare midcareer candidates for new teaching assignments. Such programs included midcareer mathematics and science programs at George Mason University and, separately, George Washington University, The Massachusetts' Institute for New Teachers, The New York City Teaching Fellows Program, The Woodrow Wilson Teaching Fellowships, and Harvard University's Midcareer Math and Science Program.[1] Many of these programs were designed to resolve or alleviate current or projected teacher shortages, particularly in mathematics and science, and to increase the number of teachers from minority racial and ethnic backgrounds. In addition, proponents suggested that recruiting those with professional experience outside of public schools would improve classroom teaching, thereby raising student performance.

Those who created policies and programs to recruit and prepare midcareer entrants did so without any robust research to inform their work. No available studies used national data, or data from a wide time-range, to examine midcareer entrants' personal and professional characteristics (such as their gender, race, and prior professional experience), their rates and routes of entry into the profession, or the positions they secured on entering teaching. No studies explore how any of these factors changed over time. Thus policy makers had little more than conjecture and findings from small-scale studies in which to ground their expectations about how midcareer entrants might reshape the teacher work force. Without better information, policy makers were not well situated to predict whether their new programs would successfully attract midcareer entrants to teaching and, if they did, what those new

recruits might reasonably be expected to contribute or what types of supports they might need. Moreover, analysts have had little evidence with which to judge whether the numerous policies and programs aimed at recruiting midcareer entrants to teaching achieved any of their intended objectives, had unexpected benefits, or introduced new challenges. This lack of research persists, despite increasing concerns during the past decade about the characteristics and quality of new teachers.

In this study, we use an innovative methodology and national, cross sectional data from six administrations of the Schools and Staffing Surveys (SASS; 1987-1988, 1990-1991, 1993-1994, 1999-2000, 2003-2004, and 2007-2008) to investigate midcareer entrants' potential to remedy these problems and improve schooling. We describe midcareer entrants' personal and professional characteristics and investigate whether and how these characteristics have changed over the past 20 years. Thus this analysis presents the first nationally representative, descriptive information about midcareer entrants, including their average age, gender, race, former career, and the level of the schools where they teach. The data and analysis about these teachers can help policy makers anticipate whether recruiting midcareer entrants to teaching will moderate staffing shortages and reduce the gender and racial imbalance in the teacher workforce. Furthermore, it can guide school officials in tailoring induction programs to the needs of new teachers and drawing productively on the experience and skills that midcareer entrants may offer to their schools. Finally, it can suggest whether substantial changes in the proportions of midcareer entrants in the teaching force might change schooling in more fundamental ways.

It is extremely important to understand the large cohort of new teachers whose numbers will grow rapidly with the retirement of nearly half the current teaching force. Arne Duncan, the Secretary of the U.S. Department of Education (USDOE), recently warned of a coming shortage and extolled the promise of teaching:

> By 2014, just five short years from now, the U.S. Department of Education projects that up to one million new teaching positions will be filled by new teachers. These major demographic shifts mean that teaching is going to be a booming profession in the years ahead, with school districts nationwide making up to 200,000 new, first-time hires annually. (Bruce, 2009)

As Ingersoll and Merrill (2011) observe, "In 1987, the modal teacher had fifteen years' teaching experience. . . . By 2007, the data show that the modal

teacher was not a gray-haired veteran but a beginner in her first year of teaching" (p. 136). Today, the economic recession has forced many school districts to cut budgets and impose staffing layoffs, creating a temporary oversupply of teachers. However, eventually, veterans will retire and schools will again need to hire novices in large numbers. It is important to understand what role midcareer entrants might play in shaping the profile and potential of the U.S. teaching force.

Our findings both extend and challenge prior research and commentary about midcareer entrants to teaching. Most notably, we find that midcareer entrants comprise a far larger proportion of the new teacher workforce (well over one-third) than many realize. The percentage of midcareer entrants among first-year teachers nearly doubled between 1988 and 2004, from 20% to 39%, before decreasing slightly to 37% in 2008. This increase in the proportion of midcareer entrants over two decades has substantially altered the profile of new teachers nationally, yet has gone largely unnoticed. The change has important implications for local policy and practice. No longer can administrators assume that their new teachers will be recent college graduates who are moving directly from *being* students to *teaching* students, with little or no work experience in other fields or types of organizations. Rather, more than one third of entrants nationally will have career histories that differ markedly from those of first-career entrants. A principal may well find among his new recruits a substantial minority whose prior experience and current expectations present new opportunities and challenges to the conventional practices of schooling. Such changes have potentially far-reaching implications for teacher preparation, new-teacher induction, and school improvement.

We also found that, although midcareer entrants were more likely than first-career entrants to be male and from minority backgrounds, they have not reduced the gender imbalance among first-year teachers nationally, and they appear to be only partially responsible for introducing slightly more racial diversity into the teaching force. Therefore, although the national demographic profile of new teachers has changed substantially due to the steady increase of midcareer entrants, we should not expect this change to substantially alter the gender or racial composition of the teacher workforce, even if trends over the past 20 years continue. In addition, most midcareer entrants have taken assignments in elementary rather than secondary classrooms, suggesting that midcareer entrants are unlikely to eliminate the shortage of mathematics and science teachers in middle and high schools. These findings should help policy makers form more realistic expectations about the extent to which programs that recruit more midcareer entrants will increase the diversity of the teaching force and reduce shortages in science and math.

Beyond our substantive findings, this analysis presents an innovative methodology for overcoming the substantial technical challenges of conducting research with all six waves of SASS data. We suspect that the lack of a viable methodology may be the reason that few, if any, researchers have conducted analyses that employ all of the extant SASS data. By describing our methodology in detail, we hope to inform the design and execution of future investigations.

Midcareer Entrants and the Changing Composition of the Teacher Workforce

In the late-1970s and early-1980s, experts began predicting massive teacher shortages, especially in math and science and among minority teachers (e.g., Fiske, 1984; Musemeche & Adams, 1978). In 1983, *The New York Times* reported that, at Congressional hearings that same year, roughly 40 states identified problematic shortages of math and science teachers—shortages that were projected to worsen in the 1990s (Brooks, 1983). At roughly the same time, researchers, educators, and teachers unions expressed increasing concern about the declining proportion of teachers from minority racial and ethnic backgrounds, with some commentators referring to African American teachers as an "endangered" or "vanishing species" (summarized in Irvine, 1988). Subsequently Michael Fultz (2004) documented the role that the Supreme Court's ruling in *Brown v. Board of Education* played in displacing Black teachers in previously segregated schools, an outcome that Moore (2011) recently characterized as "catastrophic" (p. 178).

Research suggests that these concerns about gender and racial imbalances were warranted, given that they have detrimental effects on a variety of student outcomes, including students' performance on tests and feelings of self worth (e.g., Dee, 2004, 2005, 2006; Steele, 1997; Wiggan, 2007). Analyzing data from Tennessee's Project STAR, Dee (2004) found that students performed better on assessments and were more engaged with academic material when they were taught by a teacher of the same race. Dee's (2006) analysis of data from the National Educational Longitudinal Survey (NELS) found that teachers' gender had a similar effect on student performance.

Findings such as these are particularly problematic in light of demographic changes in U.S. public schools. Over the past 20 years, student enrollments in K-12 public education have increased by 19% while the teaching force has grown by 48%, at nearly 2.5 times the rate of growth in student enrollments (Ingersoll & Merrill, 2011). Although the relative balance between male and female students held steady during this period, the proportion of women in

the teaching force grew from 70% in 1987 to 76% in 2007 (Drury & Baer, 2011). Ingersoll and Merrill (2011) report that, if this trend continues, more than 80% of the U.S. teaching force will be female by 2012. At the same time, the proportion of non-White students increased from 32% in 1988 to 45% in 2008 (Aud et al., 2010). The U.S. Census Bureau projects that half of the nation's school-aged children will be from minority backgrounds by 2020 (as reported in Center on Education Policy, 2006). By contrast, over the same period, the percentage of White public school teachers increased from 88% to 90%, while the percentage of African American teachers dropped from 8% to 6% (Center on Education Policy, 2006).Therefore, as the proportion of minority students continues to grow, the teaching force is becoming increasingly White and female.

Recognizing the problems inherent in these demographic trends, states, school districts, and nonprofit organizations sought to increase the gender, racial, and ethnic diversity among teachers hired in the late 1980s and 1990s by creating recruitment and preparation programs targeted primarily or exclusively toward midcareer entrants. Such programs offered accelerated preparation and ready access to teaching positions, often at little or no cost to the recruit (summarized in Birkeland & Peske, 2004). By 1988, 23 states had programs intended to bring midcareer entrants to teaching (Arocha, 1988) and 18 states had passed legislation allowing states agencies, themselves, to create alternative licensing programs (Lutz & Hutton, 1989).

Such policies and programs for midcareer entrants continued to emerge throughout the 1990s and those who created them often were quick to tout their success. For example, state policy makers designed the Massachusetts Institute for New Teachers and its accompanying US$20,000 signing bonus to appeal to midcareer entrants with strong academic records. The program gave priority to teachers of shortage subject areas, such as mathematics and science, teachers from minority backgrounds, and candidates willing to teach in urban schools (Billups, 1999; Fowler, 2003; Liu, Johnson, & Peske, 2004). The state's Commissioner of Education reported proudly in 1998 that 24% of the program's first class were from minority backgrounds—eight times the percentage of minority teachers in Massachusetts' public schools (McNiff, 1999).

In 1999, Virginia officials launched a program to recruit midcareer entrants, which was intended to reduce shortages of math and science teachers and increase the proportion of male and minority teachers (Benning, 1999). The program was modeled on New Jersey's Provisional Teacher Program (founded in the mid-1980s) based on that program's reported success in recruiting more male and minority teachers. Virginia's Superintendent of Public Instruction noted, "We want to be able to establish a rich pool of

qualified applicants that will enable us to respond to these shortage areas" (Benning, 1999, p. V03). The president of the state's Board of Education added, "I know that there are scientists and mathematicians and other professionals who are distinguished in their fields who would love to get into teaching as a second career and who would be great in the classroom" (Benning, 1999, p. V03). That same year, citing shortages of mathematics and science teachers and of teachers from minority backgrounds, the University of North Carolina launched its Teachers of Excellence for All Children Program aimed at "increasing the supply of well-qualified teachers by attracting midcareer professionals into the ranks of North Carolina's teacher corps" (Broad, 1999, p. A19). The University of Maryland and the Montgomery County (MD) Public Schools paired up on a similar undertaking to increase the diversity of the district's teachers by bringing more "Black, Hispanic and Asian career-changers into the classroom" (Arocha, 1988).

Federal policy makers followed the lead of states and universities. With guidance from Rod Paige, then U.S. Secretary of Education, they allocated over US$41 million to the Transition to Teaching Program, to promote new alternative licensing programs, particularly those aimed at midcareer entrants (summarized in Birkeland & Peske, 2004; see also: Blair 2003, Feistritzer & Chester, 2003). In Paige's annual reports from 2002 and 2003, he encourages states without midcareer and alternative certification programs to begin such initiatives, citing these programs' potential to draw male and minority teachers into schools and citing evidence from Texas, California, and the national Troops to Teachers program to support these claims (U.S. Department of Education, 2002). Subsequently, President George W. Bush allocated US$25 million to alleviate shortages of qualified mathematics and science teachers by attracting midcareer entrants as part of the American Competitiveness Initiative. Bush referred to this potential cadre of teachers as an, "untapped resource . . . who have both content mastery and the practical experience to serve as effective teachers and positive role models for students who are interested in science or mathematics careers" (American Competitiveness Initiative, 2006).

Most of what little we know about this subgroup of new teachers comes from smaller, state-specific studies, (e.g., Johnson, Kardos, Kauffman, Liu, & Donaldson, 2004) some of which report on programs that no longer exist (e.g., Darling-Hammond, Hudson, & Kirby, 1989; Johnson, Birkeland, et al., 2004; Madfes, 1990; Merseth, Stein & Burack, 1994). For example, Madfes (1990), who interviewed 17 first-year midcareer entrants from mathematics or science backgrounds, concluded that both preparation and induction programs should be tailored to better meet the needs of career changers. From

interviews with 18 career changers who graduated from teacher preparation programs at Harvard University, Stein (2001) found that midcareer entrants struggled with their underresourced schools, their reduced salaries, and the low status of their new profession, but found their work with students rewarding. Although these studies make important contributions, they provide a scant research base, given the attention and far-reaching expectations that policy makers have had for midcareer entrants. Thus, although strong beliefs persist about the potential of midcareer entrants to address staffing needs in teaching, there is very little systematic information about these teachers' numbers, background, or teaching assignments that policy makers and administrators can use to guide their current initiatives. Similarly, there has been little effort to discover whether previous policies and programs geared to attract midcareer entrants have achieved their intended goals of increasing the supply of teachers, alleviating shortages (particularly in mathematics and science), and increasing the proportion of male and minority teachers. Furthermore, there has been no attention to whether this substantial change in the age and experience profile of new teachers might fundamentally alter schooling.

In a recent review of the literature about midcareer entrants and career changers in education, Haselkorn and Hammerness (2008) note the discrepancy between policy makers' substantial interest in midcareer entrants and the lack of answers to basic questions about this group of teachers: "Researchers need to confirm the numbers of entering mid-career teachers nationally . . . They need to learn more about the racial and ethnic diversity of these candidates. They need to understand what kind of prior experiences career-changers have had . . ." (p. 35). This study is designed to begin addressing that shortage of information and understanding.

Midcareer Entrants and Their Potential to Change Schooling

Since the late 1960s when the large cohort of now-retiring veteran teachers entered the profession, researchers have explored why individuals choose teaching. Drury and Baer (2011) report that since 1970 teachers responding to the National Education Association's survey on *The Status of the American Teacher* consistently identified "a desire to work with young people" as their top reason for entry, followed by the "value or significance of education in society" and "interest in subject matter field" (p. 40). In his classic 1975 study, Dan Lortie reported that the 94 teachers he interviewed identified five "attractors" to a teaching career: the importance of working

with people, the opportunity to serve others, the chance to remain in settings that they know and enjoy, the material benefits of a job in teaching and having a schedule that coincides with family demands. Similarly, Goodlad (1984) found that the 1,350 teachers he surveyed were attracted by "the nature of teaching itself," "the desire to teach in general or to teach a subject in particular," "the idea of teaching as a good and worthy profession" and "a desire to be of service to others" p. 171. The 115 teachers interviewed by Johnson (1990) offered a similar list of attractors: working with people (especially children), the act of teaching, continued work with a particular subject, social or religious purposes, and having a family-friendly schedule. Many of the teachers interviewed or surveyed by these researchers also chose teaching because it was a professional career that was open to women and African American men—teaching's prime candidates—when other fields were not.

These studies did not examine whether subgroups of first-career and midcareer entrants offered different reasons for choosing teaching. However, it is important to consider why today's midcareer entrants, who initially selected another field, decided to change careers and enter teaching. Interviews with 24 midcareer entrants in a larger study of 50 new teachers (Johnson, Birkeland, et al., 2004) revealed that they believed teaching would offer more meaningful work than their previous employment. Some, who explained that they had initially pursued jobs in fields such as business, engineering, or law after racial or gender barriers were eliminated in the 1980s, said their decision to teach at midcareer marked a return to what they believed was their "true calling." Others had found that they most enjoyed the responsibilities in their work outside education that were similar to teaching, such as training colleagues. Yet others had started families and preferred the "family-friendly" schedule of teaching.

In another study, Johnson, Birkeland, & Peske (2005) studied 13 alternative preparation programs in four states. Interviews with 80 participants, most of them midcareer entrants, revealed that they had been attracted to teaching by its "meaningful work" and the schedule it offered, which allowed them time with their family. Even those who had been laid off in another field, said that they did not intend to leave education and return to their prior employment, even if a job in their earlier field became available.

Overall, therefore, it appears that midcareer entrants decide to teach for many of the same reasons as first-career teachers. However, they are notably different in that they did not choose teaching immediately after college. Because first-career entrants were students for two decades before entering

the classroom, conventional public school practices are likely to predominate their sense of what is possible. Lortie (1975), like many who have followed him, treated the few "second-career teachers" in his sample as exceptions—mostly men who were dissatisfied with a career in business or the priesthood. The large majority of his teachers were women who entered teaching as a first career. Lortie described their socialization into teaching as "continuous" in that they had always been in schools. Through their many years as students, they had formed their beliefs and expectations about teaching through the "apprenticeship-of-observation" (p. 85). Lortie concluded that such continuity of experience has a conservative effect on the profession, in that it appeals "strongly to young people who are favorably disposed toward the existing system of schools" (p. 54). If they were dissatisfied with their experience, he conjectured, they would likely choose a different line of work although we now realize that such opportunities were not widely available to women and men of color at the time. Thus Lortie concludes that recruitment into teaching reaffirms and stabilizes current approaches to teaching and schooling.

Today's midcareer entrants were not initially "loath to leave" schools as Lortie's sample of predominantly first-career entrants reportedly were. They first pursued careers in workplaces that differed markedly in structure from the flat, "egg-crate" structure offered by schools. They provided differentiated roles, responsibilities, and experience such as leading a team of peers on a project, being promoted on the basis of performance, or conducting training or assessment of their colleagues. What is not known is whether midcareer entrants put their prior work experiences behind them as they enter teaching, accommodating to the traditional structures of schooling and norms of teaching (Lortie, 1975), or whether they will draw on those experiences outside public education to change schooling.

Furthermore, little is known about whether midcareer entrants will find sufficient support and success as teachers so that they remain in teaching. They have changed fields once and might do so again if they are stymied or disappointed. Such questions suggest the importance of learning much more about the composition and experience of the large cohort of new teachers who currently are replacing the retiring generation.

This research is designed to begin such inquiry by first establishing the basic descriptive facts about midcareer entrants' personal and professional characteristics and their prevalence in the teacher workforce. Subsequent research can then examine their retention and explore whether and how midcareer entrants might be changing various aspects of their schools and students' learning.

The Study

This study is designed to provide an exploratory, descriptive analysis of midcareer entrants to public school teaching. We seek to learn how large a subgroup they represent among new entrants, what personal and professional characteristics they bring to teaching, what level of schooling they teach, and whether they have diversified the teaching force by race and gender. We draw on more than 20 years of data from the SASS to answer these and related questions. The three research questions guiding our work are as follows.

Research Questions

Research Question 1: Who are midcareer entrants? What are their personal and professional characteristics, and how have these characteristics changed over the past two decades?

Research Question 2: What percentage of new public school teachers are midcareer entrants, and how has this percentage changed over the past two decades?

Research Question 3: What role, if any, have midcareer entrants played in increasing the gender and racial diversity of the new teacher workforce?

The common policy narrative to date has been that recruiting midcareer entrants to teaching will help alleviate projected teacher shortages, fill vacancies in high-need subjects, and diversify the teacher workforce. However, this narrative is based on assumptions that have never been examined at the national scale. Establishing the basic descriptive facts about midcareer entrants nationally is an important first step in developing an informed theory of action about what draws midcareer entrants to teaching, whether they have the potential to fulfill policy makers' lofty expectations, and whether they might alter the conservative effect on the teaching force that Lortie hypothesized resulted from having a high proportion of first-career entrants.

Furthermore, we seek to contribute to an understanding of whether state and federal policies and programs aimed at increasing the number of midcareer entrants to teaching over the past 20 years appear to be having their intended effect—acknowledging, of course, that many other factors were simultaneously occurring over this time period that might also have affected the composition of the teacher workforce. Furthermore, our examination of midcareer entrants' rates of entry into teaching over time will help policy

makers make an informed assessment of the role that midcareer entrants might play in helping to avert future staffing shortages diversify the teaching force, and possibly change schooling.

It is important to gain answers to these questions now, given policy makers' renewed attention to recruiting new teachers, diversifying the teacher workforce, and filling vacancies in high-need subjects. Furthermore, the answers to these questions have important implications for programs that prepare teachers and for the schools that hire them.

Identifying Midcareer Entrants

There is, as yet, no common definition for the group of teachers we refer to as "midcareer entrants." Over the years, researchers and policy makers have identified "delayed entrants"[2] (Broughman & Rollefson, 2000), "postbaccalaureate" applicants to teacher preparation programs (Feistritzer, 1999), "midcareer entrants" (Cannata, 2010; Gordon et al., 2006; Haselkorn & Hammerness, 2008; Johnson, Birkeland, et al., 2004; Marinell, 2010), and "career-changers" (Crow, Levine, & Nager, 1990). Perhaps the only agreement across these studies is that midcareer entrants are distinct from first-career entrants—those teachers who obtain their licensing credentials during, or immediately after, their undergraduate studies and then enter teaching as a first career.

In this study, we identify as midcareer entrants those teachers who, in the year before they began full-time teaching, were older than 27,[3] had not previously taught in K-12 schools, and were engaged in one of the following activities: working in a career outside of education, working in an education-related job other than classroom teaching (e.g., librarian, school nurse, principal, etc.), teaching at a preschool or university, working in the military, retired from jobs other than teaching, or attending a university.[4] This definition is deliberately broad because it allows us to investigate whether different types of midcareer entrants possess different personal and professional characteristics and have enrolled in teaching at differing rates over the past two decades. Our strategy for identifying midcareer entrants minimizes the likelihood that our sample includes reentrants—teachers who taught previously but took a break in service before returning to the classroom. We used items on the SASS to screen out teachers who took breaks in service from teaching and those who began teaching in their schools more than one year before the survey was administered.

Data

We use data from the National Center for Educational Statistics' (NCES) Schools and Staffing Survey (SASS), a cross-sectional survey of a nationally

representative sample of K-12 teachers, principals, and district personnel in U.S. public and private schools. The SASS is the only national data set that allows researchers to identify midcareer entrants, albeit with some limitations, which we explore later in this section. NCES has administered the SASS on six occasions (1987-1988, 1990-1991, 1993-1994, 1999-2000, 2003-2004, and 2007-2008). The SASS public school teacher data sets contain a total of nearly 300,000 teachers across all six administrations, 56,242 (1987-1988); 46,705 (1990-1991); 53,003 (1993-1994); 42,086 (1999-2000); 52,478 (2003-2004); and 47,600 (2007-2008).

We perform our analyses on smaller subsamples of new public school teachers. Each of the six SASS administrations contains the following number of full-time, first-year teachers (including both first- and midcareer entrants): 1,286 (1987-1988); 1,521 (1990-1991); 1,821 (1993-1994); 1,708 (1999-2000); 1,456 (2003-2004); 1,704 (2007-2008). Of these new teachers, the following percentage were midcareer entrants in each of the survey years: 21% in 1987-1988 (269/1,286); 36% in 1990-1991 (541/1,521); 32% in1993-1994 (589/1,821); 36% in 1999-2000 (623/1,708); 40% in 2003-2004 (582/1,456); 39% in 2007-2008 (662/1,704). Based on these sample sizes, our analyses have the statistical power required to detect small effect sizes at conventional levels of Type 1 error (Light, Singer, & Willett, 1990).[5]

Measures and Method

To address our first research question, we present descriptive statistics regarding various personal and professional characteristics of midcareer entrants, such as their age, the type of school in which they teach, and the occupational category of their former career. We chose not to examine whether differences in the levels or trends over time of these characteristics were statistically significant because our primary objective is to present a basic descriptive profile of midcareer entrants. To answer our second and third research questions, we use the linear contrast methodology (Neter, Wasserman, & Kutner, 1990). This approach allows us to address these trend-over-time research questions using data from all six administrations of the SASS. Here, we do investigate whether observed differences in the elevations and slopes of various mid- and first-career trends are statistically significant.

Despite the SASS data sets' many strengths, limitations in the design and administration of the surveys constrain researchers' ability to use this potentially powerful source of information to explore questions that measure average differences or trends over time. Over the past 20 years, the surveys have employed different sampling methods and were administered across different intervals of time; thus it is not possible to simply append the six data sets into a single master

analytic file and conduct traditional trend-over-time analyses.[6] We suspect that these limitations are partly, perhaps largely, responsible for the dearth of analyses that use data from all six administrations of the SASS. Given these limitations, we employ the linear contrast methodology to address our second and third research questions. This methodology, which we describe in detail below, provides an effective and appropriate approach for these purposes.

For the second and third research questions, our primary outcome of interest is MIDCAREER, a dichotomous outcome identifying whether a first-year, full-time K-12 public school teacher is a midcareer entrant (coded MIDCAREER = 1 if a teacher is a midcareer entrant, 0 otherwise).[7] While it is not ideal to test the existence of a linear trend in a dichotomous outcome, it is the only option given the previously described limitations in the data set. Because MIDCAREER is dichotomous, our results are approximations though the estimates should not be asymptotically biased (Wooldridge, 2006).

The predictors of primary interest for the second and third research questions are $YEAR_1$-$YEAR_6$, a vector of dichotomous variables that distinguish among the six repeated administrations of the SASS (each coded 1 for the administration to which it refers, 0 otherwise). To address the third research question, we investigate whether the MIDCAREER outcome differs by mid- and first-career entrants' race and gender, and thus we include the following two question predictors in this stage of the analysis: FEMALE, a dichotomous variable indicating whether participants are female (coded FEMALE = 1 if a teacher is female, 0 otherwise); and RACE, a vector of dichotomous variables indicating whether participant are from Asian, Black, Hispanic or White racial/ethnic backgrounds (coded 1 to represent the ethnicity in question, 0 otherwise). At various points, we condense the first three racial/ethnic categories to investigate whether the outcome differs across non-White and White mid- and first-career entrants.

In essence, the linear contrast methodology allows us to estimate the relevant sufficient statistics within each SASS data set and then construct (and test) contrasts representing our hypotheses about the linear trends and average differences in the MIDCAREER outcome. All of our linear contrasts represent hypothesized trends in population means of the following form:

$$L = c_1\mu_1 + c_2\mu_2 + c_3\mu_3 + c_4\mu_4 + c_5\mu_5 + c_6\mu_6$$

Where μ_1 through μ_6 are the population means of the MIDCAREER outcome and C_1 through C_6 are the coefficients that represent our various hypotheses, such that $\sum_{i=1} c_i = 0$ within the six SASS data sets.

Specifically, we use the linear contrast methodology to investigate whether the estimated slope of any trend—such as the time trend in the percentage of first-year public school teachers who were midcareer entrants—differs from zero, on average in the population. We estimate similar linear contrasts to test whether the time trends differ by the gender and racial composition of the midcareer and first-career entrant groups. In addition, we conduct tests of difference to determine whether there were differences in the elevation and slope of related time trends. For instance, we test whether the slopes of two estimated time trends—such as the trends over time in the percentage of mid- and first-career entrants who are men—differ from one another, on average in the population. In addition, we test whether there are differences in the elevation of related time trends, such as the two just described, on average in the population.

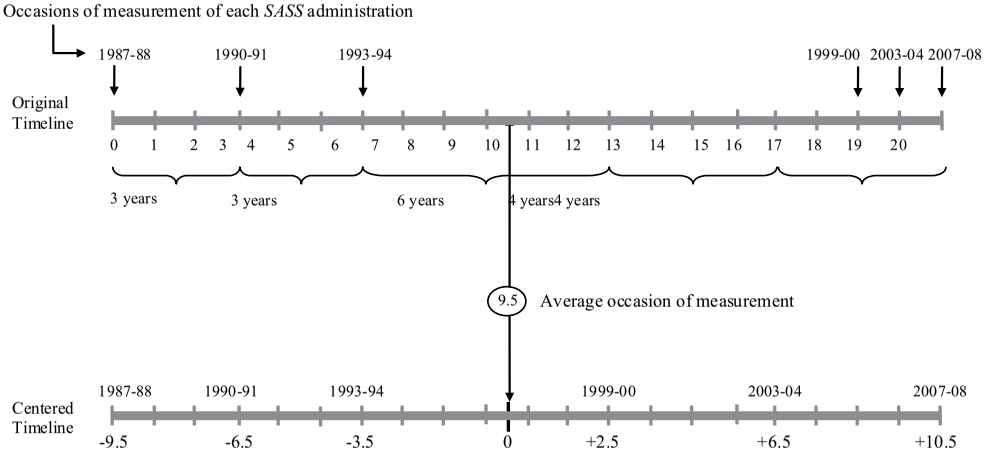
In Figure 1, we display how we compute the coefficients (C_1 through C_6 in the model above) that allow us to test our hypotheses about the rates of change in the linear trends of the MIDCAREER outcome. As depicted, the time intervals between the six SASS administrations differ as follows: 3 years (1988-1991), 3 years (1991-1994), 6 years (1994-2000), 4 years (2000-2004), and 4 years (2004-2008). Thus if one were to create a timeline depicting the 20-year period of this study with Year 0 representing the date on which the first SASS was administered (1988), the remaining four surveys were administered in Years 3, 6, 12, 16, and 20 respectively. We center the times of these occasions of measurement on their mean value of 9.5. Under these conditions, as is shown in the derivation at the bottom of Figure 1, a population contrast for testing a linear trend in the population means of the outcome is

$$L = -0.0313\mu_1 - 0.0214\mu_2 - 0.0115\mu_3 + 0.0082\mu_4 + 0.0214\mu_5 + 0.0346\mu_6$$

and the associated null hypothesis is

$$H_0 : L = c_1\mu_1 + c_2\mu_2 + c_3\mu_3 + c_4\mu_4 + c_5\mu_5 + c_6\mu_6 = 0$$

To test for the existence of a statistically significant linear trend, we first compute a sample estimate of $\hat{L}$ by substituting the appropriate sample estimates, $\hat{\mu}_1$ through $\hat{\mu}_6$ of the mean values of the MIDCAREER outcome across the six survey administrations. We then estimate an appropriate standard error for $\hat{L}$ by substituting standard errors associated with each of the estimated outcomes into the following expression:



Assuming a linear growth trajectory:

$\bar{Y}_1 = \pi_0 - 9.5\pi_1$
$\bar{Y}_2 = \pi_0 - 6.5\pi_1$
$\bar{Y}_3 = \pi_0 - 3.5\pi_1$
$\bar{Y}_4 = \pi_0 + 2.5\pi_1$
$\bar{Y}_5 = \pi_0 + 6.5\pi_1$
$\bar{Y}_6 = \pi_0 + 10.5\pi_1$

Where π_0 is the populationintercept and π_1 is the population rate of change of the hypothesized trajectory.

Notice that:

$-9.5\bar{Y}_1 - 6.5\bar{Y}_2 - 3.5\bar{Y}_3 + 2.5\bar{Y}_4 + 6.5\bar{Y}_5 + 10.5\bar{Y}_6$

which equals

$[-9.5(\pi_0 - 9.5\pi_1)] + [-6.5(\pi_0 - 6.5\pi_1)] + [-3.5(\pi_0 - 3.5\pi_1)] + [2.5(\pi_0 + 2.5\pi_1)] + [6.5(\pi_0 + 6.5\pi_1)] + [10.5(\pi_0 + 10.5\pi_1)] = 303.5\pi_1$

and so, therefore,

$$L = [-9.5\mu_1 - 6.5\mu_2 - 3.5\mu_3 + 2.5\mu_4 + 6.5\mu_5 + 10.5\mu_6] / 303.5$$

or

$L = -0.0313\mu_1 - 0.0214\mu_2 - 0.0115\mu_3 + 0.0082\mu_4 + 0.0215\mu_5 + 0.0346\mu_6$

Represents a linear contrast for the linear slope of the hypothesized trend line.

Figure 1. Determining the coefficients for representing the slope of a linear trend line occasions of measurement of each SASS administration.

$$se(\hat{L}) = \sqrt{c_1{}^2[se(\hat{\mu}_1)]^2 + c_2{}^2[se(\hat{\mu}_2)]^2 + c_3{}^2[se(\hat{\mu}_3)]^2 + c_4{}^2[se(\hat{\mu}_4)]^2 + c_5{}^2[se(\hat{\mu}_5)]^2}$$

Then, we generate an observed *z statistic* by dividing by its estimated standard error. Lastly, we determine the statistical significance of this observed *z statistic* by comparing it to an appropriate critical value from a *z* distribution. For the two-tailed tests of difference that we apply in this study, a critical *z statistic* of 1.96 represents statistical significance at the conventional .05 alpha level.

To determine the statistical significance of an observed difference in elevation between two trend lines, we first specify a null hypothesis that the equations of the two trends are equal:

$$\begin{aligned} H_0 : c_1\mu_1{}^A + c_2\mu_2{}^A + c_3\mu_3{}^A + c_4\mu_4{}^A + c_5\mu_5{}^A + c_6\mu_6{}^A \\ = c_1\mu_1{}^B + c_2\mu_2{}^B + c_3\mu_3{}^B + c_4\mu_4{}^B + c_5\mu_5{}^B + c_6\mu_6{}^B \end{aligned}$$

The linear contrast on the left side of the equation (^{A}) might represent, for instance, the average percentage of men among the population of mid-career entrants, over time. Following this example, the contrast on the right side of the equation (^{B}) would represent the average percentage of men among the population of first-career entrants, over time. To test whether the elevations of the two trends differ, we use identically weighted values for the *c* coefficients. Since there are six outcome means, the appropriate coefficient for measuring differences in elevation is 0.1667. Employing equally weighted coefficients simply tests whether the average of the outcome means for one of the trend lines is statistically different from the average of the outcome means from the other trend. This hypothesis can be simplified as follows:

$$\begin{aligned} H_0 : L = c_1(\mu_1{}^A - \mu_1{}^B) + c_2(\mu_2{}^A - \mu_2{}^B) + c_3(\mu_3{}^A - \mu_3{}^B) + \\ c_4(\mu_4{}^A - \mu_4{}^B) + c_5(\mu_5{}^A - \mu_5{}^B) + c_6(\mu_6{}^A - \mu_6{}^B) = 0 \end{aligned}$$

$$H_0 : L = c_1\delta_1{}^{AB} + c_2\delta^{AB} + c_3\delta_3{}^{AB} + c_4\delta_4{}^{AB} + c_5\delta_5{}^{AB} + c_6\delta_6{}^{AB} = 0$$

For contrasts that examine the difference in the elevation of two trend lines, the standard error of L is as follows:

$$se(\hat{L}) = \sqrt{c_1{}^2[se(\hat{\mu}_1{}^A - \hat{\mu}_1{}^B)]^2 + c_2{}^2[se(\hat{\mu}_2{}^A - \hat{\mu}_2{}^B)]^2 \ldots + c_6{}^2[se(\hat{\mu}_6{}^A - \hat{\mu}_6{}^B)]^2}$$

Where $se(\hat{\mu}_1{}^A - \hat{\mu}_2{}^B) = \sqrt{se(\hat{\mu}_1{}^A)^2 + se(\hat{\mu}_2{}^B)^2}$

To determine the statistical significance of the difference in the elevation of the two trend lines, we obtain an observed *z statistic* by dividing *L* by its estimated standard error and comparing it to the 1.96 critical *z statistic*, as before.

^

To determine whether linear slopes differ for pairs of related linear trends—such as the trend in the percentage of midcareer entrants who are male and the corresponding trend in the percentage of first-career entrants who are male—we use the equation from above (the one derived from subtracting the equation of one linear trend line from the equation of the other), but rather than selecting equally weighted coefficients, we use the same coefficients that we employ to test the existence of the linear trends in the outcome—in other words, the interval-related coefficients that we derive at the bottom of Figure 1.

Limitations

A number of limitations restrict what we can conclude from this investigation. First and most obviously, the SASS data are strictly observational, so we are unable to determine whether the observed changes that we describe are the result of changes in the job market, changes in the preferences of midcareer entrants, changes in both, or changes in some other factor altogether. Second, the items on the SASS that we use to identify midcareer entrants are not sufficiently detailed for distinguishing certain types of midcareer entrants. For instance, we cannot be entirely certain that older teachers who were "attending a university or college" in the year prior to teaching are midcareer entrants who chose to enroll in university-based teacher certification programs. It is possible that some of these individuals were late baccalaureate graduates for whom teaching is a first, though delayed, career. However, by identifying midcareer entrants only as those who are older than 27, we minimize the possibility of misidentifying first- and midcareer entrants.[8] We are also unable to determine whether this category of midcareer entrants held previous occupations before enrolling in colleges or universities and, if so, in what industries. The SASS only reports information about participants' previous career if they entered teaching directly from a profession outside of education without pursuing any traditional, full-time preparation.

Findings

Who Are Midcareer Entrants? What Are Their Personal and Professional Characteristics, and How Have These Characteristics Changed Over the Past Two Decades?

Over the period of observation, the average first-year midcareer entrant was a White, 36-year-old female who entered teaching directly from a college or

university, most likely after attending a postbaccalaureate, university-based teacher certification program. Her previous career had been in a "professional" occupation, such as social work, law, engineering, art, or medicine.[9] In her first year as a teacher, she taught general elementary education in a suburban elementary school in the southern United States. Many of these characteristics remained stable throughout the six administrations of the SASS. For instance, midcareer entrants' average age remained relatively constant over time. Similarly, the percentage of mid- and first-career entrants working in elementary schools—60% and 64% respectively, on average—also remained unchanged throughout the period of observation. Lastly, midcareer entrants who began teaching directly from jobs outside of education generally came from the same broad "professional" occupational category.[10]

Midcareer entrants' experiences prior to teaching have also changed over time. The percentages of midcareer entrants coming directly both from jobs outside of education and from education-related jobs other than teaching increased over time, on average. Specifically, the percentage of midcareer entrants transferring to teaching from careers outside of education rose steadily from 18% to 31% between 1988 and 2004 and then decreased to 21% in 2008. The percentage of midcareer entrants coming from education-related, nonteaching jobs increased steadily over time, from 12% to 22% between 1988 and 2008. Although most midcareer entrants were enrolled in colleges and universities in the year prior to teaching, this percentage decreased steadily from 66% to 44% between 1988 and 2004 and then rose to 52% in 2008.

What Percentage of New Public School Teachers Are Midcareer Entrants, and How Has This Percentage Changed Since the Mid-1980s?

We examined trends in both mid- and first-career entrants' enrollment into teaching over time. As Figure 2 depicts, we found that the total number of first-year teachers—which includes both mid- and first-career entrants—grew steadily from about 73,100 in 1988 to 121,000 teachers in 2000, decreased to approximately 111,100 by 2004, and then increased again to about 139,600 in 2008. Throughout this period, the number of first- and midcareer teachers entering the profession also grew, on average. In 1988, about 58,800 new teachers were first-career entrants. The number of first-career entrants fluctuated between 1988 and 2008, reaching a high of roughly 88,000 teachers in the final survey year. By comparison, far fewer first-year

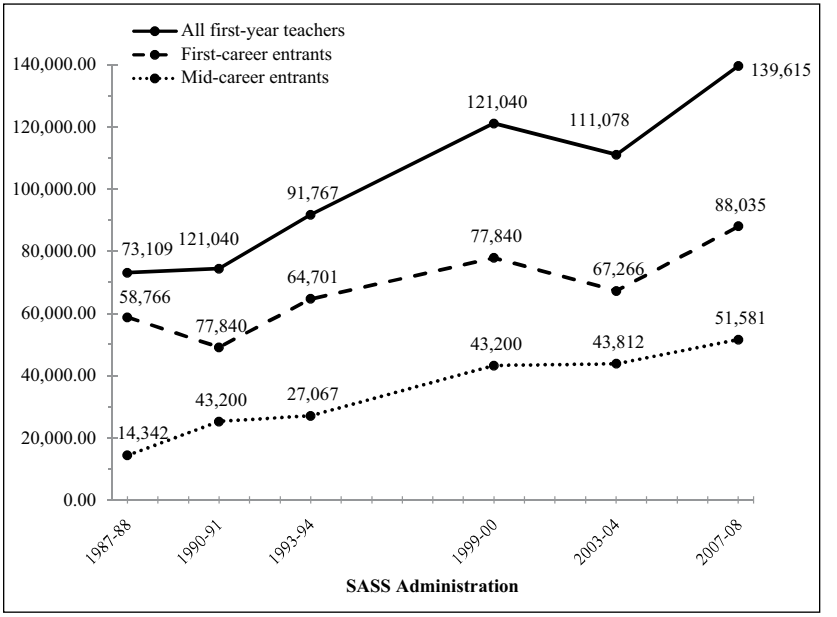


Figure 2. The total number of first-year teachers, and the number of first-year teachers who were first-career entrants and midcareer entrants.

teachers were midcareer entrants in 1988, only about 14,300. However, the number of midcareer entrants grew steadily from one survey administration to the next, reaching 51,581 teachers in 2008.

The steady growth in midcareer entrants relative to their first-career counterparts resulted in a near doubling of the percentage of midcareer entrants among first-year, full-time teachers over the first 16 years of the period of observation. As Figure 3 reveals, the percentage of midcareer entrants among all first-year teachers grew from approximately 20% in 1988 to more than 39% in 2004, before decreasing to 37% in 2008. By implication, the percentage of first-career entrants among all first-year teachers decreased over this period, from about 80% in 1988 to about 63% in 2008.[11] The trajectory for midcareer entrants displayed in Figure 3 represents a statistically significant positive linear trend ($p < .0001$), indicating that, between 1988 and 2008, the probability that a first-year teacher was a midcareer entrant increased by approximately three quarters of a percentage point (0.7356%) per year, on average, or about 15 percentage points overall.

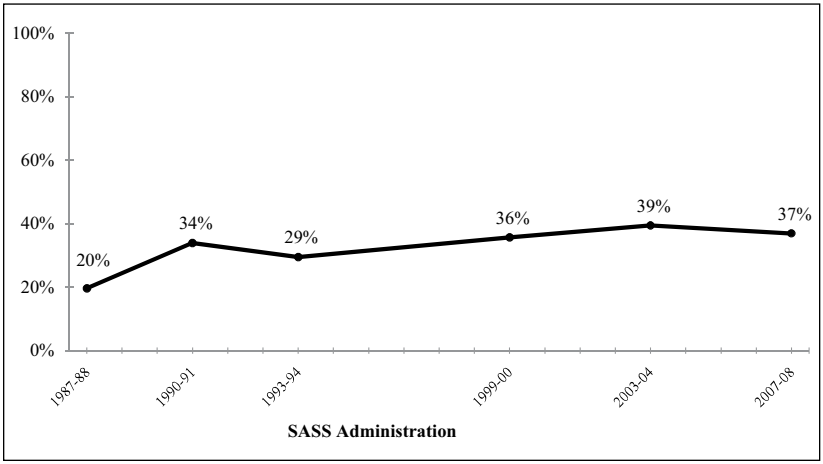


Figure 3. The percentage of first-year teachers who were midcareer entrants in each survey year.

What Role, if Any, Have Midcareer Entrants Played in Increasing the Gender and Racial Diversity of the New Teacher Workforce?

Several conditions must be met before we can attribute any observed reductions in the gender and racial imbalances among first-year teachers to the increasing presence of midcareer entrants' presence in teaching. First, the percentage of midcareer entrants among all first-year teachers must have increased—a condition that has, in fact occurred (see Figure 3). Second, *either* the percentages of male and non-White midcareer entrants must be substantially larger, on average, than the percentages of male and non-White first-career entrants *or* the percentages of male and non-White midcareer entrants must have increased at substantially greater rates than the corresponding percentages among first-career entrants. To investigate whether there was any evidence to support either scenario, we examined the trends in the gender and racial composition within the mid- and first-career entrant subgroups and investigated whether changes in the composition of these subgroups appeared to have influenced any statistically significant reductions in the gender and racial imbalances among all first-year teachers overall. We discuss the findings related to gender first.

Gender balance. We examined the gender balance within the mid- and first-career entrant subgroups to discern whether one subgroup contained a larger

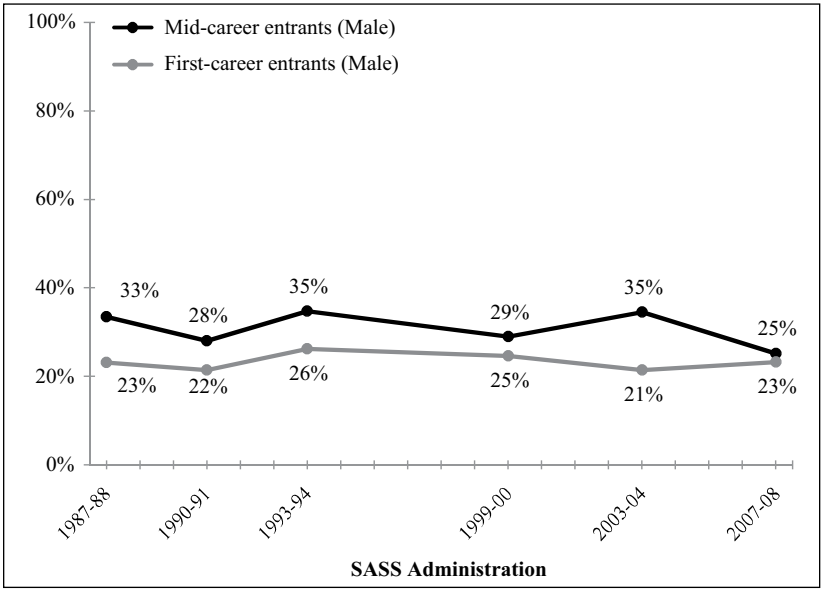


Figure 4. The percentage of first-career and midcareer entrants who are male.

percentage of male first-year teachers and whether the gender balances within the subgroups changed over time. Confirming the findings from previous studies (Feistritzer, 2005; Ruenzel, 2002; Shen, 1997, 1998), we found that, on average, a greater percentage of midcareer entrants were men. As Figure 4 depicts, approximately 31% of midcareer entrants were male as compared with about 23% of first-career entrants, on average during the period of observation. This 7.4 percentage point average difference was highly statistically significant ($p < .0001$). Interestingly, we found that, while the gender balance within both the mid- and first-career entrant subgroups fluctuated from one survey year to the next, there were no statistically significant linear trends in the gender balance within either group over the study period. In other words, the predominantly female character of both groups remained relatively stable throughout the period of observation.

Since the percentage of mid-career entrants among new teachers grew from 20% to 37% between 1988 and 2008, and a larger percentage of first-year midcareer than first-career entrants are men, one might anticipate that midcareer entrants had increased the gender diversity of the new teacher workforce. In statistical terms, this was not the case. As Figure 5 depicts,

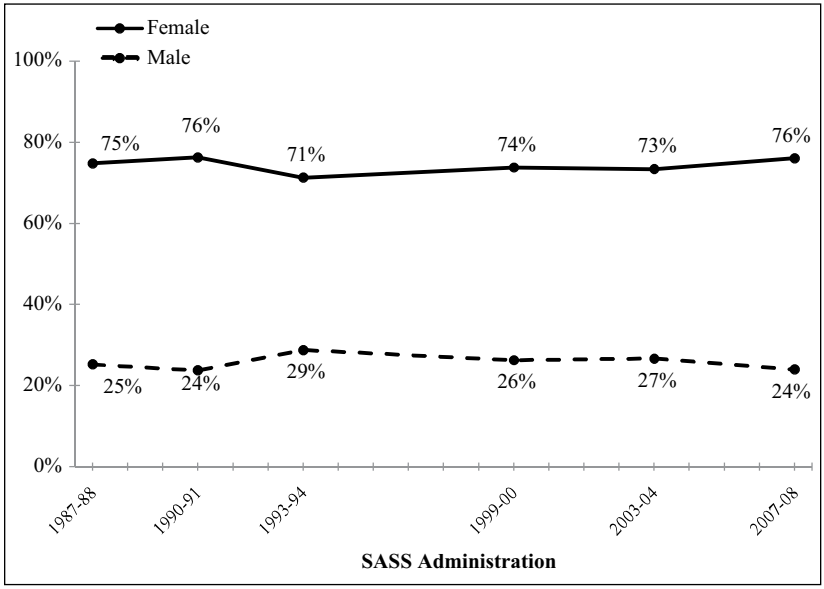


Figure 5. The gender balance among all first-year teachers.

while there was a slight observed increase in the percentage of first-year teachers who were male, from 25% to 27% between 1988 and 2004, this 1.4 percentage point increase was offset by a subsequent decline to 24% in 2008. Thus there was no statistically significant reduction in the gender imbalance among new teachers during the period of observation.

Racial balance. We conducted a similar series of analyses to investigate whether midcareer entrants have influenced the racial imbalances among the new teacher workforce. As with the gender scenario, at least one of the two following conditions must be met to suggest that midcareer entrants influenced any reductions in the racial imbalance among new teachers: (a) the percentage of midcareer entrants who are non-White must be substantially larger than the percentage of first-career entrants who are non-White; and/or (b) the percentage of non-White midcareer entrants must be increasing at a greater rate than the corresponding percentage of non-White first-career entrants.

As Figure 6 depicts, we found that the average percentage of non-White midcareer entrants (about 23%) was 5.3 percentage points larger than the average percentage of non-White first-career entrants (about 17%). This

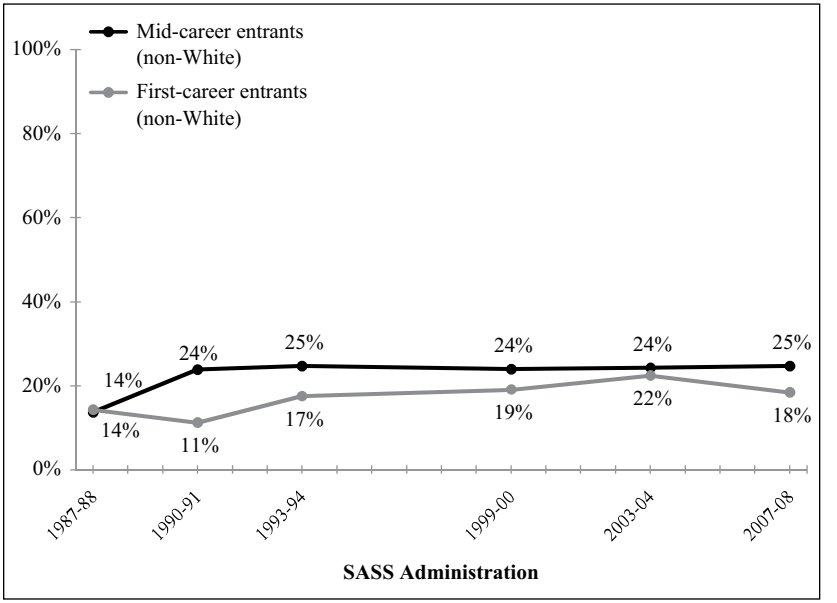


Figure 6. The percentage of midcareer and first-career entrants who are non-White teachers.

average difference of six percentage points was statistically significant (p = .0012). Interestingly, unlike the case with the stable gender balances, both the midcareer and first-career entrant subgroups were becoming increasingly non-White although only the trend among first-career entrants was statistically significant. The percentage of non-White first-career entrants increased from about 14% to 18% between 1988 and 2008, representing a statistically significant, positive linear trend of approximately 0.39 percentage points per year or about 4 percentage points overall (p = .0005).

Taken together, the higher percentage of non-White teachers among midcareer entrants and the increases in the percentage of mid- and first-career entrants from non-White backgrounds did appear to result in a slight increase in the racial/ethnic diversity of first-year teachers. As Figure 7 reveals, the percentage of White first-year teachers decreased from about 86% in 1988 to about 79% in 2008, representing a statistically significant, negative linear trend of approximately 0.38 percentage points per year, or about 8 percentage points over the time period (p < .0001). Interestingly, however, this marginal increase in the diversity of the new-teacher workforce is only partially attributable to midcareer entrants' racial and ethnic characteristics.

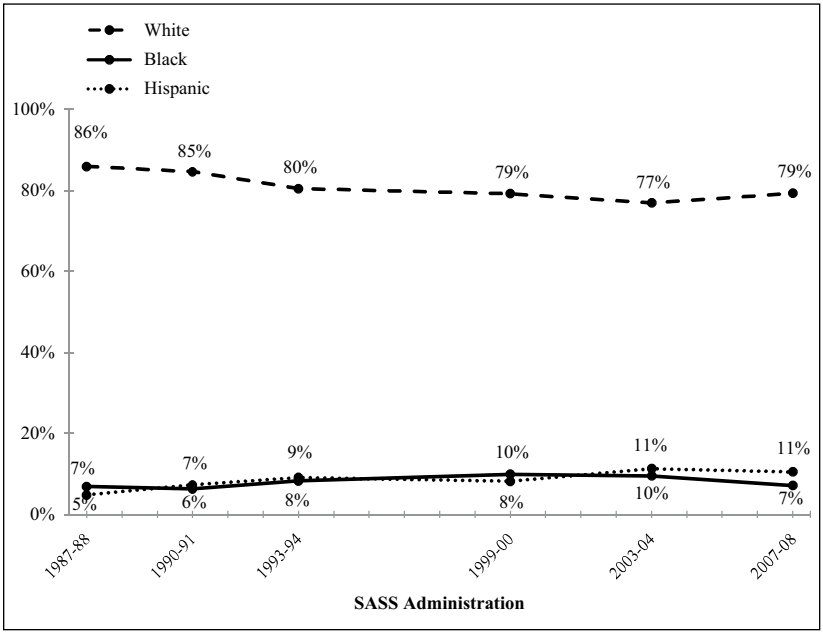


Figure 7. The percentage of first-year teachers from White, Black, and Hispanic backgrounds.

Discussion and Implications

The most noteworthy and surprising finding from this study is that the percentage of midcareer entrants among all first-year teachers nearly doubled—from 20% to 39%—between 1987-1988 and 2003-2004, before decreasing slightly to 37% in 2007-2008. This corroborates and extends the findings of recent state-level studies discussed earlier, challenging common beliefs that the vast majority of new teachers are first-career entrants. If the percentage of midcareer entrants grows at the same average annual rate that it has over the past 20 years, this subgroup of "exceptions" might soon comprise nearly one half of the new teacher workforce. Evidence provided here about the number of midcareer entrants and about their personal and professional characteristics can inform policy makers and administrators as they seek to recruit and support these new teachers and benefit from the interests, experience, and skills that they may offer.

Equally important is the level where they chose to teach. Despite finding substantially larger proportions of midcareer entrants than we expected, we did not find that many had assumed roles as secondary school teachers, where they might alleviate shortages in math and science teachers. In fact, most were elementary teachers. Moreover, midcareer entrants' increasing presence in teaching has not diversified by race or gender the first-year teaching force overall, which continues to be overwhelmingly White and female. On average over the past two decades, approximately 31% of midcareer entrants were male, compared with 23% of first-career entrants. Similarly, over the same time period, approximately 23% of midcareer entrants were non-White, compared with 17% of first-career entrants. Nevertheless, midcareer entrants did not dramatically change the gender and racial composition of the entering teaching force. Between 1988 and 2004, the percentage of first-year teachers who were male increased by only 2%, from 25% to 27%. However, this small gain was offset by a decline to 24% in 2008. And, although the percentage of non-White new teachers increased from 14% to 21% over the past two decades, this change was only partially due to midcareer entrants' increasing presence in teaching.

These findings necessarily temper expectations that recruiting more midcareer entrants will, in itself, diversify the teaching force. Although more midcareer than first-career entrants come from diverse backgrounds, these differences are not substantial enough to alter the profile of the teacher workforce. Thus states and districts seeking to increase the diversity of their teachers must develop specific initiatives to recruit, prepare, employ, and retain male and minority teachers, who choose teaching, whether as first-career or midcareer entrants.

Targeted recruitment and preparation efforts, such as those of the Boston Teacher Residency Program or initiatives like Illinois' *Grow Your Own*, coupled with opportunities for sustained support in schools, may offer an effective first step in diversifying the teaching force. However, as research by Ingersoll and May (2011) suggests, successful recruitment is not enough to ensure that teachers from minority backgrounds remain in teaching if their schools fail to support good work. Moreover, given the preponderance of White women in the teaching force and the gradual but steady increase in their numbers, it seems important to simultaneously develop programs, interventions, and professional development that increase the effectiveness of White women in teaching male and minority students.

From these analyses, we have learned that, over the past two decades, an increasing proportion of new teachers have come to the classroom after working in another profession; yet this group is, at best, only slightly more

diverse in race and gender than their counterparts who enter teaching as a first career. What do these findings imply for policy makers, teacher educators, and school officials? What supports might this large cohort of midcareer entrants need to succeed in teaching, and what might they expect from their new career? In the following discussion we explore some of the implications that our major findings may have for policy and practice. We then conclude with suggestions for future research.

Implications for Policy, Practice, and Research

The historic trends revealed here suggest that midcareer entrants will continue to play an important, and possibly increasing, role in staffing public schools in the years to come. Evidence about midcareer entrants' increasing presence in teaching should alert policy makers and school administrators to their potential to help alleviate the current predicted national teacher shortage. However, our findings do not support some common assumptions about the role that midcareer entrants will play in staffing schools and particular teaching assignments. First, the large percentage of midcareer entrants who secure positions in elementary schools calls into question the common expectation that midcareer entrants will teach a subject related to their former career.[12] Although we found a statistically significant difference (p = .0248) in the average percentage of mid- and first-career entrants teaching in elementary schools (60% of midcareer entrants, as compared with 64% of first-career entrants), the modest size of this difference suggests that simply recruiting more midcareer entrants is unlikely to solve secondary school staffing problems without providing additional incentives to attract teachers in specific subject areas or at the secondary level. It appears that policy makers may have overestimated midcareer entrants' interest in working with their subject and underestimated the incentives required to attract to teaching large numbers of professionals working in mathematics and science.

Beyond midcareer entrants' potential as a source of supply of teachers, their increasing presence in teaching may have additional, important staffing implications if they remain teachers for longer than their first-career counterparts. Some research (e.g., Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2006; Clewell & Villegas, 2001) suggests that midcareer entrants may be less likely than first-career entrants to change schools and leave teaching although there is not yet a substantial body of research to support this conclusion. Differences in the opportunities and support provided by local programs may affect the retention rates. Teachers' career decisions also are affected by larger economic factors, and it is too soon to know whether the current

recession will influence the choices of teachers who entered the classroom in the years preceding the economic downturn. It may be that first-career entrants, who exhibited high rates of turnover at the beginning of the decade (Ingersoll &Smith, 2003), will be more inclined to value the job security of teaching now that fewer alternatives are available outside public education.[13] It seems likely that a continued recession will reduce turnover among both first- and midcareer entrants, thus stabilizing, though not necessarily improving or energizing, the teaching force.

Our findings reveal that many midcareer entrants decided to teach after having served as support staff within schools or as teachers in preschools or colleges. Our research suggests that individuals from such education-related jobs already represent between 10% and 20% of midcareer entrants overall, despite there being relatively few formal programs designed to recruit and train them for work in K-12 schools. These individuals, who have experienced instructional roles and are familiar with schools' organizational cultures, may make a rapid transition to the classroom without the need for extensive preservice preparation. Given that experience, they might be appropriate candidates for fast-track preparation programs. However, if they are successfully recruited, this same group on entry may be inclined to have a similarly conservative effect on the teaching profession as the first-career entrants that Lortie (1975) studied decades ago. It is interesting that, despite the popularity of fast-track preparation programs, large numbers of midcareer entrants continue to attend yearlong preparation programs, suggesting that they may seek (or their states still require) the grounding in theory, methods, and clinical practice that more traditional programs typically offer.

Given the high percentage of midcareer entrants in today's novice cohort, their special needs for induction and support should not be overlooked if we expect them to stay in teaching. It has become increasingly apparent that supports for new teachers must take into account individuals' education, preservice training, prior work experience, and acquired skills. If school-based induction programs ever did meet the needs of new teachers, it seems unlikely that they are doing so today, given the diversity of midcareer entrants' experiences. Our findings suggest that local districts and schools should begin considering how to differentiate induction supports for first-career and midcareer entrants.

Tailoring induction to meet the strengths and needs of midcareer entrants will be no small task. Some midcareer entrants have worked extensively with their subject in real-world settings (Johnson, Birkeland, et al., 2004; Marinell, 2010; Merseth et al., 1994). As research scientists, they developed

competencies in biology, physics, or chemistry. As journalists, they honed their skills as writers. Or as engineers, they routinely used the mathematics they now teach. Such midcareer entrants may bring an understanding of how their subject is applied in real-world settings, allowing them to develop classroom activities that are practical and engaging. However, like all new teachers, they probably will want explicit advice from colleagues and coaches about how best to teach their subject—how to set up a safe and productive science lab for a class of adolescents or how to respond constructively to students' essays.

In addition, because our findings reveal that midcareer entrants are at least a decade older (36 years-old, on average) than their first-career counterparts, many of them enter schools with experience as parents, youth coaches, or teachers in community or religious organizations. Research suggests that midcareer entrants' professional and personal experiences may mean that they are less fazed than their first-career counterparts by challenges, such as being held accountable for results (Costigan, 2002) or interacting with contentious parents (Johnson & Birkeland, 2003). However, they may need additional support with classroom management and pedagogy as they get started.

Given the number of midcareer entrants in many public schools, principals, district administrators, and teacher leaders might consider whether their organizations are tapping the extensive professional skill set that midcareer entrants bring from their former careers. Evidence from a qualitative study of midcareer entrants teaching mathematics- and science-related subjects suggests that midcareer entrants possess a range of practical skills that schools could harness to strengthen their technological infrastructure, secure funds from external sources, or enhance their working relationships with businesses, community support organizations, or parents' groups (Marinell, 2010). Although it is not appropriate to generalize from this small study, this group of midcareer entrants reported that their schools were not capitalizing on many of the skills and capabilities that they brought from their former careers.

As yet, we know little about whether hiring many new teachers who have worked in another field will introduce new perspectives on the organization of public schooling and a readiness to go beyond the status quo. These midcareer entrants, whose socialization as teachers has, in Lortie's terms, been "discontinuous" with their experience as students, have the potential to become agents of change in their schools. However, the fact that nearly 20% of the midcareer entrants we studied worked in education-related roles prior to becoming teachers may suggest that they, like most of the first-career teachers Lortie studied, will continue to affirm the conventional structures

and traditions of schooling. Only further inquiry about the attitudes and activities of mid-career entrants will illuminate what organizational changes they might endorse or champion.

Because the job market for teachers is predominantly local and regional, rather than national, (Loeb & Reininger, 2004), more research is needed about the numbers and characteristics of midcareer entrants within states and specific metropolitan areas. Such research would inform targeted efforts to increase diversity or to address shortages of mathematics or science teachers in particular. Furthermore, it is critical to study the mobility and attrition of both first-career and midcareer entrants. As Richard Ingersoll (2001, 2003) and coauthors have found, teacher turnover contributes substantially to shortages of math and science teachers (Ingersoll & Perda, 2010), and teachers from minority racial and ethnic backgrounds (Ingersoll & Merrill, 2011). There has yet to be a rigorous, large-scale investigation of whether midcareer entrants remain in their schools, or in the teaching profession, any longer than their first-career counterparts. State databases, such as those in Texas, Florida, and North Carolina provide the opportunity to study mobility and attrition longitudinally, which is not possible with the national SASS data. As states and local districts continue to develop databases that track teachers' employment history, researchers should examine the proportions and characteristics of midcareer entrants statewide and locally as well as their longevity in their schools and in teaching.

In order to better inform policy makers and school officials about how, if at all, midcareer entrants change teaching and learning in their schools, we need to learn much more about them. What prompted them to leave their former career and enter teaching? What type of work did they actually do in their prior career and how, if at all, did it prepare them for the responsibilities and challenges they encounter in their schools and classrooms? Do they see new possibilities for redefining teachers' roles or reorganizing schools, based on their experience in other organizations? How long do midcareer entrants remain in the classroom and, if they leave, why do they do so? Finally, are midcareer entrants any more or less effective than other teachers at raising student achievement? Many of these questions cannot be answered with data that are currently available in large data sets and, therefore, must be pursued with field-based research and new surveys. Findings from these studies can then guide the subsequent collection and analysis of data using quantitative methods at the local, state, and national levels.

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Declaration of Conflicting Interests

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Notes

1. Some of these programs and initiatives support the preparation of both mid- and first-career entrants to teaching.
2. Broughman & Rollefson (2000) identify a "delayed entrant" as "a first-year teacher who had engaged in other activities in the year or years between graduating from college or receiving his or her highest degree and becoming a teacher" (p. 2).
3. We suggest that, to be considered a midcareer entrant, a teacher should have had some substantial amount experience in a prior career (in other words, more than just a year or two). By limiting participants in our study to those older than 27, we aim to exclude individuals who transferred into teaching after having worked in another field for fewer than 5 years.
4. We have assumed that the majority of participants who were older than 27 years and who were attending university programs in the year prior to teaching were midcareer entrants enrolled in traditional, university-based teacher certification programs.
5. We confirmed this assertion by conducting an a priori statistical power calculation at http://www.danielsoper.com/statcalc/calc01.aspx
6. In this case, given that our primary outcome of interest, MIDCAREER, is dichotomous, we traditionally would have conducted a binomial logistic regression analysis.
7. MIDCAREER = 0 indicates that a teacher is a first-career entrant.
8. To examine this assumption further, we investigated the age distribution of first-year teachers who were "attending a university or college" in the year before teaching. Seventy-five percent of teachers in this category were younger than 27; 58% were between the ages of 22 and 24, suggesting that the majority of teachers in this category were recent college graduates and that it was appropriate for us to identify them as first-career entrants. We conclude that, if there are cases where we misidentify delayed first-career entrants as midcareer entrants, they are few in number and not substantial enough to undermine our findings.

9. The U.S. Equal Employment Opportunity Commission's "Professional" classification is one of nine, wide-ranging occupational distinctions, the others being officials and managers, technicians, sales workers, administrative support workers, craft workers, operatives, laborers and helpers, and service workers.
10. The only exception was in 1988, when the greatest percentage of midcareer entrants from careers outside of education had been employed as "Officials and Managers" (29%), rather than as "Professionals" (21%), in the year prior to teaching.
11. The only distinction being made among first-year teachers at this point in the analysis is whether they were first- or midcareer entrants. Thus if 20% of all first-year teachers were midcareer entrants, the remaining 80% were first-career entrants. Therefore, an increase in the percentage of new teachers who are midcareer entrants implies a corresponding decrease in the percentage of new teachers who are first-career entrants.
12. As a further check on the accuracy of this finding, we examined the school type (i.e., elementary or secondary) where one specific subgroup of midcareer entrants—those who entered teaching directly from a career outside of education—was teaching during the time of the survey. There is no question that this group of teachers should be identified as midcareer entrants. Furthermore, this is arguably the type of midcareer entrant who we would suspect is most likely to enter secondary schools and to teach hard-to-staff subjects like mathematics and science. We found that, even among this group of midcareer entrants, greater percentages of teachers had entered elementary schools than had entered middle or high schools.
13. Recent cutbacks in public school systems, however, call into question whether teaching will remain a very secure profession.

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